



# I-75 Programming Study

Item No. 11-1.00  
Whitley County, Kentucky

**FEBRUARY 2025**

**TEAM  
KENTUCKY®**  
TRANSPORTATION  
CABINET

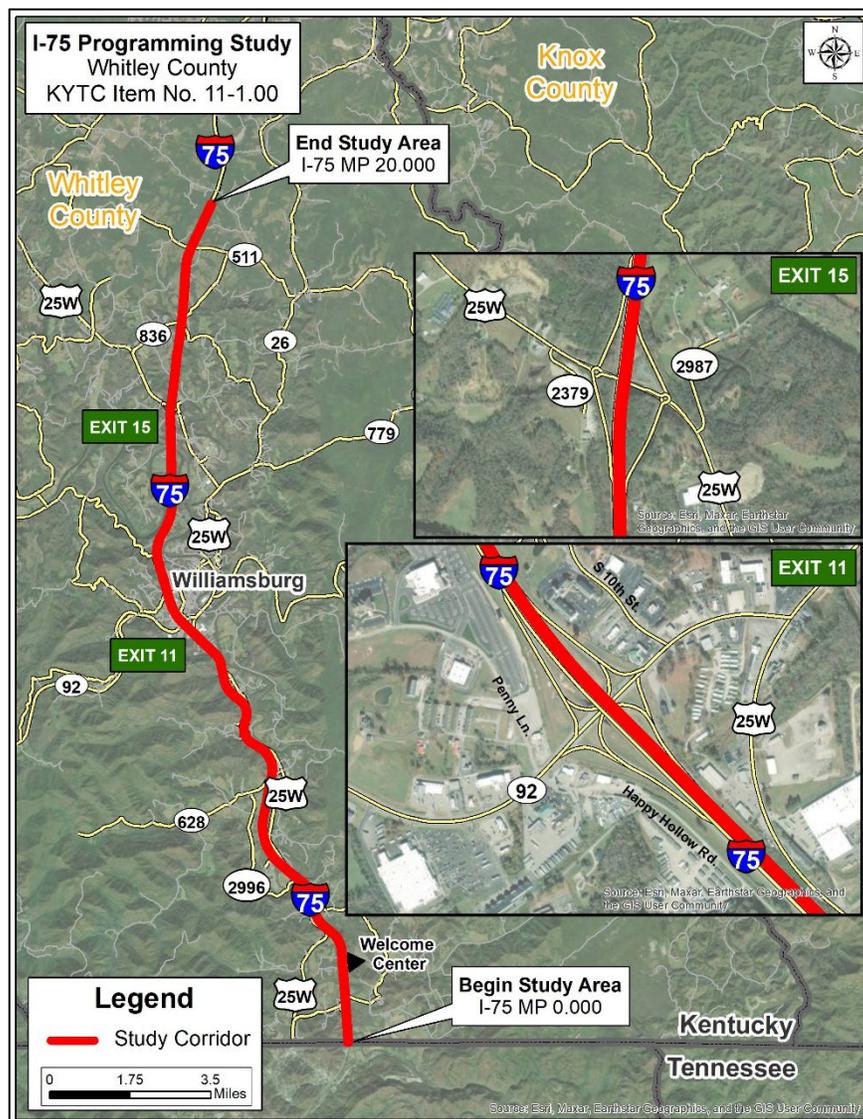


## Executive Summary

The Kentucky Transportation Cabinet (KYTC) initiated the *I-75 Programming Study*, KYTC Item No. 11-1.00, to determine the need for and impacts of widening I-75 in a portion of Whitley County to six lanes, including impacts to mainline I-75 and adjoining interchange operations. The study corridor is shown in **Figure ES-1**.

### Existing Conditions

I-75 is a major north-south interstate of national importance, spanning over 1,700 miles from Florida to Michigan. Within Kentucky, I-75 provides a connection between the Appalachian Mountains and areas to the north, including Lexington, where many travel for healthcare and employment. The I-75 study area includes I-75 in Whitley County, beginning at the Tennessee state line, milepoint (MP) 0.000, and continuing north to MP 20.000. The study area includes two interchanges: Exit 11 at KY 92 and Exit 15 at US 25W. There is also a northbound Welcome Center near MP 1.5. Whitley County had a population of 36,712<sup>1</sup> in the 2020 census with its two most populous cities, Williamsburg and Corbin, located along I-75. Williamsburg is home to the largest private university in Kentucky, the University of the Cumberlands.



**Figure ES-1: I-75 Study Corridor**

Most of the region surrounding the I-75 study corridor in Whitley County is rural, with areas of commercialized development in Williamsburg near Exits 11 and 15. Based on data from the Kentucky State Data Center (KSDC), Whitley County's population has slightly grown over the last 20 years, at just over 0.1 percent per year, and continued growth is expected. The US 25W

<sup>1</sup> <https://www.census.gov/quickfacts/fact/dashboard/whitleycountykentucky/PST045223>

interchange (Exit 15) was recently updated with roundabouts at the ramp terminal intersections and was therefore not considered for improvements.

The study portion of I-75 is classified as a rural interstate, with two 12-foot lanes in each direction, a 60-foot depressed median, and 10-foot outside shoulders. North of the study area, the four-lane typical section on I-75 continues to Exit 29 in Laurel County, where I-75 widens to six lanes. South of the Tennessee border, I-75 has a four-lane typical section for 115 miles until south of Exit 141, where northbound I-75 widens to three lanes. Daily traffic on I-75 is heaviest just south of Corbin, at 38,200 vehicles per day (VPD), and drops to 33,000 VPD north of the Kentucky/Tennessee border. This decrease in traffic continues to the south into Tennessee, where I-75 carries 23,900 VPD through Jellico Mountain and the Cumberland Plateau before increasing approaching Knoxville. Truck percentages on I-75 range from 27 percent north of Exit 15 to over 31 percent between the Tennessee state line and Exit 11. Based on results from an existing traffic analysis, the I-75 study corridor currently operates at LOS C or better and has daily volume-to-capacity ratios under 0.5.

Crash data were collected along I-75 and adjacent roadways for the five-year period between 2018 and 2022. Over the course of the five years, a total of 850 crashes were reported on I-75 within the study corridor. Of the 850 crashes, seven resulted in a fatality (0.8 percent), 141 resulted in one or more injuries (16.6 percent), and 702 resulted in property damage only (82.6 percent). The most common crash types were single vehicle (52 percent) and sideswipe (24 percent) collisions, most of which occurred on the more congested routes near Williamsburg and Exit 11.

The Kentucky Transportation Center's (KTC's) Crash Data Analysis Tool (CDAT) was used to perform an Excess Expected Crashes (EEC) analysis. EEC is a measure of the crash frequency at a given site compared to what is expected based on current conditions (geometrics, traffic, etc.). A positive EEC indicates more crashes are occurring than should be expected. Results from this analysis showed the entire study corridor has positive EECs, with the highest EEC on the segment of I-75 between the state line and Exit 11 (21.12 crashes per year more than expected).

### **Study Objectives**

The study objectives provide the foundation for decision making and the basis for evaluation and comparison of improvement concepts. The objectives of the I-75 Programming Study are as follows:

- Assess the existing pavement and bridge conditions.
- Evaluate crash history and geometric deficiencies.
- Develop traffic forecasts.
- Engage the Tennessee Department of Transportation (TDOT) to better understand the agency's long-range plans for improvements to I-75 south of the Kentucky state line.
- Evaluate improvement concepts for I-75, including both mainline and interchange improvements.
- Develop and evaluate improvement alternatives at KY 92 (Exit 11).

- Estimate impacts and costs for the proposed improvement options.
- Identify and prioritize constructible segments over the 20-mile I-75 corridor.
- Engage local officials and major stakeholders to ensure the proposed improvements align with community needs.

### Traffic Forecasts

Historical traffic data, population projections, and study area growth rates from the Kentucky Statewide Traffic Model (KYSTM) were reviewed to develop growth rates for the study corridor. If no capacity upgrades are made to I-75, daily traffic on I-75 is expected to grow one percent per year, resulting in 2045 daily forecasts up to 48,000 VPD, as shown in **Table ES-1**. Annual growth was also analyzed for the Build scenario if I-75 were to be widened to six lanes from MP 0.0 to MP 20.0. In that scenario, daily traffic on I-75 is expected to grow 1.5 percent per year, resulting in daily traffic up to 53,800 VPD.

**Table ES-1: 2045 Daily Traffic Forecasts**

Route	Section	No-Build: Four-Lane I-75 (1.0% per year)	Build: Six-Lane I-75 (1.5% per year)
I-75	State Line to Exit 11	40,800 VPD	46,400 VPD
	Exit 11 to Exit 15	47,200 VPD	52,900 VPD
	North of Exit 15	48,000 VPD	53,800 VPD

Growth rates were also developed at the I-75 interchange with KY 92 (Exit 11). Based on population projections, historical traffic trends, and results from the KYSTM, daily traffic at the interchange is expected to grow one percent per year. Daily traffic on KY 92 is expected to grow to 13,400 VPD east of I-75 by 2045 and 6,200 VPD to the west. The maximum volume expected by 2045 on the I-75 ramps is 5,800 VPD, well below the capacity for a single lane ramp. Based on these volumes, the need for additional capacity is not anticipated at the interchange.

### Improvement Concepts

Improvement concepts were developed based on a combination of a review of existing conditions, input from the project team, local officials / stakeholder input, and field reconnaissance. Concepts included I-75 widening and improvements at Exit 11, the most congested I-75 interchange in Whitley County.

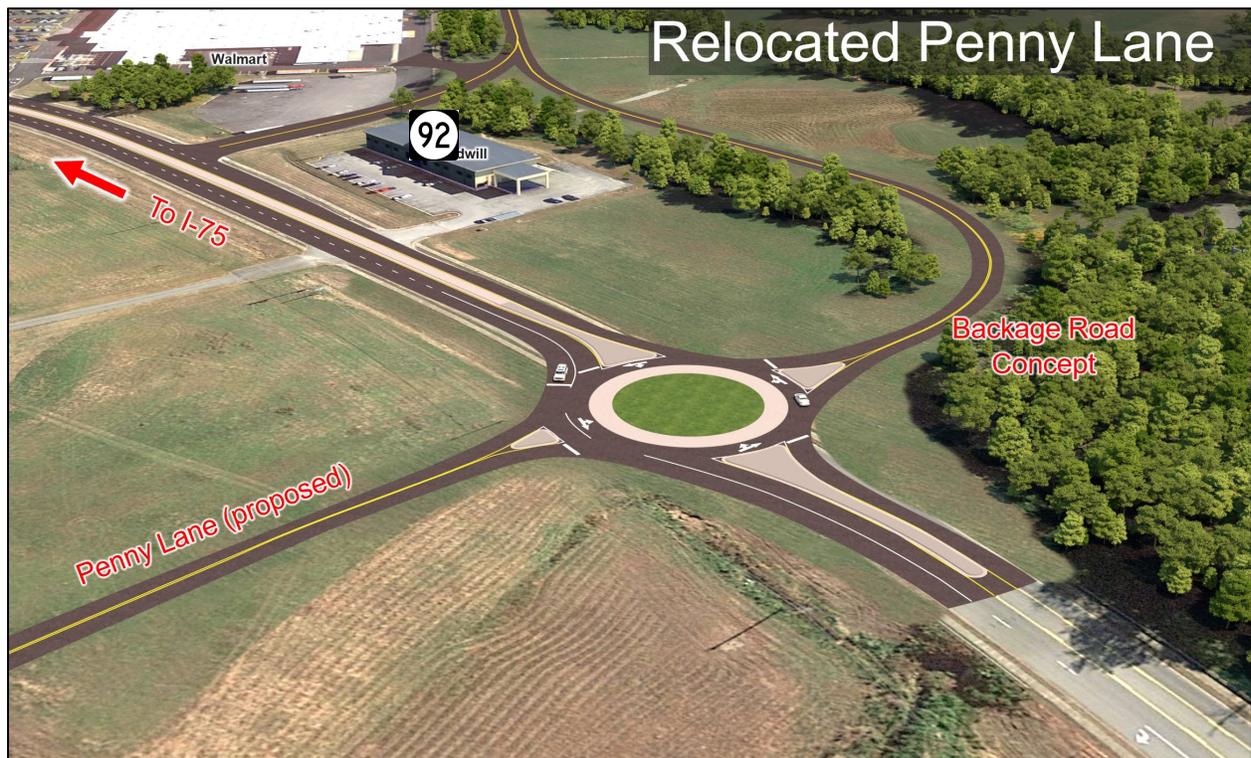
**I-75 Widening Concept A:** Widen I-75 to six lanes from MP 0.0 (Tennessee state line) to MP 20.0. This concept includes widening I-75 from four to six lanes for the entire study corridor.

**I-75 Widening Concept B:** Widen I-75 to six lanes from MP 9.6 (south of Exit 11) to MP 20.0. This concept includes widening I-75 for only the priority section. The Tennessee Department of Transportation (TDOT) currently has no plans to widen I-75 south of the Kentucky border. Without plans for widening in Tennessee, the priority widening section does not extend south of MP 9.6.

- **Concept B1:** Widen I-75 to six lanes from MP 15.5 (Exit 15) to MP 20.0.
- **Concept B2:** Widen I-75 to six lanes from MP 9.6 (south of Exit 11) to MP 15.5 (Exit 15).

**KY 92 Concept 1:** Improve KY 92 west of the I-75 Exit 11 interchange. This section of KY 92 provides access to multiple businesses, including hotels, restaurants, gas stations, Walmart, and the Mint Gambling Hall, which can be accessed via Penny Lane. Because of the proximity to the I-75 southbound off ramp (less than 500 feet), the Penny Lane intersection is striped as right-in / right-out. Many drivers, however, do not adhere to the turning restrictions at Penny Lane. This section of KY 92 was also noted by the Williamsburg police as being one of the highest crash locations, especially for vehicles turning left across five lanes of traffic. KYTC has plans under Item Number 11-80264.00 to construct an extension of Penny Lane to the west, providing a new, full access intersection about ½ mile west of I-75.

An option to improve safety is to construct a raised median on KY 92, providing left turns in at major intersections only, as shown in **Figure ES-2**. A backage road could be built to the south along Hurricane Hollow Road to provide a connection for vehicles traveling to and from I-75, with a roundabout at KY 92 and the proposed Penny Lane Extension (KYTC Item No. 11-80264).



**Figure ES-2: KY 92 Concept 1 – Roundabout at Relocated Penny Lane with Raised Median on KY 92 to the East (Looking South)**

**KY 92 East of I-75 – Concepts 2, 3 & 4:** Improve KY 92 east of I-75. This section of KY 92 has multiple driveways and intersections within 400 feet of the southbound I-75 ramps, including a signalized intersection at South 10<sup>th</sup> Street. Further east, KY 92 intersects US 25W at a signalized intersection with multiple business access points at the intersection. This lack of access management creates conflict points for turning vehicles at the intersections.

**KY 92 Concept 2:** An option to improve safety and traffic flow includes constructing a Green-T intersection at the KY 92 intersection with South 10<sup>th</sup> Street, as shown in **Figure ES-3**, and a roundabout at the US 25W intersection. The Green T Intersection concept would allow free-flow operations on KY 92 in the eastbound direction by using acceleration / merge lanes for left-turn movements from the South 10<sup>th</sup> Street. This type of intersection is expected to improve safety and reduce congestion. The roundabout at US 25W would consolidate access to only the major roadway movements and a raised median would be constructed between South 10<sup>th</sup> Street and US 25W, forcing vehicles to turn right out of driveways.



**Figure ES-3: KY 92 Concept 2 – Green T Intersection at S 10<sup>th</sup> Street (Looking South)**

**KY 92 Concept 3:** A second option east of the I-75 Exit 11 interchange is to construct roundabouts at the KY 92 intersections with 10<sup>th</sup> Street and US 25W with a raised median along KY 92. **Figure ES-4** presents a rendering of the roundabout at the US 25W intersection.



**Figure ES-4: KY 92 Concept 3 – Roundabout at KY 92 / US 25W Intersection (Looking North)**

**KY 92 Concept 4:** Based on discussions with the local officials and a review of available data, there is significant pedestrian activity on KY 92 across the I-75 interchange and a need for dedicated pedestrian facilities. An option to improve pedestrian connectivity between Williamsburg / the University of the Cumberlands east of I-75 and the commercial areas along KY 92 west of I-75 is to construct sidewalks on both sides of KY 92 across the I-75 interchange.

### Local Official / Stakeholder Outreach

Following the development of the initial improvement concepts, the project team met with local officials and stakeholders to solicit feedback on the concepts. At the end of the meeting, attendees were asked to fill out a survey. Eight local officials / stakeholders filled out the survey, all eight of which live in the study area and drive through it weekly.

All respondents prioritized the northernmost section of I-75 as the top priority for widening. Additionally, all respondents indicated that improvements are needed along KY 92 at Exit 11. **The most popular improvement option** was to construct a southern backage road with a roundabout at KY 92 and implement access management west of existing Penny Lane (**KY 92 Concept 1**). East of the interchange, the most popular option was to construct a Green T intersection at S 10<sup>th</sup> Street and a roundabout at US 25W (**KY 92 Concept 2**). The local officials also indicated that providing bicycle and pedestrian accommodations on KY 92 across I-75 is a priority.

When asked if I-75 needs to be widened to six-lanes, seven of the eight local officials answered that widening is needed now, and one answered that widening is needed in 10-15 years.

### Conclusions

Based on the findings of the study, it is recommended that I-75 Widening Concept B1 be advanced to Phase 1 Design, followed by Concept B2. At the KY 92 interchange, it is recommended that all four concepts, KY 92 Concepts 1, 2, and 3 be advanced for further consideration in Phase 1 Design. As a short-term project, a sidewalk is recommended across the I-75 Exit 11 interchange with KY 91 (KY 92 Concept 4).

Updated 2024 opinions of probable cost are shown in **Table ES-2**.

### Next Steps

The next step following this study for any potential improvements would be Phase 1 Design (Preliminary Engineering and Environmental Analysis). Improvement Concept 2b, widening I-75 from MP 14.4 to MP 19.2 is identified as KYTC Item No. 11-80354 in Kentucky's 2024-2030 *Enacted Highway Plan* with \$2.5 million in Design (2027), \$500,000 for Right-of-Way (2028), \$500,000 for Utilities (2028), and \$105.5 million for Construction (2029).

Improvement Concept 2a, widening I-75 from MP 10.1 to MP 14.4 is identified as KYTC Item No. 11-80355 in Kentucky's 2024-2030 *Enacted Highway Plan* with \$2.5 million in Design (2028), \$500,000 for Right-of-Way (2029), \$500,000 for Utilities (2029), and \$92.5 million for Construction (2030). It should be noted that the current funding may not be sufficient for the milepoints identified by this study.

**Table ES-2: 2024 Cost Estimates**

Concept	Corridor	Description	2024 Cost Estimates		
			Design	Construction	Total
A	I-75	Widen I-75 to six lanes from MP 0.0 (TN State Line) to MP 20.0	\$46,720,000	\$467,200,000	\$513,920,000
B		Widen I-75 to six lanes from MP 9.6 (South of Exit 11) to MP 20.0	\$22,260,000	\$222,600,000	\$244,860,000
B1		Widen I-75 to six lanes from MP 15.5 (Exit 15) to MP 20.0	\$8,950,000	\$89,500,000	\$98,450,000
B2		Widen I-75 to six lanes from MP 9.6 (South of Exit 11) to MP 15.5 (Exit 15)	\$13,310,000	\$133,100,000	\$146,410,000
1	KY 92	Construct southern backage road with roundabout at KY 92 and implement access management west of Penny Lane	\$637,000	\$6,370,000	\$7,007,000
2		Construct a Green T intersection at S 10 <sup>th</sup> Street and Roundabout at US 25W	\$435,000	\$2,900,000	\$3,335,000
3		Construct a Roundabout at S 10 <sup>th</sup> Street and Roundabout at US 25W	\$540,000	\$3,600,000	\$4,140,000
4		Construct sidewalks on both sides of KY 92 across I-75	\$32,000	\$320,000	\$352,000

Further funding will be necessary to advance KY 92 improvements to the design phase as additional phases of this project are not funded in *Kentucky's FY 2024 – FY 2030 Highway Plan*.

In accordance with 23 USC 106, KYTC Highway Design Memo 06-24 notes that any potential project with an estimated cost over \$100 million requires development of a written financial plan to be submitted to and approved by the FHWA.<sup>2</sup> Future project teams should follow the procedures outlined in KYTC *Design Memorandum No. 6-24* which detail compliance with these requirements, including enhanced coordination, a Financial Plan, and adherence to the project development checklist.

<sup>2</sup> <http://transportation.ky.gov/Highway-Design/Memos/06-24.pdf>