

# Kentucky Transportation Cabinet

## US 150 Executive Summary



Nelson and Washington Counties

KYTC Item No. 4-396.00



**Prepared for:** Kentucky Transportation Cabinet

District 4 - Elizabethtown  
Central Office Planning



Prepared by: Palmer Engineering and Stantec Consulting Services, Inc.

December 2015



## EXECUTIVE SUMMARY

The Kentucky Transportation Cabinet (KYTC) initiated the US 150 Scoping Study (KYTC Item No. 4-396) to explore the need for and scope of improvements to the US 150 corridor, from the Bluegrass Parkway near Bardstown in Nelson County (Mile Point 2.334 to Mile Point 7.653 in Nelson County) to just west of Springfield in Washington County (Mile Point 0.000 to Mile Point 4.311 in Washington County). The project area is located in eastern Nelson County and western Washington County in central Kentucky. The KYTC contracted with the Palmer Engineering team to assist in this effort by conducting a scoping study to evaluate possible improvement concepts for US 150 throughout the study area, including spot improvements and complete reconstruction. Ideally, the recommendations from this study will include recommended buildable segments with independent cost estimates and prioritization such that the projects can be implemented over time.

US 150 stretches approximately 120 miles from Louisville to Mount Vernon, Kentucky. Carrying between 8,800 and 12,000 vehicles per day through the project corridor, US 150 is a Rural Minor Arterial. Two-hundred, thirty-four (234) crashes were reported along US 150 within the study area for a five-year period between January, 2010 and December, 2014. Improvements have already been made to the US 150 Corridor from Springfield near St. Catherine College in Washington County to I-75 in Rockcastle County, which have resulted in a more reliable and safer connection to I-75 via Danville and Stanford.

### Purpose and Need

The purpose of the US 150 Improvement Project is to enhance local and regional mobility, increase capacity where necessary, and to provide a safer, more efficient connection between the Bluegrass Parkway and Springfield, Kentucky.

### Project Development

Community outreach helped guide the US 150 Scoping Study, particularly in identifying potential issues and developing alternatives. The public involvement process was undertaken through a two-step process involving (1.) meetings with project stakeholders and local officials; and (2.) meetings with the general public. On Tuesday, May 26, 2015, the Project Team held a public meeting at Parkway Baptist Church, in Bardstown, Kentucky. A second public meeting was held on Thursday, May 28, 2015 at Washington County High School, in Springfield, Kentucky. The purpose of these meetings was to provide information about the study, discuss the conceptual alternatives, and solicit input from the public. The meetings were co-hosted by KYTC District 4 and Central Office Planning. The Public Meeting Summaries located in **Appendix D** include the materials presented at these meetings as well as a summary of the feedback received. Two meetings of local officials and project stakeholders were also held. The first meeting was held on Thursday, January 29, 2015 at the Washington County Cooperative Extension Office, - in Springfield, Kentucky; the second meeting was held on Tuesday, May 26, 2015 at Parkway Baptist Church, in Bardstown, Kentucky.



## Improvement Strategy

Improvement strategies involved the development of five defined segments of US 150 from the Bluegrass Parkway to the already improved portion of US 150 west of Springfield. The newly improved section of US 150 at the Nelson-Washington County line was excluded from the proposed improvements. In addition to the five defined segments that cover the entirety of US 150 from the Bluegrass Parkway to Springfield, six spot improvements have also been identified that could be initially constructed. These spot improvements would be constructed to tie to future improvements covered by one of the five segments. The Improvement Strategies and Alternatives are summarized as follows and shown on **Figures ES-1 and ES-2**:

### Improvement Strategies and Alternatives

#### Segments

- 5 Segments
  - 3 in Nelson County
  - 2 in Washington County

#### Spot Improvements

- 6 Spot Improvements
  - 2 in Nelson County
  - 4 in Washington County

#### New Alignments

- 2 Locations
  - Conceptual Realignment North of Botland – Alternative to Segment II
  - Conceptual Realignment South of US 150 In Nelson County – Alternative to Segment II and Segment III

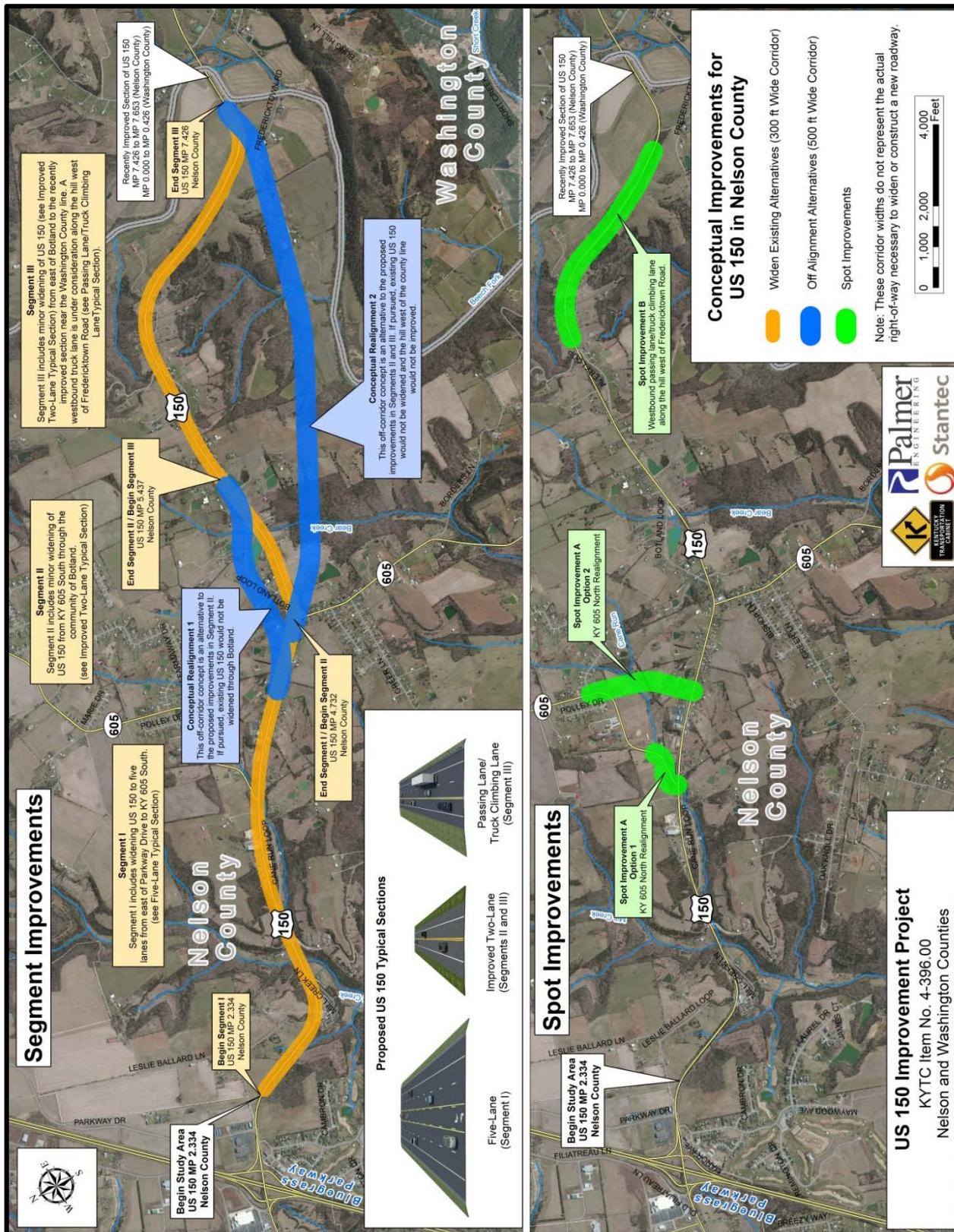


Figure ES-1 - Segment Alternatives and Spot Improvements - Nelson County

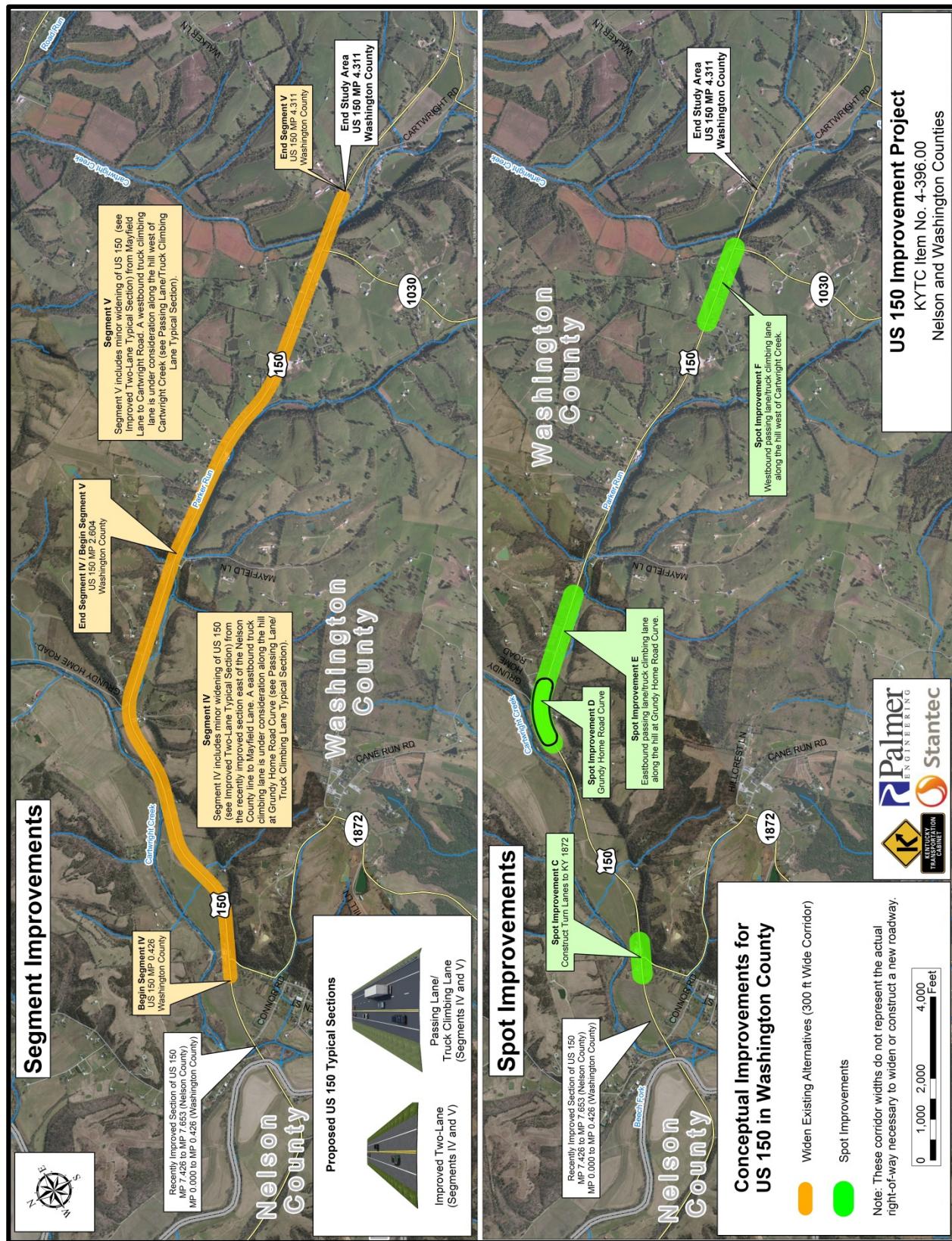
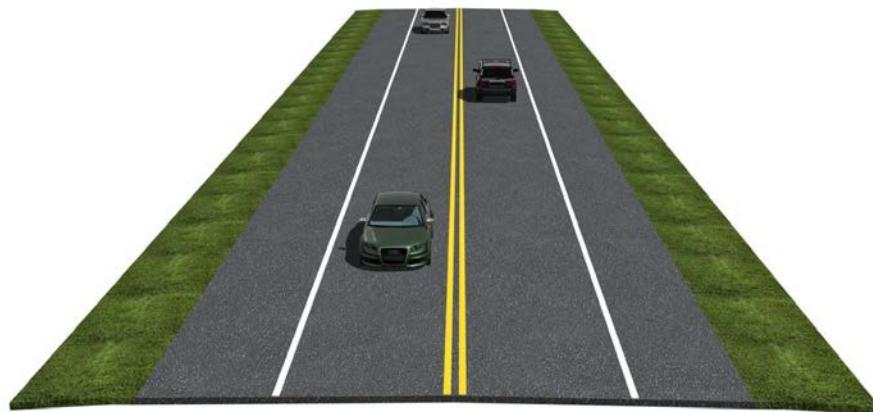


Figure ES-2 - Segment Alternatives and Spot Improvements - Washington County

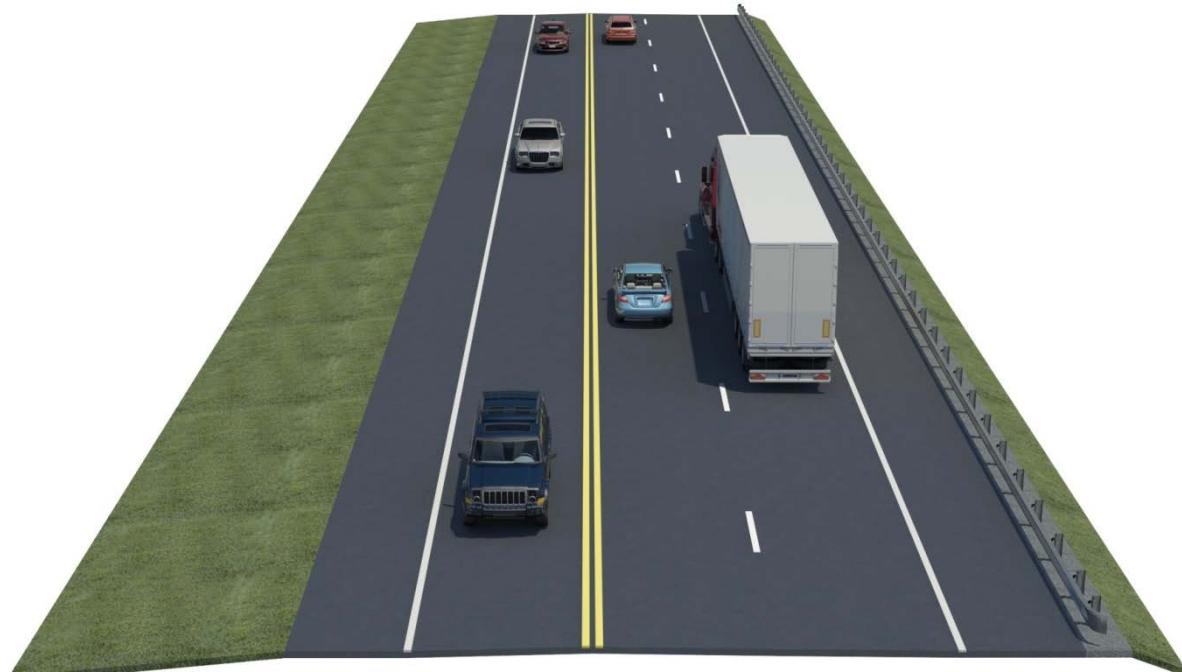
## TYPICAL SECTIONS

The Project Team considered several possible typical sections for US 150, ultimately deciding to focus on options that would accommodate driver expectancy and better suit adjacent sections of roadway. The US 150 Corridor includes three options, shown in **Figures ES-3, ES-4 and ES-5**. The first option, which would be considered in most locations, is a two-lane section (one 12-foot lane per direction) with 8 to 10-foot-wide paved shoulders. The second option would consist of similar lane and shoulder widths but would include a truck climbing or passing lane where appropriate. The third option is a five-lane section (two 12-foot lanes per direction with a center turn lane) for Segment I.



Two 12-foot lanes with 8'-10' paved shoulders

**Figure ES-3 - Conceptual Typical Section for US 150**



Truck climbing (passing) lane (where appropriate)

**Figure ES-4 - Conceptual Typical Section for US 150**



Five 12-foot lanes (including center turn lane) with 8'-10' paved shoulders

**Figure ES-5 - Conceptual Typical Section for US 150**



## Recommendations

The recommendations for the US 150 Corridor Project are based on their ability to meet the purpose and need, project team input, local official/stakeholder and public feedback, and technical analysis.

The final study recommendation for the US 150 Corridor Project is to improve the entire corridor over time using defined segments of US 150 that will cover the corridor from beginning to end, focusing first on one high priority project within each county. Segment locations are shown on **Figure ES-6**. Given the size of the US 150 Corridor Project, improvements will need to be implemented over time. Five independent alternative segments were defined, three in Nelson County (Segments I, II, and III) with a total length of 5.09 miles, and two in Washington County (Segments IV and V) with a total length of 3.89 miles. During the alternative development process, an off-corridor concept (Conceptual Realignment No. 2) that would replace existing US 150 from Botland to Fredericktown (Segments II and III) was also developed. **Table ES-1** summarizes the US 150 Corridor recommendations.

The highest priority project in Nelson County is to improve the corridor along Segment I through the eastern KY 605 (south) intersection. Segment I would effectively continue the improvements underway through the Bluegrass Parkway interchange (KYTC Item No. 4-8308.10), extending a 5-lane section that will be designed to connect to Conceptual Realignment No. 2, which takes the place of Segments II and III along the existing corridor. Conceptual Realignment No. 2 will result in reduced right-of-way, utility, and maintenance of traffic impacts compared to reconstructing the existing alignment. Additionally, the realignment of US 150 will eliminate the steep grade approaching Washington County and the Beech Fork River, a grade that cannot be reasonably reduced if the existing horizontal alignment were to be maintained. If the realignment is constructed, the portion of existing US 150 west of the Beech Fork River could potentially be closed to through traffic, and a scenic overlook could be constructed at the top of the hill.

While Segment I is the highest priority segment in Nelson County, the Project Team discussed the desire to advance the entire Nelson County portion of the corridor through Phase I design. This will allow the KYTC the opportunity to determine the optimal alignment for Conceptual Realignment No. 2 and to ensure compatibility between it and Segment I, including the details related to a likely relocation/reconfiguration of the US 150 intersection with KY 605 (south). The reconstruction of KY 605 (north) within Segment I has two possible options. Option No. 2 for connecting KY 605 (north) to US 150 was preferred and will be further evaluated during subsequent project phases.

The recommendation for this study in Washington County is to improve the corridor along Segments IV and V. The highest priority project in Washington County is to improve the corridor along Segment IV. This segment includes extending the recently improved section east of the Nelson County line, and would address the curve at Grundy Home Road, an area that was repeatedly discussed by local officials, project stakeholders, and the public.

Segments I through V appear to be feasible and beneficial projects that should be pursued further. However, based on the available design funding in the 2014 Highway Plan, the Project Team recommends that Segment IV should be the first project advanced to Phase I design.

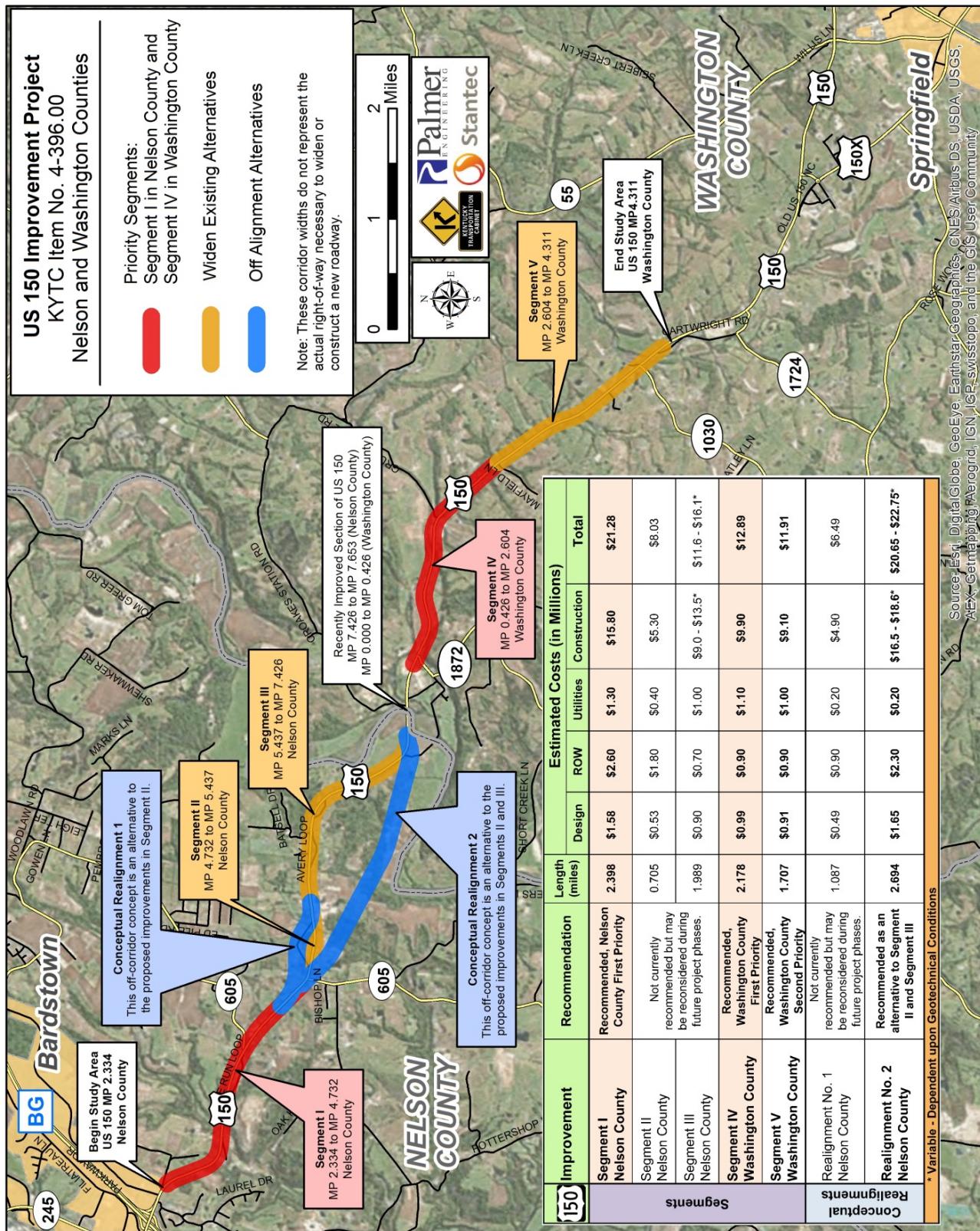


Figure ES-6 - Segment Alternatives Nelson and Washington Counties



Improvement	County	Length (miles)	Design	ROW	Utilities	Construction	Cost Estimate		Project Priority	Priority Status
							Total			
<b>Segment I</b>	<b>Nelson</b>	<b>2.398</b>	<b>\$1,580,000</b>	<b>\$2,600,000</b>	<b>\$1,300,000</b>	<b>\$15,800,000</b>	<b>\$21,280,000</b>		<b>HIGH</b>	<b>Recommended</b>
Segment II	Nelson	0.705	\$530,000	\$1,800,000	\$400,000	\$5,300,000	\$8,030,000		<b>MEDIUM</b>	
Segment III	Nelson	1.989	\$900,000	\$700,000	\$1,000,000	\$9,000,000 - \$13,500,000	\$11,600,000 - \$16,100,000	*	<b>LOW</b>	
<b>Segment IV</b>	<b>Washington</b>	<b>2.178</b>	<b>\$990,000</b>	<b>\$900,000</b>	<b>\$1,100,000</b>	<b>\$9,900,000</b>	<b>\$12,890,000</b>		<b>HIGH</b>	<b>Recommended</b>
<b>Segment V</b>	<b>Washington</b>	<b>1.707</b>	<b>\$910,000</b>	<b>\$900,000</b>	<b>\$1,000,000</b>	<b>\$9,100,000</b>	<b>\$11,910,000</b>		<b>MEDIUM</b>	<b>Recommended</b>
Conceptual Realignment No. 1	Nelson	1.087	\$490,000	\$900,000	\$200,000	\$4,900,000	\$6,490,000		<b>MEDIUM</b>	
<b>Conceptual Realignment No. 2 (Segments II &amp; III Inclusive)</b>	<b>Nelson</b>	<b>2.694</b>	<b>\$1,650,000</b>	<b>\$2,300,000</b>	<b>\$200,000</b>	<b>\$16,500,000 - \$18,600,000</b>	<b>\$20,650,000 - \$22,750,000</b>	*	<b>MEDIUM</b>	<b>Recommended</b>
Spot Improvements										
Spot Improvement "A" (Located within Segment I)										
Spot Improvement "B" (Located within Segment III)										
Spot Improvement "C" (Located within Segment IV)										
Spot Improvement "D" (Located within Segment IV)										
Spot Improvement "E" (Located within Segment IV)										
Spot Improvement "F" (Located within Segment V)										

\* Variable - Dependent upon Geotechnical Conditions

\*\* Variable - Dependent upon selection of Option 1 or Option 2

**Table ES-1 - Summary of Alternatives, Spot Improvements and Conceptual Realignments**