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To: Michael Trepanier  
Senior Project Manager

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From: Erin Reed  
Howard Stein Hudson

HSH Project No.: 2013061.41

Subject: Massachusetts Department of Transportation  
Route 28 at Chickatawbut Road Intersection Improvements. Project File No. 607342  
Public Information Meeting, Milton, MA  
Meeting Notes of July 23, 2019

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## Overview

On July 23, 2019, MassDOT Highway Division, along with representatives from the consultant team associated with the Route 28 at Chickatawbut Road Intersection Improvements held a public information meeting at the Milton Council on Aging to discuss the proposed intersection improvements and the selected alternative to advance to design.

Elected officials Michael Zullas, Milton Board of Selectman, Chairman and Senator Walter Timilty began the meeting by thanking MassDOT for addressing the safety concerns at the intersection which is currently ranked #7 on the top 200 Statewide Crash Locations. Michael Trepanier of MassDOT introduced the project team including Josh Bartus, the Project Manager for the project, and Jessica Lizza and Mark Gravallese the project engineers and designers of Howard Stein Hudson. Michael provided a project overview and outlined the goal of the project to enhance safety at the intersection.

A presentation by Jessica Lizza of Howard Stein Hudson outlined the existing conditions, including crash data from a 2016 Road Safety Audit, safety concerns, existing deficiencies, and current signal operations, that provided the impetus for the proposed project. The presentation continued with an overview of the signalized alternative and the roundabout alternative and the analysis of each alternative in regard to safety, traffic and operations, right-of-way impacts, cost and constructability. The project team walked the public, municipal representatives and elected officials through the proposed views of the roundabout, the preferred alternative selected by MassDOT as it is the most effective in meeting the project goals of enhancing safety at the intersection.

The presentation then shifted to comments and questions from elected officials, town representatives and the public. A passionate discussion focused on the effectiveness of a roundabout both in terms of safety and operations. Residents raised questions regarding the difference between a roundabout and a rotary and the use of Rectangular Rapid Flashing Beacons (RRFB) over High Intensity Activated Crosswalk (HAWK) beacons at the proposed roundabout. Residents inquired about the level of service and the current queue lengths versus the projected queue lengths in the proposed roundabout. Through the lively discussion the project team reminded the public of the limits of the project and that while both alternatives would provide a safety benefit, the roundabout shows a significantly larger benefit to fatal and injury crashes and reducing those through the intersection. The project team agreed to prepare a frequently asked questions document as a follow up to the meeting.

## Agenda

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# Detailed Meeting Minutes<sup>1</sup>

## Welcome & Opening Remarks

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**C: Michael Zullas, *Milton Board of Selectmen, Chair*:** Tonight, we welcome representatives from the Department of Transportation to talk about an issue that is critical in our community: how to make safer the intersection of Chickatawbut Road and Randolph Avenue. We know this intersection is dangerous because we live here. MassDOT also knows it's dangerous from statistics. In the latest listing of the most dangerous intersections in the state, this intersection came in 7<sup>th</sup> out of 200. From 2014 to 2016 there were 54 crashes at this intersection. Of those 54, 28 involved a fatality or bodily injury. This is a critical issue for us. There are not many issues that we deal with as state and local officials that you can categorize as life or death issues. This is one of them. We sincerely appreciate MassDOT coming out, expediting this project, moving it along, and getting feedback. We hope for a fruitful discussion this evening.

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<sup>1</sup> Herein "C" stands for comment, "Q" for question and "A" for answer. For a list of attendees, please see Appendix 1. For copies of meeting flipcharts, please see Appendix 2.

I want to acknowledge some of the state and local officials that are here and on their way. Senator Timilty is on his way and his representative is here. Representative Driscoll is here as well. From the Select Board, Richard Wells is here. And Mike Dennehy, our Town Administrator, is here.

Mike, would you like to say a few words?

**C: Mike Dennehy, *Town of Milton*:** I would like to welcome everyone here as well. There are not too many days that I sit in Town Hall with the police scanner on my desk and don't hear about a crash at Chickatawbut Road and Randolph Avenue. Thankfully, most of them are fender benders. We understand the reality and know it's a problem. We sat with Howard Stein Hudson and MassDOT in March of this year when they presented some of their ideas. We welcome them and their ideas again, and we welcome your ideas as well. I really want to thank the team for being here tonight and understanding what our state and town officials and everyone in this room knows which is that this is a life or death situation and we want to fix it.

**C: Senator Walter Timilty, *Massachusetts State House*:** Thank you Chair Zullas and Town Administrator Dennehy and MassDOT for being here tonight. I think there was a study done in 2012 which said what we all know that there is a crash here at this intersection almost every day. We hear concerns about this all the time. We have heard from people driving by who are concerned about speeding and safety for their families at this intersection and along the whole stretch of Route 28.

We're excited for this project and the collaboration between MassDOT and the town officials. At the state level, elected officials pushed it forward and expedited it because it is such a safety issue. We're excited that MassDOT is taking a serious look. We also know there are other concerns on this stretch of road. The focus of tonight's meeting is on this intersection, but we will talk about the other concerns as well. The state budget was voted on yesterday and includes funds for a Route 28 corridor study to look at the concerns on it. Thank you, again, MassDOT for being here.

**C: Mike Dennehy:** I have one more thing to add. We call this a corridor but also a neighborhood. I see a lot of residents here from that neighborhood. It's a neighborhood being impacted by a state road that is being overly used. Out of this process, we will take into consideration and try to mitigate all the nearby neighborhoods and future projects on the corridor. We want to make the whole corridor and neighborhood safer and that is a future project that this project will tie into.

## Presentation and Discussion

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**C: Michael Trepanier, *Massachusetts Department of Transportation (MassDOT)*:** Thank you so much for the warm welcome and thanks to all of you for joining us.

Before I get into the presentation, I want to take a moment to introduce the team. With us tonight, we have Josh Bartus, my counterpart and the project manager for the project at MassDOT. Jessica Lizza and Mark Gravallese are here from Howard Stein Hudson (HSH). They are the lead engineers and designers. We have Mark Hicks and Geri Vatan from our District 6 office. Mark is our Right of Way Agent for the project and Geri is responsible for all product development activities MassDOT District 6. We have our summer intern, Michelle Meyer who is joining us for her first public meeting and Doug Johnson from Howard Stein Hudson who will be taking a very detailed record of tonight's meeting. Because we always get asked this question, I'll just say it up front: this presentation, once made accessible and compliant, will be posted on the web. If you are signed in at the table in the back, we'll be sure to notify you via email once that posting occurs. In addition, we will be posting the meeting minutes that Doug is furiously typing up from the corner which will be a close-to-verbatim transcript of tonight's discussion.

As our host noted, we are here to discuss the Chickatawbut Road and Randolph Avenue/Route 28 intersection. We are going to give you a quick overview of the project and what most of you know are some of the issues out there and the existing conditions. We're going to present you with the two high level alternatives that we developed and describe why we've picked one over another. We will then leave it open, hopefully with a great deal of time, for questions and answers from all of you. Until the janitor kicks us out or we have to lock up, we'll be here to talk.

The subject intersection is a very dangerous intersection and we've been working on it for several years. We started with a standard practice called a Road Safety Audit (RSA), which is a diagnosis of what the safety problems are within a corridor or intersection as well as a recommendation for the counter measures for how to reduce crashes at any given location. That was conducted here and, ultimately, has given rise to the project that you're seeing tonight and the treatment that we are proposing.

Our goal here is to improve this intersection for safety. I'll acknowledge, because it's a bit obtuse, safety and mobility, how to safely move cars and how to move a lot of cars, are not always on the same level. A lot of times the balance has to be struck in terms of how many cars can you move versus how many cars can you move safely. That is something that we're keeping very much in mind as we've been developing concepts and analyzing alternatives.

Here's a closer aerial view of the intersection we are talking about on Slide 6. We have Route 28, or Randolph Avenue, that has two lanes in each direction. It has very little in terms of pavement markings other than the dash lines in the center line, some shoulder lines, and crosswalks. And we have one lane in each direction on Chickatawbut Road as it crosses Route 28.

Slide 7 shows some of the crash data that was referred to earlier. Again, this is the seventh most dangerous intersection in the state. 68% of those crashes have involved left turning vehicles, turning northbound and southbound and colliding with through traffic. From 2012 to 2015, there were 60 crashes. 34 of those were injuries and one of them, very unfortunately, was a fatality. One crash involved a cyclist. Something that was a bit surprising to me is most of those crashes are occurring during the most congested parts of the day. We have very high vehicle speeds in the corridor. We have congestion at all hours of the morning and evening commuting hours. We have permissive left turns, which is our technical term for allowing turns while other vehicles are making movements through the intersection. You can see that in Slide 10 where one car is turning while two lanes of traffic have a green light coming from the opposite direction. That's a big part of why this is happening. You have two major conflict points with potentially high speeds and low visibility. Solar glare in certain hours of the day really affects folks' ability to make judgments. These are typical things that we would expect when we look at the crash history. We have the approach grades and a great deal of steep slopes that are coming down from the south to the north. As I'm sure we all recognize, there are very poor pedestrian facilities. There is some paint in the crosswalk and that's about it. There are certainly no cycling facilities on Route 28, and it is probably very, very difficult to cycle on Chickatawbut Road.

These are also exacerbated in the wintertime when we have snow and ice and other environmental conditions that are adding to the poor performance of the intersection. Because I am not a traffic engineer, I'm going to pause here and turn this over to Jessica to talk about some of the more technical issues such as the way that the intersection is operating and the signal phasing. She is also going to walk us through the two alternatives that we've analyzed and give you an opportunity for you to see all that information.

**C: Jessica Lizza, Howard Stein Hudson:** As Michael stated, I'm going to walk through the existing sequencing of the traffic signal and then talk about why we care about that and how it impacts the safety of the intersection and our design moving forward. Today, there is different sequencing of the traffic signal depending on what time of day it is. That is pretty unusual. You usually don't see that at signalized intersections. During the evening peak hours, the first sequence of the traffic signal provides a dedicated phase to Randolph Avenue southbound. Slide

16 shows this with a diagram. You have Route 28 running north to south and Chickatawbut Road running east to west. In the first phase, during the evening peak hours, you are provided a left turn arrow. The left turn, the through, and the right turn movements can all proceed south through the intersection without any conflicts and you don't need to yield to any oncoming traffic. However, during all other times of day, the northbound direction is provided that same phase with a green left turn arrow for a short phase at the beginning of the signal with no conflicting traffic. Part of our concern with having different phasing during different times of day is you might not be expecting it. It goes against driver expectations. You might arrive at a signal and are familiar with the sequencing during one time of day and you expect to be given a green phase only to find out you don't have it. Following that phase, the opposing traffic on Route 28 is released. Both approaches on Randolph Avenue will have a green traffic signal so you are forced to yield to oncoming traffic for left and right turns. Some of the difficulty with this is there are no left turn pockets or lanes at the intersection. When you are waiting to yield to traffic so that you can turn, you are blocking other through-vehicles. So, there's some pressure of vehicles being behind you. The grades, volume, and speed of the intersection also make it really difficult to judge an adequate gap when you are turning left. Once the Randolph Avenue phasing is done, all of the vehicle indications are given a red light and all of the pedestrian crosswalks at the intersection are given the walk sign. Today the pedestrian signal is push button actuated. It will only come up if someone is present and waiting to cross. Otherwise, this phase in the signal just gets skipped. The final phase of the existing signal allows both approaches on Chickatawbut Road to proceed at the same time. Both sides are given a green ball indication. All of the left turns have to yield to oncoming traffic as to the right turns.

So, why do we care about this traffic signal phasing? This diagram on Slide 20 shows all of the recorded crashes from 2012 through 2015. Every number represents a different crash. All of the circles represent injuries. The bold circle here represents a fatality. As the trends show, you have really high numbers of crashes associated with people turning left from Chickatawbut Road to northbound and southbound Route 28 and getting in angled collisions with road traffic. You can also see some rear end traffic. As I spoke about, there is no left turn lane so, while you're waiting to turn left, you're in one of the through lanes.

Why we are here tonight is to try and solve some of these existing safety issues. The project team has developed two potential alternatives. One is keeping the intersection as a signalized intersection while providing safety improvements. The second, and the project teams preferred alternative, is a roundabout at this location which would remove the existing traffic signal. Now we'll go into more detail on the two alternatives.

Here on Slide 22, you have the signalized alternative. On this graphic, north is oriented to the right. Randolph/Route 28 runs horizontally and Chickatawbut Road running vertically. This alternative would maintain two through lanes on Randolph Avenue and it would merge down to one lane just south of the intersection. This alternative would add left turn lanes along both of the Randolph Avenue approaches to help solve some of those conflicts between the left turning and through vehicles. This will also allow different traffic signal sequencing, which I'll get into in a little bit. Along Chickatawbut Road we are also proposing to add a left turn lane for the westbound approach to allow vehicles that are currently waiting for a gap to turn left to safely pull to the side and allow the through vehicles to pass by them.

Another component of this design will be ADA upgrades at all of the wheelchair ramps including accessible push buttons. It also proposes a shared use path along the footprint of the intersection on both sides to allow cyclists and pedestrians to safely cross the intersection. Today there are some short bits of sidewalk out there, but there are definitely some missing connections and it could be in better condition. This would also extend the path to connect to the Blue Hills Reservation parking lot here where there is a trail head. Currently the sidewalk stops short of that today.

Now I will walk through our proposed traffic signal phasing for this alternative and how that might impact safety of the intersection. Under this alternative, the first phase would be the same during all times of day and would provide a dedicated phase for the northbound and southbound left turn lanes. Both left turn lanes would be provided a green arrow and you would be completely protected. Oncoming traffic would all be stopped for you to safely make your turn. Following that, the left turn lanes will be provided red arrows and will not be allowed to continue through the intersection. When we release through traffic coming from both directions Randolph Avenue to prevent some of the left turn angle collisions that happened today. Your through movements and right turn movements along Randolph Avenue would get you through the intersection without conflict. We will then give all of the vehicle indications a red light and provide an all pedestrian phase like the way it functions today. It will still be push button activated and will only come up when someone is waiting to cross and presses the push button. The next phase shown on Slide 26 will be new in the traffic signal. This phase will give Chickatawbut Road westbound with a short lead phase. We saw some heavy left turn movements when we counted the traffic out there and this would allow them a bit of time to clear out before releasing Chickatawbut Road in the other direction. Following that, Chickatawbut Road eastbound would be released and both approaches would be traveling through the intersection at

the same time. We would allow left turns to continue, but they would have to yield to oncoming traffic at this portion of the signal.

**C: Michael Trepanier:** One of the points that I'd like to point out in this diagram on Slide 27 is that the dashed lines are areas where conflict still exists even in this signalized alternative. I just want to point that out. One of the problems with a signalize alternative is that a lot of these conflicts while minimized, still exist within the intersection.

**Q: No Name Given:** Does that show the addition of a left turn lane on Chickatawbut Road westbound?

**A: Jessica Lizza:** Yes.

**C: Jessica Lizza:** Some of the benefits of this intersection are the safety benefits for left turning vehicles through the geometry of the intersection as well as the traffic signal phasing. When we retime the intersection, we would be retiming with clearance intervals which are the yellow and red vehicle indications. That's important because that's often what can lead to a rear end collision. By retiming them we can try and reduce some of the rear end collisions and make sure that the approach grades to the intersection are accounted for. Additionally, the path around the intersection will provide improved pedestrian and cyclist facilities.

Some considerations with this alternative: this would not address speeding through the intersection. You'll still see that. The traffic on Route 28 that exists today is expected to continue. This alternative would also see some right of way impacts due to widening for the shared use path and the left turn lanes.

Here on Slide 29 is the roundabout alternative which is our preferred alternative. In this image, Randolph Avenue is running horizontally on the screen and Chickatawbut Road vertically with north oriented to the right. In this alternative we are maintaining the two travel lanes in each direction along Randolph Avenue like there are today. Chickatawbut Road in both the directions will still have one lane approaching the intersection. Similar to the signalized alternative, we are adding a shared use path around the intersection to provide a safe crossing for pedestrians and cyclists outside of the conflict of the intersection. The crosswalks across the roundabout will be separated by splitter islands along all four approaches. You will only ever need to cross one direction of travel at a time.

**C: No Name Given:** That's my house where the expansion is happening. I would love pedestrians to be able to cross but I would also like them passing somewhere besides the front of my house.



- C: Michael Trepanier:** I want to talk to you directly about that. Let's get through the presentation and then we can talk about it.
- C: No Name Given:** I just don't understand why we can't put a left turn lane in there to stop the crashes instead of putting a rotary in everyone's back yard.
- C: Michael Trepanier:** Give us just a few more minutes to get through the presentation so we can make the case why and then we can discuss it.
- C: Jessica Lizza:** Back to the splitter islands, these allow you to only cross one direction of travel at a time. The crosswalks across Randolph Avenue, because they are crossing two lanes at a time, will have Rectangular Rapid Flashing Beacons, also known as RRFBs. If you walk up the wheelchair ramp and press the push button, that will activate alternating flashing lights. This helps address some accessibility issues of having an unsignalized crosswalk and also provides a higher visibility warning in the form of flashing lights to alert drivers approaching the intersection that you are trying to cross.

Here are some of the benefits of the roundabout. This will significantly reduce speed through the intersection, which is a huge factor when we are determining the severity of crashes. The higher the speed, typically, the higher the severity of crashes and the higher likelihood of injuries or fatalities. Roundabouts have shown to significantly reduce fatal injury crashes above signalized intersection improvements. They have less conflict points and by nature of design, they create less severe crashes. The roundabout has shown to improve traffic operations along Route 28 and the shared use path along the side will provide improved pedestrian and cyclist facilities. In the long term, roundabouts usually see lifecycle cost benefits because you are not maintaining signal equipment at the intersection. Some of the considerations of the roundabout are that it will be a higher level of construction difficulty. It will require significant changes to some of the approach grades. It will require significant changes to some of the approach grades. Because you are no longer metering traffic along Route 28, there will be no time where there is a red light so, it will be a pretty constant stream of traffic. Some of the queuing on Chickatawbut Road is likely to get worse. The roundabout has more right of way and property impacts than the signalized alternative. It also provides unsignalized crosswalks even though you do have the hybrid flashing beacon.

A safety analysis was performed to compare the alternatives against a no-build scenario to see if we did nothing at this location, how would the safety perform against the signalized alternative and the roundabout alternative? What was found is that the roundabout showed a 73% reduction

of fatal and injury crashes at this intersection. While both alternatives would provide a safety benefit, the roundabout shows a significantly larger benefit to fatal and injury crashes and reducing those through the intersection.

I'm going to dive into some of the traffic analysis results to see how this might impact traffic moving through the intersection. One of the metrics we used to look at traffic is traffic queuing. That is an engineering term that refers to how many vehicles are waiting at any approach to an intersection when the light turns from red to green. Usually, we measure those in 50<sup>th</sup> percentiles so, the average queues throughout the peak hours are analyzed and then your worst-case scenario, the 95<sup>th</sup> percentile, usually occurs for about five minutes within the peak hour of the day.

This diagram on the left of Slide 35 shows the queues for the signalized alternative. On the right are the queues for the roundabout. The blue is the average queues and the red is the worst-case scenario, the 95<sup>th</sup> percentile queues. The roundabout showed to significantly reduce the queuing on Randolph Avenue but, it is showing worse queuing along Chickatawbut Road traveling westbound. This is during the AM peak hour. We also looked at the evening peak hour and it paints a similar picture. The roundabout has shown to significantly reduce the traffic along Route 28 compared to the signalized alternative. However, it is also shown to worsen Chickatawbut Road traveling eastbound. We also looked at weekends, on Saturday specifically, to analyze the off-peak hours with non-commuter traffic. The roundabout shows to have significantly shorter queues of traffic than the signalize alternative. Slide 38 shows that in terms of the number of vehicles. It shows the same trend during the morning, evening, and Saturday. Generally, the signal shows fewer vehicles waiting at the light under the signalize alternative on Chickatawbut Road but more vehicles waiting on Randolph Avenue.

Another metric we looked is level of service. This takes your average vehicular delay and assigns a letter grade to it and follows general school conventions. A is favorable, F is unfavorable. Shown here on Slide 39, the signal is shown to have a significant amount of unfavorable levels of service along the approaches. The roundabout is shown to perform quite well apart from Chickatawbut Road during the peak hours. While there are some trade-offs along Chickatawbut Road traffic compared to the roundabout, we feel that the all-day safety benefits outweigh these tradeoffs.

Now, I'm going to go through some renderings of the roundabout. Slide 40 shows the existing view looking eastbound on Chickatawbut Road today. You have one lane approaching the traffic signal. Slide 42 shows your one lane approaching the proposed roundabout with shared use

facilities along both sides and a crosswalk in the middle.

Slide 43 is looking west on Chickatawbut Road today with parking to your left. Slide 44 shows a rendering looking west on Chickatawbut Road under the roundabout alternative. Parking will be maintained for the Blue Hills. You still have your one lane approach and a crosswalk provided before the roundabout.

Slide 45 is looking north on Randolph Avenue/Route 28 today with two lanes in each direction approaching the signal. In the future, you'll still have two lanes in each direction. Approaching the roundabout, you have your RRFB crosswalk with the rapid flashing beacon that will help alert drivers.

And lastly, Slides 48 and 49 show Route 28 looking southbound today. Slide 50 shows a rendering with the same view approaching the roundabout.

Now, I will turn it over to Michael.

**C: Michael Trepanier:** Thank you, Jess. Where do we go from here? We are tonight to hear from all of you: members of the community, property owners, people who want to tell us it's a horrible idea, and people who want to tell us that this is a good idea. We're here to hear all voices tonight, even if it's just feedback or if you've got questions, are here to answer them. The very first thing on our agenda is to hear from the community. We take that very, very seriously. We have been making a lot of assumptions and decisions inside our agency boxes working with our local partners. Tonight is an opportunity for us to get feedback from the community and we take that very seriously.

Given where we are today and understanding that there is a lot of work to do, our next step after tonight would be to work towards advancing to our first major design milestone, a 25% design, which in MassDOT parlance is a bit of a misnomer. That's really about 50% of the work that we do in design. We will be coordinating with the MBTA and Brockton Area Transit Authority to ensure that their services maintain through construction and to ensure that we are best planning for where their stops should be and other considerations like that for the transit service along the corridor. The next time you'll see us in this context, I think I will be replaced by Josh Bartus here moving forward, is where we would present a more refined design for the roundabout alternative the begins to put engineering lines on plans and baseline survey versus what you've seen tonight which is very conceptual. Before I open it up for general public comment, I'd like to acknowledge Senator Timilty and invite you to come say a few words if you would like Senator.

**C: Senator Walter Timilty:** Thank you and good evening. First off, thank you MassDOT. As I see it, there are two main goals. One is to enhance the safety and quality of life for the residents that live on this major thoroughfare and around it and one is to enhance the public safety for everyone in this community and surrounding communities because we are all interlocked. Tragically, we have sustained several fatalities on this road and numerous injuries from too many accidents to count. For that reason, there is a short-term impetus here. In fiscal year 2018, in collaboration with our local officials, I authored an amendment to bring \$20,000 to the city to enhance traffic infrastructure. This past year, I authored an amendment to bring \$20,000 for the Milton Police Department to augment traffic enforcement. Thank you to Chief King and the Select Board for collaborating with me on that. We're all in this together and we work for you folks. We have a long-term solution and the options have been shown here tonight. Going forward, I, and the rest of your elected officials, work for you folks. Whatever works better for the residents, we will pursue to enhance public safety and quality of life for all our residents and to make a safer roadway for all users. I support what the residents of the town support. So, thank you and I look forward to learning from the questions here tonight and look forward to collaborating more on this.

**C: Michael Trepanier:** Okay, I'm going to go back to a question from earlier. I will flip back to the close up of the roundabout on Slide 30. This project does require the full taking of the property on the corner here, and a lot of that is required because of the shared use path.

**C: No Name Given:** Where your rotary ends is what I can see from my house.

**C: Michael Trepanier:** We're going to have to take a closer look at what the actual property impacts are there as we get further into design.

**C: Jessica Lizza:** The red line on the screen is the property line. We are really hugging that lot and there might be some temporary impacts during construction.

**Q: No Name Given:** I just put up a new \$12,000 fence there on my property line. What is going to happen with that?

**A: Michael Trepanier:** We will be working with you. If we have to impact that fence, then we will compensate you for those impacts. This is Mark Hicks, he's from our Right of Way Bureau, and I will give him an opportunity to speak.

**C: Mark Hicks, MassDOT:** Hi, my name is Mark Hicks and I am with the Right of Way division. Sometimes with these projects, what we would do is take an easement and, if we need to remove a fence, the MassDOT Right of Way division would remove the fence and compensate you for it.

**Q: No Name Given:** So, you plan on taking my fence down?

**A: Mark Hicks:** If it is in the impact of the easement area in which they need to do the construction work, we will do that, and we will compensate you for that.

**Q: No Name Given:** So, I am going to have construction workers ripping down my brand new fence outside my house for two years while you put in this rotary for the five pedestrians that cross the road instead of putting in a left-hand turn? Pedestrians aren't crossing here like that.

**C: Michael Trepanier:** I think that is oversimplifying the situation.

**C: No Name Given:** It's not. I live here and I see it.

**C: Michael Trepanier:** It's not just about putting the sidewalk there, it's all of the things we presented this evening. The roundabout alternative is significantly safer.

**C: No Name Given:** Massachusetts is the only place that has roundabouts and I have never been in a roundabout that didn't have traffic for double the amount of time as necessary.

**C: Michael Trepanier:** That statement is not true. We are not the only state with roundabouts. We are one of the few states with rotaries and they are substantially different treatments.

The signalized intersection has a very similar level of impact to your property. We'll go through an appraisal process to look at what the impacts would be to any private property and we compensate appropriately based on market appraisals and negotiations. There is a whole process that has to occur, and this wouldn't even start for a couple years.

**C: No Name Given:** I feel like a decision has already been made. When I read in the Milton Times that Mike Dennehy thought the roundabout was a great idea, I was alarmed. I thought this can't possibly be. I live a block away. There are times of the day when I can't leave to go to Quincy because of traffic. There are times when I can't use Chickatawbut Road and I have to go all the way down to the Blue Hill River Road. Then you talk about increased traffic on Chickatawbut Road. I feel like none of you have actually driven on this road. There is some type of model you are looking at with some type of imaginary traffic flow. I feel like you don't actually know it.

**C: Michael Trepanier:** I don't live in Milton but I lived in Quincy for four years and regularly hiked in the Blue Hills.

**Q: No Name Given:** That's not the same as trying to get home from Quincy in the late afternoon and you are backed up beyond the reservoir and you are waiting and waiting. It's not like trying to get out of Chickatawbut Road in the morning because there's a lot of left turning traffic going north on Randolph Avenue and I have to sit and wait for several rotations of the light before going south on Randolph Avenue. You have made no provision for left turns going into Boston which is naturally where people will be going in the morning.

So, I wonder as I look at this, what times the day are you looking at? Have you actually been there? Do you actually know this intersection? It alarms me, this roundabout idea with these crosswalks. I saw the bicycle accident before my very eyes, and I could not believe what actually happened there. I feel like those kinds of events intensify without a signalized intersection.

Finally, I think that you've already made the decision as I look at these renderings of this roundabout. And I think to myself, "Oh My God, it's time to move". I really think it's the worst decision possible. If you actually lived here and actually know how traffic flows, it seems inconceivable. At any rate, the biggest problem is the way Randolph Avenue narrows to two lanes in the Blue Hills. That is the biggest problem because it forces traffic back into Milton. And what happens is people experience tremendous amounts of frustration getting through the intersection so, they fly through there at high speeds. If you happen to be the guy making a left-hand turn onto Chickatawbut Road in the late afternoon, you're in trouble.

That bottleneck has to be solved before anything else happens to alleviate the frustration of people waiting on Randolph Avenue backed up almost to Reedsdale Road. And in the morning, I see them coming the other way and we're all backed up into Randolph because I'm going south, and they are all going north. I see them all coming south in the late afternoon. And it seems to mean that if we don't do something about the bottleneck, all of this means very little, you know? I think your mind is made up. I felt that way when there were public hearings for the deer hunt. I felt like the state that already made decisions and were coming to convince us rather than listen to us. Have you already made a decision without listening to anybody?

**A: Michael Trepanier:** No. We made a decision to advance the roundabout as our preferred alternative. We use that language very carefully. Historically, most of the time you would see MassDOT would be when we already have the 25% design and we've invested half of our design costs in what we're presenting. Now, we are here saying we've made the decision that the roundabout is our preferred alternative. That is based on input from our local partners. That is

based on input from our partners at the Department of Conservation and Recreation, DCR, who operate Chickatawbut Road and have a substantial stake in this. We have to be sure about what we're going to present and that we are confident we all agree amongst ourselves prior to being able to come present to the public. We could have come perhaps after the conclusion of the road safety audit and identified that there's a major problem here. But, frankly, I think that would have been a big waste of everybody's time because we all know that this is a problem.

Yes, we've been to the project site. Our engineers have driven it many times. I've been through it many times myself and I expect other members of our team have been as well. We are familiar with it. We are not residents, but I don't think that is a unique qualification for working on projects statewide. Additionally, our analysis has multiple levels. If this was just a safety benefit, it wouldn't be as cut and dry. When you look at the queuing differential between a signalized intersection and a roundabout, we see a significant performance improvement overall for all of the traffic movements with a roundabout. These blue lines that Jess described are the average queue for a signalized intersection. On the roundabout alternative, we've got one blue line coming from Chickatawbut while all of the other traffic, which is dominated by Route 28, is almost in a free-flowing condition. The signal is failing as it's currently operating. It's congested. There are a lot of cars moving up and down Route 28 but we're not here to solve the corridor congestion problems. We recognize that that needs to become a priority for the state and there may be an opportunity to look at that comprehensively through a planning study. But we are here tonight to stop people from getting killed and injured. The roundabout alternative best meets that need.

Yes, we decided that that is the best alternative. We have only advanced it to an alternative concept. We haven't invested hundreds and thousands of dollars. We're here to talk about this evening.

- C: No Name Given:** This represents the results yet; we don't know what assumptions went into it so we don't know if it is valid or not. I don't know enough about it. Additionally, I think that what's going to happen is as evening traffic approaches the bottleneck, it will back up through the roundabout and nobody on Chickatawbut Road moves all. And in the morning, the converse will occur.
- C: Michael Trepanier:** Respectfully, I think there's a lot of nuance in that conversation. I really would like to move on here to some other folks in the audience. If you'd like to have a side conversation with Jess about the modeling, we can certainly do that. I think that's a little bit more nuanced and detailed than where I'd like to go.

**Q: No Name Given:** What is the current level of service? In your level of service analysis, both of them are E and F during weekdays. The only time that the roundabout was better was on Saturday. The other question would be, if we are going to invest so much time, effort and money in this, shouldn't we do better than E and F?

**A: Jessica Lizza:** In the morning, everything is an A or B which is great and very rare for urban traffic. The F is for Chickatawbut Road only, westbound in the morning and eastbound in the evening. Your weekend and off-peak is all great. All approaches, except for Chickatawbut Road during the morning and evening peak hours is a level of service A or B.

**Q: No Name Given:** What's the difference between a roundabout and rotary? You were very specific about that. I think there is a tremendous amount of apprehension with a roundabout in general. I think everyone's experience is they are difficult and safety issues. Everyone was surprised by to see that. It is not the left turn lane that everyone was expecting.

**A: Michael Trepanier:** Categorically, roundabouts are not rotaries. Both are circular. Rotaries are very large, and roundabouts are generally much smaller. Rotaries are good at processing a great deal of traffic at high speeds but have very little lane markings and demarcations. They perform very poorly when it comes to safety. Roundabouts are clearly demarcated. They are designed so that cars are deflected into circle, causing drivers to slow speeds. Additionally, you have the opportunity for better crossings where you have the substantial benefit slower speeds. National and regional research and examples show that the speed reduction associated with roundabouts substantially improves safety and has the ability to save lives, especially people on foot or on bikes.

This crossing is only about 26 feet and there will be a rapid flashing beacon and a great deal of opportunity to cross here with compliance from the bikes and pedestrians rather than the very, very few people who will want to jet across the intersection. If you're a single hiker or someone passing through, I imagine most of the activity years is associated with Blue Hills activity or people getting on the bus, it is much more likely that these cars are going to stop for you. As Jess pointed out, the existing signal only goes to the pedestrian phase for you to safely cross at the end of the other signal phase. So, you could be waiting for two or three minutes perhaps before you get that signal. We find that is not something most people do. This is well researched and understood nationally. This is documented and is not myth. This is understood by the Federal Highway Administration and by MassDOT.

**Q: No Name Given:** Where else are there roundabouts like this in the state of Massachusetts with similar levels of traffic?



**A: Michael Trepanier:** There are a great deal of roundabouts in Western Mass, in Amherst.

**Q: No Name Given:** Can you provide us with a list of four or five intersections that are parallel to this for traffic volumes so we can go check them out ourselves?

**A: Michael Trepanier:** We can certainly do a scan of what's available in the northeast.

**Q: No Name Given:** What are the traffic volumes for this intersection?

**A: Jessica Lizza:** Daily, Randolph Avenue is 26,000 to 29,000 vehicles. Chickatawbut Road is about 5,000 to 6,000. Hourly, during the peaks, northbound can be 1,200 vehicles in peak hour. Southbound is about 1,000.

**A: Michael Trepanier:** The traffic volumes are relevant, but not entirely because of the bottleneck. Part of what makes this an ideal alternative is that a roundabout starts to mirror some of the traffic and provides more consistency in how that traffic is moving through the corridor. There is a more consistent flow versus the stop and go ripple effect of red lights. One set of brake lights can have a ripple effect on half a mile up the corridor.

**Q: No Name Given:** Why aren't you addressing the narrowing of the road at the bottleneck? To me, that is a major issue with this. And there is flooding that occurs in the north and south and it turns to ice in the wintertime. You should address those things too in your plan.

**A: Jessica Lizza:** We'd definitely be looking at the drainage of the intersection in any plan.

**Q: No Name Given:** What is the percent of speed reduction at the roundabout as shown versus the signalized alternative? Also, what happens to the Hillside Avenue light? Will it stay there to slow down traffic or will it be an open flow? People are trying to get out of the side roads or driveways.

**A: Michael Trepanier:** The design speed for roundabout is 25 as opposed to the 45 miles per hour speed that is posted and would be designed for with a signalized intersection. You cannot speed through a roundabout without hitting the island. That is what roundabouts do really well. With a signalized intersection, when you have a green, you can fly through. In our observed travel speeds, we have one incident where the travel speed was upwards of 90 miles per hour. This would prevent that. It would not be possible for a vehicle to go that fast. The benefits are really substantial. We recognize this is the more challenging design. We are not trying to take the easy way out. The easier way out does not result in the safety outcomes and benefits that community and intersection deserves this.

**Q: No Name Given:** I thought this would be fixed 10 years ago when they widened the road. Can we get a left signal now before anyone else gets hurt? I had a guy honking behind me because I was not turning fast enough.

**A: Michael Trepanier:** Any kind of changes to this location require a great deal of process. I recognize that's a frustrating thing to hear. Bureaucracy is bureaucracy and we have regulatory requirements for anything that we do here. Anything short of the small fixes, that Senator Timilty described earlier, requires essentially the same time and effort and almost cost, with the exception of the construction cost, as the roundabout. We are here tonight to talk about how we have an expedited approach to a very dangerous location, and I understand there could be frustration about why we can't do something today.

**C: Jessica Lizza:** To build on that, part of the reason that the left turn signal is not as much of a short term of improvement as you might think is because we are not able to restrict those permissive turns when you're getting a green ball indication but you don't have your own turn left-lane. With the existing lane configuration that's out there today, it's not a just matter of changing the equipment. We would have to change the lane configuration that exists.

**Q: No Name Given:** What about a left arrow?

**C: Jessica Lizza:** Today there is a left arrow that then turns into a green ball. In order to make it a left turn arrow only, it needs a left turn only lane, which would require changing the lanes that are out there today.

**Q: No Name Given:** Can you extend the left turn green arrow? It is very fast and might allow one or two cars tops before it goes to the green ball.

**A: Michael Trepanier:** I'm happy to have Jess work in our district office. Geri Vatan is here from our District 6 office. The signal is under their operation. I am in our headquarters. Certainly, we would be happy to work with our operations engineer to see if we could find ways to improve it in the interim.

**Q: No Name Given:** The rule is that cars in a roundabout have the right of way. Northbound on Route 28, there is a continuous line of traffic so, that line will always have the right of way. How does someone from Chickatawbut turn left if it's a continuous line of traffic that always has the right of way in the roundabout? How is any traffic getting in? Is that why it's an F on Chickatawbut? Is it an unstated goal to reduce traffic on Chickatawbut?

**A: Michael Trepanier:** It was not an unstated goal, but it is an unanticipated outcome.

**C: Mark Gravalles, *Howard Stein Hudson*:** My name is Mark Gravellese, Manager of Public Infrastructure at Howard Stein Hudson. I can totally understand a lot of the sentiment and where you're coming from, thinking that the signalized alternative would be the fix. With the funds available for this project coming from the Highway Safety Improvement Program, the goals are safety. The benefits that we have shown you, lead us to present to you the preferred alternative being a roundabout because it provides safety benefits. It also has operational benefits, with the exception of the peaks in the morning on Chickatawbut. The rest of the day, you will be able to get in and out with relative ease traveling east and west on Chickatawbut. In the worst-case scenario, there will be a heavier peak along Route 28/Randolph Avenue which will provide some difficulty with the gaps to get in and out of the intersection.

**Q: Joe:** With the signalized alternative, I knew it would have some property impacts. Can you tell us if that affects our property? It sounds with the roundabout it will be affected.

**A: Michael Trepanier** Your property is certainly affected. Currently, we would need to do a total taking. Under the signalized option, it has less impact. The concept that we show here appears as if it has none, but there would be temporary construction impacts, grading, and all sorts of different things.

We haven't developed these concepts enough, especially the signalized alternatives in terms of how do we make grades, how do we get ADA accessible pathways, how we make the driveways work so closely to this revise the intersection geometry, etc. Those things we aren't sure of and has not been done for either alternative. What is very clear is that the roundabout alternative is very impactful of your property and will require complete taking.

**C: Mark Gravalles:** Regarding the signalized alternative for your property, I don't want to sugar coat anything. While it does look like it's less, part of your front lawn will be required for construction staging and maybe, even ultimately, the sidewalk. So, there will be less frontage in the signalize alternative that may not actually approach over the state highway property.

**Q: No Name Given:** This is about safety and the safety of everybody, but what about for all of us on the street during construction? You are ripping up the fence that I put up to keep my daughter safe on that street. For two years you are going to be doing construction directly in front of my house with a three-year-old. What about her safety and the fence that I put up that you casually just told me you're ripping up?

**A: Michael Trepanier:** There are a lot of details to be worked out. Our contractor will have provisions like temporary construction staging and fencing.

**Q: No Name Given:** Will there be any other takings?

**A: Michael Trepanier:** The only full takings we are aware of is the house in the corner. There may be other minor temporary or permanent easements along the corridor. The only other substantial property requirements are within the Blue Hills Reservation and that's something that we've been having ongoing coordination and consultation with DCR about. At the end of the day, where that property line begins and ends, in terms of who owns and operates Chickatawbut Road versus Route 28, a signalized intersection is a little more cut and dry. With a roundabout that's something we're going to have to draw those lines. It would be minimal frontage in terms of permanent easements for sidewalks or drainage for purposes and temporary easements for construction access regardless of alternative.

**Q: No Name Given:** When you pave paradise, do you give land back anywhere else? When you take trees out of the Blue Hills Reservation, which many of us love dearly, that is a loss.

**A: Michael Trepanier:** Absolutely. We would have to mitigate it. For those of you that may recall seeing Mark and I during some of the early hearings on East Milton Square, a lot of what we were focusing on then was Article 97 and the regulatory impacts associated with that. Article 97 of the state constitution sets forth that all open space, like the reservation, is protected by the constitution of the commonwealth. In practice, through our executive Environmental Affairs Office, we have a requirement to mitigate those impacts. In general, when we take property for transportation purposes, from a conservation purpose or in this case, conservation and recreation, we generally give back more than we take. Absolutely, we will mitigate that. That will be permitted through the Environmental Affairs Office and will go through our state environmental review process, the Massachusetts Environmental Policy Act. All of that will happen once we have advanced the design, better understand what those impacts are, and can quantify the impacts down to the square foot.

**Q: No Name Given:** So, the mitigation might not be here?

**A: Michael Trepanier:** It would very likely be in the Blue Hills and not far away.

**C: Mark Gravalles:** The takings that we're talking about here are on the corners of the intersection. Whether it's the signalized option or the roundabout, there will be required takings from DCR in order to fit the safety improvements that we need. The reason why they don't show

up as benefits or considerations is because they're required under both alternatives. Therefore, the same process is going to have to happen for both alternatives. DCR understands that this has been a safety issue for quite a long time and the reason why a lot of the appropriate safety measures haven't been taken is because the previous projects tried to fit within the existing state highway layout and make the improvements without taking any property. Obviously, it hasn't worked. It's still the seventh highest crash location in the entire state. There is an understanding in our partnership that there are takings required for conservation land and mitigation will be discussed and designed appropriately. It's all in the guise of providing the safety benefits under this project.

**C: Michael Trepanier:** I am going to try and get to everybody who has not had a chance to speak.

**Q: No Name Given:** You say that the speed of traffic going into the intersection will be reduced by the roundabout. Currently, you have 45 mile per hour speed limits which means right now, you are encouraging people to go 45 mph through this intersection. There is no signage saying that it is a dangerous intersection. It seems to me that DOT should think about reducing the speed limit rather than building a roundabout. Why not do that? If that is the safety problem, change the speed limit. Put up signs saying dangerous intersection.

**A: Michael Trepanier:** In an ideal world, that would be a very simple elegant solution. In the real world, we have people speeding. Our observations are much, much higher than the posted speed limit. We could probably have state troopers out there every single day enforcing it.

**C: Jessica Lizza:** The state law to change the speed limit is based on a required speed study. We did study to speeds although, it wasn't to the exact same specifications that this law requires. The law dictates that you have to set the speed limit based on existing travel speeds. Sometimes when communities do these speed studies, it doesn't always result in what you want. In the past, it has sometimes resulted in the speed limit increasing. That's a consideration. With a roundabout, we would be able to provide advisory speed signs approaching the roundabout to 25 miles an hour, which is something that would be incorporated into the design

**Q: Lee Toma:** Why rapid flash beacons instead of red-light HAWK signals? It seems that drivers ignore yellow lights. Also, why does Randolph have four lanes when it is two lanes at either end?

**A: Michael Trepanier:** We believe the rapid flashing beacons are the right treatment for a design like this. HAWK signals work well for mid-block crossings where drivers have the ability to be alerted from further away. A HAWK would not be suitable for this location. There aren't a lot of comparable intersections in the middle of the woods in an urban area. Washington Square in

Worcester would be a good analogue for this from a volume perspective. I don't think we have any RRFBs there and we have pretty good driver compliance.

And you are right, the four lanes do encourage speeding. The previous project that we did here in the late 90's or early 2000s stopped short of dealing with this. I'm confident that at time this was a problem section. In 2019, we wouldn't design a corridor with four lanes like that without having some other safety countermeasure like a divided median or something like that to calm speeds, reduce the potential for head on collisions, and deal with the left turn issues. That is a product of history and we have progressed in our thinking.

**C: No Name Given:** Like many people here, I live in the Scottswood neighborhood. We see the issues that make this intersection dangerous every day. I think some of the frustration you are hearing is that we see the dangerous driving conditions extending well beyond where the roundabout will be. The thing about our neighborhood is that Chickatawbut Road is one of the few ways in and out. It is an isolated neighborhood with very few streets. When you suggest that you have a nice model that would give it an F rating, it feels like you are telling our neighborhood we should bite it on Chickatawbut Road so that you can get more traffic flow going north and south. We don't see a benefit to this in terms of making our neighborhood safer. Maybe that one intersection will be, but the second you get past that intersection and go further down Randolph Road, we're having people killed all the way up and down the road. This doesn't look like it's going to have that effect. I see this making it even more miserable to get in and out of my neighborhood.

**C: Michael Trepanier:** I think that what we have stated here is being a little misperceived. As Jess pointed out, the times that Chickatawbut Road is failing is during the worst of the worst traffic period. That big long red line represents the 15 minutes between 7:45 AM and 8:00 AM that those queues are occurring to that extent. What we probably should have shown is what the existing queues look like. And I'm not sure if you're familiar enough or have that off the top of your head, Jess. Maybe that is something we are missing in our presentation. That's a bit of a failing on us.

**A: Jessica Lizza:** The existing queues on Chickatawbut Road are substantial. We did go out and drive it. We took videos. We took travel times. I drove through there and it took me four cycles to get through the existing signal on Chickatawbut Road. This is a screenshot from Google maps on a typical Tuesday. There are problems on Chickatawbut Road today. We're not trying to sugar coat that those are going to go away during the worst part of the peak hour. There is a chance that they get worse because of some of the points made earlier that some of the stoppage along

Route 28 will be removed and the gaps will be harder to find. But hopefully, because vehicles will be going slower, gaps will still be made. You're just not releasing large streams of traffic from Chickatawbut Road anymore. It will be more of a rolling stream of traffic. We are aware and we'll continue to do as much as we can with the design to try and mitigate things.

**Q: No Name Given:** But the backups would be substantially less on Chickatawbut Road if you had the signalized alternative?

**A: Michael Trepanier:** The worst case would be worse. We are talking about the distance of maybe three or four or five cars on average. It's generally bad as it is. Let's talk about what this really is. A lot of this is cut through traffic avoiding the Braintree split, going to 138, and connecting to I-95. I recognize that I represent the State Department of Transportation and, with that acknowledgement, we know that there are problems here in Massachusetts, especially in Eastern Massachusetts. One of the unintended outcomes here may be that this does perform poorly and then we have diversions of that regional traffic because people are getting stuck in that queue and maybe that traffic starts to dissipate. You guys have to get home. You don't have a choice. The regional cut-through drivers do. And the unintended consequences, none of us can guarantee or know. We can barely even model this with great accuracy, because people are people and models are models. To the extent that we can, we model human behavior. What may happen here is that queue on day one is bad. And then those regional travel patterns may shift.

**C: Jessica Lizza:** Part of what goes into these models is future growth. As you see here, this is predicting conditions in 2027. This projects traffic growth 10 years into the future from when we got our traffic volume data. That is part of that. So, if you're wondering why this isn't it so much better than existing conditions, we're adding volume to our models on top of what was counted today. I normally don't go into this level of detail, but so our level of service is based on average vehicular delay. There are different thresholds for a signalized intersection versus an unsignalized intersection because there's a different driver perception of delay between the two. Your F threshold at a signal is actually higher than your F threshold at a roundabout because you're expecting to have to wait at a signal. As a driver you put up with that delay better than you do at a roundabout. For a signal, an F is anything above 80 seconds of delay. At a roundabout, an F is anything above 50 seconds of delay. So, you could actually have an F at a roundabout that is less delay than E at a signal.

**C: Michael Trepanier:** It's a bit of an apples to oranges comparison. We are required to present these that way because that is how our industry works but, they are not exactly the same.

**Q: No Name Given:** As part of your analysis, was anything looked at for the side streets like such as Eager, Harbor View, and Sassomon? We get all the cut through traffic because of things like Waze. People are always on their phone and I have almost been hit twice. Was any analysis performed on that? And two, are we able to get signs on those streets where folks cannot enter except residents between certain hours? We have no other way to get out. And they are speeding up the streets. They are flying.

**A: Michael Trepanier:** I suspect that we did not do a great deal of analysis on the side streets but that is certainly something we can look at. It may be difficult for us to model, but we can certainly get out in the field to try to get an understanding of what's happening and understand the patterns that are occurring to predict how this may help.

The signs are something that that I will defer to our local partners.

**C: No Name Given:** That would be a traffic commission decision. We would start there and maybe move on to the Select Board. We can talk to you about that afterward.

**Q: No Name Given:** I've lived in Milton for 16 years and I live a couple hundred feet from the intersection. The worst part of living where I live is Route 28. This is more of a statement. The speed is ridiculous on that road and I've had more near misses that I care to explain. And with the MBTA and the buses, it's a drag strip that needs to be addressed. You take your life into your hands to try and get into the side streets. It's ridiculous. My concern is a quality of life issue here. I agree with this gentleman, by the way. I think you already have decided it will be a rotary, which I don't agree with it, but how long does that going to take? And when we're done with that project, we still have a problem with the bottleneck further up on 28 where two lanes go to one and you still have more problems going further down. How many years are we going to live with construction, dirt, and dust? I was here in 2005 and they regraded the road a little bit. The intersection was a mess. We're going to have a mess coming up again for two years and another mess after that because we don't do it all at the same time?

**A: Michael Trepanier:** We have not figured all that out yet. We know from precedent and agency experience that it is going to be a lengthy process. This is what we have the funds to do today. We are trying to address what is most high priority for the corridor. While it is incumbent to address these issues, a longer look at the entire corridor is needed. Maybe other targeted improvements could potentially be made. Today, we are here with funding for design and construction for a project that we recognize as the highest priority.



**C: Mark Gravalles:** The construction timeline at the conceptual stage right now is 2-3 years. I expect that the signalized intersection will probably be 2 years and the roundabout 2-3 with most of the major construction completed in two and some landscaping and clean up in Year 3 or something along those lines. Both projects would be in that 2-3-year timeline.

As far as having our mind made up on a project that we're going to design and construct, that's not true. We are here to get feedback and I'd like to talk a little bit about process. When you have an intersection like this that is a top 200 crash intersection in the state, as Michael and Jess had pointed out earlier, you start with the road safety audit where you identify all the deficiencies. From that road safety audit, you try to think about what some of the mitigation methods would be. What are there short-term improvements and what would a long-term capital project be that would fix all those deficiencies.

As part of the best management practices and our engineering toolbox dictated by Federal Highway, you can't just do a road safety audit and plop down a signalized intersection with some improvements that are wider, provide turn lanes, provide exclusive pedestrian signals, and call it a day. You are supposed to, and have to, look at a roundabout for every intersection. Now, when we go ahead and evaluate that roundabout at various intersections, the safety benefits and the construction methods and the operations all come into play. We went through all of this with a detailed, fine tooth comb. We had another engineering consulting firm provide the safety analysis and sit down with Michael and the team at DOT and evaluate what we think the best option was and which provided the most improvement for fatal and personal injury crashes. That information was shared in a collaborative effort with us and we did our analysis and, surprisingly, to our own information, the roundabout is a major, major win.

It provides the best safety movements and has best operations. That's why it's the preferred alternative. We're not here to tell you, "We have two options, which one do you like best?". We understand that a roundabout might be new and different. And new and different can be scary, I get that. This is a big, big change to what's out there on that corridor but, all of the empirical data shows to all of us, this is the best option. It's clear, night and day, with the information at hand that this is the preferred alternative. To show you now, at a pre-25% stage, to get input, to let you know we've done all of this work and have done it in accordance with state standards and engineering standards, and that we wanted to let you know this and get that input. This is not something that's a done deal, but the Highway Safety Improvement Program where the state provides safety dollars to improve these top 200 intersections, they want to see us maximize those dollars to make those safety benefits. That that is why, without a doubt, the data shows the rounded us the preferred alternative.

This is not something, as Michael said, where we come to a 25% design public hearing with engineering plans, 12 months of design, and 3 months of review and say, “This is what we're building. Thanks for your comment”. We are coming out at the very beginning of the process and documenting everything transparently for all of you. The roundabout provides safety and operational benefits that are far beyond the signalized intersection. We are trying to maximize the dollars in this program that's providing safety dollars to give the community the safest project possible. I did want to outline the process. We want to clearly show everyone in this room and in the town, there is a huge benefit to the roundabout and that's why we did the analysis.

**Q: Buddy Thomas, Andrew Thomas & Sons Landscaping:** Hi, I'm Buddy Thomas with A. Thomas & Sons. I am about 500 yards north of the intersection. Have you considered the impact on my business or the other businesses and people going in and out? The only thing that saves me is the stoplights from Chickatawbut Road and Hillside. That gives me the break to be able to turn in and out as well as customers. Is that any thought about that?

**A: Michael Trepanier:** I don't think that we would have considered that explicitly but that's certainly something we can consider and look at whether there are measures to help improve that.

**C: Buddy Thomas:** I don't see how a roundabout is going to improve it. Your whole thing is to keep the flow and keep traffic moving. That is all I am hearing.

**C: Mark Gravallese:** A benefit of a roundabout is that improves operations better than a signalized intersection. I understand the signals create gaps. But I want to say, the major thing here is safety. It is a huge safety improvement.

**C: Buddy Thomas:** I know this will affect my business operations.

**C: Mark Gravallese:** I can understand your concern. At this concept level, it is not explicitly evaluated. We'd love to work with you because the intersection is also going to process traffic better too. We can work with you through construction. For either alternative, there would be impacts to side streets and driveways.

**Q: No Name Given:** Have you thought about eliminating that intersection at all? The traffic increases over the last 5 years have been incredible. You could build an overpass for Chickatawbut Road to go over Route 28 and you would not have any turns allowed. Have you considered that?

**A: Michael Trepanier:** That's not feasible from a cost perspective. We don't have the dollars to build a new structure, so we won't evaluate that. It's a great idea if you are looking to keep the movements separated. That is something we have done a great deal but, in this case, it is not something we would evaluate.

**C: No Name Given:** I'm glad you're looking at this because the intersection is so dangerous. The reality is that all of Route 28 is like a death highway. Any left-hand turn is a problem. Lefts are awful. We have been told before that the slope is too angled to put in another light. If you go with this rotary, is it possible to regrade the road and add a light? If you are regrading a slope, why would you go back and regrade it in 5 years?

**A: Michael Trepanier:** We can evaluate it. We would not include it in the scope of this project, but we could evaluate it and make sure we do not preclude it in the future. Absolutely.

**Q: No Name Given:** I live in Milton and drive through here at least twice a day to and from work. The situation clearly sucks. I've lived in three different states in the past 20 years and have been seeing roundabouts more and more and see benefits from them. I'm just trying to figure out what the signalized alternative benefits are. It's not that I prefer it, I just want to make sure I'm evaluating all options and the current versus the signalized versus a roundabout.

**A: Michael Trepanier:** The bottom line is, like Mark and Jess and I have said, this would have been a less clear-cut preference if safety and mobility were on opposite ends of the scale. Often when you start to make things safer, you slow speeds and lower the amount of volume that gets through and it usually increases congestion. Sometimes you increase speeds and improve the amount of winding through and you start to introduce more crashes and safety issues. The really amazing thing about this particular roundabout is that it does both at the exact same time. It has better operations than a signal, mostly because of the significant traffic volumes on 28, and it performs significantly better from a safety perspective.

You'll see that the total for all crashes look similar, 43% reduced for the signal, 48% reduced for the roundabouts. The roundabout is performing 5% better as predicted by the Federal Highway Administration safety manuals and predicted methodology using crash modification factors. And you're going to have slightly better property damage only crashes, which are the fender bender crashes with a signal. It's 42% with a signal and 30% with a roundabout. But the big difference is we are getting a 73% reduction in fatal injury crashes.

We're not talking about someone getting a bruise. We're talking about serious injuries crashes that hospitalize somebody.

Property damage is an industry term. Everything in the transportation safety industry in the United States is based on damage to vehicles, partly, I think, because it was drafted with a great deal of input from the insurance lobby. In Massachusetts, we've stopped focusing on property damage of crashes and have focused on the places where we have fatal injury crashes. In terms of that top 200 list that we've referenced, we have re-weighted our crash metric. It used to be that fatal crashes were weighted by 10, injury crashes were weighted by 5 and property damage only or non-reported severity crashes were weighted by 1. I think many of us may have opinions about whether or not that's appropriate. We have since then tripled the value of how we're weighting these intersections, where we direct funding, and where we prioritize improvements. One injury crash, including a fatality, incapacitating injury, or non-incapacitating injury is now the equivalent of 21 property-only crashes. That really did shuffle the deck a great deal and it's also signaling a policy departure MassDOT and the Federal Highway Administration at large. Instead of focusing on fixing places where cars are bumping into each other, we are fixing places where people's lives are in danger. That, I think, is a very significant point. It's a significant point about this location in particular. And as I pointed out, we're not here presenting the easiest alternative.

We expected that we would get some pushback from you all. We expected that there'd be a need to have this robust discussion. We are so passionate about this being the preferred alternative and being the right solution here because of the significant reduction in fatal and injury crashes. As Mark started to point out, from a program requirements perspective, if we don't build the thing that leads to the most cost benefit, we don't qualify for funding in some cases. We have seen this happen where Federal Highway will say, "No, we're not going to pay for that". That could ultimately lead to more delay and a longer timeline. Now, if that's what we all agree needs to be the case, that's the case. We have an opportunity now to leverage program dollars to get these changes in the ground with some pain during construction. I will acknowledge that. It's not always going to be perfect, but no construction zone is. I think that we're striking the best balance that we can.

**C: No Name Given:** I hadn't thought about it before some of the people here mentioned it, but I really think that it is a good idea to add lights to Randolph Avenue and time them so that everybody's going 35 miles per hour. It seems to me like all through Randolph that would be a great idea because it forces you to stop. You never see that in Massachusetts and I think it's a really viable idea right now. I hate the idea of this rotary and the fact that you can't really point

to any near us that are working effectively with this kind of traffic volume says to me that is must me a new idea. It does seem to me that all of these people live off of Randolph Avenue between Reedsdale Road and Chickatawbut Road have a valid concern and you're not even addressing it. If we add additional light and we control them so that everybody moves and goes 35, it seems to me that's the way to reduce speeds through the intersection and to, let's say, save lives, at a lower cost and lower problem for the people who live around this intersection, who fear the all the consequences of construction. Maybe the idea that other people have presented here is the idea to look at so that we don't have this 3-year-long project that destroys our own lives or disrupts our lives. I really do think that these times lights could really be the answer for all of us. And why not consider it? There are only two considerations, why not consider times lights and 35 mile per hour speed limits? If I get to go all the way to Randolph without stopping, I would do it. I would take that option.

**A: Michael Trepanier:** I will say it again. The scope of this project is within this one intersection. The larger programmatic corridor-wide fixes need to be evaluated. And they are well beyond the scope of an individual intersection projects.

To address the reason why there isn't a good nearby example is because modern roundabouts, as we refer to them to very discreetly discriminate between modern roundabouts and historic rotaries, is that we don't have any of them. That is because, as Mark said, they are difficult to sell to our communities because most people don't believe that they're going to work. In places where we have them, they have worked substantially better over a signalize alternative. Josh Bartus, our project manager here, has the experience of presenting a modern roundabout approach for the Middleborough rotary on Route 18, 24, and 44. There is something like six different roads that come and go from that rotary. Josh was the designer and the project manager where it was intended to be an interim fix for what was otherwise going to be a long-term project. It was going to be an \$80 million project with a flyover and all kinds of different things that was promised to the Town of Middleborough. Guess what? We're not building that project because we built the interim solution which became the final solution for the intersection: a modern roundabout. We retrofitted that rotary to behave more like the roundabout we're proposing here. We've significantly reduced queues and significantly increased safety. We've done all the things that we're telling you tonight that we can accomplish here, but we have not accomplished necessarily nearby.

We have another project on the books in Quincy where we are undergoing the exact same analysis. We are showing a signalized alternative with a very similar cross-sectional with multiple lanes and long crossings next to a high school where traditional knowledge says these

signals are safe for people to cross there and they're going to process traffic. Traditional knowledge has been what gives us crash clusters like this one here. We at MassDOT and our consulting partners and our local partners are moving forward in the future. The future is roundabouts. We have thoughtfully for the last two years and done analysis that shows over and over and over again that the roundabout alternative is the right alternative. It is the safer alternative.

**C: No Name Given:** Over the last hour, I've come to believe you. I've also seen computer models that you can create video simulations with little cars going through the intersection. If you have it for the current condition and alternatives and can put it on the website, I know that would help convince me and others.

**C: Michael Trepanier:** We will absolutely do that. Based on what I've heard tonight, we have a lot more homework to do and a lot of work to make the case.

**Q: No Name Given:** When is the project start time of the construction?

**A: Michael Trepanier:** Right now, we have this project in our statewide safety program. We have it programed at a million and a half dollars in our fiscal 2021 program year. That generally translates to construction starting the next sprint depending on a number of different factors. The federal fiscal year runs October 1<sup>st</sup> to September 30<sup>th</sup> and a project like this would very likely go in our fourth quarter with a Notice to Proceed to our construction contractor the following construction season in spring. Given the complexity of this project, when we originally allocated those dollars, the direction was going to be a smaller scale, a quicker fix, and not even the alternative that we showed you here but a much smaller signalized alternative. Working with our partners here in the town and in our district, we recognized that there was a need to take a hard look and invested a greater deal of time and money.

It's very likely that this project is going to move to the subsequent federal fiscal year so that we're not going to see construction beginning until 2023. That is a very much in flux. What I can guarantee to this group is that we are committing whatever dollar amount it takes to get the right project built. As we have said many times tonight, we think that is the roundabout alternative. It's about twice as much in preliminary cost estimates as the signalize alternatives. The 1.5 to 3 million dollars in our preliminary estimates typically equates to about 3.5 to 5 million when we go to construction. We are willing to pay that premium because it is such a priority.

I'm leaving it a bit vague because there is a lot of process, regulatory permitting, Article 97 dispossession process, and all that mitigation. That's going to take a while. There is the total taking at the corner. Those are all very complex and time-consuming things and we will expedite them as to the extent that we can.

**C: Mark Flaherty:** I am 100 feet from intersection and have been there for over 50 years. My brother and I used to keep a crowbar next to the bushes to get people out of cars. Everything adds up to speed during an accident, mainly coming from Randolph to Milton and a person is taking a left. And it's usually on a Saturday. It's because you're going too slow on the weekdays to cause major crashes. In the old days all of the vicious accidents happened on Friday and Saturday nights. It was terrible. But you've seen them go way down in the last 30 years. First with the hill cut down. And then the light, the way it is set up. If you just set up a red light to stop traffic from Randolph to Milton, there would be no traffic. I'd love to invite you and the Board of Selectman to sit on my porch and watch on Saturday to watch people get hit. It's terrible. A lot of it is the speed.

**C: Michael Trepanier:** I think we agree. I think a great credit for why we have reduced fatalities today is that cars are safer. If anything, driver behavior is worse, but the cars are safer. What we have here will dramatically reduce speeds. Our crash diagram confirms that a lot of crashes are coming off 28 and going onto Chickatawbut Road. I thank you for all of that insight.

I'm going to go to one more comment. It's about 8:30 pm, I'd like to wrap up if we could but, we can stay and answer more questions. Is there anything else we haven't covered?

**Q: No Name Given:** How about changing the timing of the light so if one side is green, the other side is red?

**A: Michael Trepanier:** That is something we're going to have to look at with our operations engineer and see if there are potential solutions. Thank you.

**Q: No Name Given:** Your audience members raised a number of different points during this presentation. Some of them were in the scope of your purview and some were beyond. Would it be possible to look at those comments and post them as action items so that we can see where you stand during the review of those comments and see what is in scope and beyond scope? Beyond minutes, a list of action items where you can say, we looked at this and here is where it stands?

**A: Michael Trepanier:** Everything I've said is being recorded. Absolutely we can put something like a FAQ together.

**Q: No Name Given:** With adding more signals to the corridor, is there a reasonable amount of space that is required after a rotary, so traffic does not back up into the rotary?

**A: Jessica Lizza:** That would be a consideration. We want to see how closely spaced out they are. We would need to make sure its cohesive so that one is not hurting the other.

**C: Michael Trepanier:** I know some of you may be frustrated. Some of you may feel like this was a done deal. We do take this very seriously. We definitely want to understand what the concerns are. I love your suggestion and we will put more materials put up. We're going to get a simulation done and posted as soon as we can get it done.

**Q: No Name Given:** Instead of spending 5 million bucks on this project, why don't you spent \$100,000 and lower the speed limit? People are going 55 miles per hour.

**A: Mark Gravallese:** The speed limit now is 40. You can't just make that a 25 MPH sign. You would need to conduct a speed study. And I think what you will find here is that the 85<sup>th</sup> percentile of speeds going up and down Route 28 might be higher than 40. That would mean when you do the study, the speed limits might go up.

**C: No Name Given:** There needs to be someone patrolling that intersection. As the guy who lives on that corner, people run that light very frequently. People constantly speed yet, there is never a cop patrolling. I feel like the revenue that could be generated for the town just from tickets could pay for this project.

**C: Mark Gravallese:** I can certainly understand that. Your officials are in the room and hear you. Enforcement would help deter speed, but ultimately you want to make a project that slows speeds with geometric changes. There is striping and signage and things that you could do through the whole corridor to alert people of the new change in conditions ahead. That doesn't solve the corridor-wide speeding, but the town can work on that.

**C: No Name Given:** I've lived in Milton in the same house on Randolph Avenue for 60 years. The people who lived in my house before said three kids who lived in my house were killed. One by trolley and one by a milk truck. That didn't stop anything. The roads were older, and they called where we live farmland. As the years go by, the traffic gets worse. When you put the light in, it all backed up waiting for the light, and now we get all the fumes in our house. Never did I get



fumes before. You talked about sidewalks; we have never had our sidewalk plowed in 60 years which is run by the state. It's been totally ignored, and safety has been ignored. So now, after 60 years here we are again. 20 years ago, I was involved when you were going to take the hill down, and nothing got done because they didn't have the money and they didn't have a plan. I think this plan is outdated. I would like to see something good come out of it. Chickatawbut Road used to be a park, now it's a racetrack. It used to be beautiful until it was opened for the buses and trucks. It was all for the people, now the people have lots everything. Nothing is getting fixed.

**A: Mark Gravallese:** Thank you for your comments. I can totally understand that. The district is here to listen to your comments. For full disclosure, these used to be my coworkers and I used to work for the state. Projects used to be designed with a minimalist type of approach to get the maximum improvement while knowing that maybe the Cadillac design requires a lot of capital costs spent after construction to operate and maintain. Now, those all get incorporated into the design. There are many different engineering standards and requirements. Designs like these that create shared use paths have capital costs that go beyond the construction and the state knows that. They don't create these designs lightly without knowing that they have to maintain these facilities that they're now building that are making safety improvements. I totally understand your comment about lack of maintenance in the past. You know, that there is a new friendlier, bigger DOT that has more resources. They are understanding of what needs to get done in the future with these designs. As far as Chickatawbut Road, I agree with you. A lot of the parkways that DCR owns are becoming congested. A lot of them end up being cut throughs and they used to be Sunday morning drives and they were there for recreation. Now they are becoming major thoroughfares. We are trying to keep that in mind and not increase that to a detriment. We showed that during the AM peak it makes it a little bit worse in 2027, but all the times of the day we're trying to make a benefit.

**Q: No Name Given:** I would say that concentrating on this one intersection in this situation doesn't make sense. When I look at Route 18, that seems to be the kind of project we should be seeing. The fact that it narrows and widens again, and the condition of Route 28 is deplorable. The fact that we are focusing on this intersection seems so short sighted and narrowly focused. What will happen to the condition on Route 28 in all the years this will take?

**A: Michael Trepanier:** I would not say it is short-sighted, its short-minded. This is the highest priority for the corridor. If in 5-10 years from now, the corridor needs resurfacing, we have a pavement management and asset management system that dictates when we do that. When capital needs to be invested, we invest it. In terms of your larger point, Route 18 was a major project that took 20-30 years to plan. I hear there's a need to start planning for the future of the

Route 28 corridor. We're not here to solve every single problem and that's the unfortunate part of what our customer experience is. Why do we have the worst congestion in the country? I can't answer that question, but what I can do is provide a solution for this intersection so that we can build with what we have today.

Senator, do you have any closing remarks?

**C: Senator Walter Timilty:** I'd like to make some remarks about the larger picture. For the folks that came in late, my name is Senator Timilty and I just voted on the state budget that is on the Governor's desk. As a part of that, there is funding for a priority corridor study with MassDOT that we will try to get federal matching funds. This was done around this time last year for Route 138. It is a comprehensive look at sidewalks, crosswalks, signals, roads, everything. We've heard constantly from residents about the different aspects of Route 28. This is in motion. It's not just this part of 28 that is a problem.

**C: No Name Given:** But at this part of Route 28, I only have one route. When my children have to be at school at 8 o'clock, I'm leaving my house at 7:30 a.m. because traffic is so bad. It's incredible. We don't have any other way to get where we need to go.

**C: Michael Trepanier:** I don't think that is an issue unique to Milton. I live in East Boston. My neighbors constantly complained about historic levels of traffic congestion trying to get through the Sumner Tunnel. I am fortunate enough to be in a position where I work downtown and can take the Blue Line. Not everybody has that opportunity. We have seen exponential growth in traffic here in Eastern Massachusetts over the last several years. I think that is absolutely indicative of strong economic health for Massachusetts and specifically, the economic anchor, which is a Greater Boston. That comes with these costs. Infrastructure and government cannot keep up with these levels of demands so we're doing what we can to make things as best as we can, given the amount of time and money that we have.

That is a reality of living in this part of our world. I'm not saying it's okay and I'm not saying it's just for someone to sit in traffic for 45 minutes when during free flow conditions it takes 15. I will say this, the governor directed us to look at this. This is an issue that comes up every single day. It's something that we're taking seriously. We absolutely are. We're studying congestion statewide. We're looking at it and trying to diagnose the problem and find a whole suite of solutions. That's not what we're doing here tonight. Tonight, we are talking about saving lives. And with that, Chairman, if you'd like to make some closing remarks, I invite you to do so.

**C: Michael Zullas:** I just want to thank everyone for coming. It's clear that this is both an individual issue for a lot of people and it's certainly a collective issue for all of us. I do want to thank our Department of Transportation representatives because this is good government. We have a critical problem in this community at that intersection and our partners at the Department of Transportation studied this problem, they have come up with a proposed solution, they're disclosing it to everyone, and they want to get feedback, which is good. I want to thank the Department of Transportation for making the effort and coming here, not only with proposed ideas but also with money and with funding to try to help us with this problem. I know they're going to take all the comments and feedback and come up with, hopefully, even better ideas going forward. I want to thank them for doing that.

I do want to make a pitch everyone who is here for our Traffic Mitigation Committee for those issues on the local roads. We started this committee about seven or eight months ago. We have had two public hearings and we are going to have another public hearing in September to talk about issues. We have a WikiMap on our website where you can put in where there are issues with either congestion or with safety. For all the side street issues, I encourage you to come to the Traffic Mitigation Committee with those issues and come to the public hearing that we will have in September. Thank you all for coming. Thank you to the Department of Transportation.

## Next Steps

The project team will develop a simulation of the Roundabout Alternative, advance the Roundabout Alternative Design to 25%, coordinate with MBTA/BAT and DCR and present refined 25% design to public during Design Public Hearing.

# Appendix 1: Meeting Attendees

First Name	Last Name	Affiliation
Algis	Adomkaitis	Milton Resident
Gloria	Adomkaitis	Milton Resident
Mark	Alba	Milton Police Department
Josh	Bartus	MassDOT
Kerri	Brosan	Milton Resident
Mitchell	Carokan	Quincy Resident
Elaine	Caroll	Milton Times
Roy	Chambers	Milton Resident
William	Clark	Town of Milton
Katie	Conlon	Milton Resident
Thomas	Conway	Milton Resident
Brian	Crosse	Milton Resident
Stephen	Daquila	Milton Resident
Tony	Daquila	Milton Resident
Camille	DeCaro	Milton Resident
Michael	Dennehy	Town of Milton
John	Domino	Milton Resident
Marylou	Domino	Milton Resident
Marjorie	Flaherty	Milton Resident
Mark	Flaherty	Milton Resident
Mark	Gravallese	Howard Stein Hudson
Fred	Hanson	Patriot Ledger
Mark	Hicks	MassDOT
Philip	Johenning	Milton Resident
Doug	Johnson	Howard Stein Hudson
Stephen	Kelleher	Milton Resident
Lauren	Kinsella	Senator Timilty's Office
First	Last	Organization

First Name	Last Name	Affiliation
Timothy	Leveroni	Milton Resident
Jessica	Lizza	Howard Stein Hudson
Erin	Maguire	Milton Resident
Michelle	Meyer	MassDOT (Summer Intern)
Kathy	McDonald	Milton Resident
Jim	Mitchell	Milton Resident
Donna	Mitchell	Milton Resident
Robert	Mussey	Milton Resident
Summer	Ordaz	Quincy Resident
Maile	Panerio-Langer	Milton Resident
Joe	Panerio-Langer	Milton Resident
Jamie	Panucci	Milton Resident
Joe	Shurmatio	Milton Resident
Jay	Therault	Milton Resident
Evelyn	Therault	Milton Resident
Benny	Thomas	Milton Resident
Sally	Thomas	Milton Resident
Henry	Thomas	Milton Resident
John	Thompson	Town of Milton
Walter	Timility	Massachusetts Senate
Lee	Toma	Bike Milton
Michael	Trepanier	MassDOT
Geri	Vatan	MassDOT
Alexander	Whiteside	Milton Resident
Kelsey	Worcerster-Shurmatio	Milton Resident
Mike	Zullas	Town of Milton