

# KY 3 CORRIDOR STUDY AT AUXIER

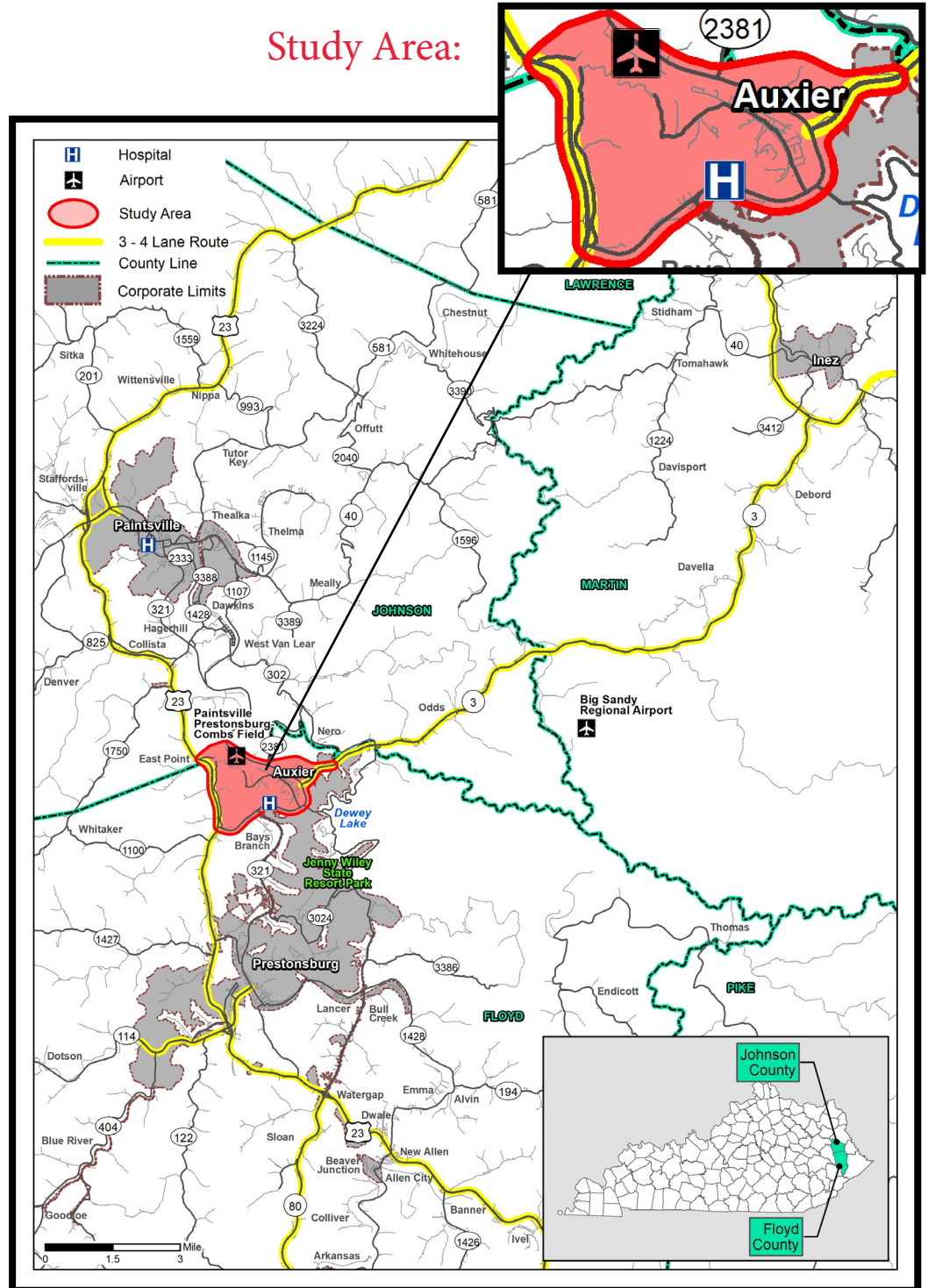
Floyd and Johnson Counties

# EXECUTIVE SUMMARY

FEBRUARY 2023



Study Area:



PREPARED FOR:



PREPARED BY:



Groundbreaking by Design.

## EXECUTIVE SUMMARY

The Kentucky Transportation Cabinet (KYTC) launched the KY 3 Corridor Study in Spring 2022 to investigate transportation issues along KY 3 in Floyd and Johnson counties, Kentucky, near the community of Auxier. This study examines the last 2.5-mile, two-lane gap in the existing 19-mile long, multi-lane KY 3 highway connection between US 23 near Auxier and KY 645 at Inez in Martin County.

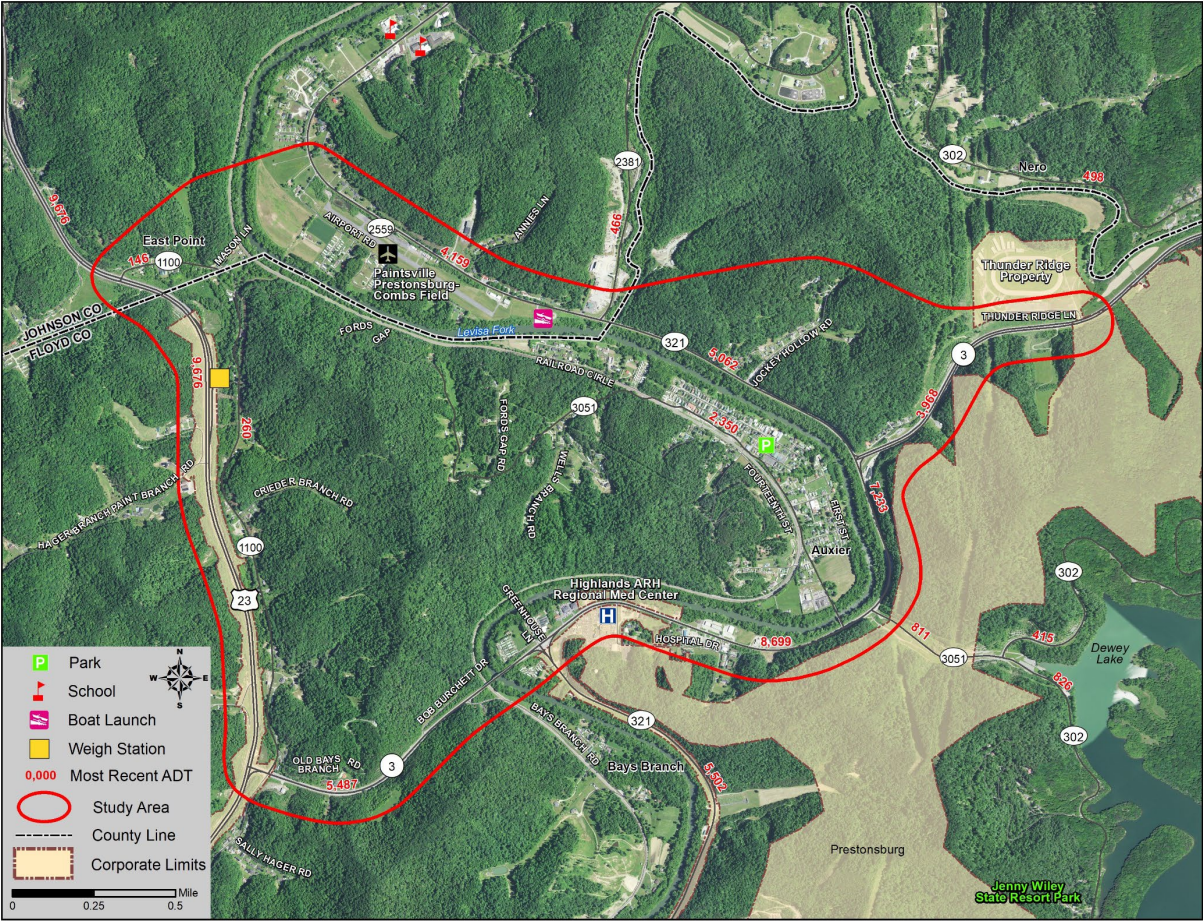


Figure ES-1: Study Area

The 2.5-mile, two-lane stretch of KY 3 near Auxier is considered a bottleneck to mobility along the corridor, stifling economic development efforts for the area. KY 3 accesses more developable property than elsewhere in the three-county area, including 180 acres of available industrial land within the Eastern Kentucky Business Park. According to local officials, the two-lane segment is the key factor deterring some businesses from choosing the business park. Meanwhile, the two-lane portion of KY 3 provides access to US 23, a regional medical center, and the community of Auxier. Only the KY 3051 (W.L. Fat Wells Memorial Bridge) over Levisa Fork connects residents of Auxier to the larger

transportation network. At the eastern edge of the study area, the city-owned, 58-acre Thunder Ridge site is also poised for development. KY 3 also provides access to Jenny Wiley State Resort Park.

## Existing Conditions

Key characteristics for KY 3 and US 23 are summarized in **Table ES-1**.

*Table ES-1: Existing Study Area Transportation Characteristics*

Characteristic	KY 3	US 23
Functional Class	Minor Arterial	Principal Arterial
Lanes + Shoulders	Two to four 12 ft lanes Varying width shoulders (1-10 ft)	Four 12 ft lanes 10 ft paved shoulders
Speed Limit	35-55 mph	55 mph
Daily Traffic	3,800-9,200 vehicles per day (vpd) 8-9% trucks	9,700 vpd, 16.5% trucks
Systems	State truck network Extended weight, Coal haul	Federal & state truck network National Highway System (NHS) Extended weight, coal haul Appalachian Dev. System, Scenic Byway

Operational analyses suggest current capacity is adequate for traffic flows. Besides vehicles, numerous bicyclists also use state-maintained highways within the study area, especially to access nearby Jenny Wiley State Resort Park.

During 2016-2020, 102 crashes occurred on study routes: three fatalities (all on KY 3), 34 injury collisions, and the remainder property damage only (PDO). Most crashes were one of three types: single vehicle (40%), rear-end (28%), or angle (22%) crashes. No bicycle or pedestrian crashes were reported in the dataset. Further assessment highlighted elevated crash locations along study routes that may be candidates for short-term spot improvements.

KYTC’s statewide travel demand model estimated future year growth for all study area roadway segments. A 1% annual background growth rate was applied throughout the study area for future No-Build forecast projections. KY 3 is expected to carry between 5,200 and 11,100 vpd in the No-Build scenario. By 2045, most study intersections degrade by one Level of Service (LOS) in one or both peak hours but continue to operate at LOS D or better. The exception is the northbound stop-controlled KY 321 approach to KY 3, which is governed by the high volume on free-flow cross-traffic during the peak hours.

## Concept Development

Study goals include identifying and evaluating options to improve KY 3 safety and connectivity between US 23 and the multi-lane section of KY 3 while also...

- ☑ supporting local economic development efforts,
- ☑ promoting continuity of four-lane access,
- ☑ providing redundant connectivity for Auxier, and
- ☑ minimizing community and environmental impacts.

Six long-term, five-lane Build corridor concepts were developed for further consideration. Of these, one would widen existing KY 3 and five would construct a roadway partially or almost totally on new alignment. With few exceptions, each of the corridor concepts is based on a five-lane rural typical roadway section, 55 MPH design speed, 12-foot lanes, and 10-foot-wide paved shoulders.

Options to provide a new, two-lane local street connector from each long-term corridor to the existing Auxier street network were initially considered but discarded as a secondary bridge over Levisa Fork would be less costly and have substantially fewer environmental impacts.

Figure ES-2, Table ES-2, and Table ES-3 provide a comparison between the six long-term Build corridor concepts.

*Table ES-2: Comparison of Corridor Concept Impacts*

Corridor Concept	Length (Miles)	Earthwork (Millions CY)	Bridge Length (Feet)	Relocations (Approx.)
Widen Existing	2.9	2.1	600	<5
Green	2.7	2.8	900	15-20
Red	2.6	1.6	600	20-30
Purple	2.6	1.7	750	10-15
Yellow	2.7	1.5	600	10-15
Central	2.6	3.5	1,500	20-30

*Table ES-3: Corridor Concept Cost Estimates by Phase (2022 Dollars)*

Build Concept	Total Cost	Design	Right-of-Way	Utilities	Construction
Widen Existing	<b>\$64.1M</b>	\$5.3M	\$1.2M	\$5.0M	\$52.6M
Green	<b>\$86.9M</b>	\$7.0M	\$4.9M	\$5.5M	\$69.5M
Red	<b>\$62.8M</b>	\$4.8M	\$6.2M	\$4.0M	\$47.8M
Purple	<b>\$68.4M</b>	\$5.4M	\$3.9M	\$5.4M	\$53.7M
Yellow	<b>\$61.2M</b>	\$4.9M	\$3.7M	\$4.2M	\$48.4M
Central	<b>\$103.4M</b>	\$8.4M	\$7.0M	\$4.0M	\$84.0M

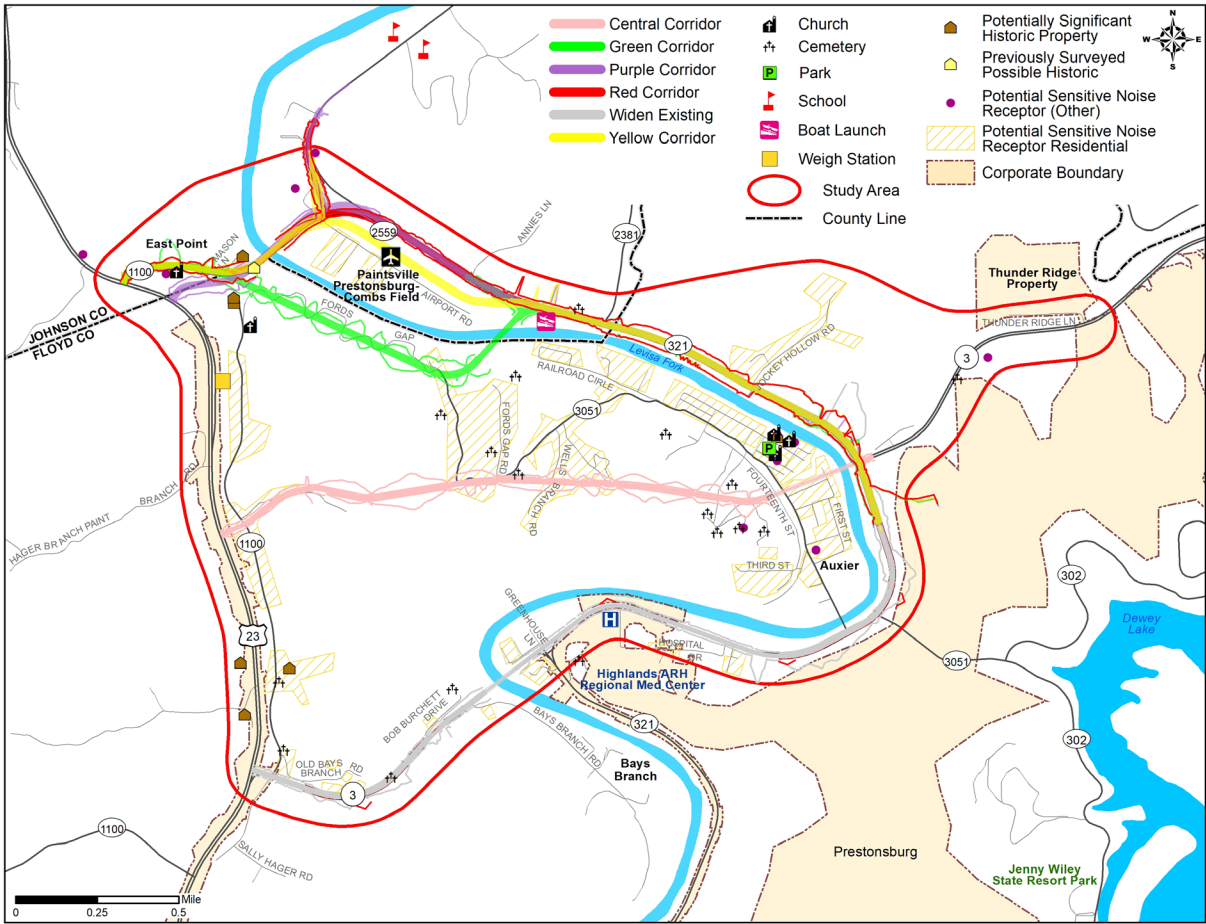


Figure ES-2: Long-Term Build Corridor Concepts

Figure ES-3 shows potential locations for three new bridge options to provide a secondary connection into Auxier: one near the former airport, another in line with the four-lane KY 3, and a third between the two.



Figure ES-3: Auxier Bridge Options

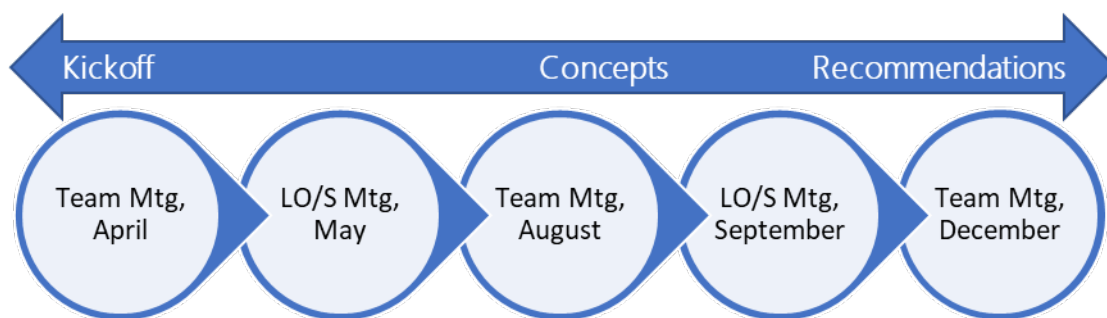
Concepts were developed to minimize property impacts, aligning with open spaces or existing roadways to minimize relocations. Costs range from \$9.3 to \$13.0 million. It should be noted that not all short-term bridge options work with all long-term corridor options.

Build concepts would result in the loss of vegetation, representing potential habitat for protected forest-dwelling bat species. Build concepts with a new structure would impact Levisa Fork, designated as critical habitat for the Big Sandy crayfish. Floodplain and floodway impacts are also associated with any new river crossing. The northern concepts (i.e., Green, Red, Purple, and Yellow) pass near three likely historic resources and two cemeteries; none of which are expected to experience direct effects but each merits further consideration in any future project development phases. Each northern concept also runs adjacent to a public boat launch—a Section 4(f) recreational resource—but minimal impacts are anticipated.

Geotechnical concerns are also associated with any build concept: the study area is in the Cumberland Plateau (Eastern KY Coal Fields) physiographic region—covered with wooded mountain crests carved by ravines eroded through coal-bearing rocks. Relief varies by over 600 feet throughout the study area. The entirety of the study area is notorious for cut and fill slope stability failures, rock falls, and landslides with much of the region mined. Vertical cuts line sections of existing KY 3 and KY 321, with visible evidence of undercutting and stability issues. Coordination with KYTC geotechnical subject matter experts will be essential if any of the Build corridor concepts advance for further project development.

### Community Coordination

Three meetings with the project team and two coordination points with local officials and stakeholders (LO/S) occurred throughout the study process during 2022.



LO/S were actively engaged in the study early on, noting benefits of an improved connection to US 23 to reduce severe crashes and to support regional economic development efforts. Given the devastating flooding throughout the region during July 2022, there was limited local engagement later in the process. While input is not a representative sample of larger community preferences, most LO/S participants agreed any of the three short-term bridge options warranted further consideration. Of the

long-term corridors, Green and No-Build received the least LO/S support while Red/Purple received the most. However, most participants agreed each concept was viable to consider further.

## Conclusions

Reviewing the concepts, costs, impacts, and input from LO/S, the project team agreed each of the three secondary Auxier connector bridge options and each of the six long-term corridor concepts are worth additional consideration should funding be identified for future project phases.