



US 25 Corridor Study

Laurel County, KY
KYTC Item No. 11-181



Executive Summary



The Kentucky Transportation Cabinet (KYTC) initiated a planning study in April 2023 to identify Complete Streets, Roads, and Highways-focused improvements on US 25 in Laurel County. The objective of the study was to identify short-term wins and long-term capital improvement projects to provide safe mobility for all users.

Study Area

The US 25 corridor study area is shown in Figure 1. The study area begins near the intersection of CVB Drive at milepoint (MP) 13.5 in the City of London and ends at MP 16.7 to the north of the intersection of US 25 and KY 490 in Laurel County. The study corridor represents a suburban transition from historic, urban London to rural Laurel County. The study area is anticipated to develop in the near future, particularly around the KY 80 (Hal Rogers Parkway) intersection.

Study Process

- Identify the user needs and goals of the study
- Observe existing conditions and travel patterns
- Evaluate current and future land use context
- Identify safety concerns and unmet user needs
- Develop potential recommendations
- Evaluate recommendations based on the study vision and goals
- Propose a list of prioritized short-term and long-term recommendations

To develop the project goals and objectives, the mobility and safety needs of the anticipated users were established. Mobility needs refer to the ability of each of the users to access, travel along, and connect to their destinations in the study area. Safety needs refer to areas where frequent crashes and lack of infrastructure contribute to crashes or inform user behavior during their travel.

Mobility Needs

- Consistent volumes of pedestrians and bicyclists along US 25, through its intersection with KY 80, and along KY 490

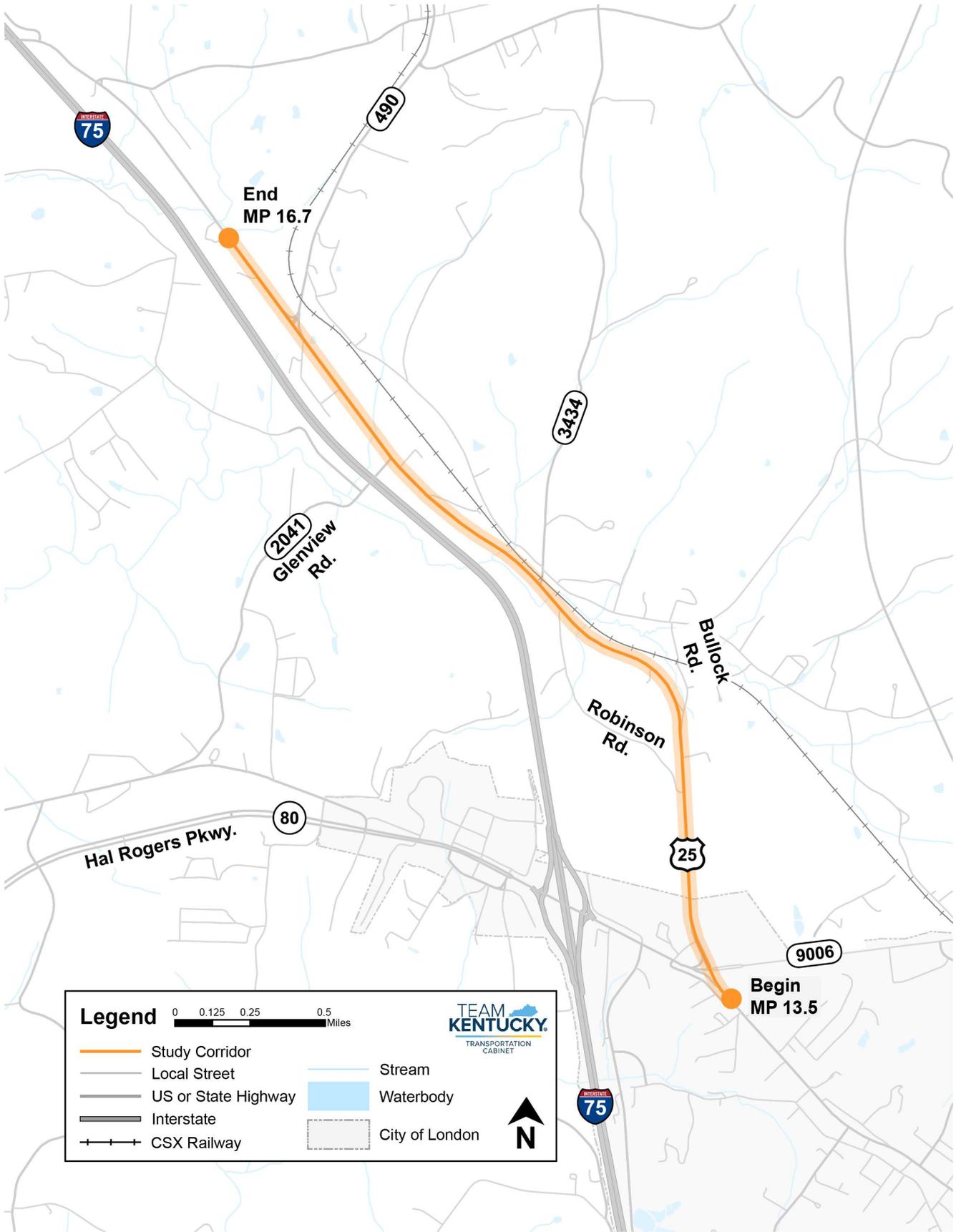


Figure 1: Study Area

- High-volume freight corridor to access Baxters North America and Robinson Stave
- High emergency vehicle volume with Kentucky State Police and East Bernstadt Fire Department located on the corridor

Safety Needs

- Undefined and frequent parcel entrances contribute to frequent opposing left-turn, angle, and rear-end crashes.
- Left-turn movements at the intersection of State Police Road, CVB Drive, and KY 80 have contributed to frequent crashes, with sixteen total crashes from 2018-2022 at this intersection.
- Lack of pedestrian and bicycle infrastructure require the use of the roadside and shoulder to travel. Defined crossing opportunities are not provided on the corridor.

Project Goals

Project goals were developed through stakeholder input, public feedback, and evaluation of current and future needs of the corridor.

- Provide safe, accessible accommodation for all users, including bicyclists, pedestrians, freight, and emergency vehicles.
- Accommodate pedestrians and bicyclists with facilities separated from the roadway to minimize uncomfortable interactions with large vehicles.
- Provide appropriate crossing opportunities for bicyclists and pedestrians at intersections and near destinations that generate pedestrian and bicycle travel.
- Prevent crashes at frequent and undefined access points.
- Prevent crashes and improve operations at the intersections of KY 80, Bullock Road, KY 3434, KY 2041, and KY 490.
- Accommodate I-75 detour traffic without negatively impacting safety for all users.

Related Projects and Plans

No specific projects are located on the study corridor from Kentucky’s 2024 Enacted Highway Plan (Six Year Plan) and the Continuous Highway Analysis Framework (CHAF) database. However, four Six Year Plan projects and one CHAF project are identified in the vicinity of the study area on KY 490 to address pavement and bridge conditions and KY 2041 to install guardrail. Related plans considered included the City of London and Laurel County and included the City of London Bike and Pedestrian Master Plan, the 2007 London-Laurel County Comprehensive Plan, and the I-75 Major Incident Detour Guide.

Existing Conditions

The study corridor is comprised of three different land use contexts, transitioning from urban City of London to suburban commercial at KY 80, and then to a rural context north of KY 490. The presence and travel patterns of motor vehicle drivers, freight operators, emergency

service providers, and bicycles and pedestrians are informed by observation and expectations by land use context. Motor vehicle, pedestrian, and bicyclist volumes decrease from south to north as the context changes. Freight volume is driven by local delivery freight and longer-range industrial and commercial freight generated by the proximity of access to I-75 and local industries to London.

Characteristic	Description	Begin MP	End MP
Functional Classification	Minor Arterial	13.5	13.6
	Major Collector	13.6	16.7
Lane Configuration	Four 12 ft Lanes	13.5	13.6
	Two 11 ft Lanes	13.6	16.7
Speed Limit	35 MPH Posted	13.5	13.8
	55 MPH Statutory	13.8	16.7
Freight	Coal Haul System	13.5	16.7
	Kentucky Highway Freight Network	13.5	16.7

Table 1: Summary of Existing Conditions

The study area is comprised of nineteen intersections, sixty-one defined access points, and approximately 2.17 miles of undefined access where motor vehicles may turn into a parcel at any point along the corridor. In addition, a high-turnover Park and Ride is located at the intersection of US 25 and State Police Road. The Park and Ride frequently operates at, or above, capacity. When the Park and Ride is full, users will park vehicles on the verge along State Police Road and near the intersection.

There are six horizontal curves, and the US 25 corridor is flat within the study area with minimal vertical curvature. The two horizontal curves located between MP 13.5 and 13.8, paired with roadside vegetation, may be below the minimum design radius for sight distance to the signal. US 25 meets the grade requirements in the KYTC Highway Design Guidance Manual.

A CSX rail line runs parallel to US 25 between MP 14.7 and 16.5. This results in adjacent rail crossings for three intersecting routes, Bullock Road, KY 3434, and KY 490. The at-grade crossing at KY 3434 is approximately 100 feet from the US 25 intersection; it includes flashing signals and gate arms. The rail crossings on Bullock Road and KY 490 are grade-separated.

The sole structure within the study corridor is a culvert over Wood Creek at MP 15.10. Its bridge identification number is 063B00006N. It is a two-span structure approximately thirty-one feet in length built in 1951. It has a Fair condition rating as of 2022.

Known utilities within the study corridor include natural gas, aerial electric, telecommunications, water and sewer.

Five years of crash data (January 2018 to January 2023) from the Kentucky State Police database was reviewed to identify crash trends and potential safety improvements. Within the five-year analysis period, 147 crashes were reported in the study segment of US 25. Crash density is highest near the intersections of KY 80/Hal Rogers Parkway and KY 490. Crash

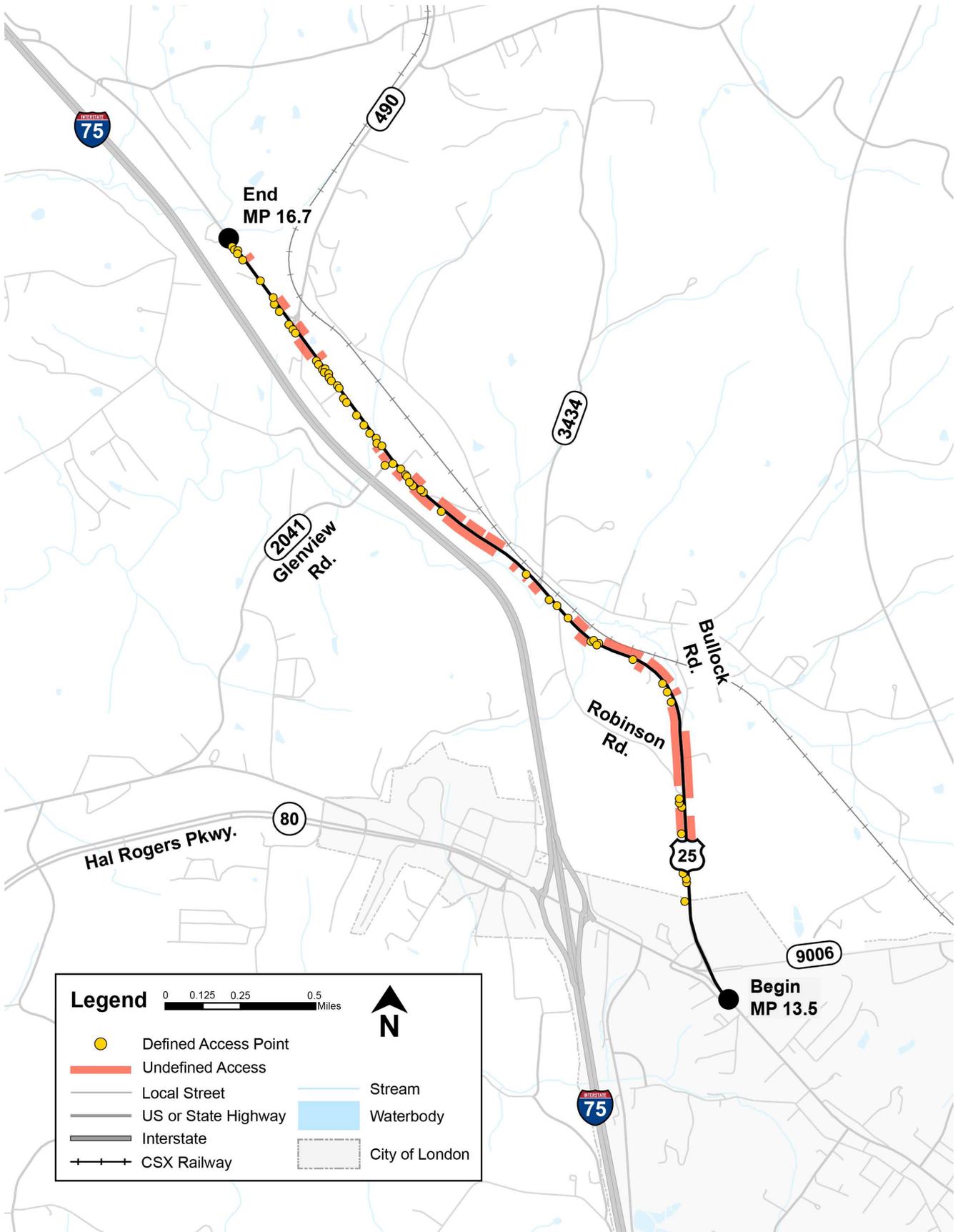


Figure 2: Defined and undefined access along US 25

density is also higher near MP 15.0 and around the intersection with Glenview Road near MP 15.8. Although crash density is highest near KY 80, the severity of the crashes increases to the north.

The Kentucky Transportation Center’s Crash Data Analysis Tool was used to calculate Excess Expected Crashes (EEC) values and Level of Service of Safety (LOSS) for the study segment of US 25. The northern section corresponds to a positive EEC and LOSS III while the southern section corresponds to a positive EEC and LOSS IV, indicating that the segment near KY 80/Hal Rogers Parkway has a greater potential for crash reduction from safety improvements. Crash history and speed data are located in **Appendix A**.

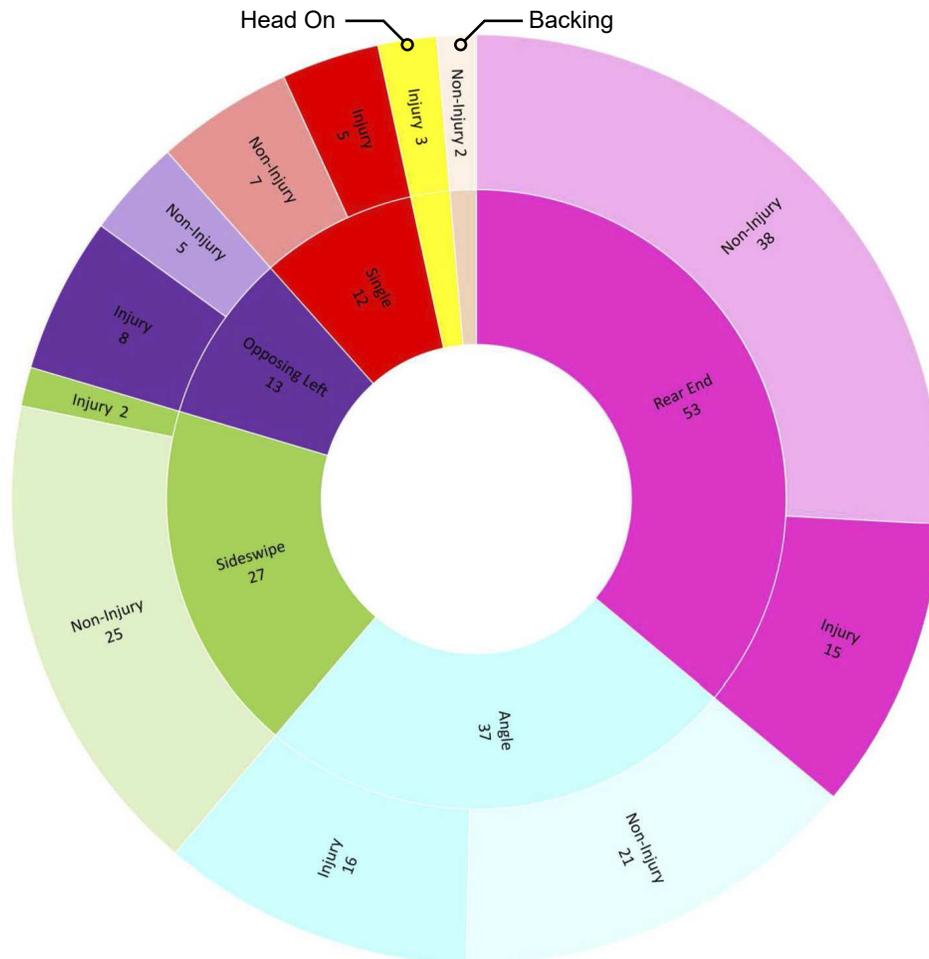


Figure 3: Severity of Crash by Manner of Collision

Environmental Overview

Data was collected for an Environmental Overview (EO) based on existing geographic information system (GIS) datasets, state and federal agency databases, literature research, archival data, and a windshield survey of the corridor. Desktop research was performed to identify and locate areas of importance or concern that lie within a 250'-wide corridor along the centerline of US 25, with a 500' in diameter buffer at four major intersections: KY 80, KY 3434 (Old Richmond Road), KY 2041 (Glenview Road), and KY 490.

The EO considers resources in the following categories: ecological resources (i.e., streams, wetlands, and floodplains); threatened and endangered species and unique habitats; UST

and hazardous materials; historic and archaeological resources; Environmental Justice (EJ) / socioeconomic data. A summary of findings is located in **v**. The full environmental overview and socioeconomic study are located in **Appendix C**.

Environmental Concerns	Description	
Threatened and Endangered Species Habitat	Federally Listed T&E Species	Four bats, six clams/mussels, and two plants
	Forest Habitat	Suitable forested and foraging habitat
	Cave-Like Habitat	Two permitted mine boundaries in study area; many others located in ½-mile buffer of study area
Water Resources	Streams	Peacock Branch, Wood Creek, and other unnamed tributaries; Gillis Branch located just outside study area
	Floodplains	Wood Creek floodplain
	Wetlands	Wood Creek and Peacock Branch RSUBH, others are R4SBC
	Wellhead Protection Areas	Source Water Protection Area: Wood Creek Water District – Zone 1
UST/Hazmat Sites	Potential sites throughout	
Mines	Two permitted mines in study area	
	Seven permitted mines within 1/2 mile	
Historic Resources	1 Site - National Register of Historic Places (NRHP)	

Table 2: Summary of Environmental Overview

Concept Development and Evaluation

Initial improvement concepts were developed based on the safety and traffic analyses, stakeholder and public feedback, and project team recommendations. The potential improvement concepts were evaluated based on key performance metrics, including:

- Safety performance, including benefit-cost analysis.
- Traffic analysis, including current and future performance.
- Environmental impacts, including both human and natural environment.
- Accommodation of pedestrians and bicyclists.

Traffic data and analysis methodology are located in **Appendix B**.

Final Study Recommendations

The evaluation matrix for the initial list of recommendations was reviewed by the project team, along with stakeholder and public input, and refined to a set of final recommendations in **Table 3**. In addition to the recommended project concepts, broader improvements to encourage driver operating speeds appropriate to the context of the corridor include:

- Maintain 35 MPH posted speed limit south of KY 80 with target speeds of 30-35 MPH.

- Implement 45 MPH target speed between KY 80 and KY 490 paired with speed management and traffic calming.
- Maintain 55 MPH statutory speed limit north of KY 490 with target speed of 55 MPH.

The implementation of the 45 MPH target speed in the suburban context between KY 80 and KY 490 allows for the design of intersections and road geometrics that will slow down driver operating speeds and reduce the footprint of innovative intersections such as smaller radii for horizontal curves and turning movements, shorter roundabout splitter islands, and narrower width driving lanes.

Improvement Category	Description	US 25 Milepoint Location	Recommend Short-Term to Mid-Term Implementation	Recommend Long-Term Implementation	Concept	
Corridor	Bicycle and pedestrian improvements	MP 13.5 to 16.4		X	A	
	- Alternate A: Shared-use path and sidewalk - Alternate B: Sidewalk on each side					
Corridor	Alternate 1: Widen US 25 to a three-lane typical section with one travel lane in each direction and a center two-way left-turn lane (TWLTL).	MP 13.8 to 16.4				
	- Modified swale drainage - Curb and gutter drainage					
US 25 at KY 80 Intersection	Mill and resurface asphalt shoulder to address roadside deterioration causing ice glaze on westbound KY 80 lane and shoulder at State Police Road	MP 11.1 (KY 80)	X		B1	
	Vegetation control on east side of northbound US 25 curve	MP 13.65 to 13.85	X		B2	
	Retroreflective signal backplates	MP 13.6	X			
	Channelize or eliminate WB KY 80 to NB US 25 acceleration lane	MP 13.6	X			
	Restrict left turns	- Left turn from State Police Road and CVB Drive to KY 80	MP 11.09 (KY 80)	X		B3
		- Left turn from CVB Drive to US 25	MP 13.5			
	Park and Ride study	-		X		N/A
	KY 80 Planning Study		MP 9.8 (KY 80) to 0.2 (HR 9006)	X		N/A
	Update signal timing		MP 13.6	X		C1
	Quadrant intersection		MP 13.6		X	C2
Continuous flow intersection		C3				
US 25 at Bullock Road Intersection	Lane extensions across Bullock Road "Y"	MP 14.46 to 14.56	X		D	
	Vegetation control or removal		X			
	Relocation of intersection	MP 14.5		X	E1	
Single-lane roundabout				X	E2	
US 25 at KY 3434 Intersection	Full-depth widening for right-turn lane on US 25	MP 15.15		X	F1	
	Dynamic envelope pavement markings and "Do Not Stop on Tracks" crossing signage and crossing warning signage for at-grade crossing (R8-8, W10-2, and W10-11a); radar-detected WATCH FOR STOPPED TRAFFIC sign (W26-1) with yellow warning beacon and WHEN FLASHING sign (W16-13P)	MP 0.02 (KY 3434)	X		F2	
US 25 at Glenview Road Intersection	Quick Kurb (paint and post) gas station entry delineation	MP 15.82	X		G	
	Intersection lighting			X		
	Full-depth widening for right-turn and left-turn lanes on all approaches				X	H1
	Single-lane roundabout				H2	
US 25 at KY 490 Intersection	Retroreflective signal backplates	MP 16.4	X		I	
	Update northbound channelized right-turn pavement markings to eastbound KY 490					
	Realigned T intersection				X	J1
	Single-lane roundabout				J2	

Table 3: Summary of Final Recommendations

The context and target speed for each segment of US 25 also inform access spacing recommendations:

- Maintain access spacing south of KY 80 and north of KY 490
- Intermittent median restrictions between KY 80 and KY 490
- Driveway and entrance access spacing of 440 feet or more recommended between KY 80 and KY 490
- Pedestrian and bicycle crossings at intersections and near pedestrian and bicycle traffic generators

The detailed analysis and evaluation of all recommended concepts are located in **Appendix E**.