



Groundbreaking by Design.

MEETING MINUTES

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

Purpose: Project Team Meeting No. 1

Place: Webinar

Meeting Date: March 16, 2020 at 10:00 AM

Prepared By: Qk4

Participants:

Tom Hall	KYTC D5 Planning
Kameryn Underwood	KYTC D5 Design
Tracy Lovell	KYTC D5 TEBM
Kevin Bailey	KYTC D5 Engineering Support
Donna Hardin	KYTC D5 Environmental
Stephanie Caros	KYTC D5 PIO
Kim Irwin	KYTC D5 Planning
Steve DeWitte	KYTC CO Planning
Beth Niemann	KYTC CO Planning
Scott Thomson	KYTC CO Planning
Steve Ross	KYTC CO Planning
Daniel Walker	KYTC CO Planning
Andy Rush	KIPDA
Rebecca Thompson	Qk4
Jeremy Lukat	Qk4
Rebecca Hammond	Qk4

Rebecca Thompson opened the meeting, welcoming attendees and providing a brief overview of the study's purpose: to examine practical spot improvements along the KY 1747 (Hurstbourne Parkway) corridor to improve traffic flow and safety. The following sections step through agenda items.

1) Study Background

The study area stretches from Stony Brook Drive through the I-64 westbound ramps. Tasks include an existing conditions inventory, development of spot improvements, local officials/public outreach efforts, and a final report.

2) Overview of Existing Conditions

Several proposed projects exist in the vicinity of the study area: widening KY 1747, reconstructing the I-64 interchange (KYTC sponsored), and a series of Metro-sponsored new connectors to the west.

KYTC Item No. 5-9019 is an HSIP project at the I-64 westbound ramp terminal; it should be added to the map. KIPDA designates the corridor as a high crash area with poor level of service (LOS) amidst several high density land uses and also identifies this area as a 2017 focus area.

Bicycle/pedestrian needs along the corridor were discussed. Qk4 will revise the map colors shown on the Bike & Ped Facilities map for better visibility.

- There is a gap in connectivity between Bunsen Parkway and KY 155, corresponding to a section with deep drainage ditches. Numerous pedestrians travel the corridor daily, accessing large retailers and an Indian restaurant/grocery.
- Sidewalk connections out of compliance with the *Americans with Disabilities Act* (ADA) were noted. Several crossings also exhibit drainage issues, making sections impassible following rains.
- The pedestrian crossing of the westbound on-ramp to I-64 was also noted as a concern. It is not included in the 5-9019 HSIP project. Increased roadside signage and thermal striping tend to be short-lived at this location due to the high traffic volumes.

3) Traffic Analyses

Based on November 2019 counts, the corridor carries 30,000 vehicles per day (vpd) south of KY 155 and 55,000—56,000 to the north. Data collection activities also measured queues, travel speeds, and origin/destination data. Three intersections operate at LOS E/F during one or more peak hours: KY 155, Bunsen Parkway, and Bluegrass Parkway. Most intersections have one or more individual turning movements operating at LOS E/F. Qk4 will provide an updated copy of the microsimulation model to Scott Thomson; acceleration/deceleration rates and fleet composition assumptions have been updated since the March 4 model review meeting.

KIPDA's travel demand model forms the basis of future year traffic forecasts. The model was run for 2030 and 2040 analysis years, incorporating all KIPDA long-range plan projects aside from the Bunsen/Blowing Tree/Bowling connectors. The model also left out the KYTC interchange reconstruction project. Traffic volumes are similar between both model years as the corridor is already approaching capacity today. The team agreed to use 2040 as the future analysis year to be consistent with other planning efforts.

4) Safety Analyses

Three-years of crash data (July 2016–June 2019) analyzed showed elevated crash rates along the entire corridor:

- 811 crashes were reported during the analysis period. This included one fatality and 81 injury collisions.
- The one fatality that was reported involved a pedestrian strike after dark at the Stony Brook Drive intersection. Three other pedestrian strikes occurred during the analysis period.

As defined in the methodology report, two crash analysis types exist: Segments and Spots. Segments vary in length, divided wherever geometry or traffic volumes change. Spots are defined by analyzing 0.1-mile-long sections where crashes are concentrated—for example, within an intersection.

- At the Segment level, the entire corridor displays Critical Crash Rate Factors (CCRF) greater than 1.0, suggesting crashes are happening more frequently than can be attributed to random

occurrences. The CCRF analysis applied the 4-lane divided highway factor as the best fit for the corridor.

- Considering each 0.1-mile-long spot, there are 11 high CCRF spots along the corridor, concentrated at major intersections. The highest has a 3.2 CCRF at the Bunsen Parkway intersection.

Steve DeWitte will provide Excess Expected Crashes (EEC) factors for the corridor.

5) Draft Purpose and Need

The draft purpose and need statement is to “improve safety, north-south vehicle throughput, and pedestrian connectivity along the congested KY 1747 corridor between Stony Brook Drive and I-64.”

The statement will be revised to eliminate “north-south” from the language, potentially weaving in language about traffic calming measures or operational efficiency as well. The current signal coordination efforts have been optimized to the extent possible. Throughput is essential but the language should not discount east-west movements.

6) Environmental Red Flags

Proposed improvements will lie largely within existing right-of-way; however, the corridor exhibits adjacent hazardous material sites, underground storage tanks, historic sites, and other community resources. Environmental red flags will be documented more fully in the study report.

7) Next Steps

A local officials meeting is scheduled for Thursday, March 26; the format will convert to a webinar to be sensitive to current health advisories. Steve DeWitte and Kameryn Underwood will collect available email addresses for attendees to send out an update. Meeting materials will closely match today’s content; Qk4 will send out an updated draft slide deck later this week for review.

A public survey is also planned to collect input from a larger audience. Stephanie Caros will coordinate efforts for a social media campaign and to launch a study-specific website from the District 5 homepage. Qk4 will provide draft language and graphics as needed.

Once public input is received, Qk4 will develop preliminary spot improvement concepts and discuss with the project team in May.

End of Minutes



Groundbreaking by Design.

MEETING MINUTES

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

Purpose: Local Officials Meeting No. 1

Place: Webinar

Meeting Date: March 26, 2020 at 1:30 PM

Prepared By: Qk4

Participants:	Amanda Deatherage	Louisville Metro Public Works
	Arnold Rivera	Louisville Metro Police Department
	Chris Crumpton	Blue Stone Engineers
	Dirk Gowin	Louisville Metro Public Works
	Emily Liu	Louisville Metro Planning & Zoning
	Jeff O'Brien	Develop Louisville
	Jim Leidgen	City Manager, Hurstbourne
	Joe Elstone	Fern Creek Fire Department
	Matt Meunier	Jeffersontown Community Development
	Steve Griffin	Hurstbourne Acres Police Department
	Terry McAllister	Mayor, Hurstbourne Acres
	Matt Bullock	KYTC D5 CDE
	Kameryn Underwood	KYTC D5 Design
	Tom Hall	KYTC D5 Planning
	Tracy Lovell	KYTC D5 TEBM
	Donna Hardin	KYTC D5 Environmental
	Stephanie Caros	KYTC D5 PIO
	Kim Irwin	KYTC D5 Planning
	Steve De Witte	KYTC CO Planning
	Beth Niemann	KYTC CO Planning
	Tonya Higdon	KYTC CO Planning
	Steve Ross	KYTC CO Planning
	Daniel Walker	KYTC CO Planning
	Patrick Perry	KYTC CO Design
	Andy Rush	KIPDA
	Randall Embry	KIPDA
	Rebecca Thompson	Qk4
	Jeremy Lukat	Qk4
	Rebecca Hammond	Qk4

Tom Hall and Rebecca Thompson opened the meeting, welcoming attendees and providing a brief overview of the study's purpose: to examine practical, low-cost spot improvements along the KY 1747 (Hurstbourne Parkway) corridor to improve traffic flow and safety. The corridor represents a long-standing challenge and rose as one of the top projects in the region during the 2020 SHIFT¹ prioritization process. The following sections step through agenda items.

1) Study Background

The study area stretches from the northern Stony Brook Drive intersection through the I-64 westbound ramps. Tasks include an existing conditions inventory, development of spot improvements, local officials/public outreach efforts, and a final report.

2) Overview of Existing Conditions

Several proposed projects exist in the vicinity of the study area: widening KY 1747, reconstructing the I-64 interchange (KYTC sponsored), and a series of Metro-sponsored new connectors to the west. KYTC Item No. 5-9019 is an ongoing highway safety improvement program (HSIP) project at the I-64 westbound ramp terminal; it also includes signal infrastructure improvements at five other nearby intersections.

Bicycle/pedestrian needs along the corridor were discussed. There is a gap in connectivity between Bunsen Parkway and KY 155 (Taylorsville Road), corresponding to a section with deep drainage ditches. Numerous pedestrians travel the corridor daily. Several crossings also exhibit drainage issues or do not meet ADA guidelines for mobility.

Improved pedestrian connectivity is a priority for Louisville Metro. They would like to see a multi-use path on the east side of the corridor, a sidewalk on the west side, and increased lighting. Other participants, including the city of Jeffersontown, emphasized the importance of a bike linkage between KY 155 and Bluegrass Parkway.

3) Traffic Analyses

Based on November 2019 counts, the corridor carries 30,000 vehicles per day (vpd) south of KY 155 and 55,000—56,000 to the north. Data collection activities also measured queues, travel speeds, and origin/destination data to develop a microsimulation model of corridor operations. Three intersections operate at level of service (LOS) E/F during one or more peak hours: KY 155, Bunsen Parkway, and Bluegrass Parkway. Over the coming months, the team will expand the microsimulation model to represent 2040 traffic then use it to test potential spot improvements to gauge their benefits.

One of the proposed spot improvements will likely include signal timing/coordination, although the HSIP project will make some improvements as well. Intelligent Transportation Systems (ITS) strategies may also be considered.

4) Safety Analyses

Three-years of crash data (July 2016–June 2019) analyzed showed high crash rates along the entire corridor:

- 811 crashes were reported during the analysis period. This included one fatality and 81 injury collisions.

¹ Strategic Highway Investment Formula for Tomorrow (SHIFT) is the data-driven mechanism used to prioritize projects for Kentucky's biennial highway plan.

- The one fatality that was reported involved a pedestrian strike after dark at the Stony Brook Drive intersection. Three other pedestrian strikes occurred during the analysis period.

As defined in the methodology report, two crash analysis types exist: Segments and Spots. Segments vary in length, divided wherever geometry or traffic volumes change. Spots are defined by analyzing 0.1-mile-long sections where crashes are concentrated—for example, within an intersection.

- At the Segment level, the entire corridor displays Critical Crash Rate Factors (CCRF) greater than 1.0, suggesting crashes are happening more frequently than might be attributed to random occurrences. The CCRF analysis applied the 4-lane divided highway factor as the best fit for the corridor.
- Considering each 0.1-mile-long spot, there are 11 high CCRF spots along the corridor, concentrated at major intersections. The highest has a 3.2 CCRF at the Bunsen Parkway intersection.

5) Draft Purpose and Need

The draft purpose and need statement is to “improve safety, north-south vehicle throughput, and pedestrian connectivity along the congested KY 1747 corridor between Stony Brook Drive and I-64.”

6) Environmental Red Flags

Proposed improvements will lie largely within existing right-of-way; however, the corridor exhibits adjacent hazardous material sites, underground storage tanks, historic sites, and other community resources. Environmental red flags will be documented more fully in the study report.

7) Next Steps

A public survey is available online to collect input on corridor needs from a larger audience. Attendees are asked to participate and to share the link with their constituents. A website for the study has been created, accessible from the bottom of District 5’s home page.

Once public input is received, Qk4 will develop preliminary spot improvement concepts and discuss with the project team in May.

End of Minutes

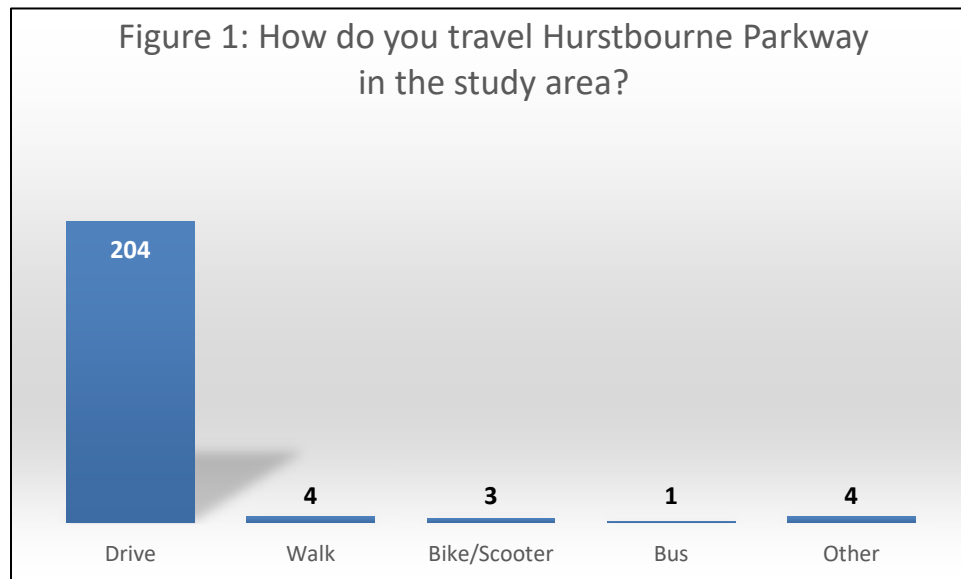
SURVEY SUMMARY

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

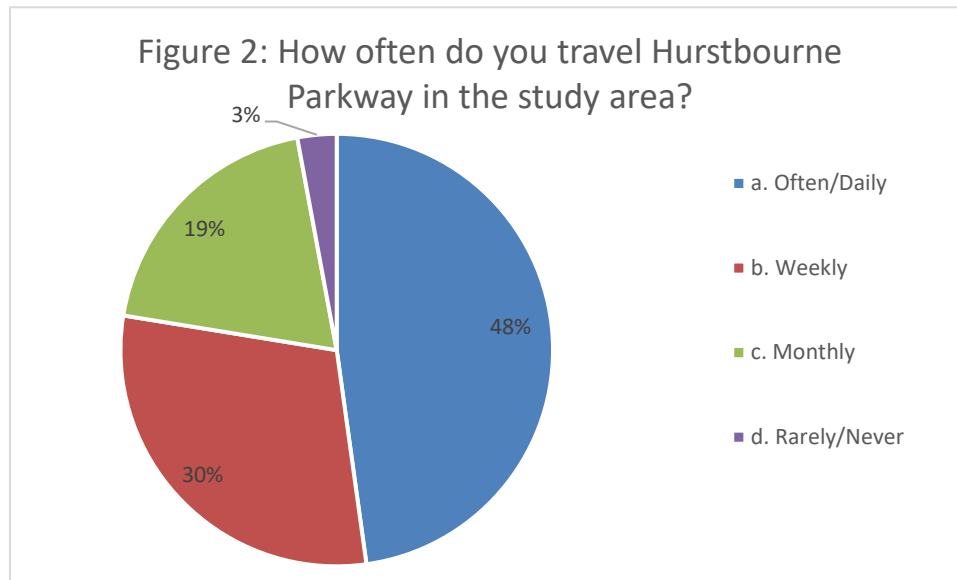
Purpose: Summary of Public Survey Responses
April 2020

A public survey was published online during April 2020 to collect input on KY 1747 corridor needs from a large cross-section of the community. The survey was promoted via District 5 social media accounts and through a link posted on the project webpage. Throughout the comment period, 207 individuals submitted responses. This memo summarizes input received.

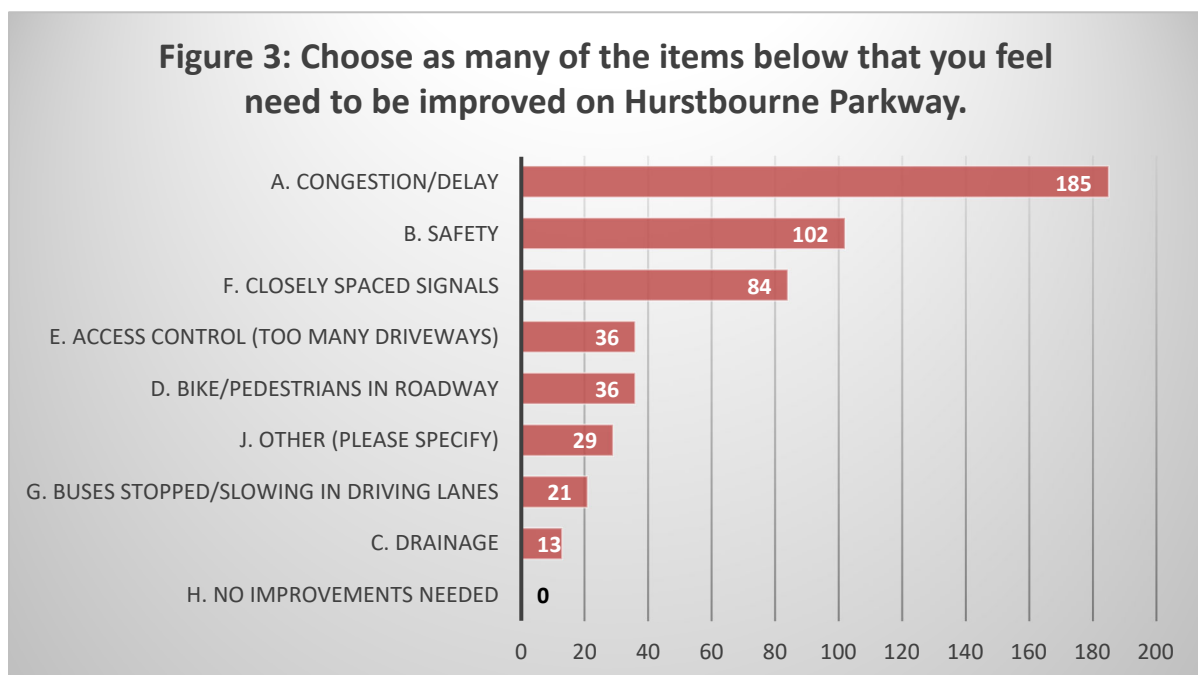
Question 1: How do you travel Hurstbourne Parkway in the study area? The majority (94%) of respondents drive. Other responses noted traveling by motorcycle and ambulance or preferring to walk/bike if there were adequate accommodations.



Question 2: How often do you travel Hurstbourne Parkway in the study area? Responses were mixed, skewed toward daily use.



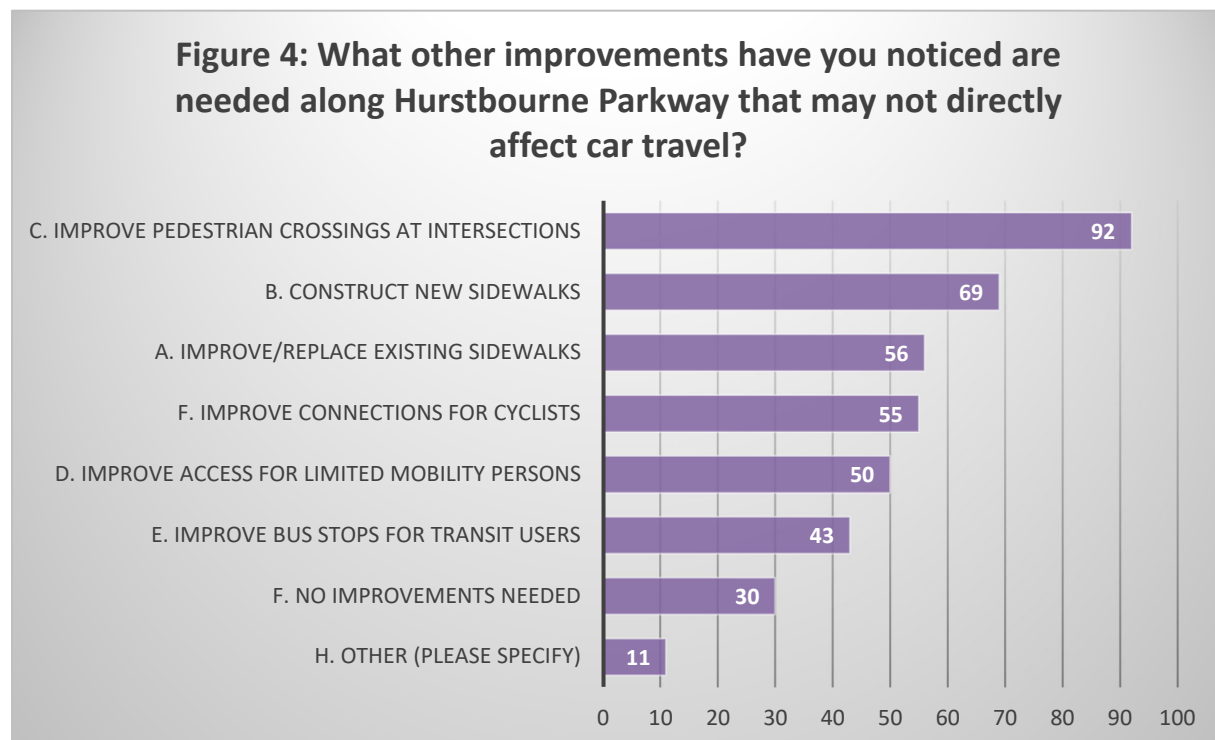
Question 3: Choose as many of the items below that you feel need to be improved on Hurstbourne Parkway. The most often selected response was congestion/delay, followed by safety and closely spaced signals. All respondents agreed some level of improvement is needed.



Numerous answers were written in as part of the “Other” category. From most cited to least, these included:

- Signals/Timing/Coordination
- Complete Street (all modes)
- Access/Lane shift at Interchange
- Bollards at Off-ramp
- Lane Continuity (forced turns)
- Panhandling
- Longer Turn Lanes
- Create a Parallel Route

Question 4: What other improvements have you noticed are needed along Hurstbourne Parkway that may not directly affect car travel? The most often selected response was improving pedestrian crossings at intersections, followed by sidewalk improvements and connections for cyclists.



Numerous answers were written in as part of the “Other” category, including: adding more travel lanes, eliminating the bollards at the off-ramp, improved signal phasing, preventing motorists from blocking intersections, fixing pothole(s) on ramps, and addressing signal timing/coordination.

Following the questions above, respondents were given an opportunity to enter location specific improvements for consideration, either as a survey text box or into an online GIS portal for data collection. In total, 136 data points were entered, summarized in **Figures 5-6** on the following pages. By category, data points were related to congestion (40%), other (23%), safety (22%), and geometry (20%). Individual comments can be seen online at <https://tinyurl.com/tprt7fa>.

Figure 5: April 2020 Public Comments

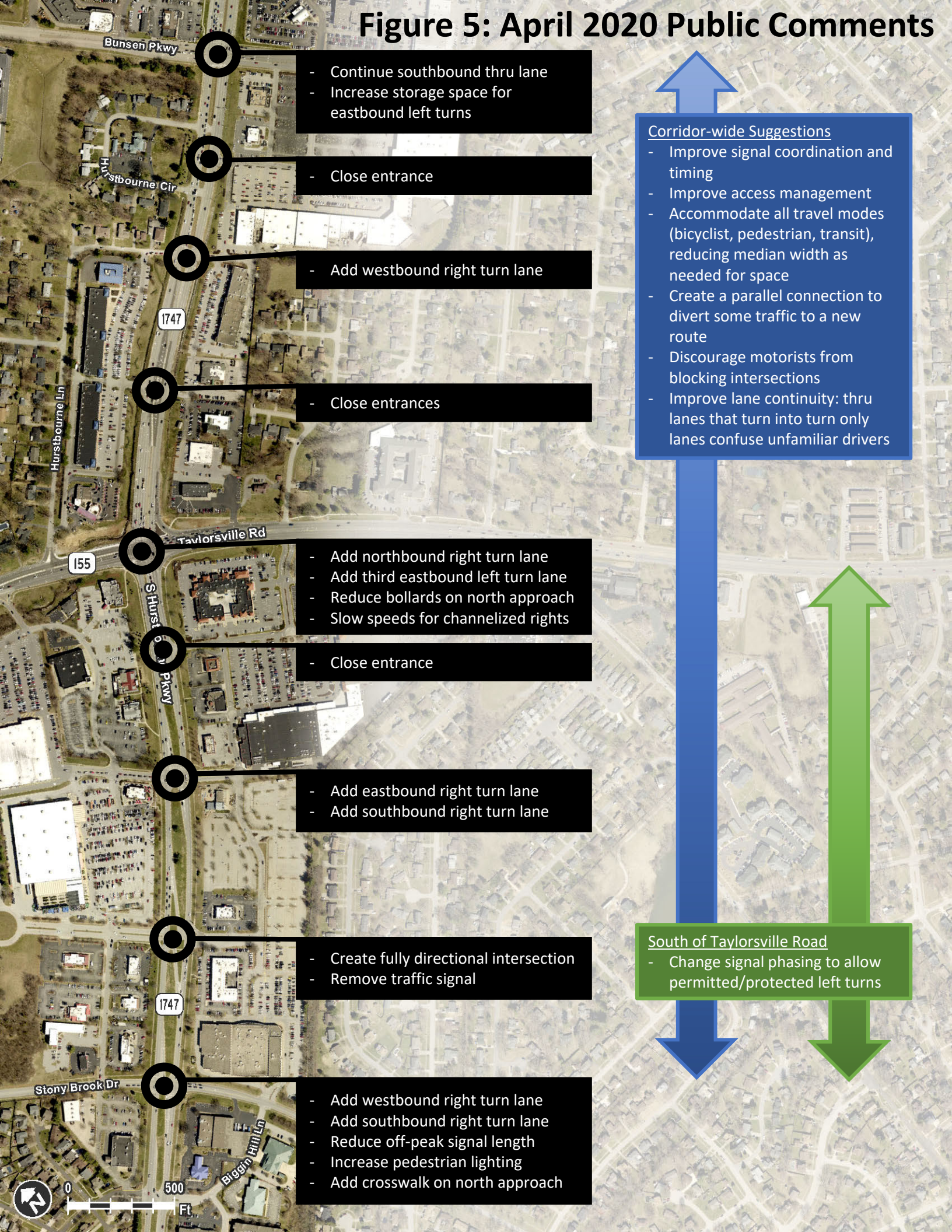
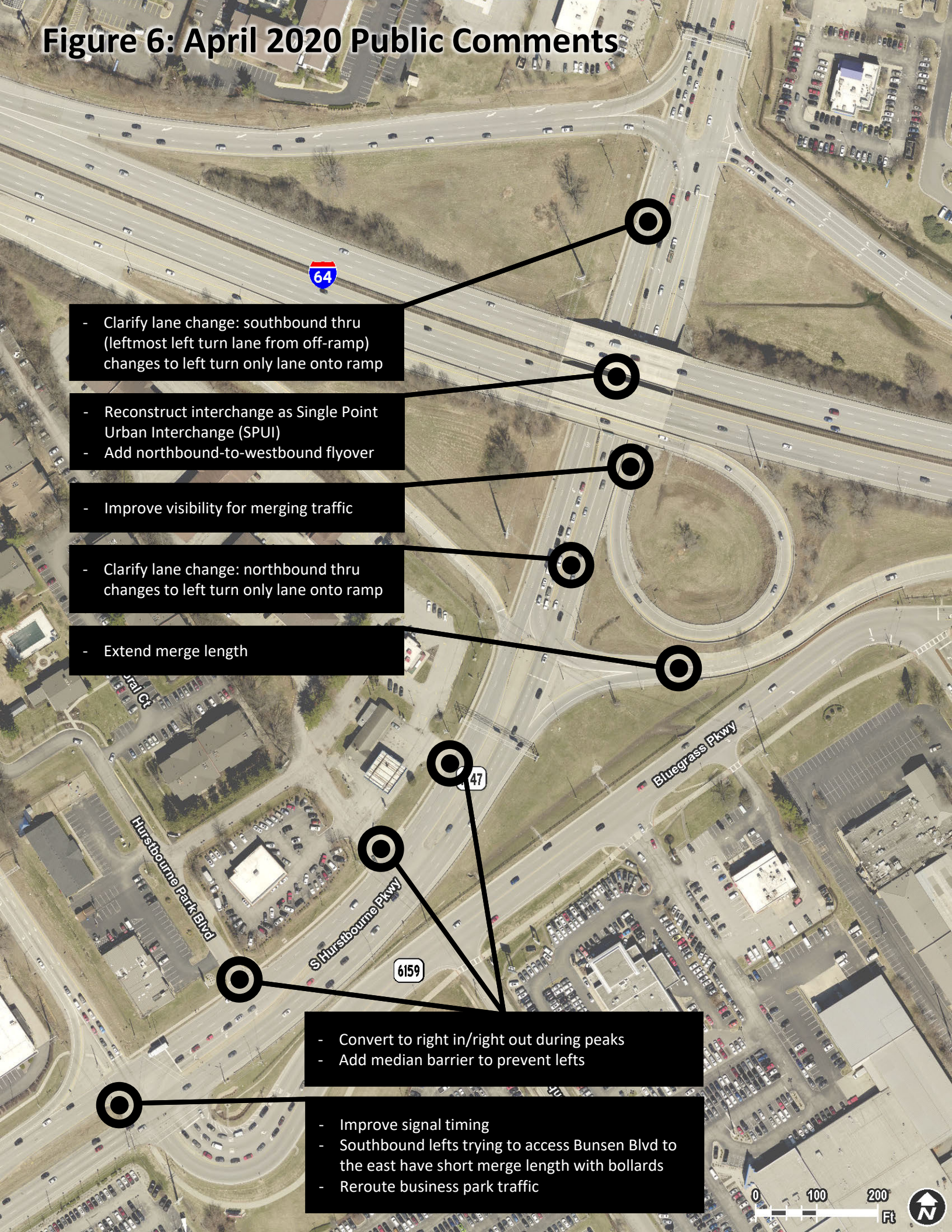


Figure 6: April 2020 Public Comments



- Clarify lane change: southbound thru (leftmost left turn lane from off-ramp) changes to left turn only lane onto ramp

- Reconstruct interchange as Single Point Urban Interchange (SPUI)
- Add northbound-to-westbound flyover

- Improve visibility for merging traffic

- Clarify lane change: northbound thru changes to left turn only lane onto ramp

- Extend merge length

- Convert to right in/right out during peaks
- Add median barrier to prevent lefts

- Improve signal timing
- Southbound lefts trying to access Bunsen Blvd to the east have short merge length with bollards
- Reroute business park traffic



Groundbreaking by Design.

MEETING MINUTES

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

Purpose: Project Team Meeting No. 2

Place: Webinar

Meeting Date: May 27, 2020 at 1:30 PM

Prepared By: Qk4

Participants:

Tom Hall	KYTC D5 Planning
Tracy Lovell	KYTC D5 TEBM
Kevin Bailey	KYTC D5 Engineering Support
Steve De Witte	KYTC CO Planning
Beth Niemann	KYTC CO Planning
Steve Ross	KYTC CO Planning
Jay Balaji	KYTC CO Planning
Tonya Higdon	KYTC CO Planning
Sadie Middleton	KYTC CO Planning
Matt Lawson	KYTC CO Planning
Daniel Walker	KYTC CO Planning
Andy Rush	KIPDA
Rebecca Thompson	Qk4
Jeremy Lukat	Qk4
Rebecca Hammond	Qk4
Theresa Owen	Qk4

Rebecca Thompson opened the meeting, welcoming attendees and providing a brief overview of the study's purpose: to examine practical spot improvements along the KY 1747 (Hurstbourne Parkway) corridor to improve traffic flow and safety. The primary purpose of the meeting was to reach a consensus on which spot improvements should be developed further.

1) Study Background

The study area stretches from the northern Stony Brook Drive intersection through the I-64 westbound ramps. Tasks include an existing conditions inventory, development of spot improvements, local officials/public outreach efforts, and a final report.

2) Review of Existing Conditions

To identify potential spot improvements, analysts examined traffic patterns, crash trends, and stakeholder/public input on needs.

Traffic data was collected in late 2019 and early 2020 at 10 study intersections. Traffic volumes range from 30,000 to 56,000 vehicles per day using KY 1747. During the PM peak, it carries 2,700 to 4,800 vehicles per hour with strong directional peaks, especially southbound during the afternoon. KIPDA's travel demand model forms the basis of the 2040 forecasts. Summarized in **Table 1**, level of service (LOS) analysis shows the facility is approaching capacity today; relatively small volume increases in the future No-Build scenario lead to degraded LOS, particularly during the PM peak hour.

Table 1: LOS Summary Table

KY 1747 Intersection	2020 AM Existing	2020 PM Existing	2040 AM No-Build	2040 PM No-Build
I-64 WB Ramps	D	D	D	F
I-64 EB Ramps	B	C	C	F
Bluegrass Pkwy	D	E	E	F
Bunsen Pkwy	C	F	D	F
Hurstbourne Ln	B	D	C	E
Shopping Center	A	B	A	C
KY 155 Taylorsville Rd	E	E	F	F
Shane Dr	B	C	D	E
Greene Way	B	C	E	F
Stony Brook Dr	C	D	F	F

Three-years of crash data (July 2016–June 2019) analyzed showed elevated crash rates along the entire corridor: 811 crashes were reported during the analysis period. This included one fatality and 81 injury collisions. Critical Crash Rate Factors (CCRF) analysis shows high crash segments cover the entire corridor length, with CCRF ranging from 1.6 to 2.5. Eleven high crash spots 0.1 miles in length were identified, concentrated at intersections.

A public survey was published online during April 2020 to collect input on corridor needs from a large cross-section of the community. During that time, 207 surveys were completed. The top cited needs were congestion/delay, safety, and closely spaced signals. Via an online GIS-based platform, respondents were asked to note location-specific needs along the corridor; 136 data points were collected. The top comment themes included more/longer turn lanes, longer merge lengths, confusion at lane shifts/drops, and improved signal coordination/timing.

3) Proposed Spot Improvements

Nine spot improvements were proposed by the team, discussed below.

1. Corridor-level Wayfinding/Signage includes painted interstate shields near the interchange, restriping the “cat tracks” for the dual lefts from the westbound off-ramp, and signage to shift eastbound Bunsen traffic to the local access ramp.

- North of Bunsen, merging into the southbound thru lane is challenging during peak periods—not just left turns onto eastbound Bunsen.
- D5 likes “pavement tattoos” which are actually thermoplastic. They cost about \$900 each. Shields offer improved visibility over signs, which many motorists overlook.

2. Signal Optimization will rely on Metro’s Synchro model to squeeze any additional capacity out of signal timing, phasing, and/or coordination improvements.

- An ongoing HSIP project includes changing existing puck detectors for loops at signalized intersections from Bunsen to Linn Station, which should make a noticeable improvement. Once hardware is in place Metro is working on optimizing the corridor between US 60 and KY 155. Funding should be available for the next fiscal year.
- Several public comments suggested switching lefts from KY 1747 south of KY 155 to permitted/protected movements. Today, these movements are protected only. The roadway width makes this challenging but it could be considered, at least off-peak.

3. Displaced Lefts separate the northbound KY 1747 to westbound I-64 turns at the eastbound ramp intersection, running them through the interchange where the sidewalk exists today. This increases southbound storage space beneath the bridges but also introduces a red phase for southbound traffic, which is free flow today.

- A large water main runs through the interchange west of KY 1747; Kevin provided plans.
- D5 considered continuing a southbound lane from the local access ramp although this would eliminate access to Thornton’s. Fully signalizing the eastbound ramps would add protected green time for local access ramp traffic, a benefit if Bunsen traffic shifts to this location.
- Queues are a concern but quick analysis with Synchro suggests the configuration is feasible. More detailed microsimulation via Vissim will be completed. Northbound left turn bays will likely have to begin at the Bluegrass Ave intersection, forcing driveways/cross-streets in this section to convert to right-in/right-out configurations.
- The sharp S-curve for northbound lefts may increase sideswipes and rollovers. The layout can be tweaked, pulling the stop bar back to soften the curve. Lane widths are wider in this section, dropping to 11 feet to fit under the bridge.

4. Southbound Thru Lane extends a fourth lane southbound from the lane drop at Bunsen to KY 155. Much of the widening is shown in the median.

- The water main runs outside the west ditch line through this section.

5. Sidewalk connectivity adds in the missing sidewalk gap between Bunsen and KY 155. The concept drawing showed a 5-foot path running parallel to the highway and along the west side.

- Metro and Jeffersontown representatives suggested a shared use path on the east side, sidewalk on the west side, and additional lighting.
- With the blue line stream running on both sides, impacts are a consideration. Since the eastbound loop ramp negates a safe connection through the interchange, the concept drawing is built upon a west side connection to minimize impacts. However, the city designated a bike path along Bluegrass Avenue.

- With the available right-of-way and smaller ditches, a shared use path could fit on the east side outside the berm. A connection to Bluegrass is valuable, even if it does not run through the interchange. An east-side shared use path will be added as a separate spot improvement concept.
- Based on existing pedestrian volumes, the western sidewalk is likely a higher priority.

6. A westbound right turn lane opposite Hurstbourne Lane is under development, funded by the adjacent property owner. This spot was removed from further consideration in this study.

7. Shane Drive turn lanes adds a southbound right turn bay. If permitted/protected phasing is viable, the mainline lefts may be fully offset to improve visibility.

- Heavy traffic accessing adjacent restaurants/stores tends to rely on the Shane Drive intersection since Greene Way is more complicated to navigate.
- The pedestrian crossing phase is 40+ seconds due to the roadway width. A refuge in the median would allow the pedestrian phase to overlap with the mainline lefts, saving ~20 seconds.
- Dual lefts towards Kroger may be warranted but a flashing yellow phase likely provides more benefit overall.

8. Greene Way reconstruction removes the extra median islands, allowing thru movements between cross-streets which are currently prohibited.

9. Miscellaneous Pedestrian Improvements is a catch-all for maintenance level actions along the corridor: drainage, crosswalks, lighting, ADA compliance, etc. A more detailed inventory will be compiled to describe what is actually included.

- Fitting these improvements onto a single project sheet may prove challenging.

Based on the group discussions, Qk4 will continue to develop the nine spot improvements.

4) Next Steps

The team discussed the remaining tasks to wrap up the study.

The scope was originally developed with four Build model runs. The following definitions are proposed:

- Build 1: Displaced Left Turn Lane, including retiming/optimizing signals at the interchange intersections and assuming Bunsen traffic shifts to the local access ramp.
- Build 2: Additional Southbound Thru Lane, including retiming/optimizing affected signals.
- Build 3: Corridor-wide Signal Retiming, assuming existing geometry and traffic flows remain as is.
- Build 4: Improvements at Greene Way and Shane Drive intersections, potentially including signal timing/phasing adjustments at southern three intersections.

Resource agency coordination can begin as soon as spot improvements are defined to the appropriate level of detail.

For the second round of stakeholder involvement, the original scoped approach will be adjusted to adapt to the virtual meeting setting—similar to the recent Item No. 5-559 study. The intent is to share the spot improvement locations and solicit feedback on prioritization. A StoryMap, similar to today's content, will be developed to share online. For local officials, a live webinar will provide an opportunity for group discussion with the project team. Soon after, the public can be directed to the StoryMap via a project website with a feedback component through a survey. A direct mailing to adjacent property owners may help advertise the opportunity. No live virtual meeting component will be necessary.

The original scope includes late June public involvement, with a final project team meeting in late July and the draft report by late August.

End of Minutes

MEETING MINUTES

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

Purpose: Local Officials Meeting No. 2

Place: Webinar

Meeting Date: July 23, 2020 at 2:00 PM

Prepared By: Qk4

Participants:

Arnold Rivera	Louisville Metro Police Department
Dirk Gowin	Louisville Metro Public Works
Donna Nichols	Hurstbourne Acres Roads and Lighting
Teresa Renninger	Hurstbourne Acres Police Commissioner
Chris Perkins	Jefferson County Public Schools
Tonya Clinkscales	Jefferson County Public Schools
Matt Meunier	Jeffersontown Community Development
Terry McAllister	Mayor, Hurstbourne Acres
Matt Bullock	KYTC D5 CDE
Kameryn Underwood	KYTC D5 Design
Tom Hall	KYTC D5 Planning
Larry Chaney	KYTC D5 Planning
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Theresa Owen	Qk4

Kameryn Underwood and Rebecca Thompson opened the meeting, welcoming attendees and providing a brief overview of the study's purpose: to examine practical, low-cost spot improvements along the KY 1747 (Hurstbourne Parkway) corridor to improve traffic flow and safety. Study limits include 1.5 miles, from Stony Brook Drive through the I-64 interchange. The corridor represents a

long-standing challenge and rose as one of the top projects in the region during the 2020 SHIFT¹ prioritization process. An online StoryMap is available to explore the data and will be shared publicly July 24.

Existing Conditions Review

Based on late 2019 counts, the corridor carries 30,000—56,000 vehicles per day with a strong southbound split in the afternoon peak. Operationally, it is approaching capacity with a few intersections at Level of Service (LOS) E or F during the PM peak. A small increase in traffic by 2040 leads to substantial degradations in LOS, with almost all intersections at LOS F in the No-Build PM peak scenario.

Three years of crash data showed high crash rates along the entire corridor: 811 crashes were reported during the analysis period including one fatality and 81 injury collisions. The majority of the corridor exhibits high crash concentrations: there are eleven 0.1-mile spots with a high Critical Crash Rate Factor (CCRF) and 90% of the corridor exhibits a positive Excess Expected Crashes (EEC) rate. EEC compares the expected number of crashes to the actual; a positive number correlates to a higher number of crashes than predicted by the model. The highest CCRF and EEC both point to the northern study limit and Bunsen Parkway intersection as the worst locations.

A survey was published online during April 2020 to collect public input on corridor needs. Over 200 individuals submitted responses. The top needs identified were congestion/delay, safety, and closely spaced signals. Comment themes cited longer/more turn lanes, longer merge lengths, confusion over lane drops, and the need for improved signal coordination. An upcoming HSIP project should address signal coordination between KY 155 and US 60.

Proposed Spot Improvements

Nine spot improvement concepts are proposed:

- Spot A includes wayfinding and signage upgrades along the northern section of the study corridor to complement the upcoming HSIP project: pavement tattoos, striping for dual lefts, and rerouting eastbound Bunsen traffic from eastbound ramp 15A to 15B to increase the merge length. Costs are estimated at \$90,000.
- Spot B includes signal optimization in the southern section of the corridor, expanding the city's planned efforts north of KY 155. Costs are estimated at \$50,000.
- Spot C removes the median islands within the Hurstbourne Pkwy/Greene Way intersection to allow thru movements between cross-streets, consistent with nearby intersections. Costs are estimated at \$340,000.
- Spot D includes maintenance actions on the existing sidewalk network within the corridor: improvements to drainage, lighting, ADA compliance, etc. Combined, costs are estimated at \$270,000.
- Spot E shifts northbound left turns from Hurstbourne Pkwy onto the I-64 westbound on-ramp, creating displaced left turn lanes, effectively creating half of a diverging diamond

¹ Strategic Highway Investment Formula for Tomorrow (SHIFT) is the data-driven mechanism used to prioritize projects for Kentucky's biennial highway plan.

interchange. This introduces a stop movement for the southbound thru traffic but still reduces queuing and delay through the interchange footprint. Costs are estimated at \$5.3 million.

- Spot F creates a fourth southbound lane on Hurstbourne Pkwy from Bunsen Parkway to just north of KY 155, tying to recent HSIP improvements. Widening occurs in the median to reduce property impacts. Costs are estimated at just under \$1 million.
- Spot G constructs the missing sidewalk connection west of the highway from Hurstbourne Circle to KY 155. A link adjacent to the highway is shown to minimize property impacts but leads to higher costs and greater stream impacts. Another approach would create a path outside the ditch with a pedestrian bridge near the KY 155 intersection; this reduces costs and impacts but would require additional right-of-way. Costs range from \$1.3 to \$5.4 million.
- Spot H creates a 10-foot shared use path along the east side of Hurstbourne Parkway between Bluegrass Parkway and KY 155, balancing stream and property impacts east of the highway. Costs are estimated at \$3 million.
- Spot I adds a southbound right turn lane on Hurstbourne Pkwy at Shane Drive and increases the offset of left turn bays to allow for off-peak permitted lefts. Costs are estimated at \$1.3 million.

A group discussion of proposed improvement concepts followed.

- Are there property impacts between Bunsen Parkway and KY 155?
The widening and western sidewalk shown on the StoryMap fit within the existing right-of-way. The lower cost sidewalk option would have property impacts.
- Spot E may require familiarizing drivers with innovative approaches but was well liked. Opportunities to minimize left turn conflicts should be embraced. It provides an affordable solution until a larger improvement can be constructed.
- Were Spots E and F included in microsimulation runs?
Yes. There are still queues in the interchange area but the southbound lanes beneath I-64 provide storage space instead of stopping as much traffic in the less access-controlled section to the north.
- Was the intersection with Hurstbourne Lane considered?
As the developer is pursuing widening of the southbound approach to separate left/right turn movements, this spot was removed from the initial list.
- Is there a way to facilitate turns to/from Hurstbourne Circle? Lefts are challenging today with only three southbound lanes to cross. The “Do Not Block Intersection” box at the southern intersection is faded and only effective a quarter of the time. Today, drivers tend to wait to turn left, rather than opting for a right turn then U-turn downstream. Events at the Nunnlea House lead to higher traffic volumes and drivers less familiar with the area. Pedestrian safety at the intersections is also a concern.

The team will investigate potential solutions. Some suggestions posed during the meeting: right-in right out designations at the two access points for that neighborhood; install another ‘traffic box’ at the entrance/exit to the neighborhood.

Next Steps

A survey is available online, seeking input on spot improvement concepts and prioritization. Participants are asked to both take the survey and promote it to their agency distribution lists. Once public input is received, final recommendations will be prepared with a report published in late 2020.

End of Minutes

SPOT IMPROVEMENT SURVEY SUMMARY

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

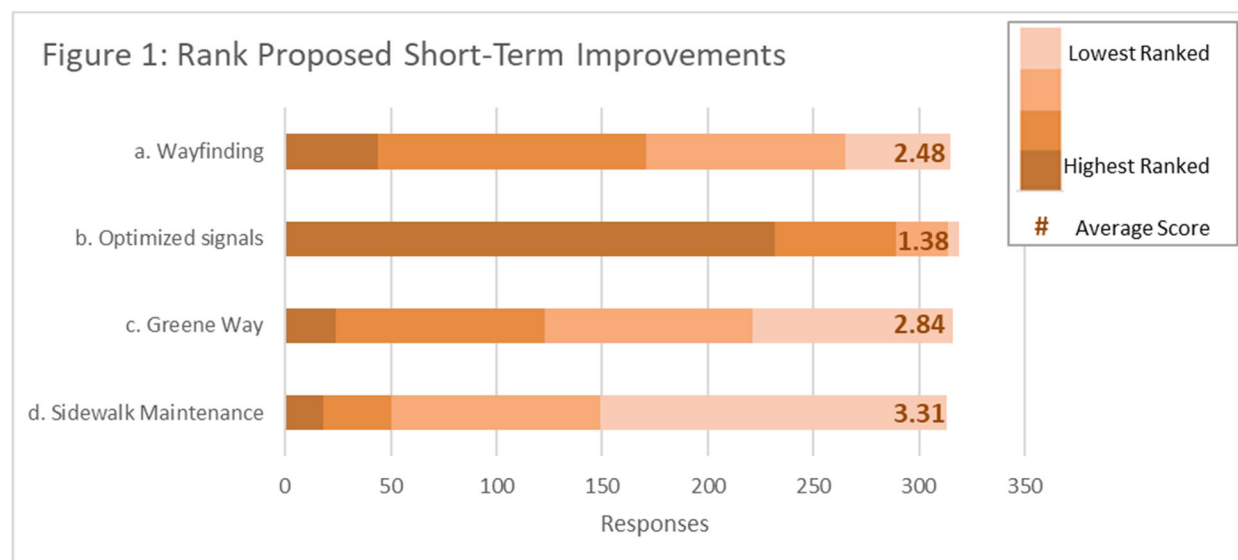
Purpose: Summary of Public Survey Responses
August 2020

A public survey was published online during July/August 2020 to collect input on potential KY 1747 spot improvements from a large cross-section of the community. The survey was promoted via District 5 social media accounts and through a link posted on the project webpage. Stakeholders who attended the July 23, 2020 virtual meeting were also asked to help promote the StoryMap (<https://bit.ly/3cOd2u3>) and survey through their distribution lists.

Analytics show targeted Facebook ads led to over 10,000 impressions (user views). Throughout the comment period, 321 individuals submitted survey responses. This memo summarizes input received.

Question 1: Please rank the four short-term spot improvements based on importance, where 1 is the most important priority to implement and 4 is the least.

Figure 1 summarizes the input received. Orange bars represent ranked numeric results with the darker bars representing the higher priority. That is, Spot B (optimizing traffic signals) received the most #1 rankings, as noted by the largest dark orange bar below. The Average Score represents the mean of numeric results, where the lower number notes the highest priority; again, Spot B with a 1.38 average ranking is the highest priority of the short-term spot improvements. Conversely, Spot D (maintenance actions along the existing sidewalk network) was the lowest priority of identified spots.

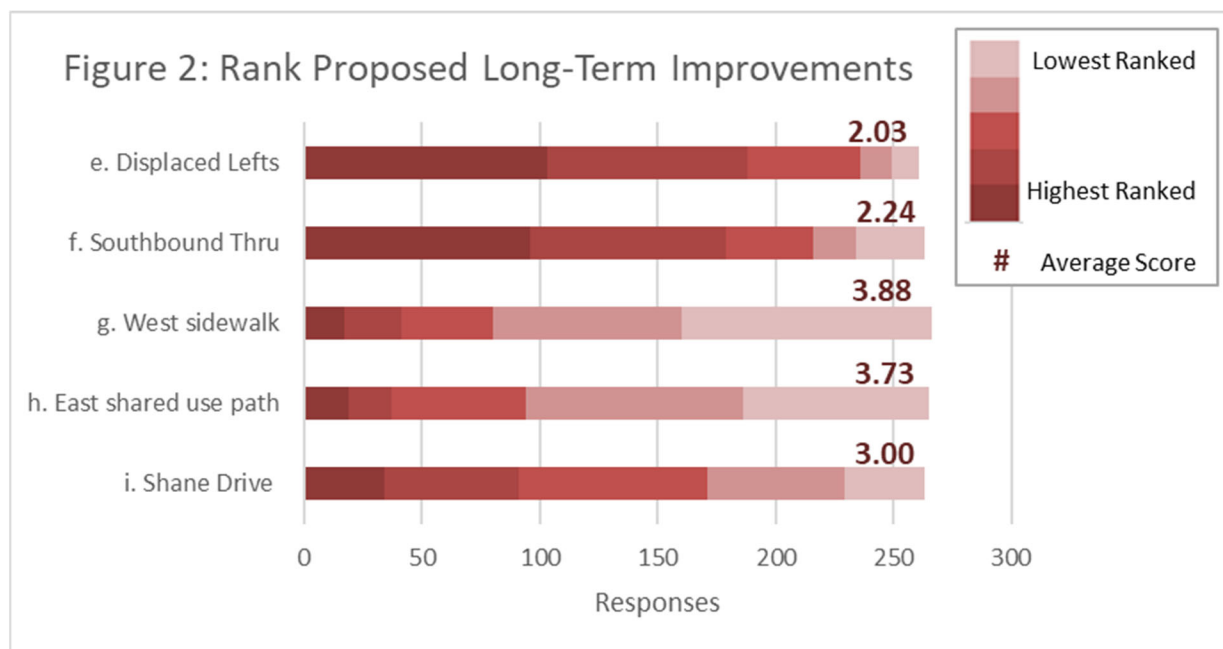


Respondents were asked to explain why they selected their top short-term priority. The most common response themes favored low-cost, high impact results and the importance of safe modal choices. Many open-ended responses reiterated corridor needs from the initial survey in April: congestion, lengthy delays, and high crash trends along the corridor, particularly associated with signals. Other open-ended response themes included:

- Unfamiliar drivers navigating the corridor complicate operations, particularly 1) accessing the Nunnlea House at Hurstbourne Circle and 2) where thru lanes become turn only lanes within the interchange.
- Consider large-scale corridor widening and/or interchange reconstruction to increase capacity.
- Short cuts through driveways, parking lots, and even under-utilized turn lanes allow creative drivers to bypass lengthy queues.
- Tall grasses in the median limit visibility; native plants/flowers would save maintenance costs. Landscaping to provide shade at bus stops would also improve the experience.
- Motorists blocking intersections further disrupt operations during congested times.

Question 2: Please rank the five long-term spot improvements based on importance, where 1 is the most important priority to implement and 5 is the least.

Figure 2 summarizes results, following the same format as the previous chart. As shown, Spot E (displaced lefts at interchange) was the highest priority and Spot G (new sidewalk, west side) was the lowest priority. It should be noted that short- and long-term spots were rated on different scales so average scores between questions do not directly correlate.



Respondents were asked to explain why they selected their top long-term priority. Beyond the written-in comments discussed above, the following comments were shared.

- Lefts from Hurstbourne Circle are a challenge today and will be more complicated if there are additional lanes to cross. The existing median provides an important refuge.
- None of the solutions represent long-term fixes, only invasive construction for minimal gains.
- TARC buses loading in the right lane contributes to weaving and delay, particularly near Shane Drive where high traffic volumes access adjacent commercial businesses.
- Recently added bollards between the off-ramp and Bunsen continue to limit merge lengths.

Question 3: Are there other locations that should be considered for improvement within the study limits?

Many open-ended public comments were provided that merit consideration; these were presented to the project team for discussion.

- Improve signage/pavement tattoos for the KY 155 intersection
- Reduce turbulent flow characteristics for southbound movements through interchange: e.g., adding navigational aids or creating positive separation between thru and left lanes
- Connect the channelized northbound right turn lane onto KY 155 with the downstream turn lane into the Kroger shopping center
- Consider additional access management measures: e.g., consolidating entrances, eliminating signals/intersections, or introducing indirect “Michigan lefts” to streamline traffic flows
- Improve efficient flow for the Exit 15A eastbound off-ramp
- Add high visibility pedestrian markings at the KY 155 intersection to improve safety
- Facilitate safe left turns to/from Hurstbourne Circle
- Improve intersections with KY 155 Taylorsville Road, Bunsen Parkway, and Bluegrass Parkway
- Consider landscaping, including more frequent mowing and planting shade trees for TARC stops
- Lengthen turn lanes
- Add northbound right turn lanes onto Bunsen and Bluegrass parkways
- Widen northbound left turn lanes to I-64.

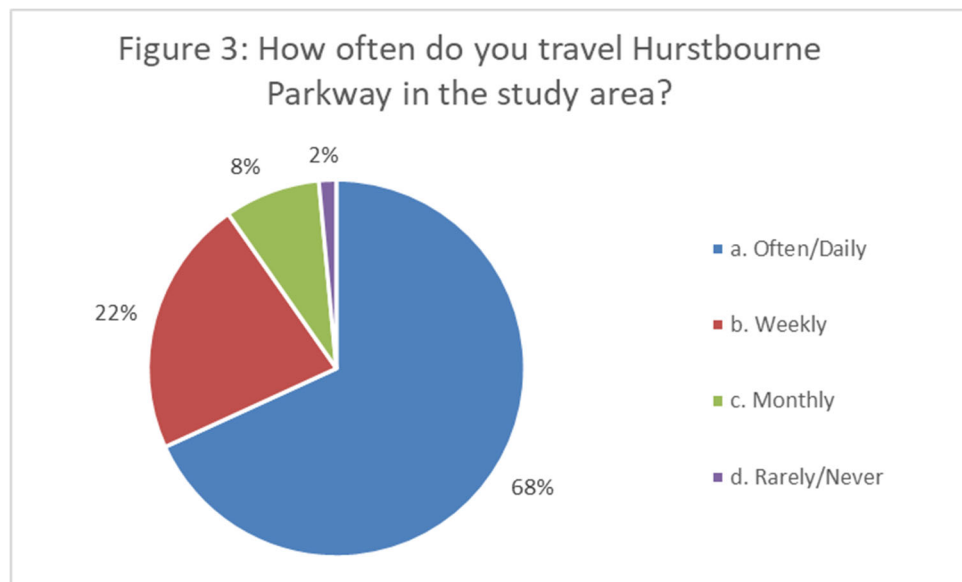
In addition, other comments were beyond the scope of the study, geographically or at a policy level. Some were infeasible from a fiscal/engineering perspective or unlikely to be implemented based on current traffic volumes and recent construction in the area:

- Major widening/reconstruction of entire corridor

- Bridge KY 1747 over I-64 for added throughput
- Continue shared use path through interchange
- Reconstruct KY 155 intersection and/or remove bollards, recently reconstructed under HSIP project 5-9008
- Add right-in/right-out access to Huntington Place development, located between the Exit 15A eastbound off-ramp and Bunsen Parkway
- Realign the sharp curve for Bluegrass Parkway
- Adjust signal phasing to provide protected left phase for minor approaches

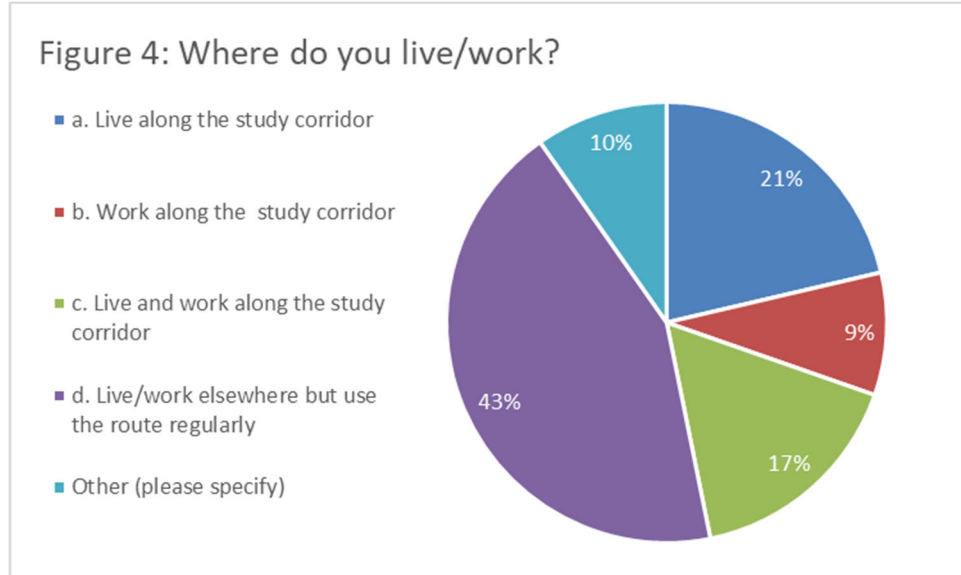
Question 4: How often do you travel Hurstbourne Parkway in the study area?

As shown in **Figure 3**, 68% of survey respondents travel the study corridor daily.



Question 5: Where do you live/work in relation to the study corridor?

As shown in **Figure 4**, the largest category of respondents (43%) neither live nor work along the study corridor but still travel the route regularly.



In addition to the compiled survey data, two individual comments were submitted to KYTC District 5 via email during the same period.

Comment 1

- The signal timing work that was done last year alleviated some of the congestion on Hurstbourne Parkway, though it is still bumper to bumper.
- Respondent opposes the idea of turning Hurstbourne Circle into a right-in/right-out configuration. They have no difficulty entering or exiting their street and feel very safe making that turn. They have not seen any crashes occur at the Hurstbourne Parkway/Hurstbourne Circle that would be caused by people trying to turn into the neighborhood.
- Flooding issues in the ditch that runs alongside Hurstbourne Parkway are noted, though it seems that the flooding in their yard only occurs when large debris blocks the outlets.
- The respondent is not opposed to construction of a sidewalk on the northwest side of Hurstbourne, but is concerned that, if any lane widening or sidewalk construction is performed, the ditch would be covered. They very much oppose the idea of removing the ditch completely.
- Respondent has called and complained numerous times about a sinkhole located on the northwest corner of Hurstbourne Parkway and Bunsen Parkway. It's currently about 3 feet wide and 1 foot deep, covered up with weeds.

Comment 2

“It has been brought to my attention that it is being considered to use the median on Hurstbourne Parkway to add an additional lane going south. This is a very bad idea for the residents of Hurstbourne Circle as we will no longer be able to turn left from our street onto Hurstbourne Parkway. It is already a daunting task at best. Some days close to impossible. Luckily with Covid 19 we have had a bit of a reprieve from the nonstop, ever increasing flow of traffic. There’s one positive of the pandemic. As things continue to improve and more cars are now on the road, we are seeing traffic resume as normal... The extra lane between Hurstbourne Lane and Taylorsville

Road is a disaster. No one knows when to merge into the turning lanes because they are so poorly marked... I can think of a million reasons to stop trying to put bandaids on an already stressed road. You can do better than this.”



Groundbreaking by Design.

MEETING MINUTES

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

Purpose: Project Team Meeting No. 3

Place: Virtual Meeting

Meeting Date: September 22, 2020 at 1:30 PM

Prepared By: Qk4

Participants:	Kameryn Underwood	KYTC D5 Design
	Tom Hall	KYTC D5 Planning
	Tracy Lovell	KYTC D5 TEBM
	Kevin Bailey	KYTC D5 Engineering Support
	Larry Chaney	KYTC D5 Planning
	Donna Hardin	KYTC D5 Environmental
	Steve De Witte	KYTC CO Planning
	Beth Niemann	KYTC CO Planning
	Steve Ross	KYTC CO Planning
	Tonya Higdon	KYTC CO Planning
	Sadie Middleton	KYTC CO Planning
	Matt Lawson	KYTC CO Planning
	Daniel Walker	KYTC CO Planning
	Andy Rush	KIPDA
	Rebecca Thompson	Qk4
	Jeremy Lukat	Qk4
	Theresa Owen	Qk4

Rebecca Thompson opened the meeting, welcoming attendees and providing a brief overview of the study's purpose: to examine practical spot improvements along the KY 1747 (Hurstbourne Parkway) corridor to improve traffic flow, safety, and pedestrian mobility. The primary purpose of the meeting was to review study findings to date, working towards recommendations in the draft report.

The study area stretches from the northern Stony Brook Drive intersection through the I-64 westbound ramps, about 1.5 miles in length. Nine improvement concepts were developed to date, shared with stakeholders and the public during July and August 2020.

Review of Public and Agency Comments

A virtual meeting with local officials and stakeholders was held July 23; there were eight attendees beyond the project team. Generally, participants liked the low-cost measures suggested, especially the pedestrian connections. The main concern was for left turns to/from the Hurstbourne Circle approaches.

The following day, a public survey launched to collect community input over a 30+ day period. In total, 321 completed surveys were returned. Public rankings showed Spot B (signal optimization) was by far the top priority of the four short-term spot improvements. Mid-term,¹ Spots E (displaced left) and F (extra southbound lane) were the highest priorities while Spots G and H (pedestrian facilities) received the lowest rankings. Responses suggest most people completing the surveys were commuters, skewing the results away from under-represented community groups who typically rely on pedestrian connections.

The team discussed several written-in suggestions for other spot improvement locations to consider:

- Adjust Spot A to add pavement tattoos for southbound KY 1747 approaching KY 155. Unfamiliar motorists get confused where thru lanes change to turn only lanes.
- Hurstbourne Circle received many comments though there is not a demonstrated crash problem at either approach.
 - Most crashes in this stretch are rear end collisions, likely associated with drivers rushing to get through the Bunsen Parkway intersection to progress to the next set of coordinated signals.
 - Adding an extra southbound thru lane will introduce more conflict points and longer lengths for left-turning traffic to cross.
 - Ongoing signal coordination efforts through this stretch should improve flow, providing more gaps for cross-traffic.
 - If additional development occurs on the west side of Hurstbourne Parkway (near Bunsen Parkway), the northbound left turn lane onto Bunsen Parkway may be changed to a dual left. The existing left turn bay is long today because it serves both Hurstbourne Circle intersections in addition to Bunsen.
 - The southern Hurstbourne Circle intersection should add signage and/or repaint the “do not block” box as part of Spot A.
 - The northern Hurstbourne Circle intersection should be converted to a right-in/right-out as part of Spot F (additional southbound thru lane) and/or if the northbound left turn lane onto Bunsen Parkway is changed to a dual left in the future.
- Adding a third lane connection along KY 155 was suggested, between the northbound channelized right turn from KY 1747, connecting to the Kroger driveway 420 feet east. KY 155 continues with three lanes east of this entrance. The short right turn bay into Kroger is a recurring community concern: people use it to accelerate into the third lane heading east,

¹ Post-meeting note: Spots E-I were presented as long-term spots during public survey effort. Subsequently, the timeframe of concepts considered expanded to include a longer term vision (discussed below) so Spots E-I were redefined as “mid-term” spots to differentiate.

making cross-traffic unsure whether it's safe to pull out. The intersection is beyond the limits of the 5-555 study but is regularly considered by KYTC District 5 as an area of concern.

- Bollards restricting the merge length south of the eastbound off-ramp were frequently cited but addressed by Spots A and F.
- A new Spot J will be added, extending the northbound right turn lane to KY 155 back to the right-in/right-out driveway by Starbucks/PNC. This area frequently sees drivers maneuvering onto the curb to access the channelized right turn onto KY 155. Extending the turn lane all the way back to the entrance will give vehicles better access to the right turn.

Five resource agency comments were received to date, each citing no comments, no impacts, or standard form letter replies.

Build Traffic

Three build traffic scenarios were modeled in Vissim, generally representing the north (Spot E), central (Spot F), or south (Spots C and I) improvements coupled with corresponding signal timing adjustments.

Spot E showed the greatest traffic benefits in the PM peak hour, improving Level of Service (LOS) at the two ramp intersections from F in the 2040 No-Build scenario to LOS D. Queue lengths associated with the displaced lefts were also modeled: the southbound moves show a max queue of about 800 feet during the PM peak, compared to 700 feet of available storage. The average queue is about 450 feet. **Table 1** summarizes the delay by movement at the intersection with the eastbound ramps during the PM peak.

Table 1. PM LOS and Delay by Movement: KY 1747 with eastbound ramps

Movement	No-Build LOS	No-Build Delay	Build LOS	Build Delay
NB Left*	N/A	N/A	D	48 sec
NB Thru	D	35 sec	C	24 sec
NB Right	B	16 sec	B	12 sec
SB Left	C	22 sec	C	23 sec
SB Thru	F	108 sec	F	86 sec
EB Right (Ramp)	F	1,238 sec	C	34 sec
Overall Intersection	F	83 sec	D	49 sec

* NB Left does not exist in No-Build; cross-over left created in Build

Spot F shows a 17-second reduction in delay at the Bunsen Parkway intersection, though LOS remains F in both No-Build and Build.

Overall corridor travel times by scenario and direction are shown in **Table 2**.

Table 2. Corridor-wide Travel Times

Direction	No-Build	Build 1	Build 2	Build 3
AM Peak				
Northbound	569 sec	523 sec 46 sec savings	564 sec 5 sec savings	560 sec 9 sec savings
Southbound	392 sec	361 sec 31 sec savings	383 sec 9 sec savings	387 sec 5 sec savings
PM Peak				
Northbound	684 sec	659 sec 25 sec savings	682 sec 2 sec savings	682 sec 2 sec savings
Southbound	860 sec	820 sec 40 sec savings	815 sec 45 sec savings	855 sec 5 sec savings

Benefits and Costs

Cost estimates were prepared for each of the nine initial spot improvements. These will be refined per the meeting discussions, adding an additional Spot J. Benefit-cost ratios were developed, primarily based on crash modification factors (CMF) from the CMF Clearinghouse.² All calculations assume a 20-year horizon (2020-2040) with a 3% discount rate. Benefits are generally high, driven by the high crash concentrations along the corridor. Travel time benefits associated with Spots E and F are conservatively assumed to be restricted to just the AM and PM peak hours. Spots G (sidewalk) and H (multi-use path) were the only spots resulting in a ratio below 1.

The team discussed the benefit of prioritizing projects, at least for the mid-term spots. As independent alternate transportation modes, bicycle/pedestrian projects have not traditionally scored well in SHIF'T or received funding in the Enacted Highway Plan. The existing conditions inventory and field observations affirm that many pedestrians traverse the gap between KY 155 and Hurstbourne Circle. Combining Spots F and G may preserve a positive benefit-cost while making the missing sidewalk link more likely to score well.

Qk4 followed up with an internal survey for attendees to prioritize the mid-term spot improvements, summarized in **Table 3**.

² Post-meeting note: CMFs for short-term spots were less applicable than long-term spots, resulting in inflated calculations; these were discussed at the project team meeting but are not intended for publication in the report. For example, an arterial corridor cannot experience a 21% reduction in crashes each time signals are coordinated.

The following CMFs were applied to long-term spots:

- E, limited empirical data available on displaced left crash reductions but 21% reduction in fatal/injury crashes applied, based on a [case study](#) from Florida.
- F, no safety benefits assumed; all benefits related to improved travel times.
- G, 65% reduction in pedestrian crashes applied, based on 1996 KY [research report](#), page 17.
- H, 25% reduction in bicycle/pedestrian crashes, based on [CMF 9250](#) for adding shared use path along divided, urban principal arterials.
- I, 34% reduction from [CMF 6095](#) although KY 1747 daily traffic volumes exceed ADT range used to develop CMF.

Table 3. Mid-Term Spot Prioritization

Spot	High	Medium	Low	Overall
E. Displaced Lefts	6	4	1	High
F/G. SB Lane, Sidewalk	9	0	1	High
H. Shared-Use Path	0	3	8	Low
I. Shane Dr	3	7	1	Medium
J. NB Right to KY 155	2	7	2	Medium

Long-Term Vision

In late July, Qk4 was also tasked with documenting why a truly long-term vision for the corridor was not examined alongside the practical solutions presented to date. A range of technical analyses—both as part of this 5-555 study and previous planning efforts—illustrates the complexity of defining a true long-term “fix” for the corridor.

- **Widening KY 1747** between KY 155 and the I-64 interchange was assessed in this 5-555 study. Even with additional lanes and signal timing improvements, microsimulation suggests that many intersection turning movements remain over capacity, particularly at the Bunsen Parkway and KY 155 intersections. Both intersections are among the highest volume surface-street intersections in Kentucky and represent substantial choke points for the corridor. Their improvement is key to reducing congestion and improving travel times along the corridor. Both are traditional signal-controlled intersections that have been expanded numerous times over the years to maximize capacity.

Widening KY 1747 was also modeled in the 2019 Middletown-to-Simpsonville Needs Analysis. It documented that widening spurs **induced demand**, increasing the daily traffic using the corridor without any corresponding reduction in the volume-to-capacity ratio despite additional lanes.

- The **I-64/KY 1747 interchange** is a substantial choke point for the KY 1747 corridor. Reducing delays through the interchange is a key component in reducing congestion and improving travel times along the corridor. However, major improvements to this interchange would be costly and result in sizable impacts to adjacent properties. Reconstruction was studied as part of a 2008 preliminary design project—including traffic simulations for a variety of build configurations and growth assumptions. Though costs in 2006 dollars ranged from \$25-51 million, the Bunsen Parkway intersection remained at LOS E/F in each configuration studied.
- **Capacity at the Bunsen Parkway Intersection** was tested using a planning-level intersection capacity tool developed by FHWA as a part of the current study. Based solely on pre-COVID 2020 traffic volumes, an alternative intersection configuration could potentially improve throughput (see **Table 4**) but the feasibility is complicated by the proximity to the I-64 interchange. Bunsen is a critical component to improving mobility in the corridor because even with additional lanes on KY 1747 and an improved I-64 interchange, Bunsen will continue to be a choke point. Any large-scale improvements at the Bunsen intersection would require substantial right-of-way purchases, commercial relocations and/or frontage roads, and multiple utility line relocations. Another consideration regarding any large-scale improvements

in this area would include avoiding impacts to an existing small park and historic property just to the west which are protected by Section 4(f) regulations.

Table 4. Preliminary Results from FHWA Intersection Capacity Tool, with 2020 pre-COVID Volumes at KY 1747/Bunsen Parkway

Layout	Overall v/c	Notes
Conventional	0.8-0.9	Current configuration
Quadrant (Southeast)	0.8	Other quadrants infeasible due to interchange and Section 4(f) resources
Displaced Lefts on Bunsen	0.8	
Displaced Lefts (all legs)	0.7	Challenge with proximity to interchange
Median U-Turns on Bunsen	0.7	

- **Capacity at the KY 155 Intersection** is a similar concern. Like at Bunsen, any large-scale improvements would require costly and substantial right-of-way purchases, commercial relocations and/or frontage roads, and multiple utility line relocations. South Fork Beargrass Creek and its associated drainage is another challenge.
- Additional opportunities for **regional cross-I-64 mobility** have been considered over the years. Preliminary results from other studies suggest a parallel connection and/or an additional I-64 interchange would be needed to divert meaningful traffic away from KY 1747. KIPDA's long-range plan identifies several such concepts: Christian Way/Bunsen Boulevard connector (KIPDA #206/265), Blowing Tree/Bunsen Parkway connector (#258), KY 1918 Watterson Trail widening (#233), Plantside Drive extension (#2608), Urton Lane extension (#474), Rehl Road improvements (#1514), etc. Each concept has unique costs and associated impacts.

Given Hurstbourne Parkway's large impact on the state-maintained highway system, a regional analysis is necessary to accurately define a comprehensive, long-term approach to these interrelated challenges—beyond the purview of the 5-555 study. The smaller-scale improvements which have been developed as part of this study have the greatest potential to meaningfully improve short-term safety and congestion of Hurstbourne Parkway given the constraints captured above. Additional high-level feasibility discussions regarding the I-64 interchange and intersections with KY 155 and Bunsen Parkway will be incorporated into the 5-555 report.

A more comprehensive regional planning analysis is needed to determine if investing in other cross-I-64 corridors might provide more benefit than directly investing in the KY 1747 corridor. This analysis should provide up-to-date traffic modeling and forecasting, prioritize needs in the area, and evaluate—using benefit/cost analyses, modeling, and other data—whether improving other parallel routes may be more appropriate than making direct, large-scale improvements to KY 1747. In addition to KIPDA concepts listed above, this analysis should evaluate grade-separated interchanges and innovative intersection improvements at the KY 1747 intersections with Bunsen Parkway and KY 155. A study of this magnitude is anticipated to cost \$1.25 million.

End of Minutes



Groundbreaking by Design.

MEETING MINUTES

Project: KY 1747 Hurstbourne Parkway Improvements Study
Jefferson County
Item No. 5-555

Purpose: Project Team Meeting No. 4

Place: Virtual Meeting

Meeting Date: November 17, 2020 at 8:30 AM

Prepared By: Qk4

Participants:	Matt Bullock	KYTC D5 CDE
	Tom Hall	KYTC D5 Planning
	Tracy Lovell	KYTC D5 TEBM
	Kameryn Underwood	KYTC D5 Design
	Larry Chaney	KYTC D5 Planning
	Mikael Pelfrey	KYTC CO Planning
	Steve De Witte	KYTC CO Planning
	Beth Niemann	KYTC CO Planning
	Steve Ross	KYTC CO Planning
	Albert Zimmerman	Qk4
	Rebecca Thompson	Qk4
	Jeremy Lukat	Qk4
	Theresa Owen	Qk4

Beth Niemann opened the meeting, welcoming attendees and providing a brief overview of the study. The primary purpose of the meeting was to refine the long-term vision for the corridor, working towards recommendations in the draft report.

Rebecca Thompson presented Qk4's long-term analyses, built around FHWA's intersection capacity tool and a literature review of previous study findings.

One key consideration is the intended character of the roadway: is it a principal arterial more focused on mobility/throughput or more of a parkway-style urban link with lots of access to adjacent developments? With limited north-south links in the vicinity, it serves multiple roles.

Widening KY 1747 between KY 155 and the I-64 interchange was discussed at the September project team meeting. Even with additional lanes and signal timing improvements, many intersection turning movements remain over capacity, particularly at the Bunsen Parkway and KY 155 intersections. The 2019 Middletown-to-Simpsonville Needs Analysis documented that widening spurs induced demand,

increasing the daily traffic using the corridor without any corresponding reduction in the volume-to-capacity ratio (v/c) despite additional lanes.

The I-64/KY 1747 interchange is one bottleneck for the KY 1747 corridor. Reconstruction was studied as part of a 2008 preliminary design project (Item No. 5-52), with four scenarios having construction costs of \$25-51 million in 2006 dollars. Inflated to 2019, this equates to \$40-80 million. Even with this investment, 2030 build traffic analyses showed the Bunsen Parkway intersection remained at LOS E/F in each configuration studied.

Qk4 applied FHWA's planning-level intersection capacity tool for a high-level look at viable long-term solutions at the Bunsen Parkway and KY 155 intersections, two more bottlenecks today.

- At Bunsen Parkway, the proximity to the eastbound off-ramp restricts the potential for improvements on the southbound KY 1747 approach. Evaluations of a quadrant roadway, displaced left turn lanes along the east/west approaches, or median U-turns along the east/west approaches resulted in a v/c less than 1.0. However, each results in sizeable right-of-way and access impacts for adjacent properties. Hunnington Place shopping center was of particular concern due to the location of its only access point.
- At KY 155, evaluations of a quadrant roadway, displaced left intersection applied to two or four legs, and several grade-separated interchange configurations resulted in a v/c less than 1.0. Again, each results in substantial right-of-way and access impacts for adjacent properties.

Group discussion followed:

- Quadrant roadways are more common in less densely developed corridors where fewer right-of-way impacts are likely to result. D-6 recently opened one along US 42 in Florence.
- Does a single leg displaced left configuration provide benefits? At a standard four-leg intersection, creating a displaced left on only one approach would not provide full signal timing/phasing benefits. It made sense at the I-64 interchange (Spot E) since the westbound ramps only carry the one direction of traffic.
- Access to the Hunnington Place shopping center today is funneled through a single intersection with Bunsen Parkway. Adding/modifying access to tie to KY 1747 would be challenging with the heavy merge move coming off the eastbound I-64 off-ramp immediately north of the intersection. There is a grocery store in this development as well.
- Could a roundabout on the westbound Bunsen Parkway approach work with the median U-turn configuration? Would queues backup into the roundabout? This 5-555 study did not collect traffic data beyond the ten KY 1747 intersections but it is worth consideration if a long-term improvement at Bunsen moves forward. Large car-carriers access the car lot in the east quadrant, necessitating a mountable center island. High volumes of cut-through traffic use the former Walmart parking lot, now home to a Malibu Jacks. Cars stack up in the main intersection, taking 3-4 cycles to clear Bunsen sometimes. If traffic on Hurstbourne Parkway were moving, congestion along Bunsen would be less problematic.
- Are there options to tighten up layouts at a theoretical KY 155 interchange to reduce impacts? Most of the single point urban interchanges (SPUIs) Qk4 has designed to date are on interstate facilities in rural areas. Actual spacing requirements are tied to traffic, terrain, etc. We looked at a handful of constructed SPUIs with similar constraints in other locations; the nearest spacing to an adjacent signal was 700 feet (Silver Springs, MD example) or about 850 feet in

Kentucky (KY 237/KY 18 in Florence). The New Circle Road/US 60 SPUI in Lexington is about 820 feet to the nearest partial intersection (Helm Street) or 1,150 feet to the nearest signalized intersection (Eastland Parkway).

The team briefly discussed some potential long-term example corridors that would be comparable to KY 1747. US 441 through Pigeon Forge, TN has a six-lane divided section, relying on conventional intersections, channelized turn lanes, and median U-turns to move traffic past an infinite series of commercial driveways on the sole north-south connection in the vicinity. State Route 154 through Salt Lake City, UT has stringent access control along a six-lane divided section and relies on a series of at-grade displaced lefts and SPUI's to funnel trips to cross streets then into the surrounding grid network for local access. US 19 through Clearwater, FL is similar but on a larger scale, using an elevated expressway with ramps between SPUIs to effectively create a one-way frontage road on either side. Again, it comes back to the intended function of the Hurstbourne Parkway: a parkway feel with local access options or a higher mobility arterial, trending towards a lower speed freeway experience.

Additional opportunities for regional cross-I-64 mobility have been considered over the years. These have been shown to have varying effects on the KY 1747 traffic.

- Preliminary results from other studies suggest a parallel connection and/or an additional I-64 interchange would be needed to divert meaningful traffic away from KY 1747.
- The 2019 Middletown-Simpsonville study showed regional vehicle-miles-traveled (VMT) and vehicle-hours-traveled (VHT) savings for improved connections along Bunsen, Bowling, and Blowing Tree.
- Also from the 2019 analyses, widening KY 1918 (Watterson Trail) diverts 700-800 vehicles per day from KY 1747; volumes drop off for other cross-I-64 connections studied moving further east.
- Plantside Drive extension provides a secondary access point to the industrial park and could have a large impact on KY 1747 traffic; the way the 2019 study was set up, each build model was an individual analysis, not counting for cumulative impacts like the I-Move widening effort.

D-5 planning staff is regularly asked to identify and prioritize regional projects for investment: i.e., is it a better use of public funds to improve long-term mobility on Hurstbourne Parkway or invest in widening another route to add capacity elsewhere? Alongside technical analyses, planning-level costs and community input are needed to inform these decisions.

Recognizing that a future regional planning analysis is recommended, to the extent possible this 5-555 study should document the long-term vision as an essential component of the planning process alongside short- and medium-term improvements developed earlier. What long-term improvements are recommended for the corridor? What priority order makes sense to construct them? How do needs along KY 1747 compare to other needed investments in the region? A white paper could provide additional information, even if all these questions cannot be answered yet. These answers were the intention when D-5 requested funding for the study, however a study approach beyond just a 1.5-mile section of the KY 1747 corridor is necessary to adequately answer these questions.

Qk4 anticipates delivering a draft report before Christmas, with KYTC comments due back by the end of January.

End of Minutes