KY 32 CORRIDOR STUDY

Nicholas County, KY
Item No. 9-8812

EXECUTIVE SUMMARY | DECEMBER 2024

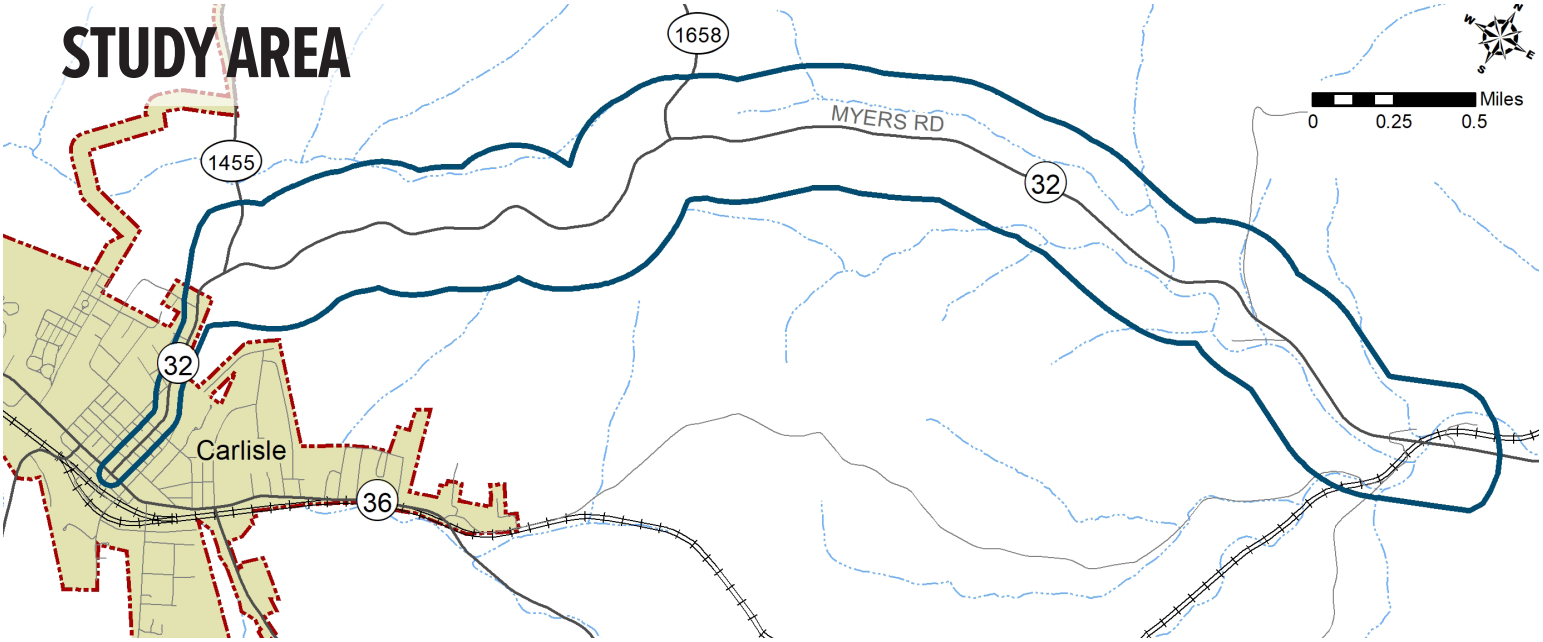
PREPARED BY

TEAM KENTUCKY
TRANSPORTATION CABINET

IN PARTNERSHIP WITH

QK4

STUDY AREA



Executive Summary

The Kentucky Transportation Cabinet (KYTC) initiated a corridor study of KY 32 (North Broadway/Meyers Road) in Nicholas County to evaluate safety and mobility enhancements for roadway users. The study area **(Figure ES-1)** spans approximately five miles, beginning at the intersection with KY 36 (Main Street) in Carlisle and extending northeast towards Fleming County to the bridge over the TTI Railroad and Scrubgrass Creek.

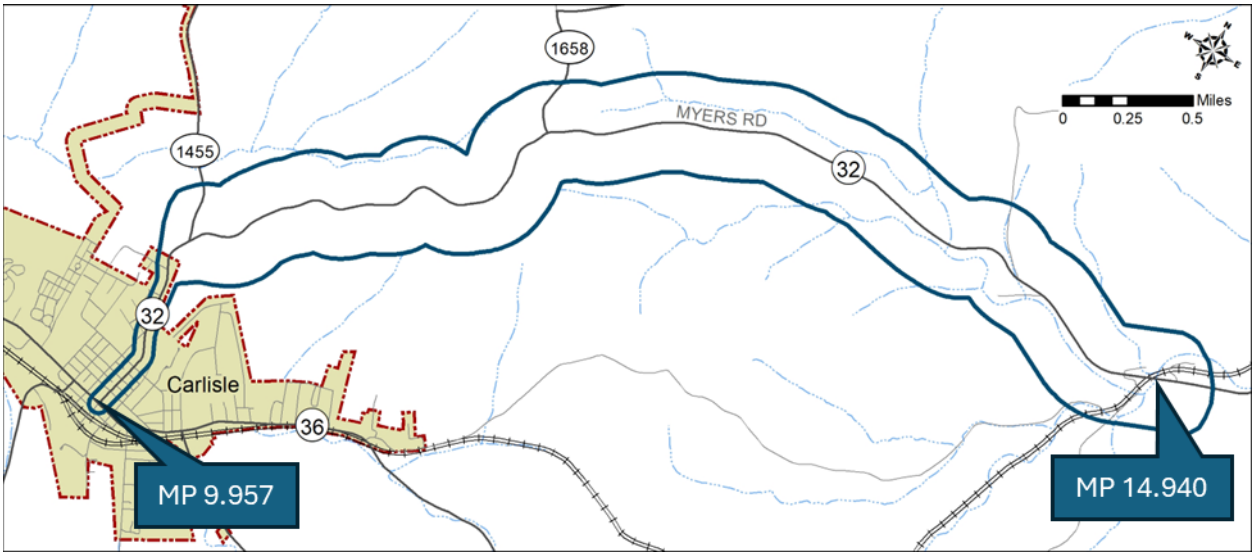


Figure ES-1: KY 32 Study Area

KY 32 is functionally classified as a rural major collector. It is not part of the National Highway System or a federal or state freight route.

Within the city limits, KY 32 has two 13-foot-wide lanes with curb and gutter and on-street parking on both sides of the street through downtown. Beyond, the rural section features two 10-foot-wide driving lanes with 1-foot-wide paved shoulders before widening out approaching the bridge at the northeastern study area limit. Speed limits along KY 32 climb leaving the city: 35 mph in town, 45 mph for 0.8 miles north of KY 1455 (Lake Road), and 55 mph beyond.

Shown in **Figure ES-2**, four KY 32 segments show steeper than recommended vertical grades. There are also 16 sharper-than-recommended horizontal curves, three of which have advisory signage today.

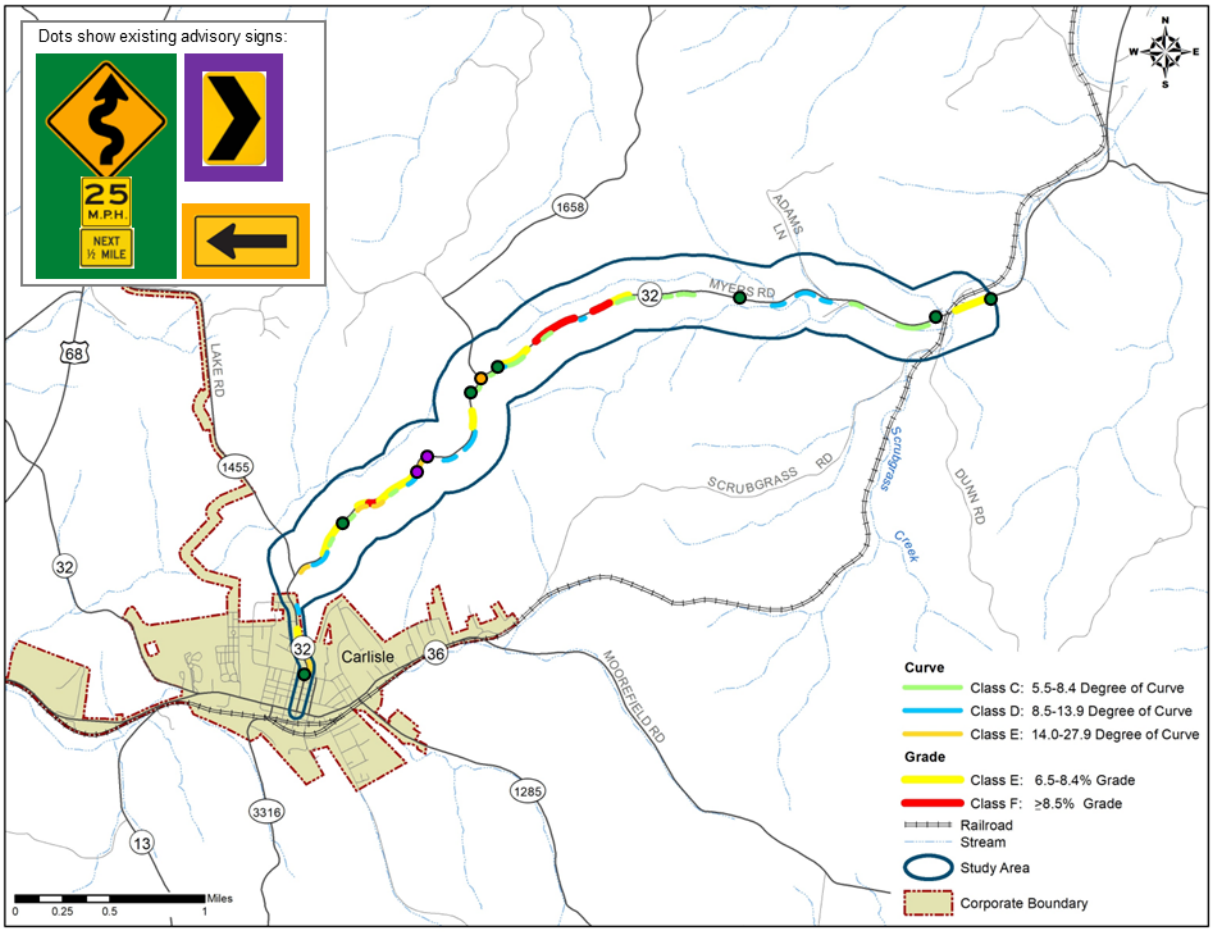


Figure ES-2: Steep Grades and Sharp Curves

Crash Analyses

To understand reactive safety concerns and systemic risk factors, analysts examined five years of recent crash data. Historical crash data were evaluated to identify KY 32 crash trends. Analyses place heightened focus on more severe crashes, particularly in reducing fatalities and serious injuries.

- A total of 36 crashes were reported during 2018–2022, with locations scattered along the corridor. Of these, 16 occurred within Carlisle (south of Green Valley Road, MP 9.957–10.556) and the remaining 20 were distributed along 4.4 miles of rural route.
- Of the 36 reported crashes, none resulted in fatalities and five (14%) resulted in injuries. Within town, there were two injury collisions; the remainder were property damage only (PDO).
- Considering the entire corridor, the most common crash types were single-vehicle crashes (44%), angle collisions (19%), and same direction sideswipes (11%).

From a systemic perspective, analysts also considered the underlying risks contributing to observed trends. Overall, 31% occurred on wet or icy roads, 28% occurred during nighttime hours, and 33% were classified as roadway departures. The existing conditions analysis found risk factors including tight

horizontal curves, steep grades, and narrow pavement width coupled with steep edge drop-offs. Further, sight distance restrictions due to trees, brush, or hillside slopes inside many horizontal curves also contribute to safety performance.

Traffic

As of 2023, an estimated 1,100–2,300 vehicles per day (vpd) travel KY 32 through the study area with minimal growth projected through the 2045 analysis year. Turning movement counts were collected during September 2023 at two key intersections. Analysis showed no capacity concerns: today and through 2045, both study intersections operate at LOS A/B during AM and PM peak hours.

While neither Carlisle nor Nicholas County has formal bike/pedestrian plans, Carlisle has a robust sidewalk network. Data shows no cyclists in the area but identifies significant pedestrian movements downtown.

Meetings

The project team met at three key milestones throughout the study process and engaged with local officials and stakeholders (LO/S) twice.

Goals & Objectives

Study area needs are driven by safety over mobility and should accommodate all user types. For the developed stretch within the city, this includes a focus on intersections and pedestrian connectivity. For the rural stretch, concepts should address systemic safety risks like narrow typical sections, sharp curves, and pavement deficiencies.

Build Concepts

Improvement concepts were grouped into four categories:

- **In-town concepts** aim to enhance safety, mobility, and overall usability of the town's transportation network, making it more accessible and efficient for all users. Each is contained within existing pavement, with minimal impacts beyond parking. Much of town lies within a large historic district.
- For the rural section of the study corridor, **Low-Cost concepts** focus on enhancing road safety and visibility through strategic pavement striping, signage, and other measures. Minimal

environmental/community impacts would occur although narrow strips of new right-of-way is required in some cases, and nearby vegetation could represent protected bat habitat.

- **Medium Impact concepts** enhance rural road safety and functionality but require larger investments than the Low-Cost category, including impacts to adjacent properties. Environmental impacts are larger than previous categories, including residential relocations, one stream crossing, potential bat habitat, and utility relocations.
- **Full Reconstruction** to create a consistent 45 mph design speed has the largest footprint and would relocate an estimated 20+ residences along the route, significantly changing the character of the corridor.

Table ES-1 summarizes prioritization results, incorporating traffic operations, safety considerations, project team input, and other factors. High, medium, and low priorities are assigned relative to other Build concepts within the study area. Other highway corridors throughout the district and state carry higher traffic volumes and demonstrate more severe crash trends than the study section of KY 32, representing more critical needs within the larger transportation system.

Table ES-1: Project Team Recommendations

Concept	DRUC Cost	Priority
IN TOWN		
a. KY 32/KY 26 Pedestrians	$270k	Low
b. Midblock Crossings	$80k	Low
c. Define Striping	$165k	Medium
d. Four-way Stops	$55k	High/Traffic data needed
LOW-COST		
a. 6" Striping	$340k	Low/with Resurfacing
b. Curve Signage	$80k	Medium
c. KY 1455 Striping	$40k	Medium
d. Additional Guardrail	$4.6M	Low
f. Henryville Sidewalks	$1.2M	Medium
MEDIUM IMPACT		
a. Pull-offs	$780k	Medium
b. Hillsides/Vegetation	$1.6M	High
b* Adams Ln Hill/Vegetation	$350k	Medium
c. Stoney Creek Intersection	$5.0M	Medium
d. Widen/Realign Curves	$23M	Medium
RECONSTRUCTION		
a. 45 mph design speed	$61M	Dismiss

While planning-level estimates aim to be conservative, larger projects with longer implementation timelines are likely to see cost escalation. Corridor reconstruction was considered but dismissed due to the excessive costs and significant environmental and property impacts.