Welcome Transcript

Welcome to the virtual website for KYTC's proposed improvement project along Richmond Road and Athens Boonesboro Road.

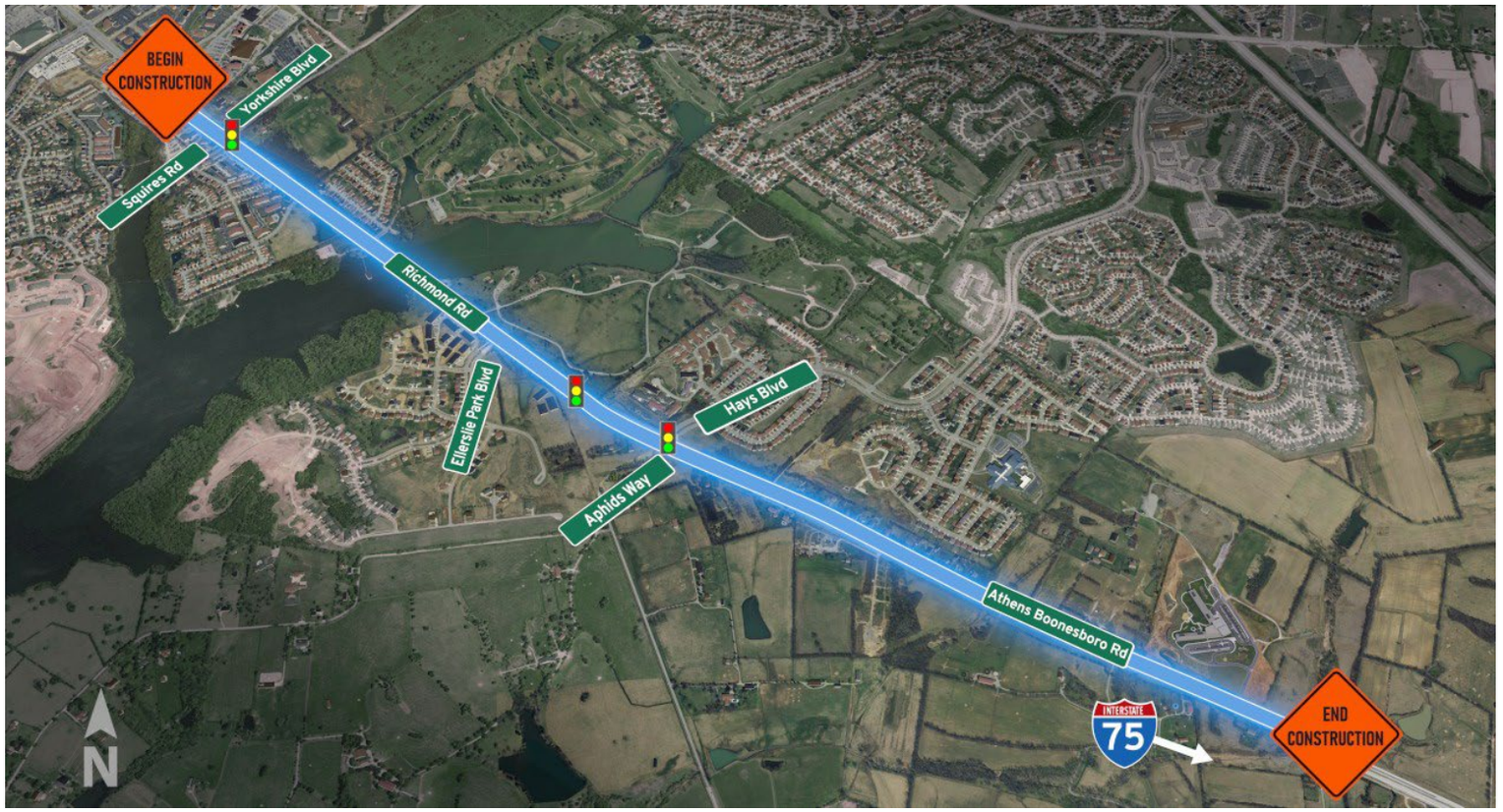
You will have the opportunity to view several display stations, just like you would at an in-person public meeting for one of KYTC's typical transportation projects. You can move through the site by clicking on the menu in the upper left corner of the screen, or you can click the blue rectangular buttons to move from station to station. Each of the individual display boards can be viewed by selecting the blue icon on each board. If you need additional help navigating, scroll down to get additional information.

You will start here at the Welcome Station, where you can watch a video summarizing the project and view a general map of the project area. Go ahead and select the blue eye on the Welcome board to begin. After you have reviewed the videos on this board, select the blue Design button to move to the next station.

Welcome

Welcome to the KYTC Richmond Road Virtual room.

You can view information on the proposed improvements along Richmond Road and Athens Boonesboro Road, and provide comments/ feedback.



[Welcome Video]

Welcome Video Transcript

Hello! I'm Jason Siwula, an Assistant State Highway Engineer at the Kentucky Transportation Cabinet.

Thank you for your interest in learning more about proposed improvements to make the Richmond Road and Athens Boonsboro Road corridor safer and more efficient for travelers like you.

Stretching from Eagle Creek Drive to the entrance of the Brenda Cowan Elementary School, this corridor provides key access from Richmond Road to Interstate 75 and the southeast portion Lexington. Lexington has seen a lot of growth with an increase in residential neighborhoods, retail stores, restaurants and schools. More roadway users often means more traffic congestion. The Transportation Cabinet is exploring innovative safety solutions to keep motorists moving safely along this busy corridor with shorter wait times and increased efficiency. We're also looking at ways to improve connections for those who walk or ride.

We hope you find this website helpful to get engaged in the process by learning more about the project and sharing your thoughts. We want to hear from you so we've posted all the content online that we'd typically cover at an in-person public meeting.

I invite you to click on different displays that will include information like the project's history and timeline, design plans, right of way process, and much more. Each topic features an audio overview so be sure to turn your speakers on. At the end you'll have the chance to submit comments or questions about the proposed plan. Together, we can work to make Richmond Road and Athens Boonesboro a safer corridor for everyone who uses it – whether on foot or two, four or more wheels.

Thank you very much for attending. We hope you find this virtual website informative and helpful.

Design

This next station includes two additional videos which explain and provide more details on the project's design concept, as well as information about the Restricted Crossing U-Turns which are being proposed. After viewing these videos, select the blue Interactive Map button to move to the next station.

Design

Click to watch an animation of the proposed project.

Design Animation Transcript

The Kentucky Transportation Cabinet is working to improve safety and traffic flow on the Richmond Rd and Athens Boonsboro Rd corridor, from Eagle Creek Drive, to the entrance of the Brenda Cowan Elementary School.

This corridor provides direct access from the urban area of Lexington to Interstate 75 to the southeast. The roadway experiences heavy traffic congestion and has been identified as a priority high crash corridor. The volume of traffic continues to grow - with more residential neighborhoods, retail stores and restaurants, and a new school. Some of the traffic signals are too tightly spaced, which slows traffic flow, and the corridor lacks places for people to bike, walk and cross the street safely, despite being adjacent to Lexington's largest city park.

Design Animation Transcript

In addition to the high number of crashes along the corridor, particularly at Hays Blvd, many of these are angle and left-turn crashes, which can result in serious injury. To reduce the number of these severe crashes, a series of innovative intersections, referred to as RCUT's or Restricted Crossing U-Turns, are being proposed for this section of Richmond Rd.

RCUT intersections provide several important benefits. First, they reduce the number of locations where vehicles cross paths at an intersection, which can reduce the occurrence of overall crashes, by up to 40 percent. More importantly, they significantly reduce serious left-turn and angle crashes, especially from the side streets. Recently constructed RCUTs across Kentucky have reduced this type of severe crash by 50% or more, sometimes eliminating them altogether.

RCUTs help traffic flow more freely by redirecting certain turning movements that would normally be in conflict at a traditional intersection. Redirecting these movements allows more vehicles to proceed at the same time. This means the traffic signal can provide more green time along both the main street and the side street, which decreases driver wait times at signals, and reduces the amount of time it takes to travel along the roadway.

Design Animation Transcript

Let's discuss how RCUTs can improve safety and congestion by looking at several intersections along the Richmond Rd and Athens Boonsboro corridor. We'll start at Squires Rd and Yorkshire Blvd and move outbound along the corridor. RCUT intersections include one main intersection, and two adjacent median U-turns. At the main intersection, drivers who are traveling on the major street can continue straight, turn left, or turn right, just like at a typical intersection.

The path of travel for drivers on side streets is what differs with RCUTS. From the side street, all drivers start by turning right. Those who desire to continue on the side street or need to make a left turn onto the main street, will turn right then make a U-turn at the adjacent median opening. Drivers then continue straight on the main street or turn right again to continue on the side street.

Depending on the amount of traffic on the side street, RCUT intersections and their adjacent median U-turns, may include a traffic signal. Some RCUTs and U-turns along the corridor will include traffic signals, while others will not.

Design Animation Transcript

Let’s take a look at the next major intersection, at Ellerslie Park Blvd, directly across the street from Jacobson Park. As the Ellerslie Park neighborhood continues to grow, there is a need to provide additional traffic control for the safe movement of drivers, as well as pedestrian crossings to allow residents to safely access the park and nearby playground, either on foot or by bike. An additional entrance to the Park is also needed to better manage traffic, especially when the park hosts large special events.

A new Jacobson Park entrance and RCUT intersection at Ellerslie Park Blvd will improve both safety and access to the neighborhood and the park. A traffic signal at this location will ensure good traffic flow, and most importantly, will provide a protected pedestrian crossing across Richmond Rd into the park. This new Ellerslie Park RCUT, traffic signal, and park entrance also allows for the removal of the traffic signal at the existing Jacobson Park access across from Old Richmond Rd. This reconfiguration provides for better signal spacing and traffic flow between Ellerslie Park Blvd and Hays Blvd. The current park entrance at Old Richmond Rd will remain, but a median closure will prevent left

Design Animation Transcript

turns into the park at this location. Inbound drivers, as well as drivers exiting the park, will still be able to turn right both into and out of the park at the existing park entrance.

We'll now continue down the corridor to the intersection of Old Richmond Rd and Athens Boonesboro Rd, across from the existing Jacobson Park entrance. This intersection is at a skewed angle, which results in high speed, sometimes unpredictable right turns onto Old Richmond Rd. It also impedes good sight distance for drivers turning onto Athens Boonesboro Rd from Old Richmond Rd. Moving the primary access between Old Richmond Rd and Athens Boonesboro Rd, to an RCUT intersection at Hays Blvd and Aphids Way, will result in safer turning movements, with better sight distance. This reconfiguration also allows for the removal of the traffic signal at Old Richmond Rd to reduce driver delay between Hays Blvd and Ellerslie Park Blvd, as discussed in the prior slide. The current roadway access point at this location will be removed, directing drivers to Aphids Way to turn onto Old Richmond Rd.

Design Animation Transcript

Let's turn our attention now to the intersection of Athens Boonesboro Rd, Hays Blvd and Aphids Way. This is the most congested intersection in our project area and has the largest number of crashes. Heavy left and right turning movements between Richmond Rd and Hays Blvd is a primary source of both excessive delay and crashes. Additionally, traffic on Aphids Way has increased significantly in recent years. An RCUT at this signalized intersection will reduce crashes, especially serious crashes. A dual left turn onto Hays Blvd, coupled with longer green times will reduce driver delay. Aphids Way will be reconstructed as part of the project. This will accommodate growing traffic volumes, including those drivers now using Aphids Way to connect to Old Richmond Rd.

The last RCUT intersection in our project area is at the entrance to the Brenda Cowan Elementary School. An RCUT at this intersection will not significantly change the current pattern of travel for most drivers. Left and right turns into the school site will proceed in the same manner as a typical intersection, as will right turns out of the school site toward Lexington. Drivers exiting the school site, traveling toward I-75, will need to first turn right onto Athens Boonsboro and then make a U-turn. Engineering studies do not currently indicate that traffic volumes necessitate a traffic signal, but the KY Transportation Cabinet will continue to monitor traffic volumes and safety trends at this location.

Design Animation Transcript

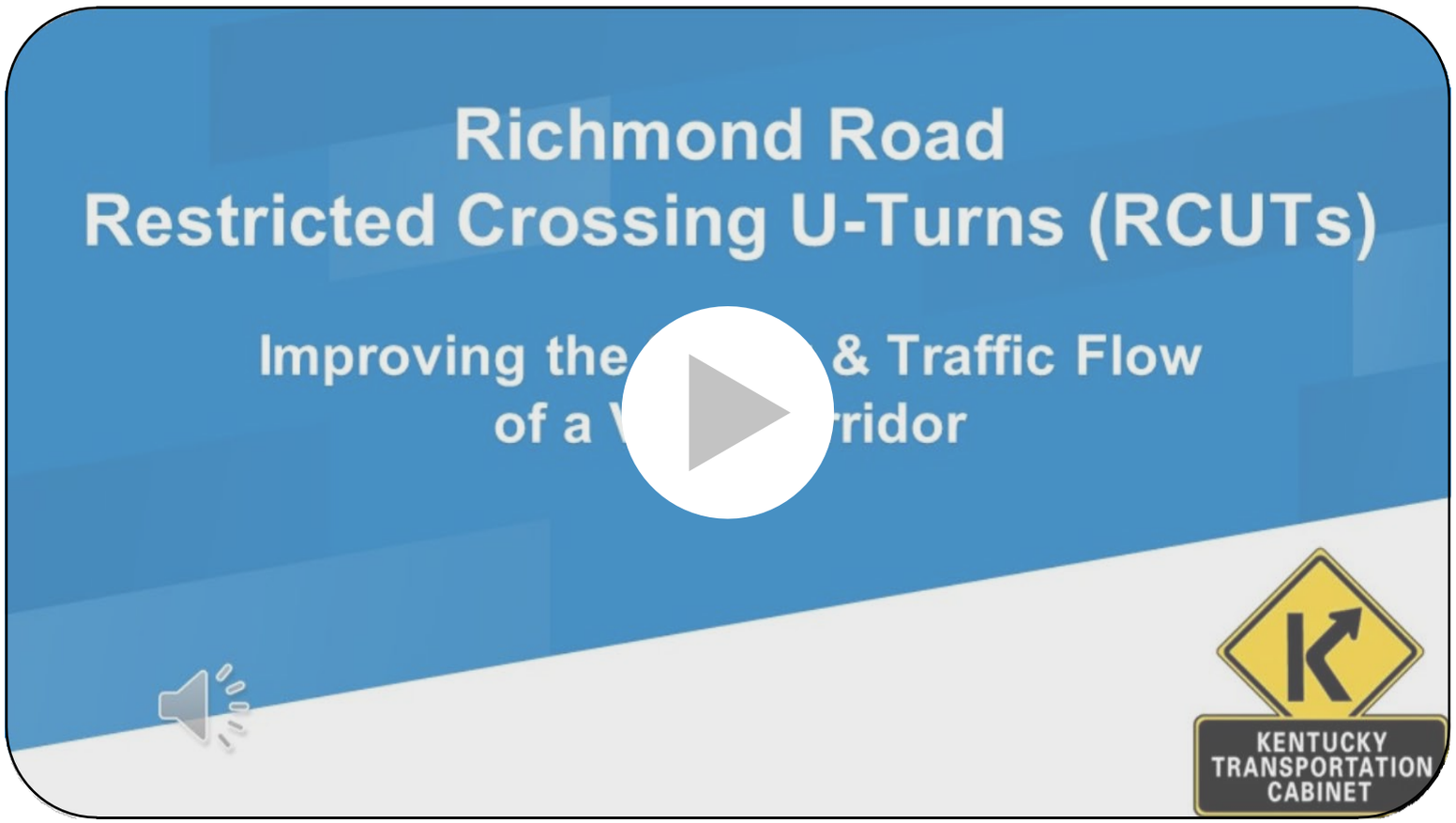
And finally, let's talk about improvements for bicyclists and pedestrians along the corridor. A shared use path is proposed to run along the north side of Richmond Road, extending from the Yorkshire Boulevard & Squires Road intersection to Jacobson Park, then continuing to Hays Boulevard. This path will provide a safe place for people to bike and walk along the corridor and will provide much needed access to Jacobson Park from the surrounding neighborhoods.

The project would also provide safe places for pedestrians and bicyclists using the trail to cross the road at each of the three major intersections that will have traffic signals. These include Squires Rd and Yorkshire Blvd, Ellerslie Park Blvd and the new Park entrance, and Hays Blvd and Aphids Way. RCUTS provide a higher level of safety and protection for pedestrians crossing the street, compared to traditional intersections. this is because the pedestrian crosswalk that goes across the major street does not cross the path of left turning vehicles, which is one of the more common vehicle to pedestrian crash types and causes of severe pedestrian injury. Bicyclists can also navigate RCUT intersections using these crosswalks, or they can use the same travel path as vehicles, if they choose.

We hope this presentation has helped explain how these RCUTs and other upgrades will improve safety and traffic flow along the Richmond / Athens Boonesboro Rd corridor. As always, our goal at the Kentucky Transportation Cabinet is to keep our communities moving safely, with as little delay as possible. For more information about the Richmond Rd corridor improvements please visit transportation.ky.gov

Design

Click to learn more about Restricted Crossing U-Turns (RCUTs)



RCUT Presentation Transcript

This presentation provides an overview of an innovative intersection design known as a Restricted Crossing U-Turn. This is one of the improvements that has been developed as part of the Richmond Road project which has the goal of improving the safety and traffic flow along this important corridor.

Here are the three main topics that will be covered in this Presentation. First, a brief discussion about the project's funding source, the Highway Safety Improvement Program. From there, a discussion about why Richmond Road is being studied. The presentation will finish with a discussion about Restricted Crossing U-Turns, also known as RCUTs. There will be a description of what an RCUT is and information about the benefits of an RCUT.

Moving into the first topic of project funding, you might be wondering just what is the Highway Safety Improvement Program, also known as the HSIP?

The HSIP is one of five core federal-aid highway programs. The purpose of the HSIP is to achieve a significant reduction in fatal & serious injury crashes. This purpose is achieved by implementing the three main components of the HSIP.

RCUT Presentation Transcript

The first component is the Strategic Highway Safety Plan, which is a document that describes the safety improvement strategies and emphasis areas for Kentucky. The Strategic Highway Safety Plan is also the guiding document that helps the Kentucky Transportation Cabinet develop the second component, which is a listing of HSIP funded projects. The Richmond Road corridor improvement project is one such project. The third component is the Railway-Highway Crossing Program, which is handled by the Transportation Cabinet's Division of Right-of-Way, Utilities, and Rails, where they implement improvements at railroad crossings, such as warning signs, flashing lights, and gates.

When it comes to the HSIP, the most common question is: What makes a project eligible for federal HSIP funding? There are three primary requirements within the federal regulation that must be met for a project to be eligible for HSIP funds.

RCUT Presentation Transcript

First, the project must address a priority in Kentucky's Strategic Highway Safety Plan. Second, the project must be identified through a data-driven process. Third, the project must contribute to a reduction in fatal and serious injury crashes.

The first requirement is easy to check – either an improvement strategy is listed in Kentucky's Strategic Highway Safety Plan, or it isn't. Kentucky's Strategic Highway Safety Plan is very comprehensive and covers nearly all the traditional safety improvement strategies, as well as several of the newer innovative safety improvement strategies. The other two requirements are a little more involved, but the quick version is this: to identify projects, the Kentucky Transportation Cabinet screens the entire roadway network to identify sections of roadways and intersections that have a history of a high number of crashes. Once those locations are identified, a study is performed to better understand the underlying factors contributing to the crashes, so that a variety of safety improvement options can be brainstormed and considered by the project team. Finally, using research from before-after studies of many different safety improvement options, the project team evaluates which improvement options give the best chance of reducing fatal and serious injury crashes.

RCUT Presentation Transcript

In a nutshell, federal regulations require the HSIP to be Strategic, Data-driven, and Evidence-based.

Let's now discuss why Richmond Road is being studied.

Based on what the HSIP is all about, it's probably no surprise that Richmond Road is being studied because several intersections have a history of a high number of crashes. Specifically, the intersections at Hays Boulevard & Aphids, at Old Richmond Road & Jacobson Park, at Ellerslie Park Boulevard, and at Yorkshire Boulevard & Squires Road, are all intersections that are experiencing a relatively high frequency of crashes. The intersection of Richmond Rd at Hays Boulevard & Aphids Way is shown in bold text because this intersection has the highest number of recorded crashes in the project area.

RCUT Presentation Transcript

As these intersections and their historical crash data were studied, it was found that most crashes involved two or more vehicles. There were a lot of rear-end crashes, left-turn related crashes, and angle crashes; angle crashes are also known as T-bone crashes. The left-turn and angle crashes were the crash types that typically involved fatalities and serious injuries. As mentioned a few slides ago, the project team relies heavily on the scientific evidence from before-after studies to determine which improvement options have the best chance of improving safety at a particular location. Because these intersections are experiencing multi-vehicle crashes with the most severe crashes being angle and left turn related crashes, the project team recognized there was a major opportunity to significantly improve safety and traffic flow by constructing a series of RCUT intersections along the corridor.

With that in mind, let's now discuss what an RCUT is and the benefits of an RCUT.

This was mentioned earlier in the presentation, but as a reminder, RCUT stands for Restricted Crossing U-Turn. Like many things in life, this intersection design has other names that it is sometimes called. One of those names is J-Turn. When there is a corridor containing several RCUT intersections, some states refer to this as a Superstreet.

RCUT Presentation Transcript

With the name out of the way, let's turn our attention to how an RCUT functions. For traffic traveling along the mainline, traffic interacts the same as at a traditional intersection – mainline drivers can go straight, turn left, or turn right in the exact same manner as they do at a traditional intersection. The only traffic that has to interact differently at an RCUT is side street drivers who want to make a left turn onto the mainline or go straight across the mainline. For these movements, the side street driver must first turn right, travel a short distance down the mainline where they make a U-Turn, and then make their way back to the main intersection to complete the desired movement. While redirecting all side street traffic to first turn right might not seem like it would provide a safety benefit, many before-after studies of RCUTs have revealed there are very significant safety benefits. These before-after studies have been performed on a wide range of RCUTs in a variety of settings and have shown that after implementing an RCUT, on average there will be a 20-40% reduction of all crashes, a 30-60% reduction of minor injury crashes, and a 50-100% reduction of serious injury and fatal crashes.

But what is it about the design of an RCUT that causes it to have these great safety benefits?

RCUT Presentation Transcript

To answer that question let's look at the number of conflict points at an RCUT as compared to a traditional intersection.

If you're not familiar, a conflict point is where two vehicles have the chance to crash into one another if one vehicle makes a mistake and does not yield the right of way to the other vehicle. It's a little hard to see the conflict diagrams in the upper right and lower right corners, but a traditional intersection has 32 conflict points, whereas an RCUT intersection has 14 conflict points. What's more, the red dots in the two conflict diagrams represent crossing conflict points. Crossing conflict points are where a T-bone type crash can occur. As can be seen, a traditional intersection has a lot of red dot locations where a T-bone crash can occur, whereas an RCUT has very few red dot locations where a T-bone crash can occur.

32 conflict points at a traditional intersection versus 14 conflict points at an RCUT means an RCUT has 56% fewer conflict points. This very significant reduction in conflict points is a big reason for the safety benefits we see at an RCUT. Essentially, fewer conflict points result in lower driver workload, which is a term that indicates the number of tasks a driver must perform at the same time. Too much driver workload means even the best drivers are likely to make a mistake. The next slide is a short video that hopefully helps illustrate this concept.

RCUT Presentation Transcript

On a busy road, drivers monitor conflict points from all directions. Too many conflict points make driving unpredictable and risky. Designs that reduce conflict points create a more predictable and less stressful experience for drivers.

With a better understanding of the safety benefits of an RCUT, let's now talk a little about the traffic flow benefits at an RCUT. In short, RCUTs operate more efficiently than traditional intersections. To better understand why that is the case, let's first put the drivers at an intersection into two categories. In one category we have all the drivers traveling along the mainline– let's call these the primary movements – and in the other category, we have all the drivers who are trying to either enter the mainline or leave the mainline – let's call these the secondary movements. The great thing about an RCUT is that all the secondary movements can be served at the same time. When the mainline through traffic shown in red is stopped, the mainline left turns get to go at the same time the side street right turns get to go. These movements are shown in green.

RCUT Presentation Transcript

Because all the secondary movements occur at the same time, the traffic signal at an RCUT only needs two signal phases: one signal phase is a green that serves all the mainline through traffic, the second signal phase is a green that serves everyone else. A comparison of a 2-phase RCUT traffic signal to a typical 4-phase traffic signal, reveals that the 2-phase RCUT traffic signal provides much more green time for the mainline during each traffic signal cycle. Being able to give more green time to the mainline means much more traffic can move into and out of the city much more efficiently, without the major expense of adding more through lanes.

What's more, the overall cycle length of a 2-phase RCUT traffic signal can usually be shorter than the overall cycle length of a typical 4-phase traffic signal. If you're not familiar, cycle length is the amount of time it takes the traffic signal to cycle through all its phases. A shorter cycle length means the average amount of time roadway users wait for a green is reduced. This not only benefits side street traffic, but it also benefits pedestrians because shorter cycle lengths mean pedestrians are given the "Walk" interval more times per hour, which has been shown to correlate with less jaywalking since pedestrian wait times are shorter.

RCUT Presentation Transcript

Speaking of pedestrians, this diagram shows the crossing paths a pedestrian would use at an RCUT. It looks like a Z and it might seem a bit awkward at first glance, but this crossing pattern creates additional safety benefits for pedestrians. First, the island within the center of an RCUT provides pedestrians with a refuge area when crossing the mainline.

Another benefit is that pedestrians are given the “Walk” symbol for crossing the mainline at the same time as the mainline left-turns and side street right-turns are going; earlier we called these the secondary movements. What’s even better is that the crossing path for pedestrians never crosses the path of these secondary movements. Notice how the blue line representing the path for pedestrians does not cross the any of the green lines representing the paths of turning vehicles.

On the other hand, at a traditional intersection, a pedestrian crossing the mainline must contend with both left turning and right turn traffic from the side street.

RCUT Presentation Transcript

Let’s sum up the benefits of an RCUT

First, the safety benefits. These included significant reductions in crashes, especially the severe crashes, which is due to less conflict points, less driver workload, and a more predictable environment. Also, it’s much safer for pedestrians to cross the mainline because the RCUT has a center refuge island and pedestrians do not have to contend with turning traffic from the side street.

Second, we have improved operations at an RCUT because RCUTs only need two traffic signal phases to serve all users, which means more green time for mainline, and shorter cycle lengths, which mean less wait time for everyone.

KYTC Richmond Road

KENTUCKY TRANSPORTATION CABINET

Interactive Map Transcript

At this station, you can view an interactive aerial map that will allow you to view the proposed improvements by scrolling throughout the project area. You can also zoom in to a specific location to see the proposed improvements in more detail.

Clicking on the blue Timeline button will take you to the next station.

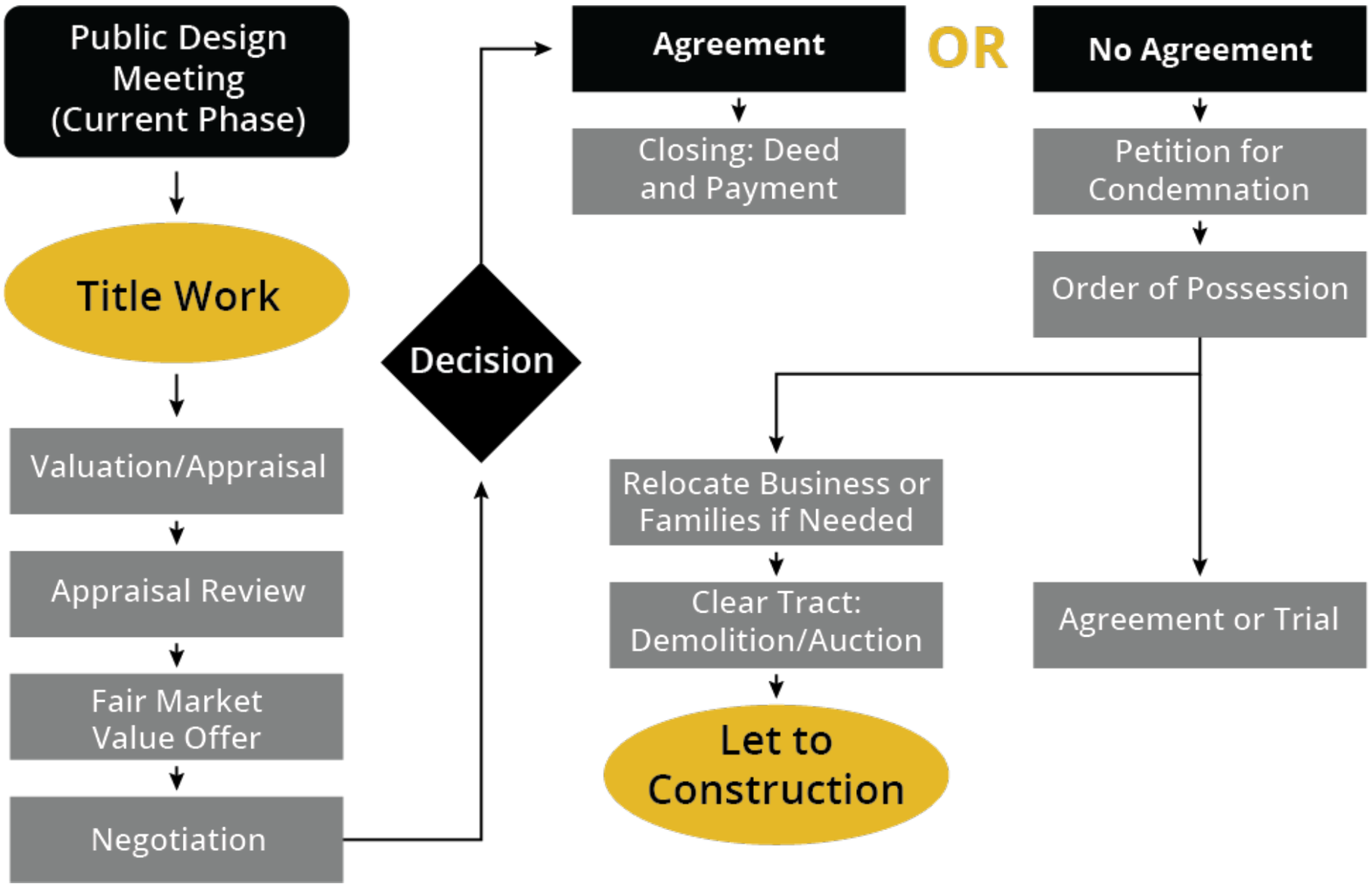
Project Timeline

*** Dates contingent upon approval of funding, completion of right of way acquisition, and weather conditions**

Project Timeline Transcript

Here, you can view an exhibit that shows our current schedule for the project. These dates represent our best estimate for the different phases of the work, however there are still many steps in the process and these dates may change as we move forward toward completion. This website will remain open as the project advances and any schedule changes will be noted here as soon as we become aware of them.

Right-of-Way Process



Right-of-Way Process Transcript

You can view an exhibit at this station which illustrates the Right-Of-Way acquisition process.

Please visit our website at transportation.ky.gov/rightofway to view or download the most recent version of our Right-of-Way and Acquisition Process brochure. For any additional questions concerning the right-of-way process, please contact our District Office in Lexington at (859) 246-2355.

And finally, by selecting the blue Public Comment button, you will be able to provide important feedback about the project.

FAQs

Click on the icon to review a list of Frequently Asked Questions about this project. This document will be updated as needed.

Frequently Asked Questions Transcript

On the first board, you can review a list of Frequently Asked Questions that you may have about the project, and specifically about the Restricted Crossing U-Turns. Hopefully, some of your questions will be addressed in this document. We will update this document during the review period to respond to questions we receive, so we suggest you continue to monitor this site for additional information at your convenience.

Public Comment

Comments will be accepted through April 30, 2022. Select from one of the two options below, or contact the Highway Safety Improvement Program Office.

[Leave a Comment]

[Download Form]

Contact the Highway Safety Improvement Program Office: 502-564-3030 for additional info.

Public Comment Transcript

Your input is very important to us, and we want to inform you of the available options to provide comments and ask questions regarding the proposed project. We will be accepting comments until April 30, 2022. During this time, the website will remain open so that you may view the project materials. Feel free to access the site as often as you would like.

There are two options to ensure that your questions and comments are recorded and provided to the Project Team and local officials. The first is to submit them in the Leave A Comment box on this page and click the Submit button. You will note that we have included a Sign-In Form for you to complete. This information is optional, and you can leave comments without filling it in. Still, we encourage you to let us know that you are visiting our site. We expect that during the remaining phases of the project there will be need to send out information (either electronically or by mail) and we would like to include your information in our mailing list.

The second option for providing comments starts by clicking the Download Form button. You will be able to print and fill out a paper comment form and then mail it back to us. Our mailing address is listed on the form.

Public Comment Transcript

You may also contact our Highway Safety Improvement Program Office at 502 564 3030 for additional information about the project. If you would like to talk or meet with a KYTC staff representative about the project, request a phone call or an in-person meeting using the Comment box.

Thank you again for visiting the website for the proposed improvement project along Richmond Road and Athens Boonesboro Road.