

KY 30 Planning Study

Executive Summary

From KY 11 in Booneville to KY 15 in Jackson Owsley and Breathitt Counties, Kentucky

This planning study examines the KY 30 corridor from KY 11 in Owsley County to KY 15 in Breathitt County, a total length of approximately 23.3 miles.

Existing Conditions

The study portion of KY 30 stretches from KY 11 in Booneville to KY 15 in Jackson. KY 30 is classified as a Rural Major Collector with a 55 mph posted speed limit in the majority of the study area. It is a two lane facility with the majority of the route having 9 to 10 foot wide travel lanes and narrow (2 to 4 foot wide) shoulders. The corridor passes through mountainous terrain, connecting a number of small rural communities and scattered homes. Two schools, the Kentucky Bend Medical Center in Jackson, and numerous churches also rely on the route for access.

At a systems level, KY 30 provides a connection between the Hal Rogers Parkway and I-75 in London and the Mountain Parkway near Salyersville.



Deficient geometric features are adjacent to Highland-Turner Elementary School.

Along the 23.3 mile study route, analysts identified 70 horizontal curves that do not meet current standards, 17 sag vertical curves that do not meet current standards for headlight stopping sight distance, and 18 crest vertical curves that do not meet current common geometric practices for stopping sight distance. This represents 58% of the horizontal curves along the study portion of the route, 29% of the sag vertical curves, and 45% of the crest vertical curves.

Based on 2013 traffic counts, traffic volumes along the corridor range from 800 to 5,400 vehicles per day – with the lower volumes in the section near the county line. Based on a traffic forecast conducted by KYTC, a 1.2% annual growth rate was applied to the corridor, with volumes growing as high as 7,000 vehicles per day by 2040. Volume-to-capacity ratio for each analysis segment varies from 0.23 to 0.32 in year 2013 and 0.27 to 0.38 in 2040. This indicates each segment operates well below its design capacity.

Over a four-year analysis period from June 2009 to June 2013, there were 119 reported crashes along the 23.3 mile corridor. Of these, two crashes resulted in fatalities and 48 resulted in injuries. Based on the most recent statewide crash data for rural major collectors¹ which looked at crashes between 2009-2011, injury crashes generally compose 29% of total crashes; along the study portion of the KY 30 corridor, injury crashes compose 40% of total reported crashes. The majority of crashes along KY 30 (64%) were single vehicle collisions. Along the study corridor, four spots were found to have a CRF greater than 1.00, with CRF values ranging from 1.15 to 1.28. Two of the high crash spots have deficient roadway geometrics along KY 30. A third is located at Fish Creek Loop Road which is skewed at the KY 30 intersection and has a steep grade. The fourth high crash spot is located in Booneville along a high volume stretch of KY 30 with a lot businesses and driveways.

Purpose & Need

The purpose of the proposed KY 30 improvement project is to improve roadway geometrics to enhance safety and local mobility between Jackson and Booneville and regional connectivity between the Hal Rogers Parkway and I-75 in London and KY 15 in Jackson. The need is expressed through the substandard geometric features and four high crash spots.

¹ Analysis of Traffic Crash Data in Kentucky (2007-2011); Kentucky Transportation Center

Beyond the primary project purpose, facilitating economic development is a secondary goal for the project.

Alternates Considered

To improve safety and traffic operations, the project team considered a selection of potential alternates:

- No Build Alternate.
- Short-term Spot Improvement options.
- Improve the corridor to 45 mph, following new alignment at times and widening shoulders.
- Improve the corridor to 55 mph, following new alignment at times and widening shoulders.

The project team (Kentucky Transportation Cabinet, Kentucky River Area Development District, CDM Smith & HMB) developed conceptual designs, planning-level cost estimates, and a high level comparison of impacts.

Throughout the study, the project team met with local officials, stakeholders, and the public to discuss alternates and understand local perspectives on improvement concepts. Generally, feedback received indicated strong public support for the proposed project:

- 76 of 78 surveys indicated the route should be improved.
- Respondents preferred the corridor be improved to 55 mph, following a new alignment at times

and widening the shoulders. This was preferred over spot improvements and the 45 mph improvement alternates.

- In addition 59 out of 74 respondents thought KY 30 should be rerouted to avoid the Booneville courthouse square.

Recommendations

The planning study recommends that the corridor be improved to 55 mph, widening the roadway to provide two 11 foot wide travel lanes with 10 foot shoulders (8 foot paved). In some locations, off-alignment improvement options are included to improve deficient curves to operate at higher design speeds.

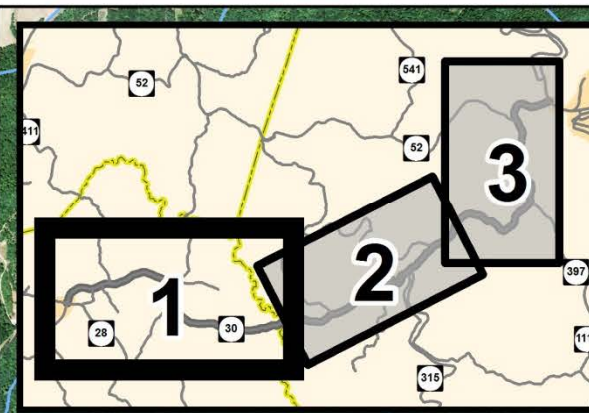
Planning-level cost estimates and the proposed corridor for each of the recommended construction sections are presented in **Figures ES-1, ES-2, and ES-3**.

In Segment 1, a potential rerouting through Booneville should be considered in future project phases to move traffic away from the courthouse square. In addition an optional new connection to KY 397 in Segment 3 should be considered in future project phases.

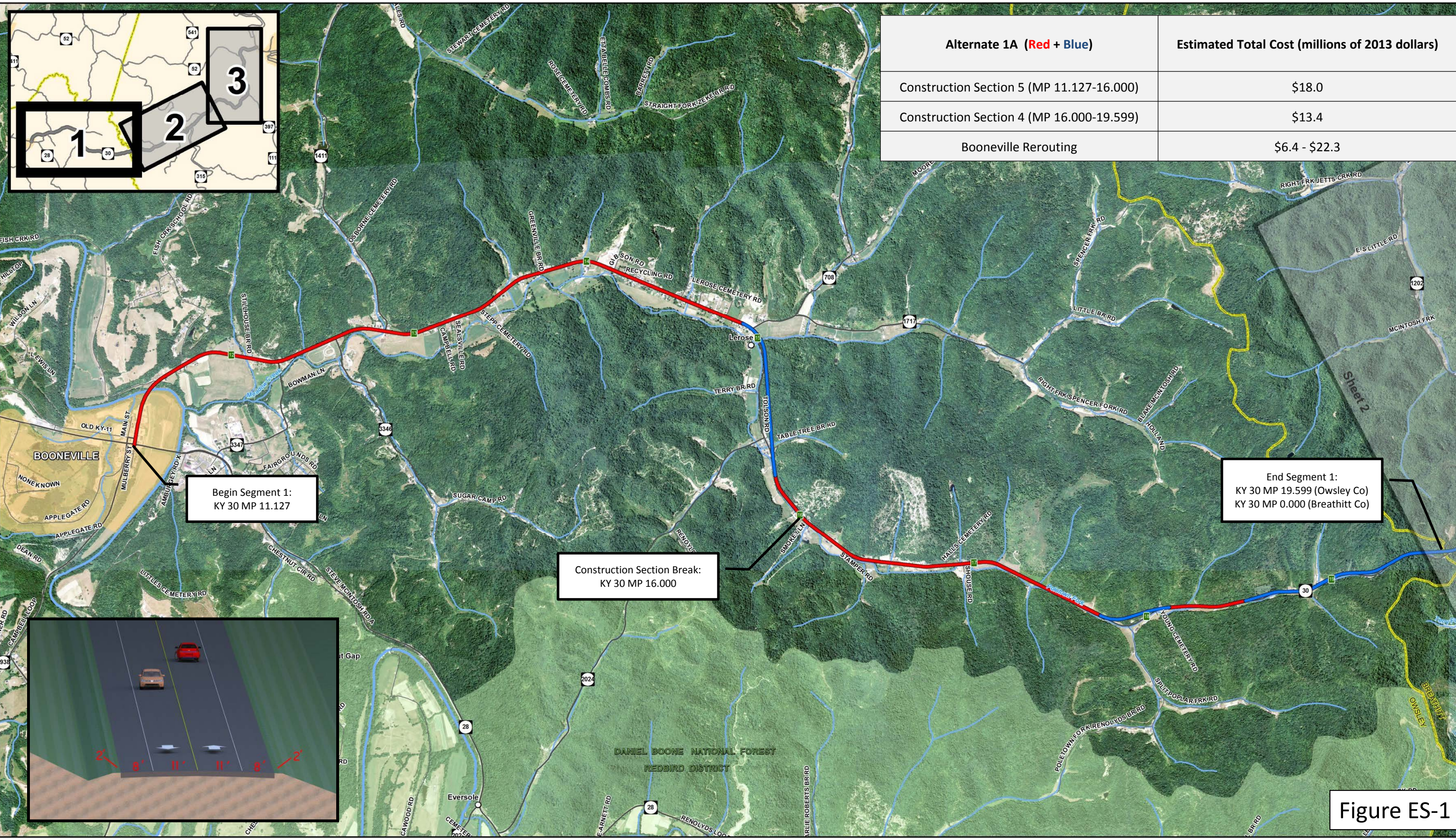
Where possible, segments are recommended to be split into \$25 to \$30 million construction sections to ease funding and maintenance of traffic concerns. Planning-level cost estimates and prioritized construction sections are presented in **Table ES-1**.

Table ES-1: Cost Estimates by Prioritized Construction Section (Millions of 2013 Dollars)

Prioritized Construction Section	Alternate	Design	ROW	Utilities	Construction	Total Cost
1	Alt 3C (Breathitt County MP 7.000 to 12.732)	\$3.6	\$2.2	\$1.4	\$40.8	\$48.0
2	Alt 2A (Breathitt County MP 5.000 to 7.000)	\$0.9	\$0.8	\$0.7	\$9.3	\$11.7
3	Alt 2A (Breathitt County MP 0.000 to 5.000)	\$2.1	\$1.9	\$1.7	\$23.2	\$28.9
4	Alt 1A (Owsley County MP 16.000 to 19.599)	\$0.9	\$0.8	\$1.3	\$10.4	\$13.4
5	Alt 1A (Owsley County MP 11.127 to 16.000)	\$1.3	\$1.0	\$1.7	\$14.0	\$18.0
Optional Improvements						
N/A	Booneville Rerouting	\$0.8	\$1.5	\$1.0	\$19.0	\$22.3
N/A	New KY 397 Connection	\$0.6	\$0.4	\$0.1	\$3.5	\$4.6



Alternate 1A (Red + Blue)	Estimated Total Cost (millions of 2013 dollars)
Construction Section 5 (MP 11.127-16.000)	\$18.0
Construction Section 4 (MP 16.000-19.599)	\$13.4
Booneville Rerouting	\$6.4 - \$22.3



Begin Segment 1:
KY 30 MP 11.127

Construction Section Break:
KY 30 MP 16.000

End Segment 1:
KY 30 MP 19.599 (Owsley Co)
KY 30 MP 0.000 (Breathitt Co)

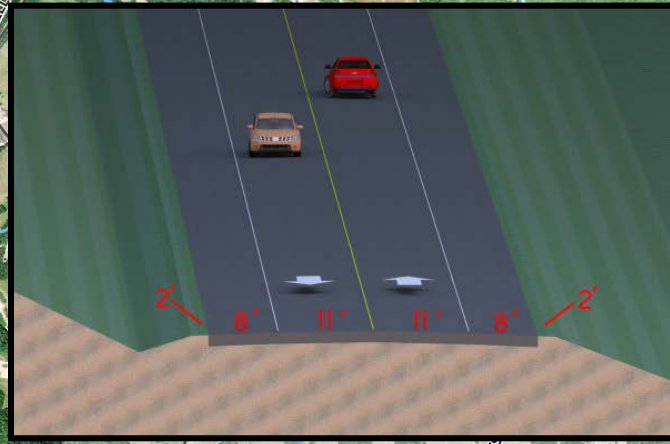


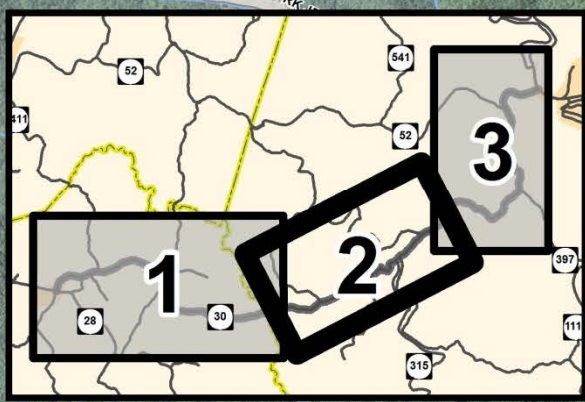
Figure ES-1



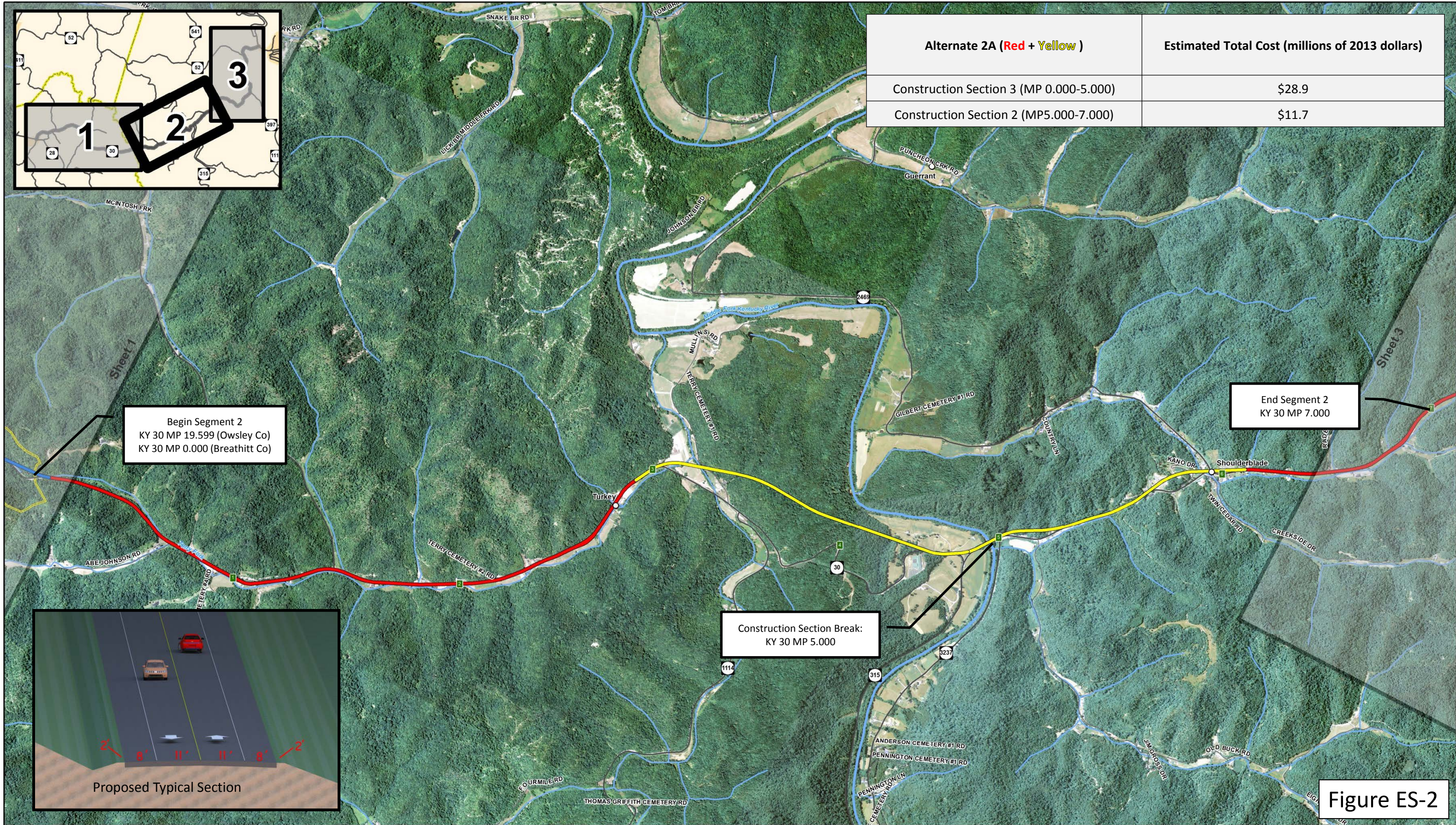
- Existing
- Widen Existing On Alignment (55 mph)
- New Alignment (55 mph)



KY 30 Planning Study
From KY 11 in Booneville to KY 15 in Jackson
Breathitt and Owsley Counties
**Long Term Improvement
Segment 1 Recommendation**



Alternate 2A (Red + Yellow)	Estimated Total Cost (millions of 2013 dollars)
Construction Section 3 (MP 0.000-5.000)	\$28.9
Construction Section 2 (MP 5.000-7.000)	\$11.7



Begin Segment 2
 KY 30 MP 19.599 (Owsley Co)
 KY 30 MP 0.000 (Breathitt Co)

End Segment 2
 KY 30 MP 7.000

Construction Section Break:
 KY 30 MP 5.000

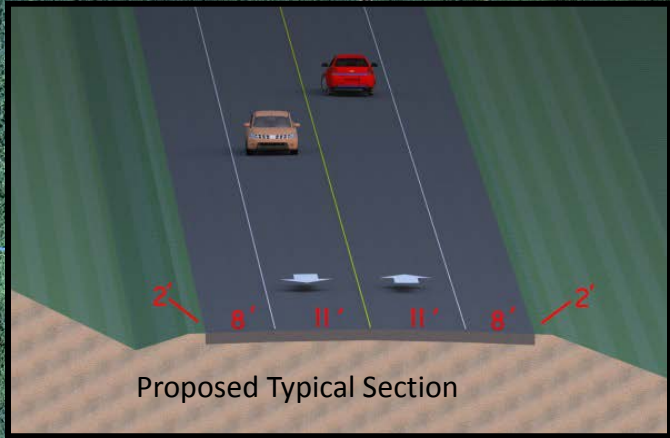


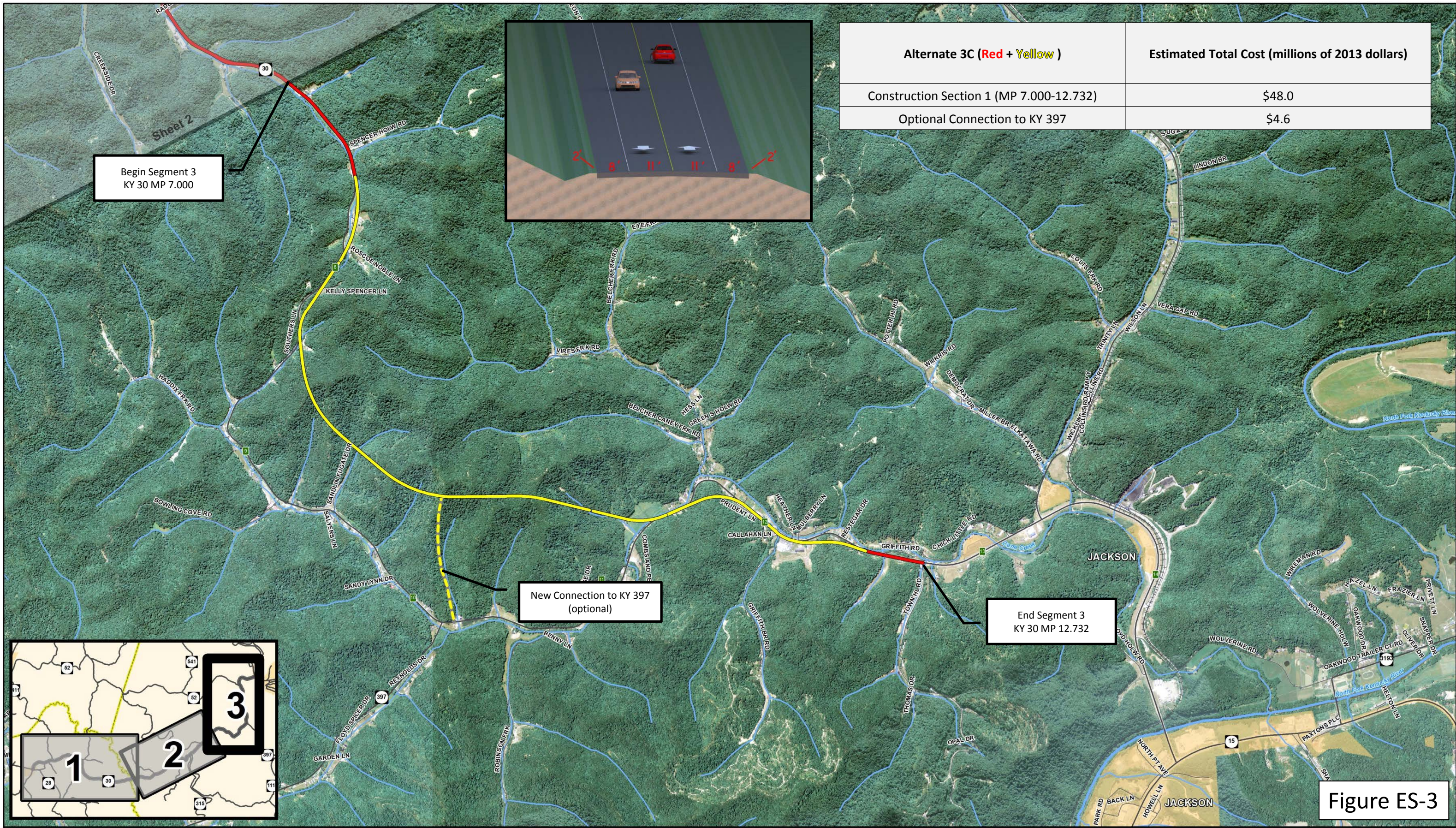
Figure ES-2



- Existing
- Widen Existing On Alignment (55 mph)
- New Alignment (55 mph)



KY 30 Planning Study
 From KY 11 in Booneville to KY 15 in Jackson
 Breathitt and Owsley Counties
**Long Term Improvement
 Segment 2 Recommendation**



Alternate 3C (Red + Yellow)	Estimated Total Cost (millions of 2013 dollars)
Construction Section 1 (MP 7.000-12.732)	\$48.0
Optional Connection to KY 397	\$4.6

Begin Segment 3
KY 30 MP 7.000

New Connection to KY 397
(optional)

End Segment 3
KY 30 MP 12.732

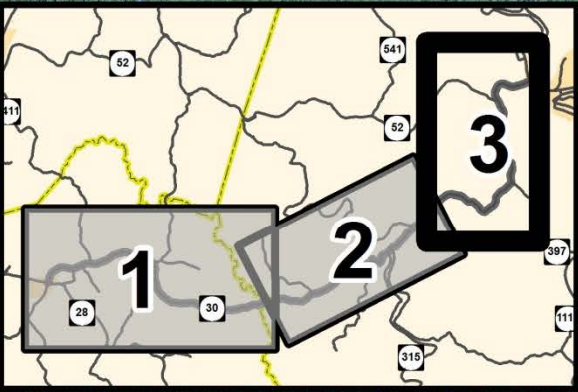


Figure ES-3



- Existing
- Widen Existing On Alignment (55 mph)
- New Alignment (55 mph)
- Optional Connection to KY 397



KY 30 Planning Study
From KY 11 in Booneville to KY 15 in Jackson
Breathitt and Owsley Counties
**Long Term Improvement
Segment 3 Recommendation**