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KENTUCKY TRANSPORTATION CABINET
US 62 CORRIDOR STUDY

Executive Summary | July 2023



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Executive Summary

The Kentucky Transportation Cabinet (KYTC) initiated the US 62 Corridor Study with the objective to identify and evaluate potential solutions to improve safety, congestion, and access management along US 62 in Elizabethtown, Hardin County, Kentucky. The study area extends from Brook Street to Gregory Street, mile point (MP) 18.839 to MP 20.560, shown in **Figure ES-1**. The study evaluated multiple corridor-wide and I-65 interchange improvement concepts and recommends those which KYTC may use for further project development and implementation.

Improvements along US 62 were previously identified and recommended in the East Elizabethtown Connectivity Study sponsored by the Lincoln Trail Area Development District (ADD) in coordination with the City of Elizabethtown and KYTC. US 62 has become the primary access point from I-65 as well as a gateway to Elizabethtown. With a dramatic increase in commercial development in the area along with an overall expected growth due to recent industrial activity, it is anticipated congestion as well as crash density and severity will worsen.

The project team identified goals for the study based on the transportation challenges in the area. The goals of the study are to:

- ▶ Develop a range of concepts that can be further studied and/or refined in the Preliminary Engineering and Environmental Phase that address safety, operational, geometric, and multimodal challenges.
- ▶ Develop improvement strategies to address increased multimodal congestion along one of the primary mobility connections on the east side of Elizabethtown.
- ▶ Identify project challenges early and establish associated costs to inform funding requests, including potential federal grants and the biennial highway plan.
- ▶ Establish a broader project team including city engineering and planning staff to understand the implications of project decisions on the gateway concept.

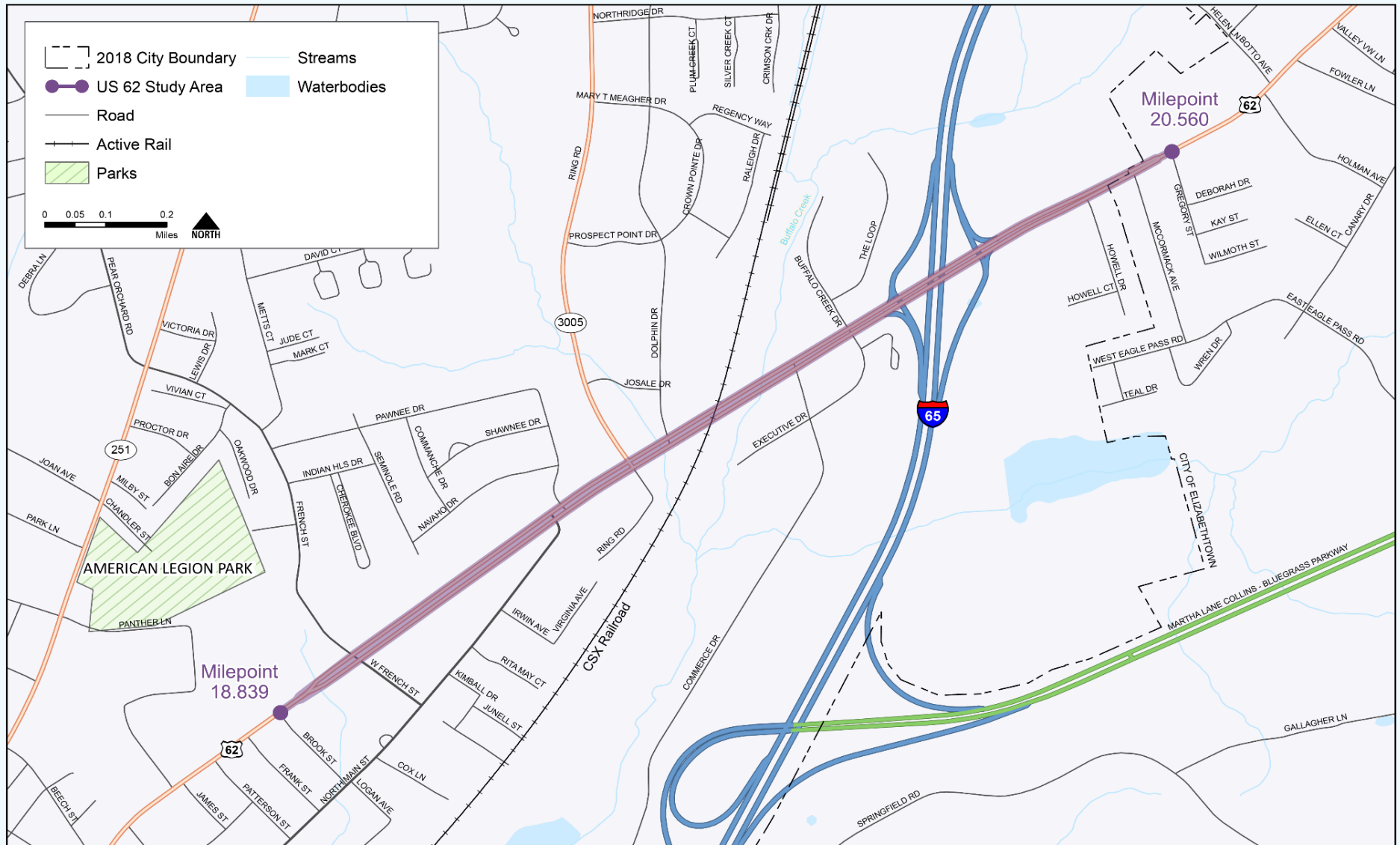
Existing Conditions

A detailed inventory of current physical and geometric design characteristics was completed to evaluate the existing conditions of US 62. US 62 is classified as an Urban Minor Arterial west of I-65 and as an Urban Major Collector east of I-65. It is not on the National Highway System (NHS) nor is it a Federally Designated Truck Route. The speed limit in the study area is 35 mph west of Brook Street and 45 mph east of Brook Street. It is a four-lane facility with two lanes in each direction, and lane widths are 12 feet wide throughout with median and shoulder widths varying throughout. There are 14 intersections in the study area, eight are unsignalized and six are signalized.

The CSX railroad bridge over US 62 provides 32 feet of horizontal clear width for each direction of travel. The eastbound opening provides 15 feet, 4 inches of vertical clearance with the westbound opening providing 14 feet, 2 inches, which is less than the minimum requirement of 16 feet, 6 inches under a CSX railroad facility.

Pedestrian and bicycle activity levels were investigated using Strava and StreetLight Data. There is significant pedestrian activity and the highest levels are present between North Main Street and Buffalo Creek Drive. Bicycle usage on US 62 appears to be low with the highest area of usage the same as for pedestrians.

Figure ES-1: US 62 Study Area



Traffic Volume and Operations

A traffic analysis was performed addressing three major topics: volumes, operations, and safety. Tasks included examining historical and existing (2022) traffic volumes as well as forecasting future traffic to the design year of 2045. Traffic volumes are projected to grow 0.5% per year. The 2045 AADT volumes range from a low of 15,055 vehicles per day (vpd) east of I-65 to a high of 36,835 vpd between KY 3005 (Ring Road) and Commerce Drive. Intersection operations were analyzed using Synchro Version 11 (HCM 6th Edition) analysis software to evaluate the AM and PM peak hours Level of Service (LOS). Under existing traffic conditions and in 2045, all intersections operate at LOS D or better in both the AM and PM. KY 3005 (Ring Road) is the only intersection expected to operate at LOS D in 2045.

Safety

A historical crash analysis was performed to examine traffic safety trends and to identify potential safety issues on US 62. Within the five-year (2017– 2021) analysis period, 394 crashes were reported in the study area. A breakdown of the crashes by severity found that one fatal crash occurred, and eight serious injury crashes (2%) occurred over the five-year period. Most crashes (339, 86%) were property damage-only. Of these, seven involved pedestrians. An examination of the crashes by manner of collision showed most (173, 43.9%) were rear end crashes. Approximately 72% of rear end crashes occurred near signalized intersections where queuing occurs. The location and density of crashes within the US 62 study area are shown in **Figure ES-2**.

Figure ES-2: US 62 Crash Density Map (2017 - 2021)



Development and Evaluation of Potential Improvement Concepts

In addition to project team meetings between the consultant team, KYTC, and the City of Elizabethtown, outreach for this study included two meetings with local officials and stakeholders, as well as an online public survey. Using the existing conditions, traffic, and safety analysis, along with input from the local stakeholders, an initial list of potential improvement concepts was developed and presented to the project team. These concepts included multiple typical sections, intersection improvements, interchange types, and railroad crossing options. After meeting with the project team for an initial screening of the potential improvement concepts, the concepts that remained were grouped into full-corridor concepts for evaluation and presentation to the local officials and stakeholders. Four interchange options and two railroad options were also evaluated.

Each full corridor and interchange potential improvement concept was evaluated with respect to safety, traffic operations, right-of-way impacts, environmental impacts, and concept costs. Planning level cost estimates were prepared for design, right-of-way, utility relocation, and construction for each option. The full-corridor improvement concepts were shared with the project team and based on the analysis; the team was able to make a recommendation for which concepts to move forward to the next phase of project development.

Recommendations

The full-corridor concepts with typical section, intersection control type, and interchange options that were recommended at the final project team meeting are summarized below.

- ▶ Move forward with a curb and gutter typical section with 10-foot shared use paths on both sides. In Preliminary Engineering (Phase 1 Design), investigate moving the shared use path further away from the roadway.
- ▶ Move forward with a corridor that provides roundabouts at West French Street and Commerce Drive. Further investigate the intersection type at KY 3005 (Ring Road) in Phase 1 Design, including keeping the intersection signalized, a Continuous Green T, a roundabout, or other restricted crossing U-turn (RCUT) solution. Restrict the Buffalo Creek Drive/Executive Drive intersection to right in – right out. The corridor should provide RCUT/U-turning opportunities between major intersections.

- ▶ Move forward with the Buffalo Creek Extension, providing a connection from Buffalo Creek Drive to Commerce Drive. The exact alignment and tie in with Buffalo Creek Drive will be determined in Phase 1 Design. The extension of Buffalo Creek Drive would not need to be constructed at the same time as US 62 improvements. A phased construction approach could be taken.
- ▶ All four interchange concepts (improved diamond, single point urban interchange, diverging diamond, and roundabout) are recommended to carry forward into Phase 1 Design for further evaluation.
- ▶ KYTC is applying for a grant for a new railroad crossing. If that application is successful, then a new crossing is recommended. If it is not, then modifying the typical section under the existing railroad bridge to allow for 4-foot sidewalks is recommended.
- ▶ Include aesthetic treatments to beautify the corridor and create a gateway to Elizabethtown.

The Design, Right-of-Way, Utilities, and Construction (D, R, U, and C) costs in 2023 dollars for the corridor improvement concepts are presented in **Table ES-1** and for the interchange concepts in **Table ES-2**. The D, R, U, and C costs in 2023 dollars for the railroad crossing improvements are shown in **Table ES-3**. Upon completion of this study, selected recommended improvement concepts will be further examined and moved through project development. Funds for future project development phases of this corridor are in Kentucky's Enacted Fiscal Year (FY) 2022 – FY 2028 Highway Plan (Highway Plan) as Item No. 4-80200.00. The next steps for any identified concepts are Preliminary Engineering and Environmental Analysis, commonly referred to as "Phase I Design."

Table ES-1: US 62 Roundabout with Curb and Gutter Concept Cost Estimates

Phase	Corridor Improvement Concept			
	Base Roundabout Corridor (with Buffalo Creek Drive Extension)	Roundabout Corridor with KY 3005 (Ring Road) Signalized	Roundabout Corridor with RIRO at KY 3005 (Ring Road) with roundabouts at Pawnee Drive and Dolphin Drive	Roundabout Corridor with no Buffalo Creek Drive Extension
Design	\$1,200,000	\$1,200,000	\$1,300,000	\$900,000
Right-of-Way	\$3,600,000	\$3,600,000	\$3,900,000	\$2,500,000
Utilities	\$900,000	\$900,000	\$1,200,000	\$700,000
Construction	\$9,600,000	\$9,600,000	\$10,400,000	\$6,900,000
Total	\$15,300,000	\$15,300,000	\$16,800,000	\$11,000,000

In 2023 dollars, RIRO = Right in – right out intersection

Table ES-2: I-65 Interchange Cost Estimates

Phase	Interchange Improvement Concept			
	Improved Diamond Interchange	Single Point Urban Interchange (SPUI)	Diverging Diamond Interchange (DDI)	Roundabout Interchange
Design	\$400,000	\$2,100,000	\$400,000	\$500,000
Right-of-Way	\$0	\$0	\$100,000	\$200,000
Utilities	\$0	\$0	\$100,000	\$100,000
Construction	\$2,900,000	\$17,300,000	\$3,300,000	\$3,900,000
Total	\$3,300,000	\$19,400,000	\$3,900,000	\$4,700,000

In 2023 dollars

Table ES-3: CSX Railroad Crossing Cost Estimates

Phase	Railroad Improvement Concept		
	Two-Track Railroad Bridge	Three-Track Railroad Bridge	Narrow US 62 Lanes and Sidewalks
Design	\$2,300,000	\$2,600,000	\$100,000
Right-of-Way	\$100,000	\$100,000	\$0
Utilities	\$300,000	\$300,000	\$0
Construction	\$18,700,000	\$21,200,000	\$800,000
Total	\$21,400,000	\$24,200,000	\$900,000

In 2023 dollars

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