

CHAPTER 6 – RECOMMENDATIONS AND CONCLUSIONS

The recommendations and conclusions for this I-66 study are based upon the evaluation of corridor alternates for an interstate-type facility from Somerset in Pulaski County to London in Laurel County. Geometric criteria used in the preparation of this study include a 70 mph design speed; moderate horizontal and vertical curvature; access available only at interchanges; and four twelve-foot lanes. Considered in this chapter are the recommended I-66 corridor, cost estimates, prioritization of corridor segments, and conclusions of the study.

A. DEVELOPMENT OF RECOMMENDED CORRIDOR

1. Corridor Advantages and Disadvantages

Shown in **Table 6.1** are identified advantages and disadvantages for each of the study alternates presented at the Interdisciplinary Team meeting on April 26, 2000. In short, the evaluation results indicate the following:

- KY 80 Alternate
 - Generally good in most traffic and socioeconomic areas
 - Slightly below average in environmental categories
 - Most expensive project costs
 - Many access control and right-of-way issues
 - Geometric, design and operational issues
- North Alternates
 - Generally good in most traffic and socioeconomic, environmental and cost categories
 - Alternates passing between London and Corbin offer better traffic service
- Middle Alternate
 - Modest traffic service and additional highway service infrastructure will be needed
 - Impacts to undisturbed natural areas
 - Potentially prohibitive impacts to the Wild River portion of the Rockcastle River
 - Least expensive costs
- South Alternates
 - Generally below average in traffic and environmental categories
 - Particular concerns relative to impacts to the Daniel Boone National Forest
 - Greater impacts to threatened and endangered species
 - Potential negative impacts to Laurel River Lake
 - More expensive overall costs

2. Corridor Recommendation

Using the results of the corridor evaluation effort, public and resource agency input, interdisciplinary team efforts (minutes included in Appendix G), and a recommendation for a corridor alternate was selected that would best meet the stated project goals. A discussion of the reasons for this selection is described in the following paragraphs.

Due to potentially serious environmental concerns, public opposition and low traffic service levels, the south and middle corridor alternates are generally not preferred. All of the south alternates are considered to have potentially significant environmental concerns, particularly with respect to impacts on sensitive areas of the Daniel Boone National Forest, the Laurel River Lake area, and possible locations of threatened and endangered species. These corridors are also expected to carry traffic volumes that are generally lower than some of the north alternatives. The S-3 corridor passes south of Somerset and would consequently impact more people and businesses, as well as require more major bridge crossings of the Laurel River and Lake Cumberland than the other alternatives.

The M-1 corridor also involves potentially significant environmental concerns, particularly with respect to impacts on sensitive areas of the Daniel Boone National Forest and possible locations of threatened and endangered species. This corridor alternate passes through a large number of undisturbed areas of the forest and creates a new crossing through the state-designated Wild River section of the Rockcastle River. Traffic service levels and accessibility to existing highway facilities are also relatively low for M-1, and costs to provide infrastructure to service this corridor would be higher than other alternatives.

Among the north alternates, N-2 was eliminated as a preferred option due to low traffic service levels and adverse travel created by the circuitous alignment of this corridor between Somerset and London. The primary reason for proposing the N-2 alternate was to provide a corridor that would fall outside the designated Wild River boundary of the Rockcastle River. Since further investigation of Kentucky's Wild River legislation indicates the permitted use of KY 80 at the Rockcastle River, the N-2 alternate can be eliminated from further consideration. It should be noted that discussions with the Wild River coordinator in the Division of Water of the Kentucky Natural Resources and Environmental Protection Cabinet have indicated that utilizing the KY 80 crossing may be a preferred option for the recommended corridor. Additionally, the KYTC has purchased property for a 4-lane ultimate facility at KY 80 and the Rockcastle River; therefore, additional right-of-way for the project should be minimal in this section.

With the south, middle and N-2 corridors eliminated from further consideration, the remaining analyses involved a critical examination of the relative advantages and disadvantages of an improved KY 80 and the N-1, N-3 and N-4 alternates. Environmental groups generally identify KY 80 and the north routes as being acceptable. While many organizations have expressed a preference for making maximum use of the KY 80 corridor, a number of concerns have been identified related to the exclusive use of the KY 80 corridor. Opportunities likely exist for using sections of KY 80, but use of the entire corridor could be prohibitive due to right-of-way costs, socioeconomic impacts and major construction challenges. In developed areas, the right-of-way costs could be excessive, particularly in the vicinity of London. Displacements of residences and businesses could also create social and economic impacts. Construction activities to widen some sections of KY 80 would be greater than the costs of new construction, and maintenance of traffic along KY 80 throughout construction would be difficult in areas. Recommendations should allow future design and environmental studies to examine alignment options near to or along sections of KY 80 from Somerset to the Rockcastle River; however, KY 80 from the Rockcastle River to the Daniel Boone Parkway was eliminated from further consideration.

Table 6.1 Evaluation Matrix

Alternate	Advantages	Disadvantages
KY 80	Provides above average traffic service	Most expensive project costs
	Improves system connectivity	Difficult I-75 interchange issues at Pittsburg
	Minimal impacts to DB National Forest	Extensive maintenance of traffic
	Avoids cliff lines, streams and wetland sites	May require frontage roads or major ROW acquisition
	Improves an existing corridor	Major impacts to cultural and sensitive land uses
		Crosses the Wild River area
		Poor recreational access
		Requires the most number of displacements
N-1	Provides best traffic service	I-75 crossing could impact airport
	Avoids areas of disadvantaged populations	Poor accessibility between KY 80 and I-75
	Offers service to London and Corbin	I-75 interchange may affect more homes and businesses
	Avoids many natural and environmentally sensitive areas	May impact more churches, schools and cemeteries
	Provides good service to industrial areas	Provides below average system connectivity
	Has lower than average project costs	Impacts the Wild River Area
	Can potentially use strip-mined lands	
	DB Parkway tie closer to London	
N-2	No impact to Wild River boundary	Constructibility difficult in areas of rugged terrain
	Avoids most natural and environmentally sensitive areas	Provides below average traffic service
	Avoids the most threatened and endangered species	Most likely to impact disadvantaged populations
	Offers good industrial and system serviceability	Does not access lake and recreational areas
	Avoids many cultural land uses	May potentially impact Wood Creek Lake
	Has lower than average costs	
N-3	Avoids many natural and environmentally sensitive areas	Presents construction challenges at I-75
	Impacts the least amount of DBNF	Carries less traffic around London
	Avoids known cave routes	Potentially disturbs more disadvantaged populations
	Provides best travel time and distance savings	
	Provides below average costs	
N-4	Carries higher than average traffic volumes	Impacts the Wild River area
	Offers high accident reduction	Potentially impacts more cultural land use areas
	Offers service to both London and Corbin	Provides below average system connectivity
	Avoids pristine areas of the DBNF	Construction challenges in rough terrain and basins
	Avoids many natural and environmentally sensitive areas	
	May offer best I-75 interchange location	
	Likely impacts fewer areas of disadvantaged populations	
Extends the corridor further east than other alignments		

Alternate	Advantages	Disadvantages
M-1	Provides shortest distance	Provides below average traffic service
	Provides the lowest overall project cost	Provides poor system connectivity
	Causes the least number of displacements	May cause significant impact to DBNF
	Requires low maintenance of traffic during construction	Likely impacts many threatened and endangered species
	Provides above average industrial serviceability	Direct impact to the Wild River area
	Causes minimal impact to cultural land uses	
	Avoids many wetland sites and cave routes	
S-1	Improves an existing corridor	Provides below average traffic service
	Provides average system and industrial connectivity	Likely to impact disadvantaged populations
	Avoids known archaeological and historic sites	Significant impacts to the DBNF
	Avoids the Wild River area	Many environmental impacts overall
	Provides low per-mile project costs	Likely to affect many threatened/endangered species
	Provides access to communities south of London	
S-2	Crosses I-75 in less-populated area	Impacts existing weight stations
	Potential tie to US 25E possible	Provides below average traffic service
	Provides average system and industrial connectivity	Likely to impact disadvantaged populations
	Avoids known archaeological and historic sites	Significant impacts to the DBNF
	Avoids the Wild River area	Many environmental impacts overall
	Provides low per-mile project costs	Likely to affect many threatened/endangered species
S-3	Provides access south of Somerset	Large bridge structures required
	Provides average system and industrial connectivity	Interchange at US 27 not feasible
	Avoids known archaeological and historic sites	Significant impact to cave systems
	Avoids the Wild River area	Provides below average traffic service
	Provides low per-mile project costs	Likely to impact disadvantaged populations
	Provides access to communities south of London	Significant impacts to the DBNF
		Many environmental impacts overall
	Likely to affect many threatened/endangered species	
S-4	DB Parkway tie closer to London	I-75 crossing could impact airport
	Provides average system and industrial connectivity	Provides below average traffic service
	Avoids known archaeological and historic sites	Likely to impact disadvantaged populations
	Avoids the Wild River area	Significant impacts to the DBNF
	Provides low per-mile project costs	Many environmental impacts overall
	Provides access to communities south of London	Likely to affect many threatened/endangered species

Construction challenges for an I-66 alignment north of London, lower traffic service levels, and concerns over the close proximity of the corridor to Wood Creek Lake indicate the N-3 alternate passing north of London to be the least desirable of the remaining alternatives. A corridor that would pass south of London and provide access to both London and Corbin offers a greater number of advantages and better meets the project goals. Identified problems related to constructing I-66 north of London (the N-3 alternate) include a continuously elevated section of the route over I-75, US 25 and the CSX railroad. Poor accessibility to both London and Corbin is a factor for this option, which carries less traffic than alternates passing between London and Corbin. The potential for geologic concerns relative to the possibility of abandoned underground coal mine areas are also an issue for the N-3 alternative. It was also noted that public concerns have been raised associated with the impacts of the N-2 and N-3 corridors on Wood Creek Lake, which provides half of London's water supply. In consideration of these issues, it was concluded that further consideration of the N-3 corridor alternate should be eliminated.

The N-1 and N-4 alternates both provide improved access not only to London, but also to Corbin, and thereby better meet some of the project goals. For the N-1 corridor, concerns were raised over the proximity of the corridor to the London-Corbin Airport flight path, thereby eliminating future airport expansion. The location of the I-75 and I-66 interchange could also create right-of-way acquisition problems east and west of I-75. Several subdivisions in the area would be impacted along with some large business/industrial areas along the US 25 corridor. Additionally, while the N-1 corridor does not directly impact the Levi Jackson State Park area, the corridor could have indirect impacts on this area. The N-1 corridor does pass in close proximity to the park and it would also fall between London and the park, thereby potentially limiting recreational access to the park facilities. In general, the N-1 corridor presents concerns on the eastern side of the I-75 corridor, closer to London.

One of the major considerations for the N-4 alternate involves its impact on the new truck weigh stations along I-75. At its proposed location, the interchange will be located less than one mile from the entrance ramp to the truck weigh station on the southbound side of I-75. This location places the interchange in a position where it may interfere with the existing truck weigh station operations. However, design modifications could be provided to the configuration of the interchange or to the truck ramps serving the weigh stations to allow both to coexist. An additional issue pertaining to the N-4 alternate is that, west of I-75, the corridor has several crossings of Sinking Creek, which is a known habitat for endangered species of mussels. Although the N-4 route would pass through the Daniel Boone National Forest on a new location, much of that portion of the forest has already been disturbed by logging and mining.

Given all of the issues identified above, and specific consideration of the advantages and disadvantages associated with the N-1 and the N-4 alternatives, it is recommended that the N-4 corridor provide the basis for future development of I-66 between Somerset and London. In using the N-4 corridor, however, there are several recommendations for corridor adjustments that should be considered with future project development activities. These issues are discussed later in this chapter and include the following:

- North of Somerset, consider opportunities to adjust the corridor northward to better avoid new subdivisions in the area;
- From Somerset to east of the Rockcastle River, the recommended corridor should include portions of the KY 80 corridor to the maximum extent possible;

- West of I-75, the corridor should seek to reduce the number of crossings of Sinking Creek in order to minimize potential impacts to threatened and endangered species habitats; and
- More detailed studies will be required in the design phase to finalize the location of the I-66/I-75 interchange. The interchange is expected to be located in a section that is at least one to one and a half miles north of the southbound weigh stations.

3. Recommended Alternate Issues

The recommended alternate for the I-66 corridor between Somerset and London is the N-4 corridor with a selected set of potential modifications, as shown in **Exhibit 6.1** (see next page). While these potential modifications do not involve a formal change, they do offer some flexibility to the proposed corridor that should be considered as options during subsequent project development activities. The following sections cover these issues as they relate to the recommended corridor.

• I-66/I-75 Interchange

An approximate location for the I-66/I-75 interchange is identified in **Exhibit 6.2**. The N-4 corridor crosses I-75 at a point just north of the southbound truck weigh station. Because of the proximity of this interchange to both the southbound and northbound truck weigh stations, adjustments to the interchange or truck weigh station ramps will likely be needed to avoid operational conflicts between entering and exiting traffic.

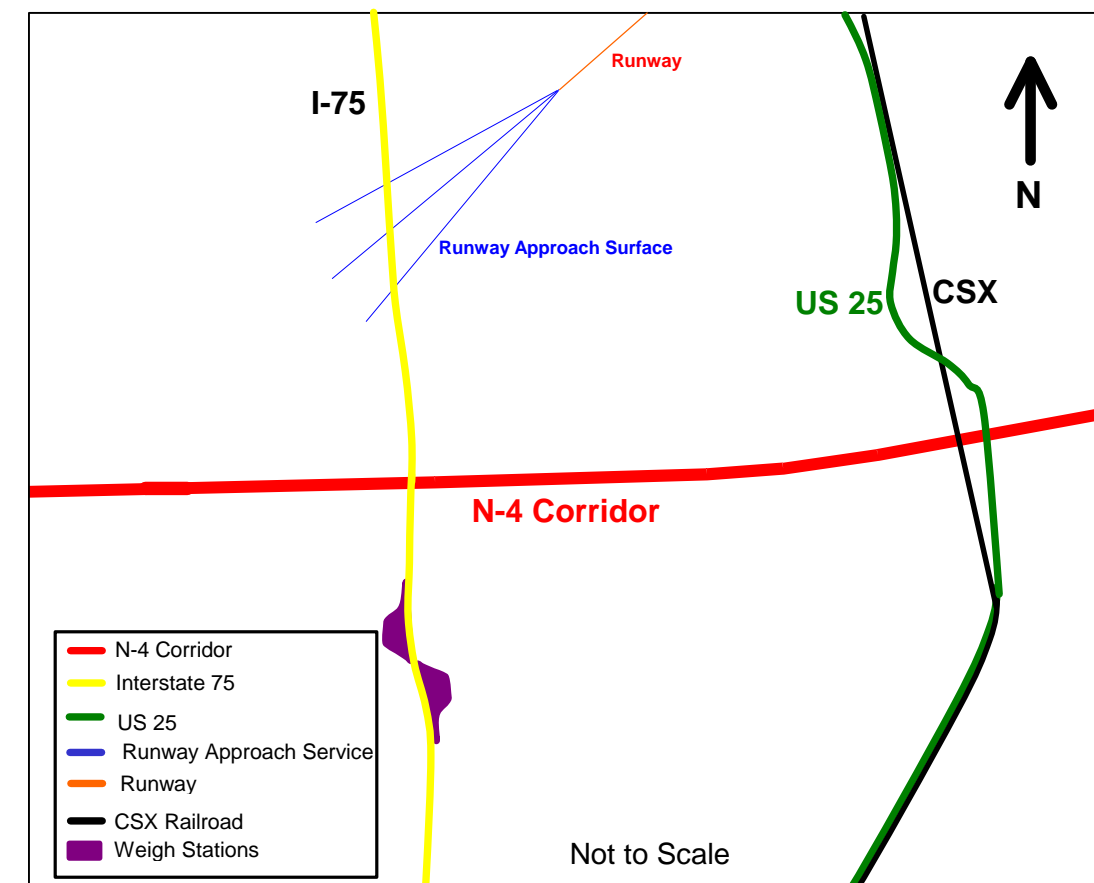


Exhibit 6.2 Approximate Location of I-66/I-75 Interchange

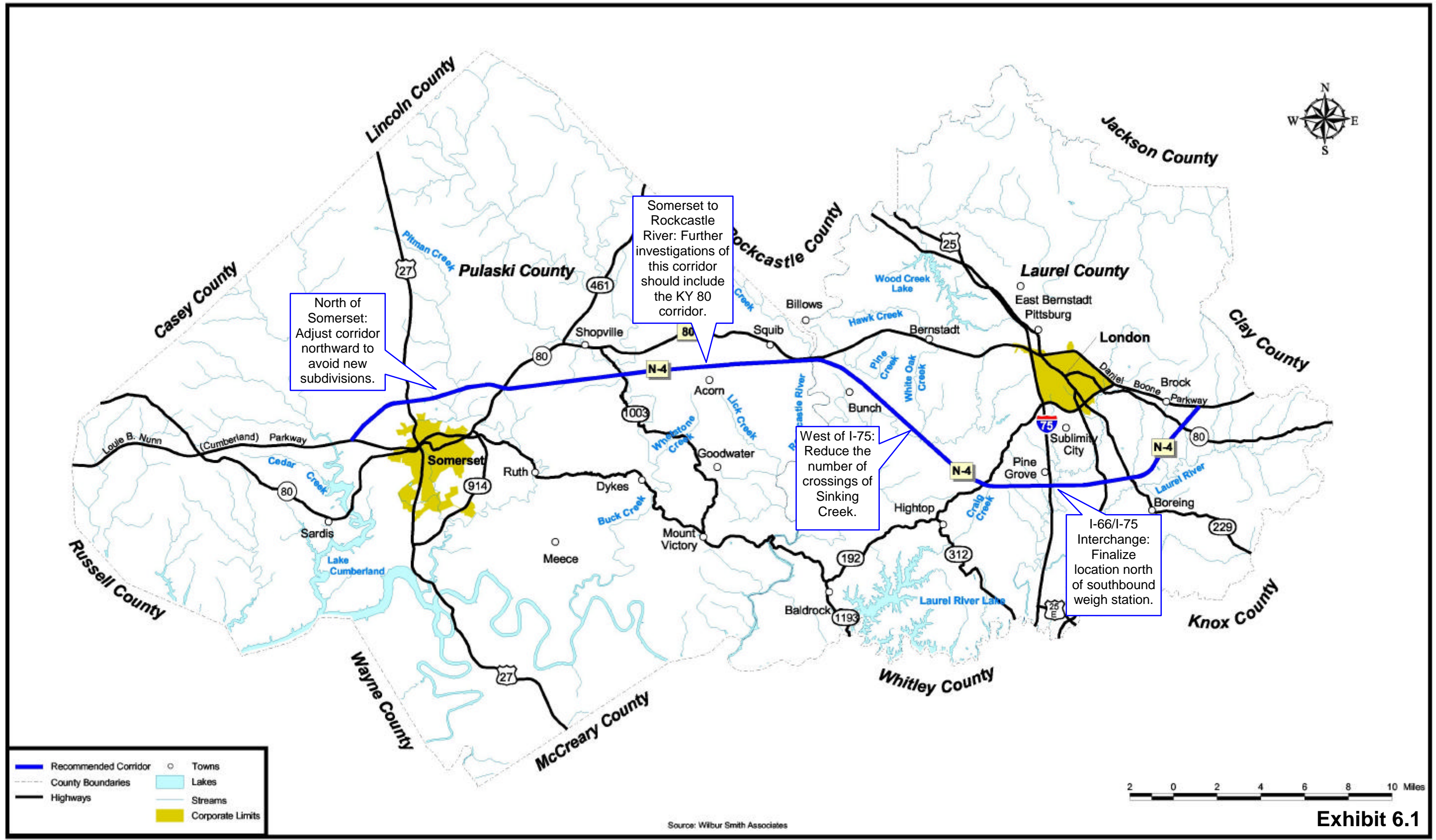
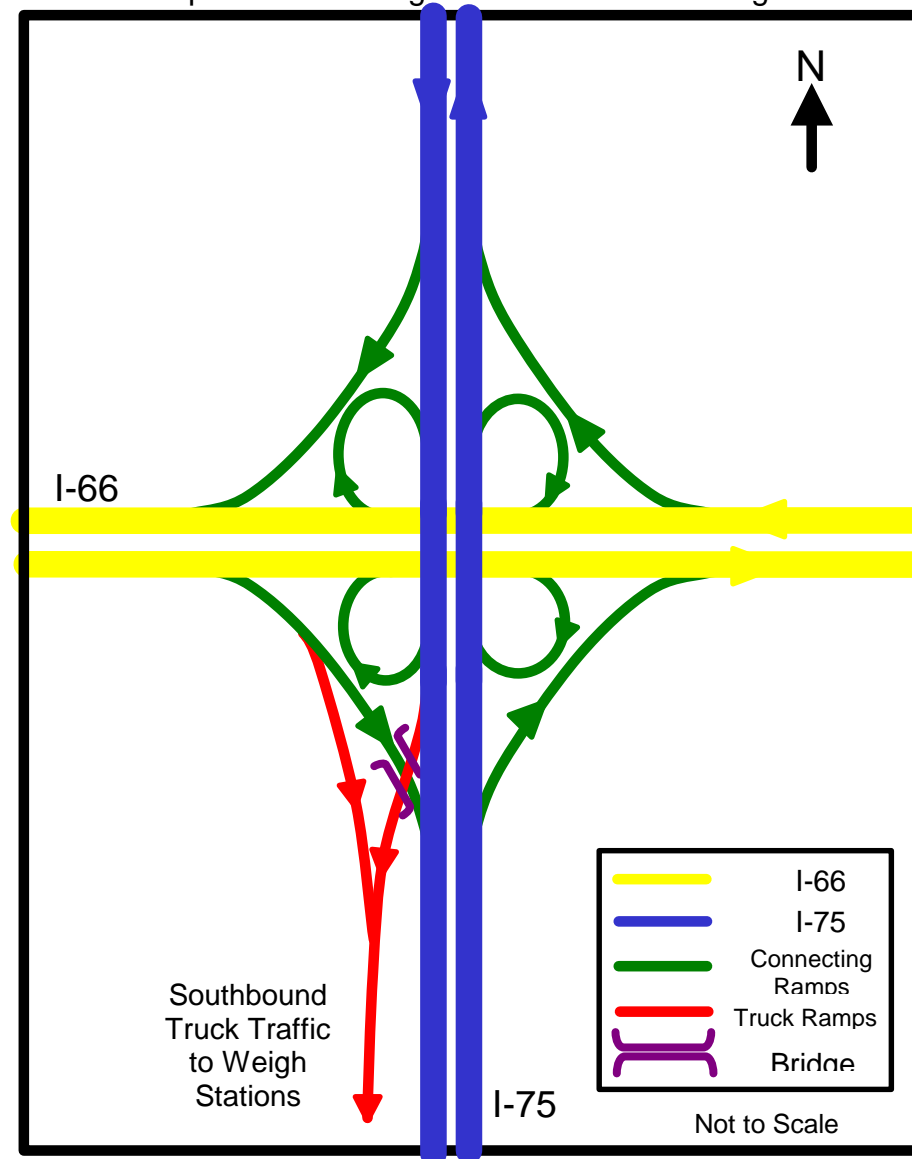


Exhibit 6.1
Recommended Corridor

If the interchange location is adjusted a little farther north, conflicts with trucks merging back onto I-75 from the northbound truck lane would likely be eliminated. Therefore, only traffic conflicts associated with southbound trucks would need to be addressed. Ramping options associated with this interchange must first consider a basic interchange configuration. While many alternatives exist for freeway-to-freeway interchange connections, the most simple and inexpensive of these would be a basic cloverleaf design, as illustrated by the schematic drawing in **Exhibit 6.3**. Also shown in this exhibit is a potential ramp configuration between the southbound traffic coming from I-75 or I-66. As illustrated, trucks destined to the weigh station would be removed at selected points in the traffic stream, and that would serve to reduce the number of conflict points.

Many other variations exist for the proposed I-66/I-75 interchange and the associated truck ramps. A more thorough examination of design options, operational issues, costs and benefits may help to reveal the most practical option for this element of the N-4 alternate. One additional option for locating the I-66/I-75 interchange would be to push the location far enough north so that adequate spacing would exist between the interchange ramps and the truck ramps to the southbound weigh stations. However, further investigation reveals that the runway approach might prohibit any other interchange locations.



The London-Corbin Airport currently has a non-precision approach with a 34:1 slope on the obstruction clearance surface. With this criterion, a maximum elevation of the tallest bridge deck surface for the I-66/I-75 interchange is approximately 1330 feet. The elevation of I-75 at this location is approximately 1160 feet. Lighting elevations will also be an issue. If this structure did meet the requirements for the existing obstruction clearance surface, it might still potentially interfere with the airport's ability to ultimately be upgraded to an Instrument Landing System (ILS) precision approach. An ILS

precision approach would require a 50:1 slope on the obstruction clearance surface. This requirement would result in a maximum bridge deck elevation of approximately 1287 feet. Additional Federal Aviation Administration Part 77 surface considerations may come into play with an interchange located within or near the approach surface illustrated in Exhibit 6.2.

Future design studies will be required to select the final interchange location. Nevertheless, the potential interchange should fall within the segment along I-75 that is bounded by the weigh stations to the south and the London-Corbin Airport's runway approach surface to the north. Future studies should look specifically at interchange design configurations, the associated elevation requirements for FAA Part 77 surfaces, and the requirements of the Master Plan for the London-Corbin Airport.

Exhibit 6.3 Design Consideration For I-66/I-75 Interchange

• Parkway Interchanges

The two termination points for this priority section of I-66 are identified as the Louie B. Nunn (Cumberland) Parkway and the Daniel Boone Parkway. Recognizing that future development of the I-66 corridor would extend beyond these prescribed segment end points, the orientation and configuration of the interchanges at these points should be developed accordingly.

At the Louie B. Nunn (Cumberland) Parkway, the interchange must also account for the proposed northern extension of the Somerset Southwest Bypass. Illustrated in **Exhibit 6.4** is the proposed concept for this location. The I-66 corridor will be connected to the Somerset Southwest Bypass with a directional interchange, potentially oriented with a "trumpet" configuration. West of the Somerset Southwest Bypass, I-66 will continue as an uninterrupted

four-lane freeway to the Louie B. Nunn (Cumberland) Parkway. At the point where I-66 connects to the Louie B. Nunn (Cumberland) Parkway, the highway should be designed to afford a seamless and continuous flow of traffic from the Louie B. Nunn (Cumberland) Parkway on the west to I-66 on the east. The remaining section of the Louie B. Nunn (Cumberland) Parkway between I-66 and the Somerset Southwest Bypass is not initially envisioned to require any type of direct access to I-66. In fact, the orientation of the Somerset Southwest Bypass and I-66 might render this small portion of the parkway as obsolete and it could be removed or redesignated as a local facility.

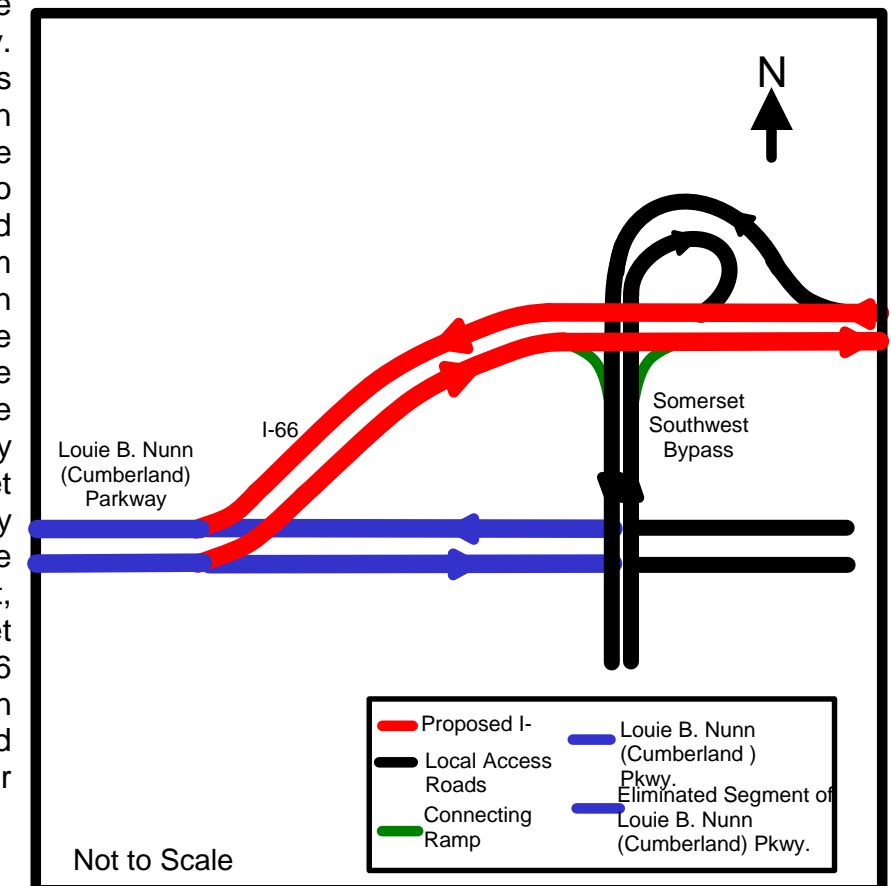


Exhibit 6.4 Potential Louie B. Nunn (Cumberland) Parkway Interchange

At the Daniel Boone Parkway connection, a similar requirement exists for providing a continuous and seamless transition between the proposed I-66 corridor to the west and the existing Daniel Boone Parkway on the east. While the planning and design of this facility should provide for a continuous four-lane, divided freeway facility, the route and connection might initially be constructed as a two-lane facility at this point to correspond with the existing two-lane construction of the Daniel Boone Parkway. The proposed orientation of the interchange is shown in **Exhibit 6.5**.

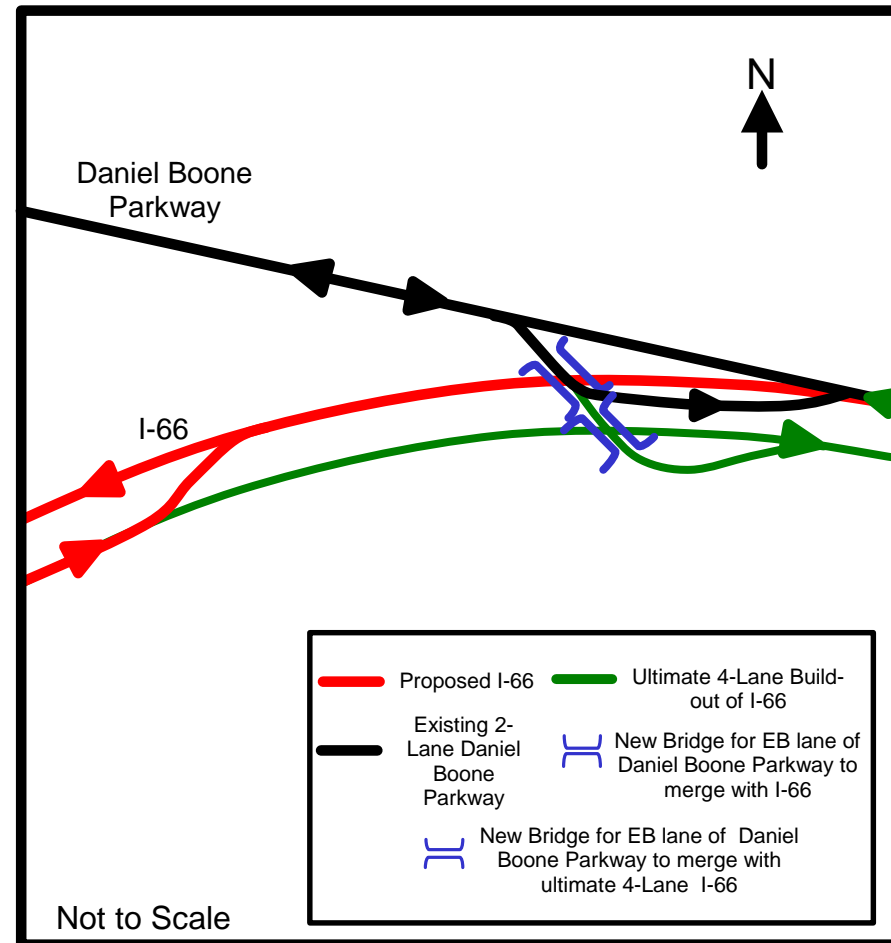


Exhibit 6.5 Potential Daniel Boone Parkway Interchange

Note that, in advance of the interchange to the west, I-66 could be transitioned to a two-lane roadway before continuing eastward as the Daniel Boone Parkway. A flyover ramp would be constructed to allow for an eastbound connection from the Daniel Boone Parkway connection north of London to cross over I-66 and continue east on the Daniel Boone Parkway toward Hazard, Kentucky.

• *Future Corridor and Route Alignments*

In this planning study, the analysis of alternate corridors has focused upon a series of 2,000-foot wide corridors within which future alignment alternatives might be developed. Having identified the N-4 corridor as the recommended alternative, future environmental studies and design efforts will focus upon alignment options that are principally focused within this corridor. However, this 2,000-foot corridor is not intended to serve as a boundary that would restrict the consideration of alignment options that might pass outside of this corridor. In the case of the N-4 Alternative, there are several locations where such adjustments might prove to be beneficial in minimizing environmental impacts or reducing construction costs.

For instance, once a more definitive location for the I-66/I-75 interchange is established, the highway alignments to connect to this facility might pass slightly outside of the current N-4 corridor. North of Somerset, new residential development is occurring that may require the consideration of alignment variations that pass outside of the current corridor.

Passing between Somerset and London, many have suggested the consideration of options to utilize portions of the KY 80 corridor. While the sole use of this corridor may be prohibitive from many standpoints, a more detailed analysis of design options might identify segments of KY 80 that could be successfully used for the purpose of I-66. Finally, environmental concerns have been raised over the number of times the N-4 corridor crosses Sinking Creek, which is home to habitats of threatened and endangered species downstream of these crossings. Efforts to develop alignment alternatives to reduce the number of crossings of this creek may help to eliminate or minimize the threat to sensitive species within this area.

B. RECOMMENDED CORRIDOR EVALUATION

This section provides an evaluation of the recommended corridor based on the criteria discussed in Chapter 4. The recommended corridor is evaluated in three basic categories: traffic and socioeconomic analyses, environmental issues, and engineering and construction cost analyses.

1. Traffic and Socioeconomics

The following paragraphs provide an analysis of several traffic and socioeconomic issues related to travel benefits, and social and economic considerations.

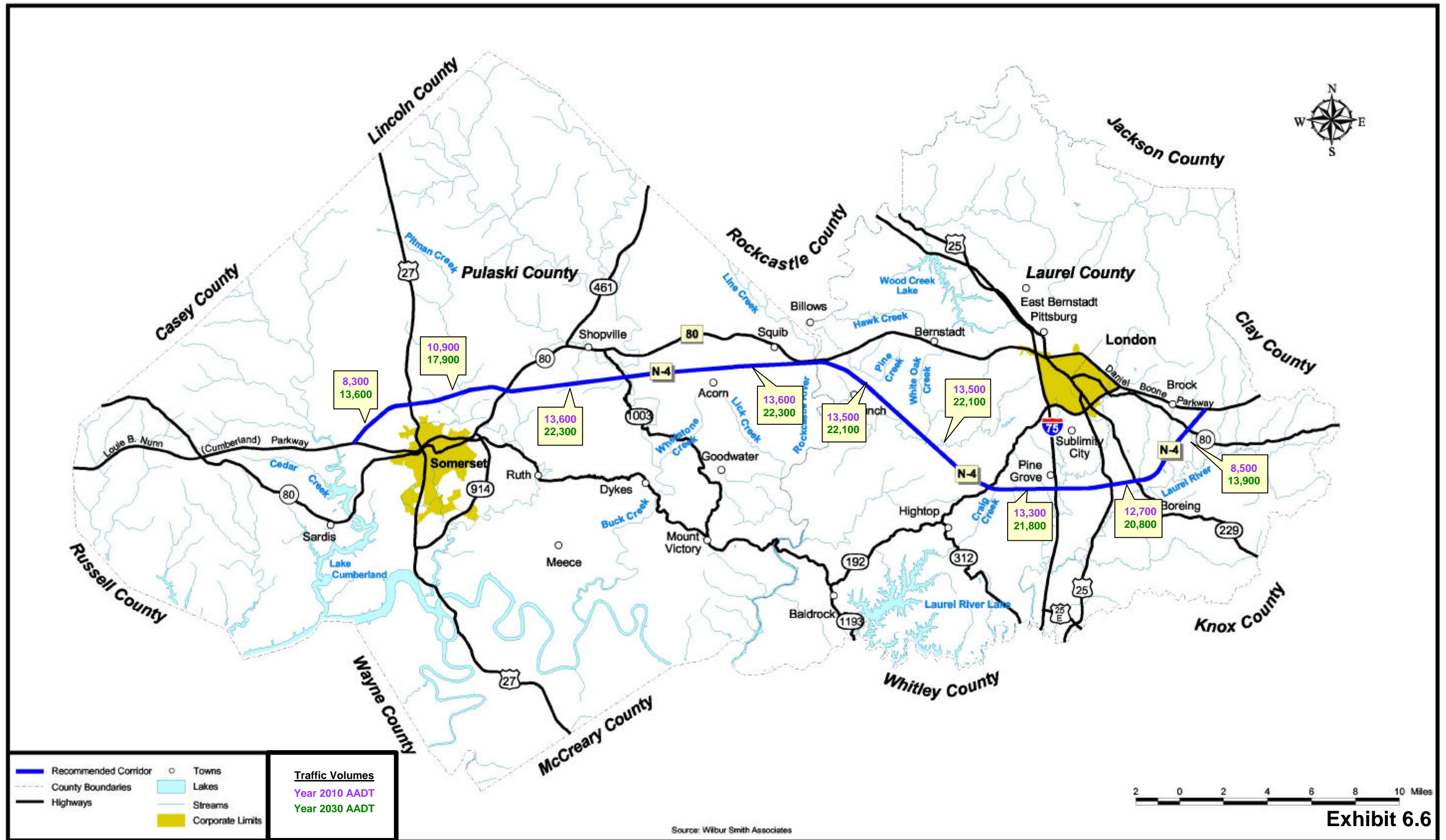
• *Travel Benefits*

Projected traffic volumes were derived for the recommended corridor for the years 2010 and 2030. As shown in **Table 6.2**, the weighted (based on segment length) average annual daily traffic (AADT) along the recommended corridor is expected to reach 19,900 vpd by the year 2030. **Exhibit 6.6** graphically displays the volumes for the projected years.

Time and distance savings can be approximated by comparing travel to and from the same terminus points for the recommended corridor and KY 80. As shown in Table 6.2, about 10.5 minutes are expected to be saved with the recommended corridor, typical time savings for the north corridors. Likewise, about 3.1 miles in distance savings are anticipated for the recommended corridor.

Table 6.2 Traffic and Socioeconomic Issues

Criteria	Evaluation
Travel Benefits	
Year 2030 Volume (vehicles per day)	19,900
Time Savings (M:S)	10:26
Distance Savings (miles)	3.056
VMT Served (vehicle-miles)	932,000
VHT Saved (vehicle-hours)	3,470
Accident Reductions by Year 2030 (accidents)	480
Social and Economic Issues	
Recreational Proximity (miles)	31.8
Industrial Serviceability (miles)	5.7
Environmental Justice (% fewer than regional average)	29



Recommended Corridor Traffic Volumes

The “Daily VMT Served” provides a measure of the vehicle-miles traveled along the recommended corridor, while the “Daily VHT Saved” measures the number of vehicle-hours saved by the use of the corridor. The recommended corridor is expected to serve about 932,000 vehicle-miles and save about 3,500 vehicle-hours by the Year 2030.

An analysis of the recommended corridor segments was completed to determine the potential annual accident reduction based on the daily vehicle-miles traveled. As shown in Table 6.2, the expected number of annual accidents is expected to be reduced by 480 by the Year 2030.

- *Social and Economic Issues*

Proximity to local recreational facilities was estimated for the recommended corridor. For the purposes of this report, recreational proximity is defined as the average distance from the nearest proposed interchange along the recommended corridor to 116 recreational facilities in the two study counties and ten surrounding counties. As shown in Table 6.2, the recommended corridor, like the other north alternates, is situated farther from recreational facilities, resulting in an average distance of about 31.8 miles.

Similar to the measurement for recreational facilities, industrial serviceability is measured by determining the average distance from the recommended corridor to 203 industrial facilities in the study area. Similar to the other north alternates, the recommended corridor has an average distance to industrial facilities of approximately 5.7 miles.

For this study, environmental justice is estimated by calculating the percentage of minority, elderly and low-income persons along the recommended corridor. Values above zero indicate a corridor is more favorable than the regional average, potentially causing fewer negative impacts to these population groups. As shown in Table 6.2, the recommended corridor has fewer environmental justice concerns than the region, containing about 29% fewer minority, elderly and low-income persons.

2. Environmental Issues

An environmental overview of the recommended corridor alternate was completed using GIS databases, other technical resources available in-house, and various agency and private resources, as discussed in Chapter 4. This overview is intended to provide KYTC officials with knowledge of potential environmental issues that can be reasonably identified at a corridor planning level. The following paragraphs identify “potential” issues within buffer zones of either 500 or 2,000 feet in width, along the recommended corridor. Environmental issues considered for this study include cultural and historic features, native species, natural areas, and other issues. These are summarized in **Table 6.3**.

- *Cultural and Historic Features (within a 2,000-foot corridor)*

A total of 26 known archaeological sites are located within the recommended corridor, about the same number reported for most of the north alternates studied. It is important to note that the number of known sites is often only a reflection of the amount of cultural resource survey that has been conducted within the area. There is also one known historic structure within the corridor, but it is not eligible for the National Register of Historic Places. Compared to the study corridors, the recommended corridor contains a similar number of cemeteries and churches, or 6 and 9, respectively. This does not necessarily mean that 6 cemeteries and 9 churches would be impacted by the recommended corridor. It is only an indication of the

number that fall within a 2,000-foot buffer zone. A total of 2 schools are contained within the corridor, similar to other study alternates.

- *Native Species (within a 2,000-foot corridor)*

The data summarized in this analysis represent known occurrences of species within the defined corridors and are not necessarily an indication of the impacts that may be caused by a future corridor. As shown in Table 6.3, a total of 2 threatened and endangered species are known to be located within the recommended corridor. This number is similar to the number of species located within the other north study corridors and considerably lower than those known to be near the middle corridor and most of the south alternates. A total of 1 potential threatened and endangered species is located within the recommended corridor.

- *Natural Areas (within a 500-foot corridor)*

Natural areas encompass a broad range of features within the study area, including National Forest property, geologic and cave features, cliff lines, streams, wetlands, lakes and rivers. The recommended corridor contains approximately 390 acres of property owned by the Daniel Boone National Forest, the same amount of property contained by the south study corridors.

As shown in Chapter 4, the KY 80, N-2 and N-3 corridors would likely have the least degree of impact to the forest. However, study alternates such as N-1 and N-4 pass along areas within the National Forest that have been impacted by previous surface mining activities. Although not as desirable as KY 80, N-2 and N-1, the recommended corridor will have less impact on the forest than the south and middle alternatives.

A review of the geology of the region indicates a diversity of formations and features that present planning and design challenges. As shown by the National Speleological Society’s data in Chapter 4, the north alternates, and therefore the recommended corridor, would likely have the least adverse impact on the active karst and cave systems in the area. Still, addressing these structural and drainage impacts will be an important part of the forthcoming NEPA investigations.

Table 6.3 Environmental Issues

Environmental Feature	Number of Occurrences
Cultural and Historic Sites	
Archaeology Sites	26
Historic Structures	1
Cemeteries	6
Churches	9
Schools	4
Native Species	
Threatened and Endangered Species	2
Potential Threatened and Endangered Species	1
Natural Areas	
DBNF Property (acres)	390
Cliff Lines (feet)	35,860
Stream Crossings	53
Wetland Sites (acres)	90
Wild River Crossing	1
Other Issues	
Oil and Gas Wells	23
Hazardous Sites	0

Cliff lines are prevalent throughout the project area and, dependent upon the terrain and geology, represent areas where rock overhangs or ridges form. As shown in Table 6.3, a total of 35,860 feet of cliff lines may be crossed by a highway developed within the recommended corridor. This figure is low for the study corridors.

Area water resources, including streams, wetlands and river systems were also considered for this analysis. The recommended corridor crosses a total of 53 blue-line streams, and contains approximately 90 acres of wetland areas. The corridor also crosses the Rockcastle River, one of nine rivers in Kentucky that is designated as part of the Wild River System.

- Other Issues (within a 2,000-foot corridor)

Based on available data, the recommended corridor also includes a total of 23 known oil and gas wells and no hazardous sites (landfills, hazardous waste sites, underground storage tanks, Superfund sites, Superfund No Further Action sites, etc.).

3. Estimated Construction Costs

Using the unit costs identified for this project’s geometric criteria, total project costs were estimated for the recommended corridor. Cost components calculated for each segment of the route include design, right-of-way, utilities, bridges, interchanges, rest areas and construction activities. As shown in **Table 6.4**, total estimated costs for the recommended corridor are approximately \$949 million. Corridor segments are defined in the following section, and are intended to permit the segmental construction of the corridor. The cost estimate for the recommended corridor is fairly average when compared to the other north alternates, and it is lower than the costs estimated for the KY 80 corridor options.

Table 6.4 Recommended Corridor Cost Estimates

Segment	Length (miles)	Cost Items (million \$) ¹					Total Cost (million \$) ¹	
		Const- ruction	Bridges ²	Inter- changes ³	Design	Right-of- Way and Utilities	Project	Per Mile
1	7.7	77.2	25.5	39.6	21.0	46.4	209.7	
2	13.3	131.8	18.0	13.2	24.4	56.9	244.3	
3	2.0	19.9	11.9	4.0	5.1	9.9	50.8	
4	11.8	117.5	8.8	38.2	25.0	60.4	249.9	
5	8.4	83.3	22.0	26.4	19.5	43.5	194.7	
Total	43.2	429.7	86.2	121.4	95.0	217.1	949.4	22.0

¹ Items have been rounded.

² Includes overpasses and railroad structures.

³ Includes one rest area per alternate.

C. PRIORITY SEGMENTS AND IMPLEMENTATION

1. Project Priorities

In order to begin the consideration of priority segments of the proposed I-66 corridor, the recommended alternate was divided into five basic sections. The section endpoints were chosen to represent logical termini for segments during the planning, funding, design and construction processes. It is important to note that the segments do not represent the recommended phasing order for the corridor – they are only intended for identification purposes. Identified segments of the recommended corridor include:

- Segment 1: Somerset Northern Bypass, Louie B. Nunn (Cumberland) Parkway to KY 80
- Segment 2: KY 80 to the western approaches of the Rockcastle River Bridge
- Segment 3: Rockcastle River Bridge and approaches
- Segment 4: Eastern approach to the Rockcastle River Bridge to I-75
- Segment 5: London Bypass, I-75 to the Daniel Boone Parkway

In order to continue existing Somerset Bypass efforts and provide a complete bypass facility, Segment 1 is recommended to be the first priority for the I-66 project. Segment 5, the London Bypass, is situated in an area with on-going development activities. In order to acquire contiguous right-of-way for the design and construction of this portion of the route, Segment 5 is recommended to be the second priority. This section will also become more critical as traffic and safety concerns continue to increase along existing facilities on the north side of London.

Throughout the course of this project, consideration has been given to the eastward construction of the I-66 corridor in the study counties, from Somerset to London. Existing traffic volumes along KY 80 are slightly higher along the western end of the route, potentially leading to these priority assumptions. However, it is important to consider that the facility will not be continuous without the completion of Segment 4, from the Rockcastle River’s eastern approach to I-75. Also, traffic model projections indicate that volumes between Somerset and the Rockcastle River will be largely dependent upon the routing of the corridor between the River and London. Until Segment 4 is completed, the amount of new traffic drawn to the corridor is expected to be limited. Therefore, it is recommended that Segment 4 be the third priority, followed by Segment 3 and Segment 2, respectively. In this way, linkages will be created to maximize the use of this facility.

These recommended project segments are illustrated in **Exhibit 6.7** and are listed below by priority:

- Priority 1: Somerset Northern Bypass, Louie B. Nunn (Cumberland) Parkway to KY 80
- Priority 2: London Bypass, I-75 to the Daniel Boone Parkway
- Priority 3: Eastern approach to the Rockcastle River Bridge to I-75
- Priority 4: Rockcastle River Bridge and approaches
- Priority 5: KY 80 to the western approaches of the Rockcastle River Bridge

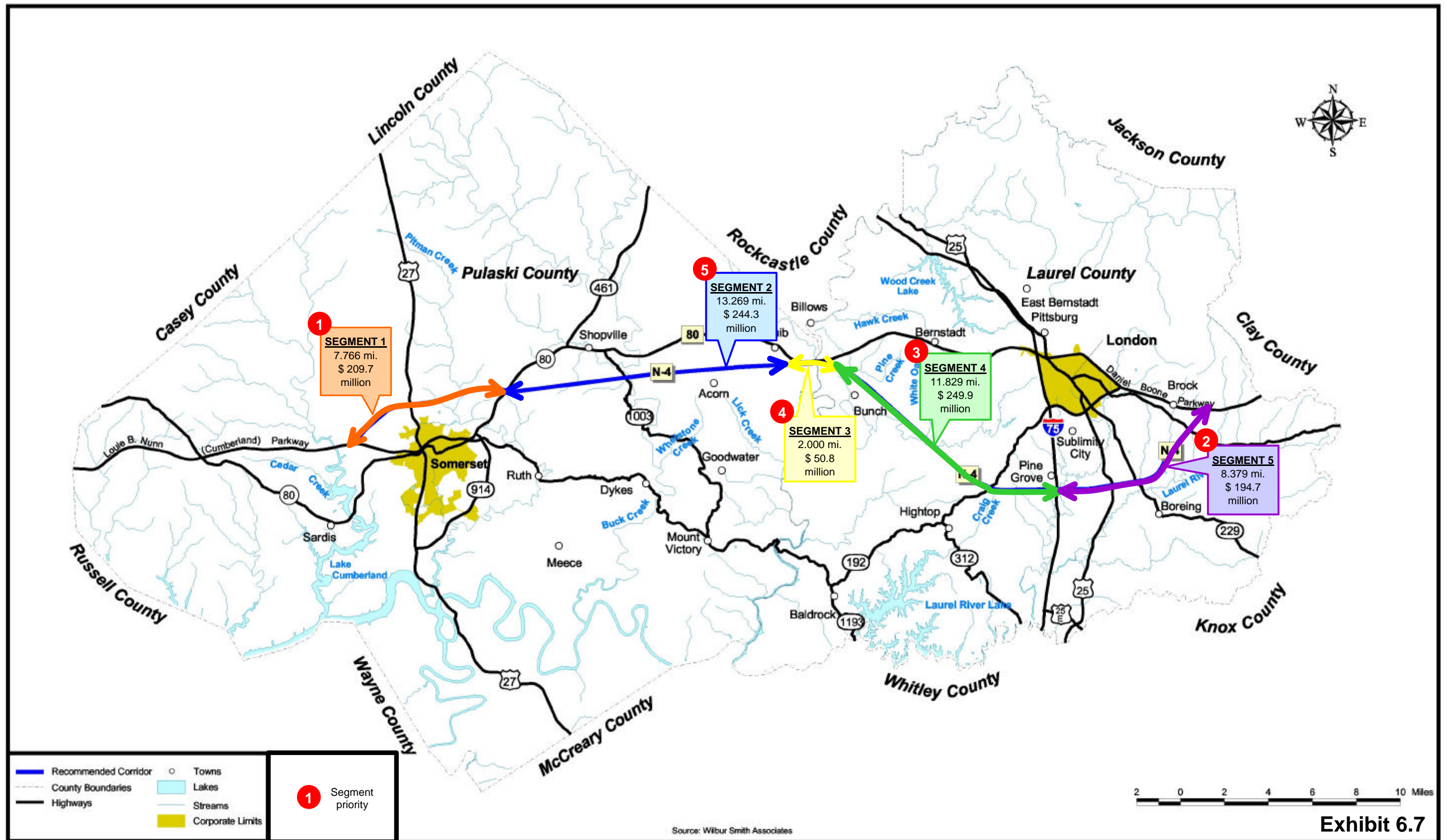


Exhibit 6.7

Recommended Segment Priorities

2. Funding Issues

The Statewide Transportation Plan (STP) identifies programmed and planned short-term and long-term improvements over a twenty-year period. Programmed short-term improvements are those projects that have been specifically defined and have some commitment of funding. The KYTC Six Year Highway Plan (2001-2006) comprises the short-term component of the STP. Programmed short-term funding also exists for further design and development of the I-66 corridor within Pulaski and Laurel counties.

Long-term improvements are those improvements that have been identified as needed but which do not have a commitment of funding. These improvements are contained in the STP as part of the 1999 Long-Range Highway Plan. The Long-Range Plan comprises the years 7 through 20 of the Statewide Transportation Plan. Several long-range improvements are identified for the I-66 corridor within Laurel and Pulaski counties, as well as other counties statewide, as "illustrative" projects. Illustrative highway projects are a special category of needed highway system improvements that are unlikely to move forward until and unless project-specific funding is identified at the federal level. Approximately \$2.6 billion of projects involving I-66 segments within Pulaski and Laurel counties are identified.

Costs for the I-66 project are expected to be expensive and special funding sources will be required through the federal government. Approximately \$25 million in dedicated funding has been contributed to the project. It is possible that Federal funds for interstate improvements could also be set aside and used for I-66. A predetermined, yearly funding structure could possibly be made part of a budget plan and amortized over time to achieve the necessary funding for all of the priority segments.