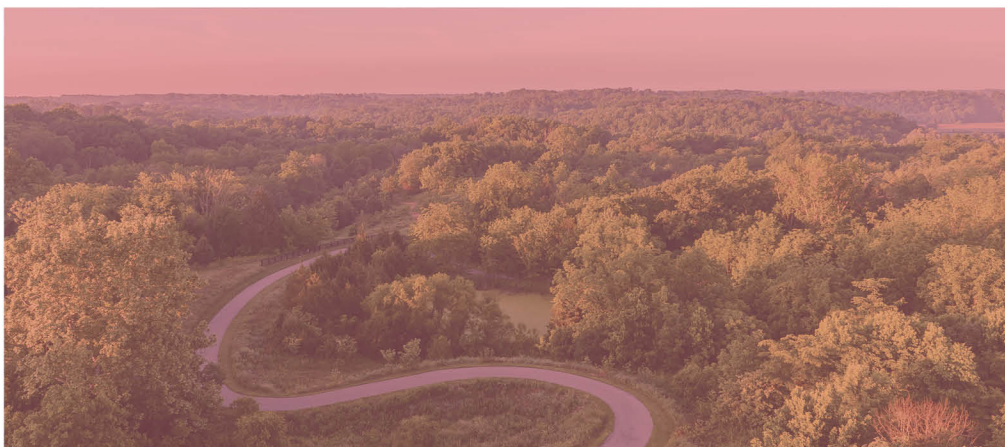


# Appendix B

## Preliminary Alternatives Report



# Preliminary Alternatives Report

65-71 Regional Connector

April 2, 2019

## Table of Contents

1 – Initial Alternative Corridor Development .....	3
<b>Alternative 1</b> .....	5
<b>Alternative 2</b> .....	7
<b>Alternative 3</b> .....	9
2 – Existing Corridor Improvement Alternatives .....	13
<b>Alternative 5A</b> .....	14
<b>Alternative 5B</b> .....	16
3 – Typical Sections .....	17

# 1 – Initial Alternative Corridor Development

The study team developed a set of corridor alternatives connecting I-65 to I-64 and then on to I-71 based on the existing conditions analysis (traffic/safety analysis, environmental data, and an overall study-area review) plus input from the Stakeholder meetings. One set of corridors was focused on new alignments, and a second set of corridors was focused on upgrading existing facilities. In addition, the No Build Alternative will be carried forward throughout the process.

## *New Corridors*

For the new corridor routes, the first step in the process was to identify potential I-65, I-64 and I-71 interchange locations – in some cases, at existing interchanges, and in some cases, at new locations. A variety of corridors was developed to connect these tie-in points. The corridors are presented as 2500-foot-wide bands. Overall, there were 28 different new corridor alternative combinations identified. The initial corridors are presented in **Figures 1 through 4**.

The existing conditions analysis, as well as input from stakeholders, identified both areas to avoid and areas to connect. Potential areas to avoid included the Elk Creek and Waterford neighborhoods in Spencer County as well as other densely populated neighborhoods, particularly in Bullitt and Oldham Counties. Input from Bullitt County representatives requested the corridor cross US 31E/150 just south of Mt. Washington, and this was achieved with several of the options.

A recent planning study investigated an I-64 interchange at Gilliland Road in Jefferson County. This interchange was incorporated into one of the corridor segments (Alternative 1). Stakeholders also requested a corridor east of Taylorsville and, to meet this request, a corridor was developed that navigates between Taylorsville and Taylorsville Lake. A short portion of this corridor is outside the original study area. The Saddlebred horse farms, located in Shelby County in the vicinity of I-64 and US 60 west of Shelbyville, represented another sensitive area and were carefully navigated.

## *Existing Corridors*

Several corridors were developed to primarily follow existing roadways (Alternatives 5A, 5B, and 5C). The corridors are shown on **Figure 5**. The existing corridor alternatives mostly upgrade existing roadways, using existing I-65 interchanges at KY 44, KY 480, and KY 245 as starting points, with improvements studied along those routes to the east. East of Mt. Washington, the corridor connections tie to KY 55 and KY 1848 as improvements turn north. At I-64, the existing interchanges at KY 1848 and KY 55 would be utilized. Moving north from I-64, the KY 1848, KY 53 and KY 55 corridors will be studied along with another option that ties to the existing KY 153 interchange at I-71. In Henry County, the KY 55 corridor improvement will connect to the KY 55/US 421 corridor and follow KY 55 to I-71 where a new interchange will need to be added.

### *Proposed New Corridor Alternatives*

From the 28 different possibilities, the new corridor alternatives were paired down to 12 to advance to the Level 1 screening. The 12 alternative corridors are described below and are grouped into four primary alternatives with one to three variations for each. The corridor lengths are described in **Table 1**.

**Table 1. New Corridor Alternative Lengths**

	Alternative											
Segment	1	1A	1B	2	2A	2B	2C	3	3A	3B	4	4A
I-65 to KY 44	4.2		11.1	11.1				11.6		4.2	11.6	
KY 44 to US 31E	7.1									9.0		
US 31E to KY 155	12.2			10.3				10.6			8.6	
KY 155 to I-64	3.8			6.0		8.1	6.0	10.0			15.3	
I-64 to KY 22	12.6	12.5	12.6	10.8	15.9	16.0	10.8	16.0	20.7	16.0	12.7	
KY 22 to I-71	2.0			2.0			2.0					
Total	41.9	41.8	41.7	40.2	43.3	45.5	40.4	48.2	52.9	49.8	59.5	58.4

## Alternative 1

Alternative 1 is illustrated in **Figure 1**. Alternatives 1, 1A and 1B originate at one of two I-65 locations. Alternative 1 starts at a proposed interchange approximately three miles north of KY 44 (Exit 117) in Shepherdsville. This alternative heads in a southeast direction generally along the Bells Mill Road corridor, interchanging with KY 44 between Shepherdsville and Mt. Washington. From there, it continues southeast, crossing the Salt River and then turning northeast, crossing back across the Salt River and interchanging with US 31E/150 south of Mt. Washington. Dense residential developments make it difficult to stay north of the Salt River within this segment. From US 31E/150, the corridor continues northeast, interchanging with KY 155 in Jefferson County. A potential interchange is illustrated in **Figure 1** at KY 44. At this location, KY 44 currently carries less than 4,000 AADT; however, the segment between US 31E/150 and KY 155 is approximately 12 miles long, and additional access may be warranted with KY 44 providing the most logical location. From KY 155, the corridor heads north and interchanges with I-64 approximately three miles east of I-265. This would be a new interchange located in proximity to the previously studied Gilliland Road interchange.

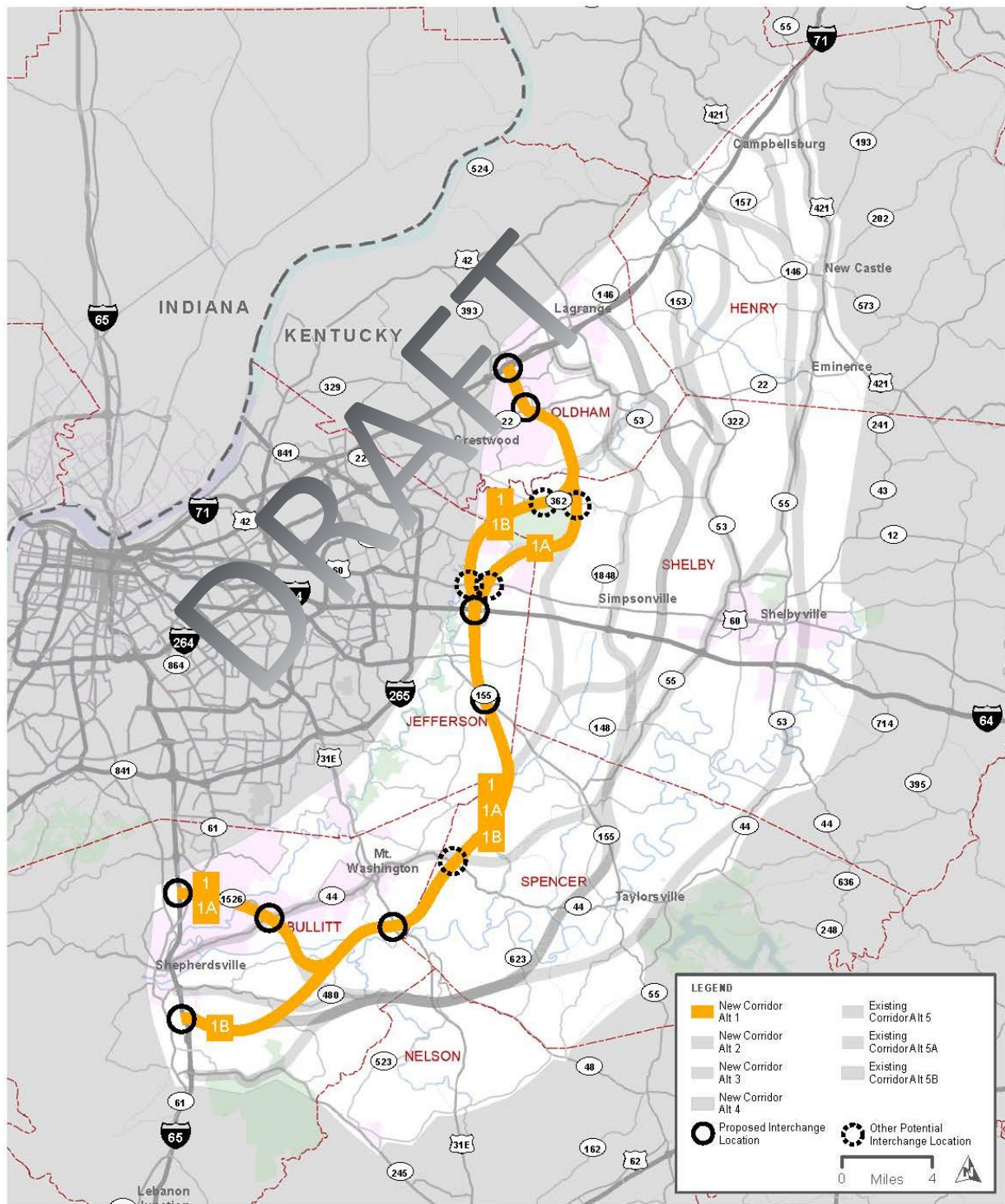
Approximately one mile north of I-64, the corridor crosses US 60, which is another logical interchange location. However, given the spacing and design challenges at this location, this interchange is noted as a potential and not a proposed interchange. From US 60, the corridor heads north interchanging with KY 22. Between I-64 and KY 22, KY 362 is noted as another potential interchange location. As is the case with KY 44, KY 362 is a lower volume road, but an interchange may be warranted in the long term. North of KY 22, the corridor follows KY 393, utilizing the KY 393 interchange at I-71 (Exit 18).

Alternative 1A is similar to Alternative 1, only deviating between I-64 and KY 22. Instead of passing north of The Polo Fields Golf Course/neighborhood, Long Run Golf Course, and Long Run Park, it runs south of these locations, tying back into Alternative 1 north of KY 362.

Alternative 1B originates at the new I-65 interchange south of KY 480 and south of Shepherdsville. Construction on this interchange recently started and will take approximately two years to complete. This corridor heads northeast, intersecting Alternative 1 south of the Salt River and north of KY 480. Given that the corridor parallels KY 44 to the south, the first interchange would be at US 31E/150.



Figure 1. New Corridor Alternative 1



DATA SOURCE: LOJIC, KIPDA, KY GeoNet, Esri

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FIGURE 1: ALTERNATIVES 1, 1A, 1B  
65-71 REGIONAL CONNECTOR

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## Alternative 2

Alternative 2 is illustrated in **Figure 2** and originates at the same interchange along I-65 as Alternative 1B. The corridor heads northeast, intersecting US 31E/150 at the same location as Alternative 1. Just south of KY 155, Alternative 2 heads northeast, veering away from Alternative 1 and interchanging with KY 155 in Spencer County instead of Jefferson County. From there, the corridor continues north interchanging with I-64 just under three miles west of the Simpsonville interchange (Exit 28). As with Alternative 1, Alternative 2 includes a potential interchange with US 60 approximately one mile north of I-64. Alternative 2 then follows Alternative 1 northward, interchanging with KY 22 and then interchanging with I-71 at KY 393 (Exit 18).

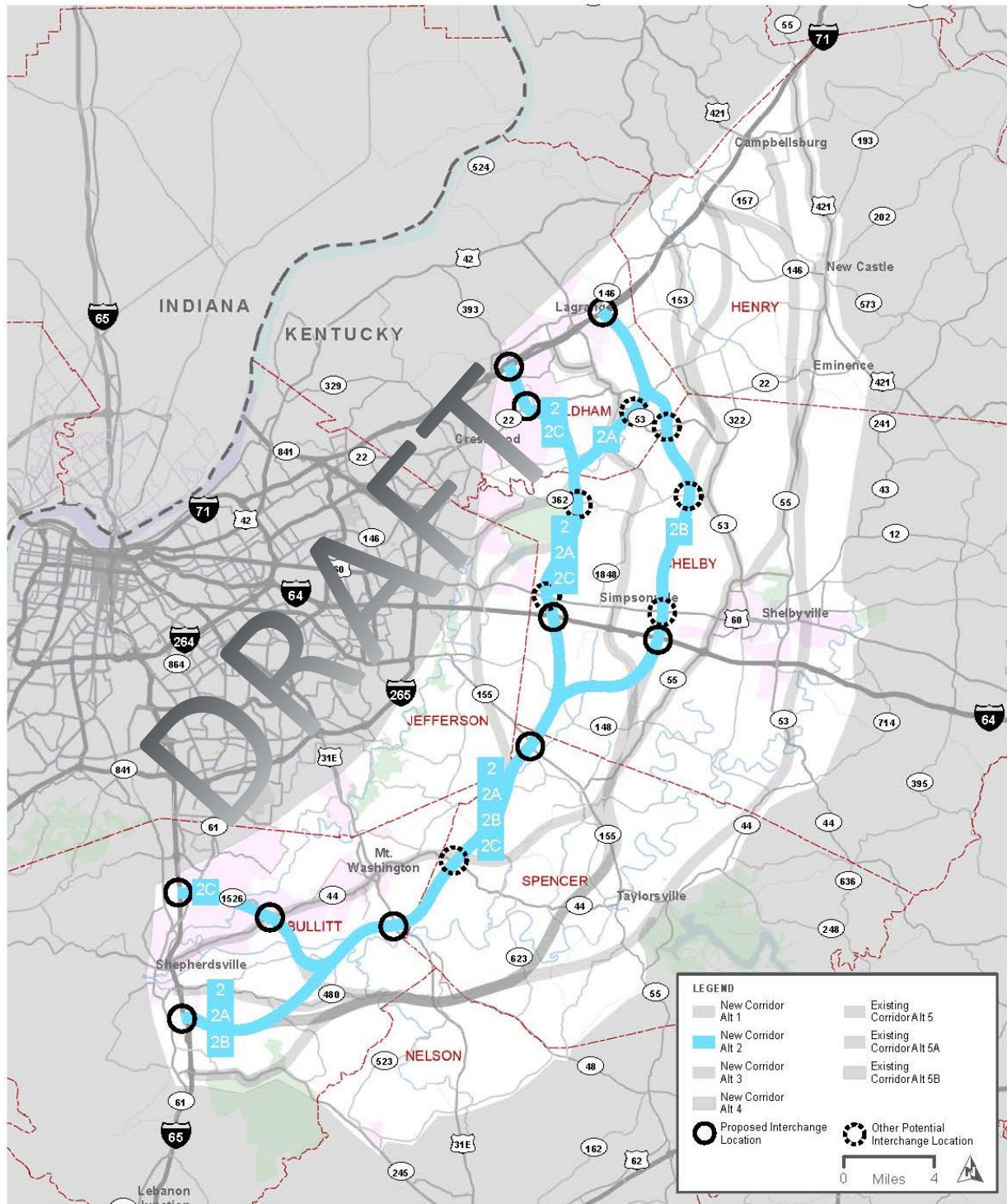
Alternative 2A follows Alternative 2 to just north of a potential interchange with KY 362. From there, Alternative 2A heads northeast, crossing KY 53 and then turning north towards KY 712. It then follows KY 712 to I-71, where a new interchange would be built. The new interchange would be located approximately 1.5 miles north of the KY 53 (Exit 22) interchange.

Alternative 2B follows Alternative 2 until it branches off to the east at KY 148. From there, it travels northeast to a new interchange along I-64 approximately halfway between Simpsonville and Shelbyville. As with the other alternatives, a potential interchange is shown at US 60, just over a mile from I-64. From US 60, Alternative 2B heads north, joining Alternative 2A near KY 22. It then follows Alternative 2A, interchanging with I-71 at KY 712.

Alternative 2C starts at the same proposed I-65 interchange as Alternative 1. It follows Alternative 1, interchanging with KY 44 between Shepherdsville and Mt. Washington, before intersecting Alternative 2 south of the Salt River. From this location, it follows Alternative 2. The primary reason for the development of Alternative 2C is to provide an option that accesses I-65 north of Shepherdsville. This option also provided the opportunity to use the Bells Mill Road corridor to KY 44, create an interchange at KY 44, then extend the Bells Mill Road corridor south to proposed Alternative 2. The Bullitt County stakeholders expressed a strong desire to see Bells Mill Road extended to a new connection between I-65 and US 31E/150 and, with the difficulty in locating a new corridor alternative in Bullitt County north of KY 44, Alternative 2C provides the Bells Mill connectivity the stakeholders suggested.



Figure 2. New Corridor Alternative 2



DATA SOURCE: LOJIC, KIPDA, KY GeoNet, Esri

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FIGURE 2: ALTERNATIVES 2, 2A, 2B, 2C  
65-71 REGIONAL CONNECTOR

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## Alternative 3

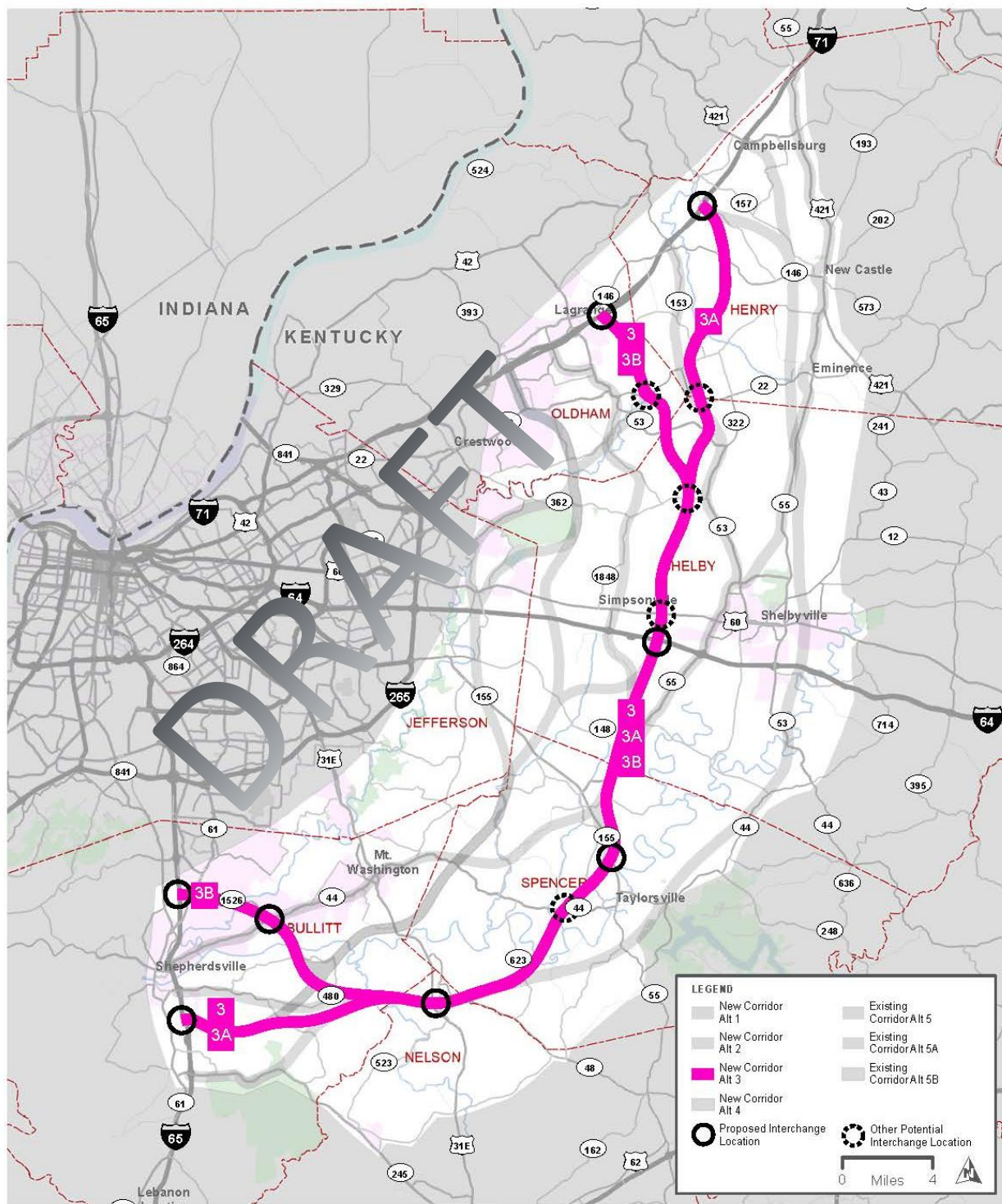
Alternative 3 is illustrated on **Figure 3** and starts at the same location as Alternatives 1B and 2 but travels more east than northeast, interchanging with US 31E/150 in northern Nelson County near KY 480. It then turns northeast, interchanging with KY 155 east of Taylorsville. An interchange could also be considered at KY 44 as an additional access to Taylorsville.

Alternative 3 would then head north, interchanging with I-64 at the same location as Alternative 2B. From I-64, it would follow Alternative 2B to KY 712, creating an I-71/KY 712 interchange. Between I-64 and I-71, a 16-mile stretch, three potential interchanges are identified. The first is at US 60, just over a mile north of I-64. The other two potential interchanges are at KY 362 and KY 22. Both are lower-volume roads located in the middle of the segment. Traffic analysis will show if either of these interchange locations are warranted.

Alternative 3A follows Alternative 3 to just north of KY 362. This corridor then heads in a more northeasterly direction than Alternative 3. A potential interchange is proposed at KY 22, and Alternative 3A's northern terminus would be a new interchange constructed at I-71 and KY 1606, located approximately 2 miles north of the existing KY 153 (Exit 28) interchange.

Alternative 3B begins at I-65 north of Shepherdsville, and then follows the Bells Mill corridor, similar to Alternatives 1 and 2C. It then interchanges with KY 44, and joins the Alternative 3 corridor west of US 31E/150, where it follows Alternative 3 to I-64 and I-71.

Figure 3. New Corridor Alternative 3



DATA SOURCE: LOJIC, KIPDA, KY GeoNet, Esri

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FIGURE 3: ALTERNATIVES 3, 3A, 3B  
65-71 REGIONAL CONNECTOR

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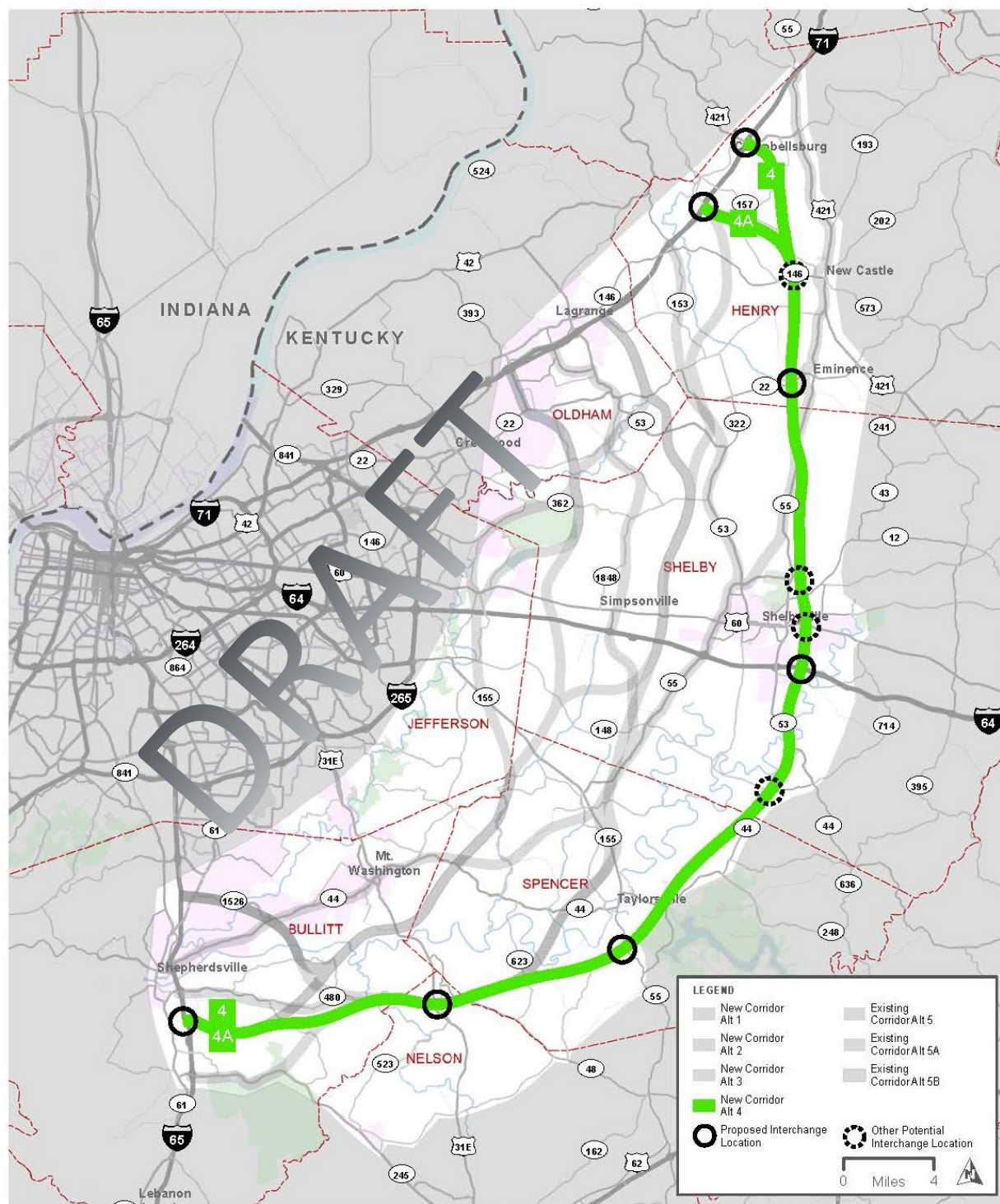
## Alternative 4

Alternative 4 starts at the new I-65 interchange south of Shepherdsville, like Alternatives 1B, 2 and 3. Alternative 4 is shown in **Figure 4**. It interchanges with US 31E/150 in northern Nelson County and then travels northeast towards Taylorsville. An interchange is proposed at KY 55 south of Taylorsville. Alternative 4 then continues northeast towards Shelbyville, interchanging with I-64 approximately one mile east of the existing I-64/KY 53 Interchange (Exit 35). An additional interchange could be considered south of Shelbyville near the KY 148 and KY 44 intersection, to provide additional access along this 15-mile segment. North of I-64, a potential interchange could be considered at either US 60 or KY 43. Alternative 4 would travel north to a proposed interchange with KY 22, and then continue north to the existing Campbellsburg interchange (Exit 34). Another interchange could be considered at KY 146 to break up this 11-mile segment.

Alternative 4A follows Alternative 4 for the majority of its distance, branching off to the west just north of the potential KY 146 interchange. This alignment provides an alternative I-71 interchange at KY 1606, which is the same location used for Alternative 3A.



Figure 4. New Corridor Alternative 4



DATA SOURCE: LOJIC, KIPDA, KY GeoNet, Esri

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FIGURE 4: ALTERNATIVES 4, 4A  
65-71 REGIONAL CONNECTOR

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## 2 – Existing Corridor Improvement Alternatives

Three additional corridor alternatives primarily follow existing roadways. The initial alternatives, illustrated in **Figure 5**, are upgrades to existing roadways which intersect the interstates (I-65, I-64, and I-71) at existing interchanges. To meet the goal of providing increased mobility, offset intersections and substandard horizontal curvature along the existing roadways are planned to be straightened, providing smoother overall corridors. Existing or planned (I-71 at LaGrange Parkway) service interchanges will be used at each proposed interstate crossing except at the I-71/KY 55 location where a new service interchange will need to be constructed. The segment lengths for the alternatives are included in **Table 2**. Segments of the alternatives are examined independently in this document in the event that segments of independent utility are ultimately identified.

**Table 2. Existing Corridor Alternative Lengths**

	Segment	Existing Corridor Alternatives (miles)		
		5	5A	5B
	I-65 to US 31E	10.3	11.6	11.2
	US 31E to KY 155	10.5	12.7	12.7
	KY 155 to I-64	9.0	8.4	8.4
	I-64 to KY 22	11.4	14.1	14.8
	KY 22 to I-71	4.0	5.7	13.5
Total Corridor (miles)		45.2	52.5	60.6

### Alternative 5

Alternative 5, the northernmost and westernmost alternative, originates at the existing KY 44 partial cloverleaf interchange at I-65 (Exit 117) in Shepherdsville. The corridor follows KY 44 to the northeast, through commercial and residential property lining the corridor. KY 44 is a mostly two-lane corridor with occasional turn lanes and is known by the residents of Bullitt County for its heavy congestion. KYTC has been studying ways to improve the KY 44 corridor for several years, but the proximity of neighborhoods and businesses to the roadway, combined with a lack of available funding, has prevented solutions from moving forward. Alternative 5 generally follows KY 44 for about four miles to the east after passing through Mt. Washington. At that point, Alternative 5 leaves KY 44 and enters Spencer County, generally following Plum Ridge Road (County Road 1169) before connecting to the existing KY 55 corridor at the KY 155 intersection with KY 55.



North of KY 155, Alternative 5 enters Shelby County, following KY 55, a two-lane road with minimal shoulders, for approximately four miles before turning north to follow the Buck Creek Road corridor after crossing KY 148. The Buck Creek Road corridor leads to the existing KY 1848 diamond interchange with I-64 (Exit 28), which services the Outlet Shoppes of the Bluegrass. North of I-64, Alternative 5 follows KY 1848 to US 60, where it then passes north through farmland to reconnect with and follow KY 1848. At the intersection of KY 362, Alternative 5 leaves the existing KY 1848 corridor and connects to the County Road 1315 corridor as it enters Oldham County. KY 1315 is a narrow but lightly populated corridor that ties to KY 53. Alternative 5 follows KY 53, currently a two-lane roadway, to the new four-lane LaGrange Parkway and then follows the new LaGrange Parkway to the location of a proposed new interchange on I-71 (KYTC Highway Plan Number 5-483.30).

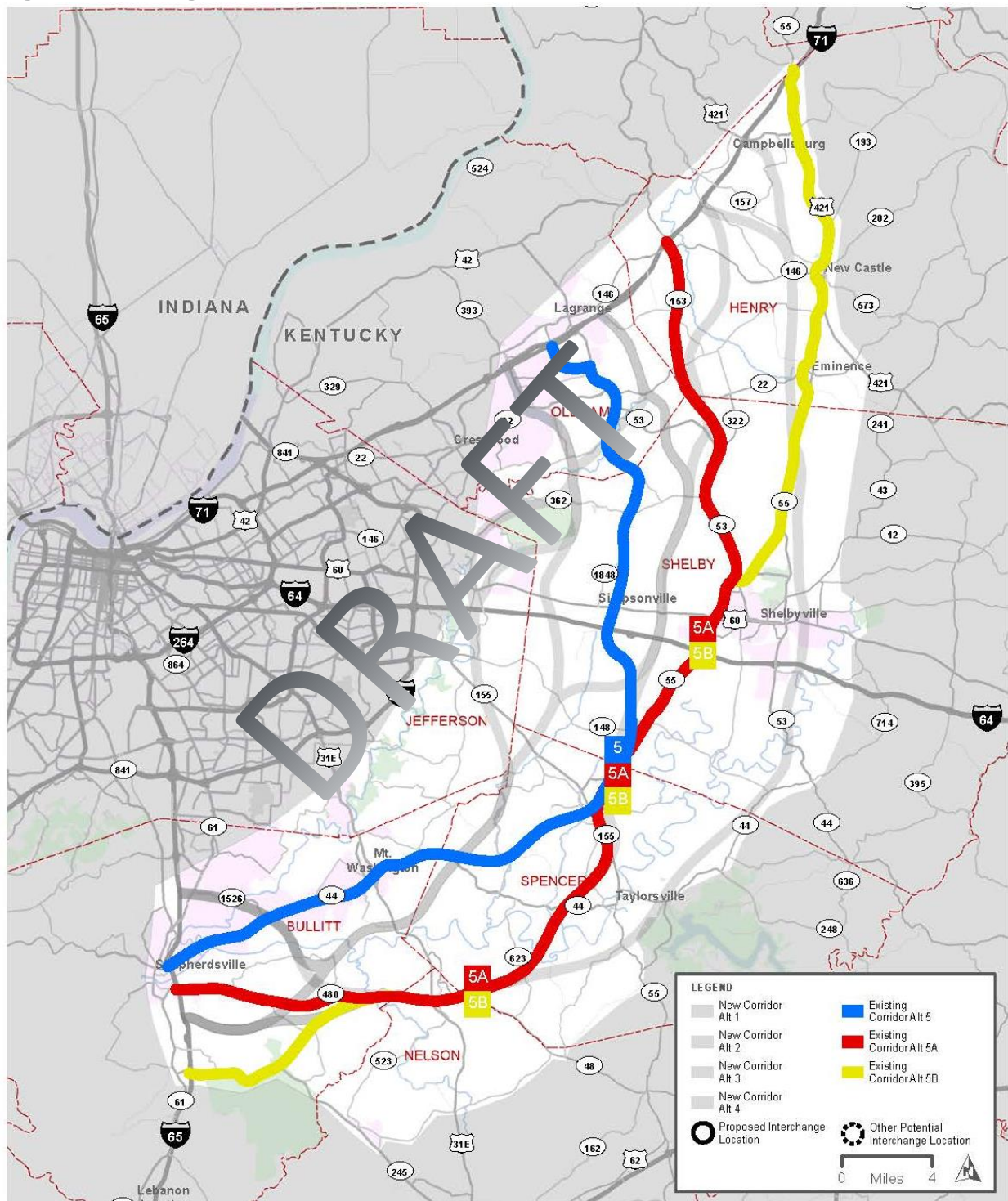
### **Alternative 5A**

Alternative 5A begins at the existing KY 480 interchange with I-65 in Shepherdsville (Exit 116). The KY 480 interchange services the Cedar Grove Business Park, which includes several large clients with distribution centers – among them, Amazon. Alternative 5A follows four-lane KY 480 through the industrial area and continues east on the two-lane KY 480 (Cedar Grove Road) corridor to US 31E/150 after entering Nelson County. After crossing US 31E/150, Alternative 5A passes cross-country – mostly through farmland – in Spencer County to KY 155 west of Taylorsville, including crossings of the Salt River and KY 44.

Alternative 5A follows the existing two-lane KY 55 corridor northwest of Taylorsville before turning north along the KY 55 corridor into Shelby County. The KY 55 corridor in Shelby County is currently a relatively straight two-lane road that passes through the community of Finchville to the KY 55 diamond interchange at I-64 on the west side of Shelbyville (Exit 32). Alternative 5A follows KY 55 north along the four-lane KY 55, crossing US 60 before joining Freedom's Way, a five-lane facility at the edge of Shelbyville.

As KY 55 (Freedom's Way) turns east at the north side of Shelbyville, Alternative 5A leaves KY 55 and follows the two-lane KY 53 corridor. KY 53 is a relatively straight and lightly populated corridor. Alternative 5B leaves KY 53 at a sharp curve, where it joins KY 322 and travels cross-country to the KY 22 corridor in Henry County for a short stretch, before passing to the KY 153 corridor and following the two-lane KY 153 to the existing KY 153 diamond interchange with I-71 (Exit 28).

Figure 5. Existing Corridor Alternative 5



DATA SOURCE: LOJIC, KIPDA, KY GeoNet, Esri

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FIGURE 5: ALTERNATIVES 5, 5A, 5B  
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**Alternative 5B**

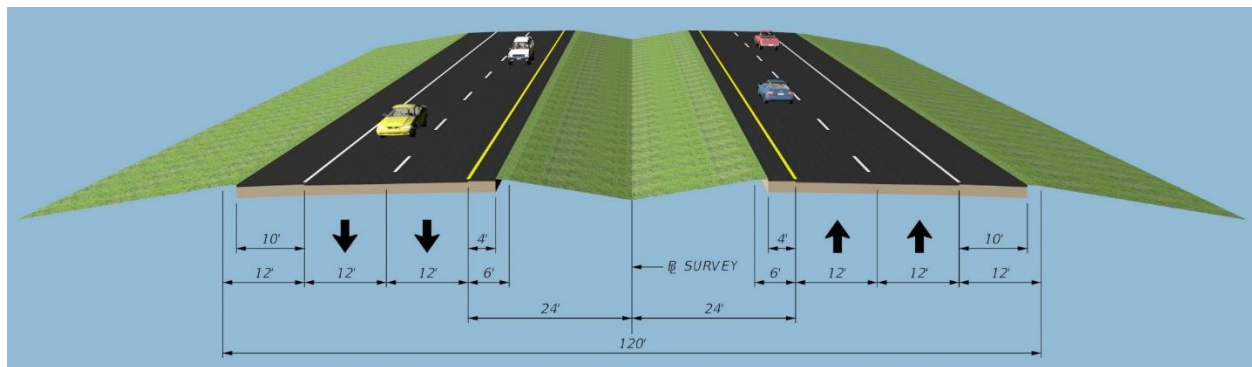
Alternative 5B begins at the existing KY 245 diamond interchange south of Shepherdsville (Exit 112). The KY 245 corridor is a two-lane roadway passing through the Bernheim Arboretum and Research Forest. Alternative 5B follows KY 245 for approximately four miles before turning north and passing cross-country to join the KY 480 corridor in Spencer County. From there, Alternative 5C follows the same corridor as Alternative 5A described above northwest of Taylorsville and through the existing KY 55 interchange with I-64 west of Shelbyville (Exit 32).

As Alternative 5B follows KY 55 (Freedom's Way), a five-lane roadway, it diverges from Alternative 5A to rejoin the KY 55 corridor north of Shelbyville. Alternative 5B then follows KY 55, a two-lane roadway with full shoulders, north to Eminence as it enters Henry County. Historic properties in Eminence and New Castle (both in Henry County) require a west bypass of each town. From between Eminence and New Castle, Alternative 5B follows the US 421/KY 55 corridor north. Just east of Campbellsburg, the routes diverge with the Alternative 5B corridor following KY 55 to I-71 where a new service interchange would be required. US 421 / KY 55 is a two-lane facility, with no paved shoulders.

### 3 – Typical Sections

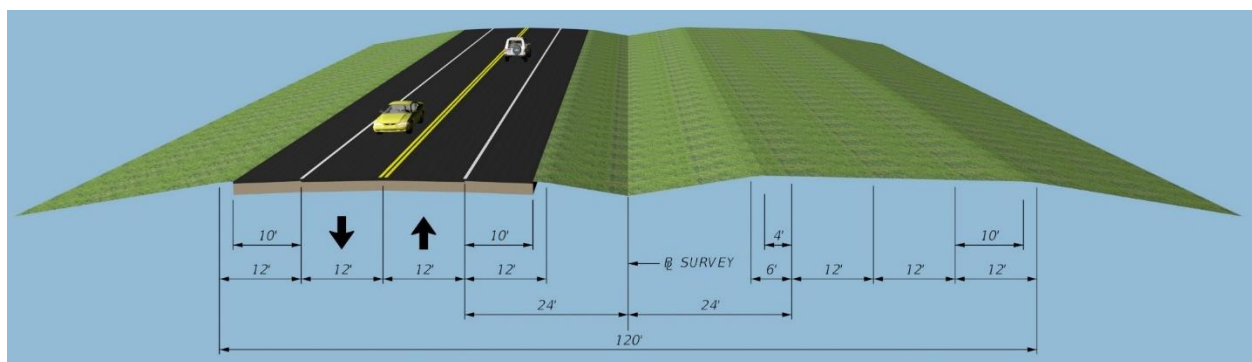
Alternatives 1 through 4 are proposed to be interstate or parkway type facilities using an approximate 70-mph design speed. System interchanges would need to be provided at each of the three interstates, and service interchanges would be provided at other strategic locations as described above and presented in **Figures 1** through **4**. As illustrated in **Figure 6**, the roadway would be a four-lane roadway (two in each direction) with 12-foot lanes and a 48-foot depressed median. Six-foot inside shoulders and 12-foot outside shoulders are proposed.

**Figure 6. Four-Lane Roadway (48-foot Median)**



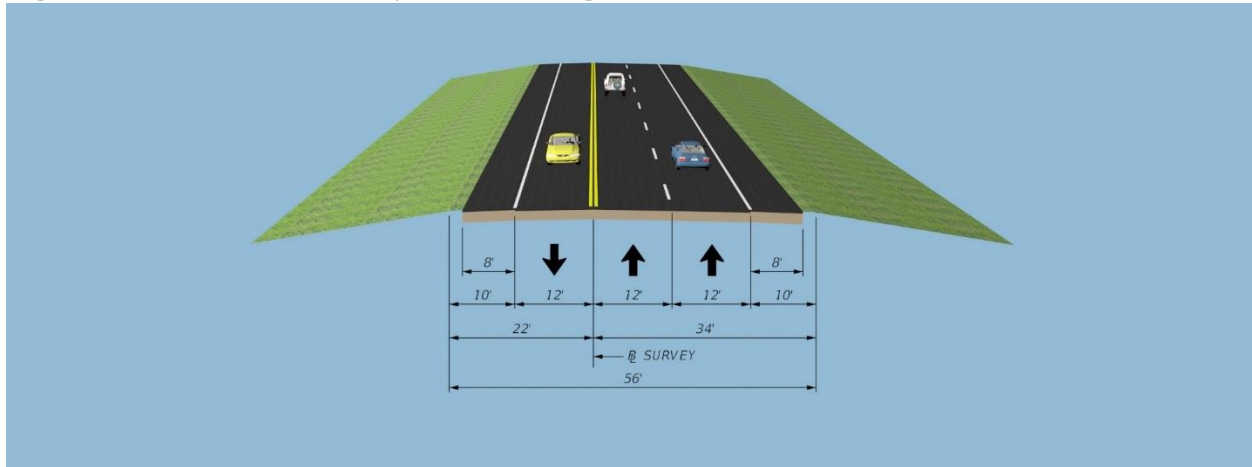
While Alternatives 1 through 4 are presented as interstate type facilities with interchanges, traffic projections may show a limited access facility with interchanges is not warranted initially. Another facility type could be a “regional connector roadway” and could provide a combination of at-grade intersections and interchanges. Interchanges would be provided at existing Interstates. The typical section would be similar to the one presented in **Figure 6**, except a narrower median could be considered. Depending on traffic, this roadway could be a four-lane facility, or a two-lane facility on four lanes of right-of-way, as shown in **Figure 7**. In addition, a combination of interstate type facility and regional connector type facility could be used.

**Figure 7. Two-Lane Initial / Four-Lane Ultimate Roadway (48-foot Median)**



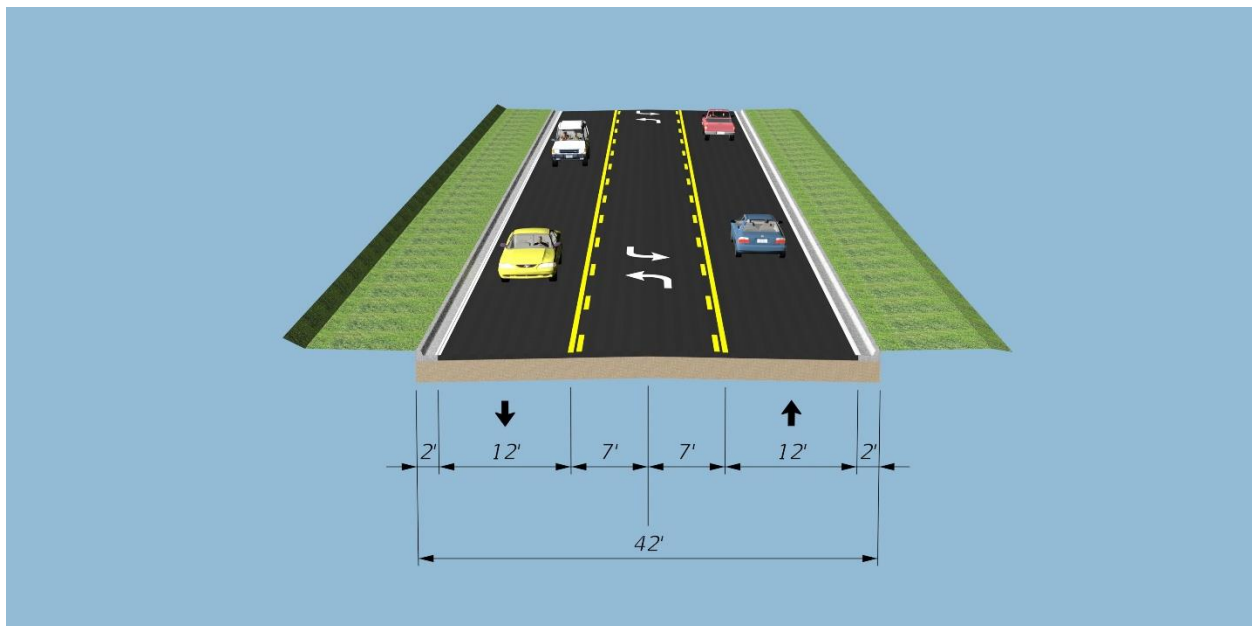
Improvements along the existing corridors could use the four-lane divided highway typical section where right-of-way allows, but could also consider two lanes with a median, widening to a “2+1” facility, or widening to three or five-lane facilities with center turn lanes depending on the traffic volumes. Passing lanes could also be considered as illustrated in **Figure 8**.

**Figure 8. Two-Lane Roadway with Passing Lanes**



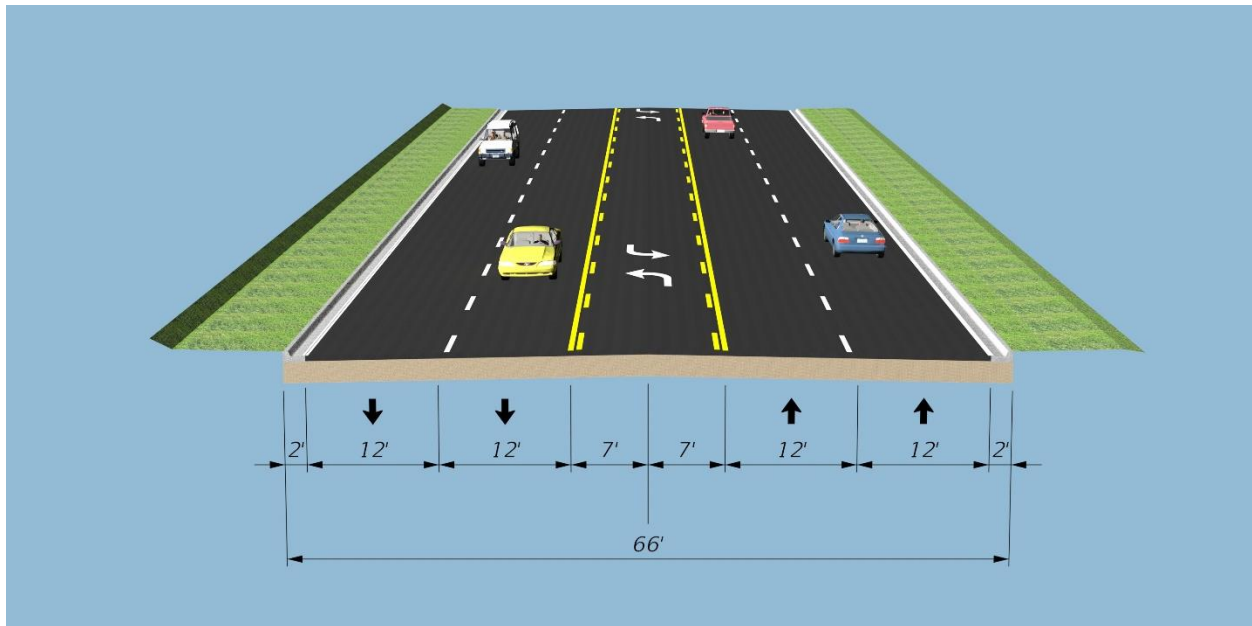
Examples of 3-lane urban and 5-lane urban facilities with curb and gutter are illustrated in Figures 9 and 10 respectively. These urban facilities would be utilized where an existing built up corridor is improved to limit right of way impacts.

**Figure 9. 3-Lane Urban Roadway with Curb and Gutter**





**Figure 10. 5-Lane Urban Roadway with Curb and Gutter**



The inclusion of access management concepts, where right of way allows, will be considered. Access management concepts such as raised median islands with an increased median width of 20 feet will help to eliminate several of the conflict points associated with access control by permit segments. R-cut intersections with u-turns could also be utilized in congested areas to reduce signal needs and reduce conflict points.