

# I-64 INTERCHANGE + CONNECTOR STUDY

JEFFERSON & SHELBY COUNTIES  
ITEM NO. 5-80000

PREPARED BY

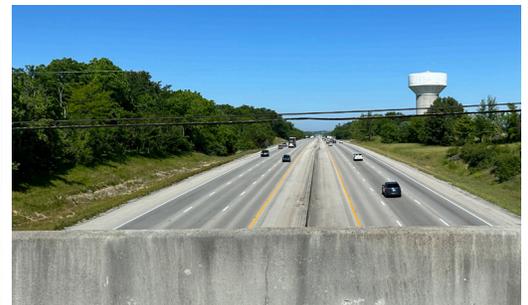
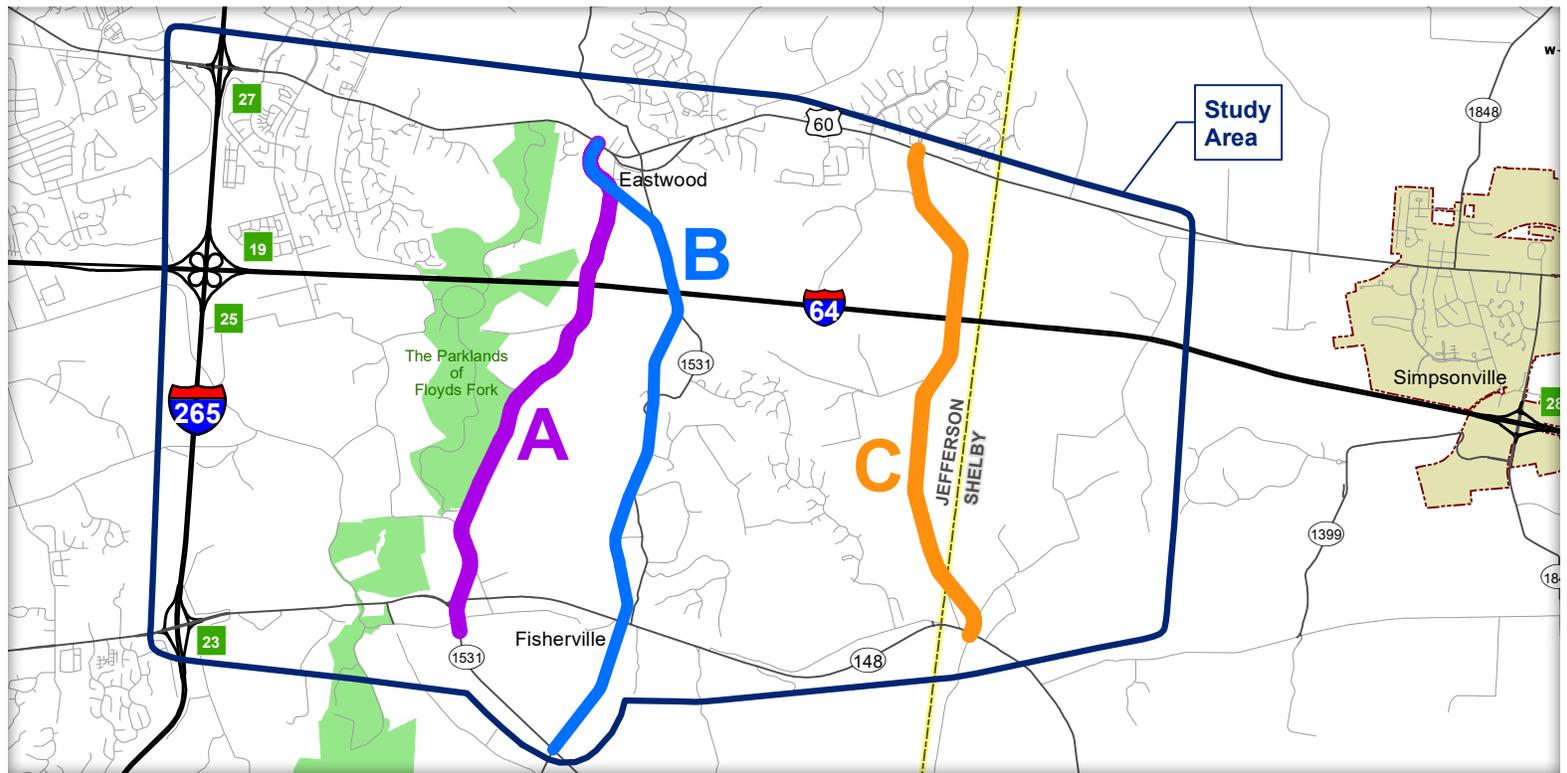
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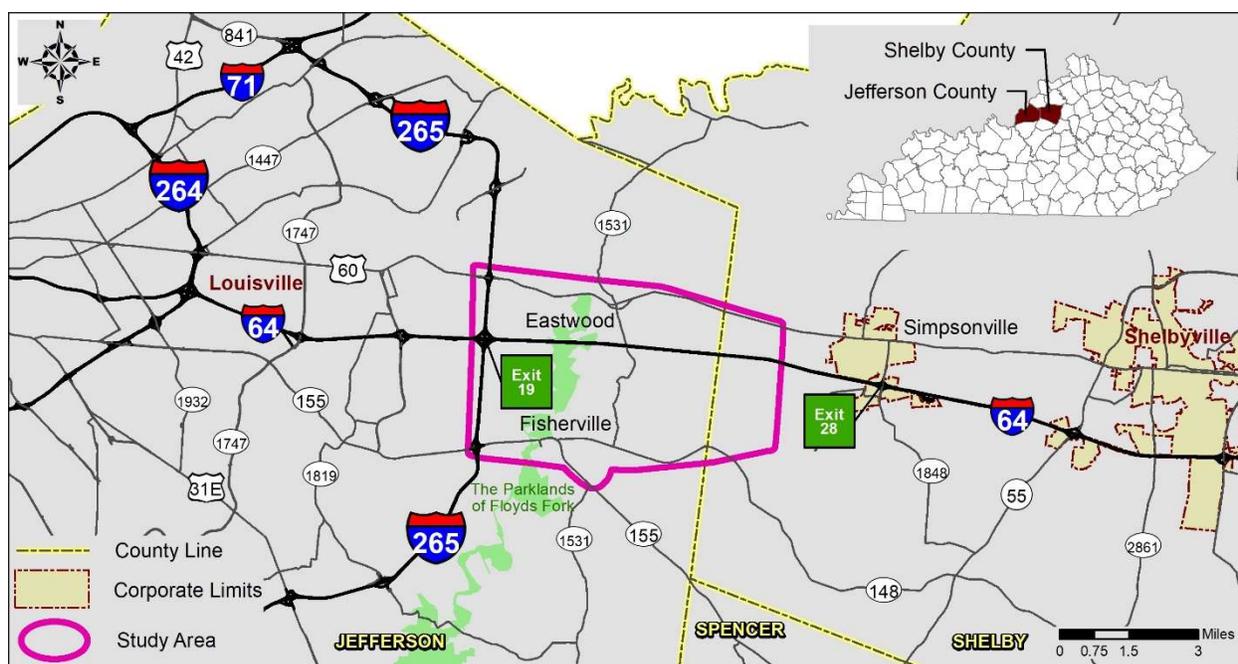


EXECUTIVE SUMMARY | DECEMBER 2024



## EXECUTIVE SUMMARY

The Kentucky Transportation Cabinet (KYTC) initiated this study to evaluate the need for and feasibility of providing increased access to I-64 in eastern Jefferson or western Shelby County. The current system provides no access to the interstate between Exit 19 at I-265 (Gene Snyder Freeway) and Exit 28 at KY 1848 (Buck Creek Road) for Simpsonville, a distance of about nine miles. The I-64/I-265 system interchange does not provide access to surface streets: it is another 1-2 miles beyond to enter/exit the interstate system. This is the longest gap in interstate access anywhere in Jefferson County and the longest along I-64 anywhere in Kentucky's urban areas. The study area<sup>1</sup> is shown in **Figure ES-1**.



**Figure ES-1: Study Area Boundary**

### Regional Planning Context

Eastern Jefferson County and western Shelby County have both experienced considerable development and population growth in recent years, with these trends expected to continue. Census Bureau estimates show a 13% increase in households from 2020 to 2022 for block groups overlapping the study area. While I-64, US 60 (Shelbyville Road), and KY 155/KY 148 (Taylorsville Road) provide relatively high mobility corridors running east-west through the study area, existing north-south connections beyond I-265 are lower mobility, narrow rural roadways that meander with the terrain, intended to provide access to less densely developed surrounding land uses.

<sup>1</sup> Should a new interchange concept advance, adjacent I-64 interchanges beyond the study area may be analyzed to demonstrate compliance with federal policies on interstate access points.

The study represents an update of a 2008 KYTC planning study (Item No. 5-8200),<sup>2</sup> which relied on an extensive community outreach effort to define a host of potential interchange and connector locations. While much of the study area remains low-density single family residential lots, notable changes have occurred since: including creation of the Parklands at Floyds Fork, construction of Echo Trail Middle School, large-scale commercial developments in Simpsonville, and a host of proposed subdivisions. Recommended corridors in the 2008 study stretch from US 60 at Eastwood to KY 155 near Fisherville. At the time, costs were estimated at \$50 to \$60 million. Continued coordination with residents, developers, local officials, and the railroads was recommended. Further, impacts to parks and terrain constraints are noted as special considerations should a Build concept advance. However, no additional work on the potential project occurred.

Beyond the 2008 study, analysts reviewed many other sources to understand the area's character and context:

- Large-scale roadway projects in the Commonwealth's FY 2024-2030 *Enacted Highway Plan* or KIPDA's *Connecting Kentuckiana 2050* Metropolitan Transportation Plan
- Planning studies for overlapping transportation corridors and subareas
- Regional land use plans, like Louisville's 2040 *Comprehensive Plan* and the 2019 *South Floyd's Fork Vision Study*

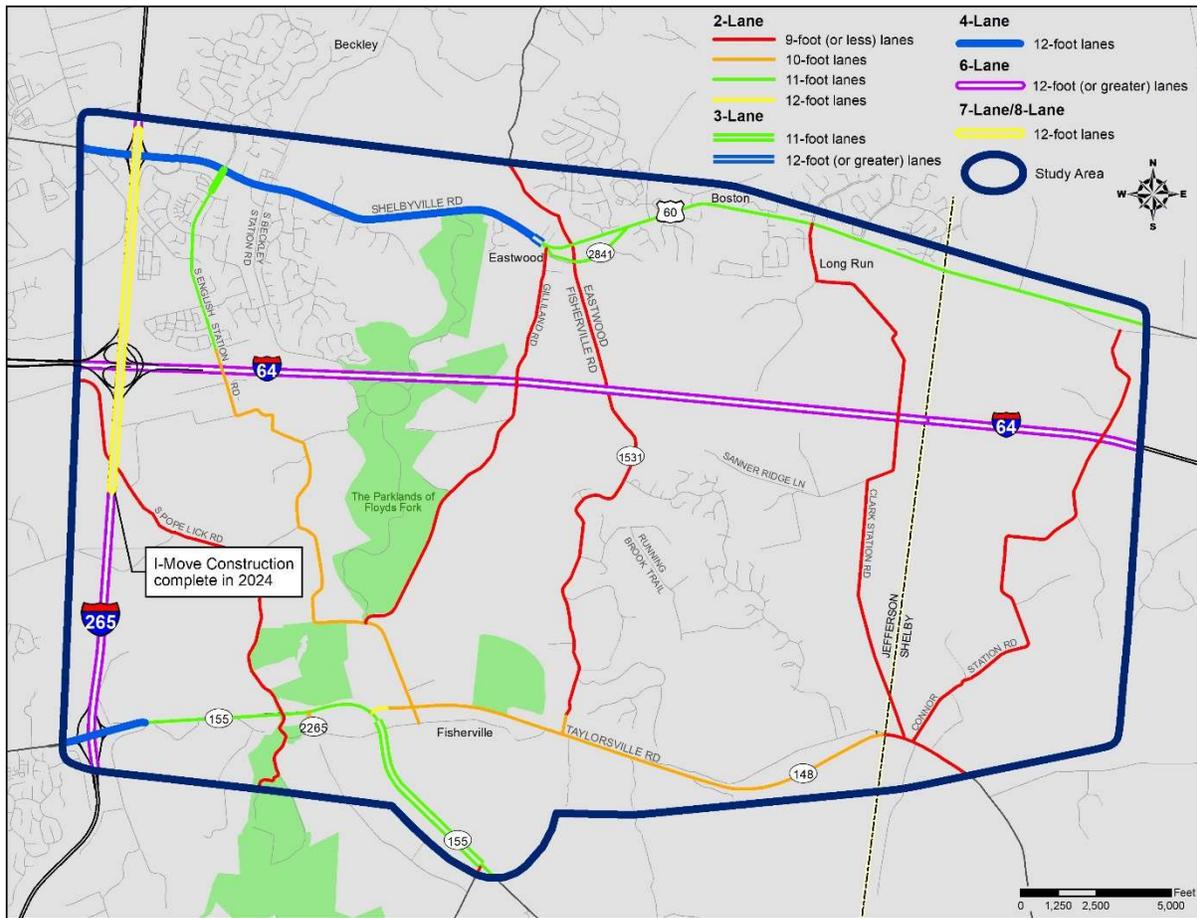
### Existing Highway Network

The highest mobility routes tend to run east-west through the study area with lower mobility collectors and local streets providing north-south connections. North-south routes tend to have narrow lanes and shoulders (**Figure ES-2**), lower speed limits, and substandard alignment elements—steep hills and sharp curves. Real-time travel speed data shows slowdowns due to peak period congestion—particularly along US 60 near I-265 and through Eastwood—as well as lower travel speeds associated with the steep and curvy north-south rural routes.

Three overpasses in the study area currently provide north-south connections above I-64: 056B00043N (South English Station Road), 056B00491N (Gilliland Road), and 056B00493N (Clark Station Road). At four other locations, I-64 bridges over another public roadway: 056B00490N (South Beckley Station Road), 056B0049N (Beckley Creek Parkway), 056B00492N (KY 1531), and 106B00107N (Connor Station Road).

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<sup>2</sup> Online at <https://transportation.ky.gov/Planning/Pages/Planning-Studies-and-Reports.aspx>



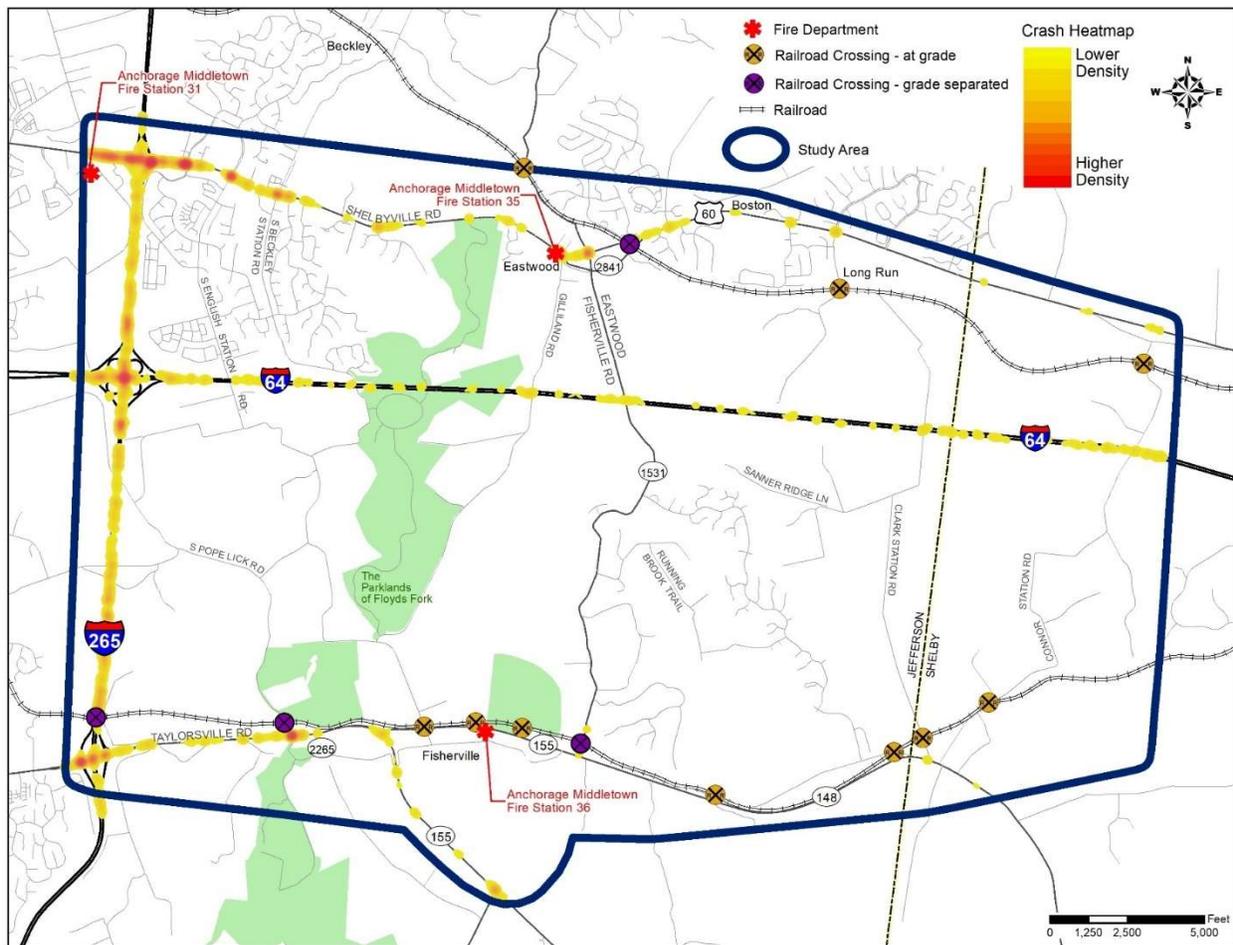
**Figure ES-2: Number of Lanes and Lane Widths**

Two rail lines run east-west through the study area. RJ Corman roughly follows the northern border of the study area, crossing under US 60 at Eastwood. Norfolk Southern (NS) runs just north of the KY 155/KY 148 corridor at the southern boundary of the study area. While most crossings are at-grade with warning flashers or gate arms on relatively low-volume rural highways, three are somewhat unique:

- A 1,000-foot tunnel carries the RJ Corman line beneath US 60, Rockcrest Way, and Eastwood Cutoff Road.
- A 772-foot-long trestle carries the NS tracks over South Pope Lick Road, Pope Lick Creek, and the Louisville Loop.
- A low-clearance, one-lane passage connects KY 1531 beneath the NS line.

Records show 1,856 total crashes were reported on study area roadways during 2018-2022—mapped by density in **Figure ES-3**. Approximately 85% of all study area crashes occurred along

the three highest-volume study routes: US 60 (578 crashes over 7.0 miles), I-64 (339 crashes over 6.6 miles), and I-265 (654 crashes over 4.3 miles). Six crashes (<1%) resulted in fatalities, 354 (19%) resulted in injuries, and 1,486 (81%) involved property damage only (PDO). Four fatalities were along I-265 with the other two on US 60. Predominant crash types are rear end collisions (48%), single vehicle crashes (18%), and same direction sideswipes (16%). Segments of I-265 and KY 155/KY 148 demonstrate higher crash rates than predicted by mathematical models—indicating a poor Level of Service of Safety.



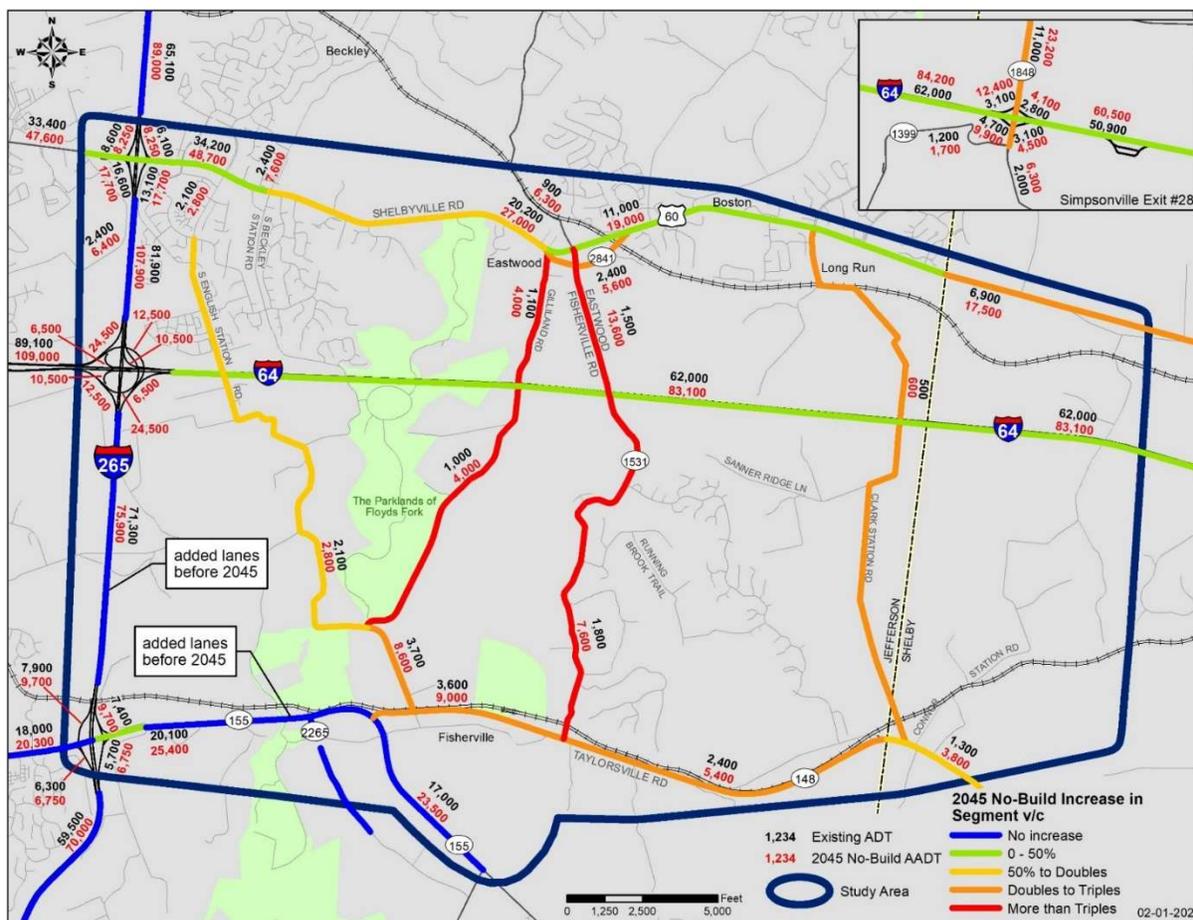
**Figure ES-3: Heat Map of Crash Data (2018-2022)**

### Existing & Future Traffic

**Figure ES-4** presents average daily traffic volumes for highway segments throughout the study area. Analyses indicated most roadway segments within the study area operate at acceptable Level of Service (LOS) and with a reasonable volume-to-capacity ratio (v/c) based on segment-level analysis. One segment currently operates at LOS E: KY 155 between I-265 and KY 148. However,

for busy urban corridors, capacity at intersections provides a more representative measure of overall operations than a segment-wide average.

Key operational metrics at 22 study intersections show a few operate at LOS E/F during one or both peak periods. Even where operations are at LOS D or better for the overall signal, several minor street movements exhibit poor LOS—especially along the busier sections of US 60 near I-265. Poor LOS but no movements approaching a v/c of 1.0 suggests there is excessive delay for a relatively low-volume move.



**Figure ES-4: 2045 No-Build Traffic and Change in v/c**

Year 2045 growth trends were coded into a project-specific travel demand model to forecast future traffic patterns. To ensure model assumptions reflect up-to-date development expectations, the project team compiled information from numerous sources to define socioeconomic growth assumptions: projections from both KYTC and KIPDA models; county-wide population projections; conversations with Planning & Zoning officials in Jefferson, Shelby, and Spencer counties; and input from key stakeholders as part of the Community Advisory Group (CAG) that met at key milestones.

With 6,000 new homes and 4,500 new jobs projected within the study area by 2045, traffic volumes are expected to increase over 2023 levels with or without a new interchange/connector. **Figure ES-4** shows 2045 No-Build projections alongside 2023 traffic and projected increases in v/c compared to existing levels. Based on expected growth in the area, existing highways will not be sufficient to handle expected traffic during peak travel periods. Substantial expected growth results in degraded performance at most study area intersections.

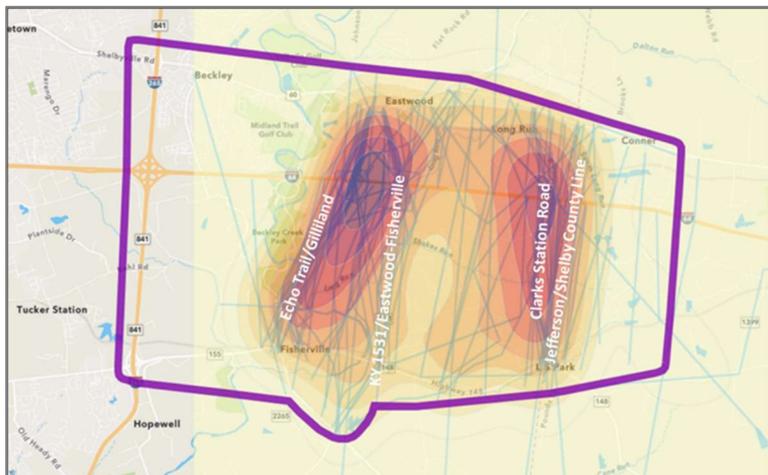
**Goals & Objectives**

Two primary goals drive the study: 1) to reduce congestion on the existing roadway network and 2) to improve connectivity to I-64 within the nine-mile stretch between I-265 and KY 1848. Several other screening metrics are important to consider when evaluating Build options. Combined with the primary goals above, these cover all six of the project goals from the 2008 study:

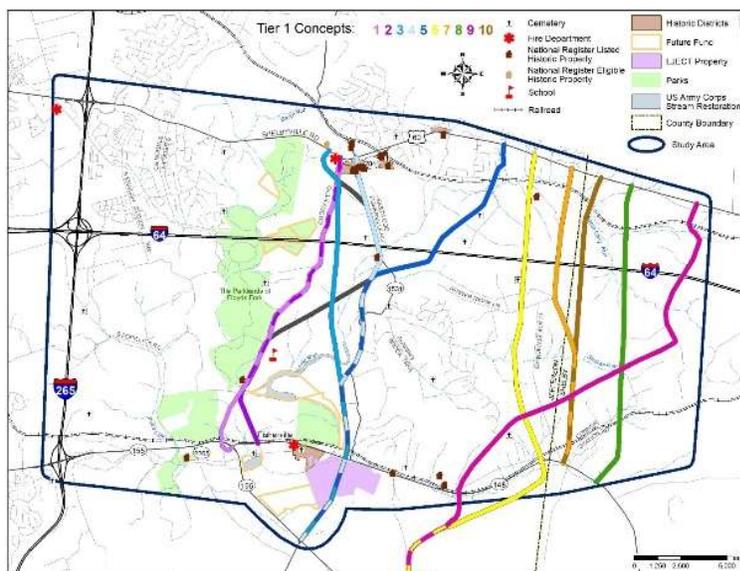


## Development of Build Concepts

The 5-80000 concept development process occurred in two tiers, starting with broad planning-level corridors then advancing a subset of the most competitive options for more detailed analysis.



**Figure ES-6: Public Suggestions on Corridors**

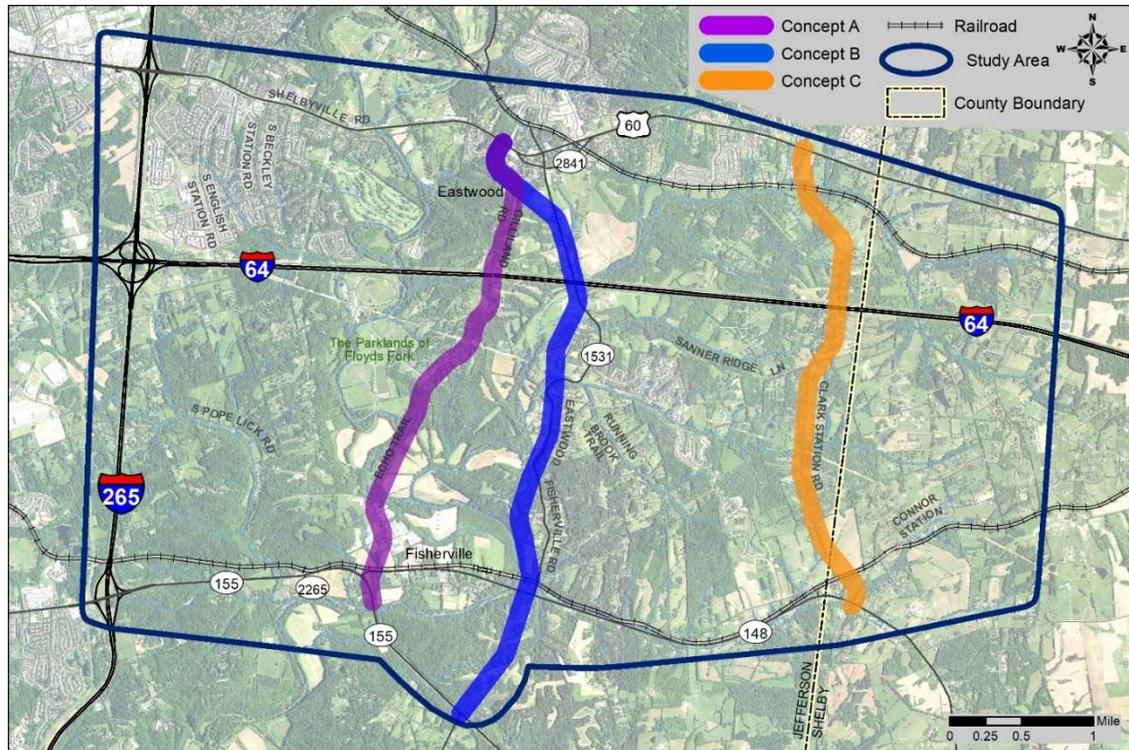


**Figure ES-5: Tier 1 Corridors**

Tier 1 corridors (**Figure ES-5**) were developed based on existing highway connections, expected growth patterns, terrain, environmental constraints, public suggestions (**Figure ES-6**), past planning efforts, and other engineering considerations. Each concept is assumed to have a 45-mph design speed, two lanes—increasing to a five-lane typical for any concepts north of I-64 and west of Eastwood—and a shared use path on one side. Each Tier 1 concept was screened against study goals and objectives and other engineering considerations like length, earthwork, utility impacts, etc. The most competitive corridors that represent a range of different geographic settings advanced for more detailed Tier 2 analyses.

More detailed options were developed for three Tier 2 corridors (**Figure ES-7**), representing the

most competitive combinations from Tier 1 spread across the study area. Tier 2 concepts still represent a high-level corridor overview with broad assumptions rather than an alignment-level design. If any Build concept advances, preliminary design investigations would consider multiple alignments within a single corridor-level concept to define specific footprints, turn lane lengths, optimal traffic control devices, etc.



**Figure ES-7: Range of Tier 2 Concepts**

- The westernmost Build option, **Concept A** generally follows an improved Gilliland Road/Echo Trail. It ties to US 60 west of Eastwood and creates a partial interchange with KY 155/KY 148 to overpass the NS railroad line. It is 3.6 miles long with five lanes north of I-64, two lanes south, and three lanes near the school. Forecasts show 26,700 vehicles per day (vpd) on the new corridor north of I-64 and 13,500 vpd south of I-64. Of the three options, Concept A is closest to the Parklands but requires the least earthwork as it follows existing roadways for most of its length. Costs are estimated at \$130 million in 2023 dollars but with the projected traffic increases along I-64, both Concepts A and B may require additional thru lanes between I-265 and the new interchange to operate at LOS D or better during peak hours.
- The central Build option, **Concept B** generally follows an improved KY 1531 (Eastwood-Fisherville Road). It ties to US 60 west of Eastwood, crosses above the NS railroad line at KY 148 bypassing the one-lane underpass, then ends at KY 155 opposite KY 1531 (Routt Road). It is 4.4 miles long with five lanes north of KY 148 and two lanes south. Forecasts show 28,600 vpd north of I-64, 30,200 vpd south, and 11,400 vpd south of KY 148. Of the three options, it carries the most traffic but has the longest and widest footprint and the most impacts (e.g., streams, conservation easements, and neighborhoods). Costs are estimated at \$170 million but with the projected traffic increases along I-64, both Concepts

A and B may require additional thru lanes between I-265 and the new interchange to operate at LOS D or better during peak hours.

- The easternmost Build option, **Concept C** generally follows Clark Station Road near the Jefferson/Shelby county line, bridging over both rail lines. It is 3.4 miles long with two lanes for its entire length. Forecasts show 16,000 vpd on the connector north of I-64 and 9,100 vpd south. It has the shortest length, lowest cost, and fewest impacts but carries the least traffic. Concept C falls near the midpoint of the 9-mile I-64 interchange gap. Costs are estimated at \$120 million.

Volumes suggest each new interchange with I-64 would need signals at both ramp termini and dual left turn lanes from the eastbound off-ramp to support peak hour traffic. However, additional intersection control evaluations should be examined during any future design work.

The same hybrid travel demand model was used to simulate Tier 2 Build concepts alongside other KYTC capacity-improving projects. Each scenario measures traffic volumes projected to use a new interchange and connector, as well as changes in traffic along existing highways. **Table ES-1** summarizes daily traffic volumes on key highway links.

**Table ES-1: Daily Traffic for 2045 Scenarios**

Segment	No-Build	Concept A	Concept B	Concept C
New Connector, north of I-64	X	26,700	28,600	16,000
New Connector, south of I-64	X	13,500 18,100 <sup>1</sup>	30,200 11,400 <sup>2</sup>	9,100
US 60, east of I-265	48,700	41,400	40,400	45,300
US 60, near Parklands	27,000	19,700	16,700	23,600
US 60, east of Eastwood	19,000	21,600	21,000	20,000
I-64, east of I-265	84,400	114,000	114,000	95,000
I-64, at Shelby County Line	84,400	81,000	82,000	74,000
KY 155, east of I-265	25,400	21,400	22,800	24,400
KY 155, north of Routt Road	23,500	25,800	19,200	19,700
KY 148, east of Fisherville	5,400	5,600	8,300	6,500
I-265, north of I-64	107,900	99,500	100,400	108,300
I-265, south of I-64	75,900	72,000	71,700	75,300

<sup>1</sup> South of South Pope Lick Road; <sup>2</sup> South of KY 148

As shown, the No-Build option carries higher traffic volumes on US 60 west of Eastwood than any Build scenario. Capacity analyses suggest major widening of US 60 alongside other smaller scale intersections improvements will likely be necessary to provide adequate capacity for future growth.

Any Build concept reduces regional vehicle-hours of travel (VHT); that is, cumulative trips are completed in less time than in the No-Build scenario, suggesting faster travel speeds and less time spent in congested areas. The western Build concepts (A-B) are more effective in reducing regional congestion than Concept C. The model shows a new connector without an interchange does not effectively improve regional traffic congestion.

**Table ES-2: Regional Congestion Metrics**

	Vehicle-Miles of Travel	Vehicle-Hours of Travel (VHT)	% VHT Change from No-Build
Base (2021)	5,738,195	179,541	-
No-Build	7,386,489	278,942	-
<b>Concept A</b>	7,416,265	275,298	-1.31%
<b>Concept B</b>	7,416,511	275,397	-1.27%
<b>Concept C</b>	7,412,392	276,645	-0.82%

In addition to traffic performance, Tier 2 concepts were screened to evaluate impacts on the surrounding properties and environmental resources. While any future project development phases will include more in-depth assessments, this screening is intended to highlight major “red flag” concerns that would affect decision-making and prioritization.

**Table ES-3: Comparative Impacts between Build Concepts**

Metric	Concept A	Concept B	Concept C
<b>Corridor Length</b>	3.6 miles; 2-5 Lanes	4.4 miles; 5 lanes	3.4 miles; 2 lanes
<b>% on New Alignment</b>	32%	80%	44%
<b>New Right-of-Way</b>	50-60 acres	100-110 acres	60-70 acres
<b>Recreational Resources</b>	Near Parklands	-	-
<b>Conservation Easements</b>	-	Bisects LJCET	-
<b>NRHP Historic Resources</b>	Eastwood HD +3 other sites	Eastwood HD +3 other sites	2 sites
<b>Potential Relocations</b>	50-60 acres plus ±8 relocations	100+ acres plus ±8 relocations	60-70 acres plus ±3 relocations
<b>Community Resources</b>	Serves fire depts, school, Industrial Park	Serves fire departments	-
<b>Planned Developments</b>	1 subdivision; 2 businesses	2 subdivisions; 1 business	-
<b>Stream Impacts</b>	4 crossings; 1,600 ft	9 crossings; 2,700 ft	7 crossings; 1,600 ft
<b>Earthwork (1,000s CY)</b>	70 cut; 230 fill	190 cut; 160 fill	180 cut; 310 fill
<b>Utility Impacts</b>	Most	Some	Some

## Meetings

The study incorporated numerous opportunities to engage with diverse stakeholder groups.

- The project team met regularly, reviewing technical analyses and comments from Community Advisory Group (CAG) members, public surveys, and other sources.
- The CAG is comprised of 18 invited members, selected to act as a link between KYTC and the community at-large to provide meaningful discussions, viewpoints, and feedback throughout the study. The CAG met four times throughout the study.
- Two sets of public meetings were held to share information, answer questions, and collect insights. In-person events were supplemented with a dedicated project website and online surveys. Engagement opportunities were crafted to ensure equal access and non-discrimination.
  - In August 2023, a set of two public meetings were held to introduce the study and collect insights on area needs. Over the 5-week comment period, 276 survey responses were collected with 60% supporting a new interchange/connector.
  - In April 2024, another set presented the Tier 2 concepts and collected feedback. Over the 4-week period, 307 surveys were collected with 75% agreeing that a connection/interchange would improve travel in the study area. Concept A received the most support and Concept C received the least. About 20% preferred a No-Build option.
- KYTC briefed local elected officials and other stakeholders prior to each public meeting.
- KYTC sent requests for information to 70 resource agencies regarding study goals, scoping concerns, conservation/development plans, sensitive locations, and mitigation strategies.
- Two meetings with the Federal Highway Administration (FHWA) provided an update to federal partners, who play a key role in future approvals should a Build option advance.

## Recommendations

Independent of a Build corridor, four standalone future projects are recommended for consideration:

- Major widening of US 60 to extend the five-lane section to near the county line, with the exact limits to be determined based on traffic investigations along that corridor,
- Major widening of KY 155—covered by other ongoing KYTC design projects,
- Minor widening along KY 1531 to address safety concerns as traffic increases, and
- A new east/west connector between Echo Trail and KY 1531.

The project team dismissed **Concept B** from further consideration in light of impacts to the LJCT easement, costs, stakeholder feedback, and interchange operations.

**Concepts A** and **C** are both viable options that satisfy the purpose, providing regional traffic benefits that outweigh anticipated costs. Future design efforts should examine different alignments within the preferred corridor(s), specifically considering intersection-level operations and connections at US 60 and KY 155/KY 148. The corridor could be considered a minor arterial although the rural/urban designation warrants further consideration during future design phases.

The next phase in the project development process is Preliminary Engineering and Environmental Analyses, including an Interchange Justification Study (IJS) and continued engagement with FHWA. Coordination with local officials, key stakeholders, the already-established CAG, and the public is essential as concepts are advanced for implementation.