



EXECUTIVE SUMMARY

Alternatives Study
Henry & Trimble Counties
US 421 from I-71 to Bedford
Item No. 5-147.00
April 2009



The purpose of this planning study is to gather information necessary to develop and evaluate alternatives for the possible reconstruction of US 421 from the I-71 interchange to Bedford. This reconstruction would improve safety and traffic flow along the corridor. Another nearby project that is occurring is north of Bedford, the Milton Madison Bridge Project.

Draft Project Goals

The preliminary goals established for this project include:

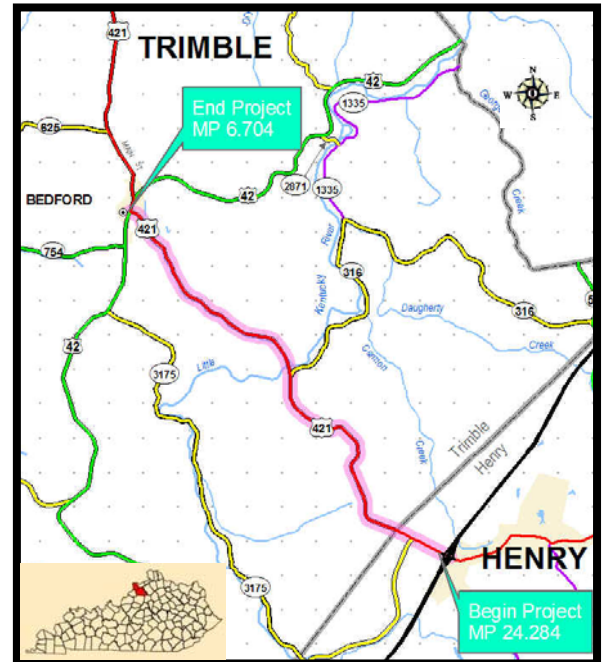
1. Enhance regional connectivity by improving the connection from I-71 to Bedford and to points north of Bedford.
2. Improve safety for the traveling public and school busses by addressing the less than optimal horizontal and vertical alignment and by utilizing a typical section that more closely meets current guidelines.
3. Improve access to Henry and Trimble Counties to support development in the region by providing better access to I-71.

Project Funding

This project was scheduled in the 2002 Six-Year Highway Plan (FY 2003-2008) with committed funds of \$200,000. There are no future phases scheduled for this project at this time.

Existing Roadway Conditions

The current roadway alignment has narrow lanes and shoulders. The most frequent crash type in the project area was a vehicle running off the road. Other issues with the existing route are the curves and grades that do not meet current guidelines or



provide adequate sight distance for on-coming vehicles or vehicles pulling into traffic from side roads.

An improved route may decrease the travel time between Bedford and I-71, improve safety and promote new industry in the region.

Environmental Issues

Wilbur Smith Associates (WSA) prepared an Environmental Footprint for this project on US 421. Several concerns were identified and need to be addressed as subsequent phases develop. These include: erosion, wetlands, public and private water sources, a large forest block, possible endangered, partial, status, threatened and concerned species, prime lands, community sensitive locations, Underground Storage Tanks (UST) and monitored sites, air & noise impacts and

structures that are registered as Historic Sites.

Public Involvement

Throughout the study, local citizens, public officials and stakeholders were given the opportunity to provide input. In addition, input was solicited from many local, state and federal agencies. Some local concerns were identified through this process:

- Near the I-71 interchange, where US 421 has full shoulders, trucks park on the shoulder in front of the gas station creating a visual obstruction to drivers trying to pull out of the gas station onto US 421.
- A bypass is necessary around the US 421/US 42 intersection in Bedford beginning north of the schools and continuing south along the east side of US 421 and rejoining US 421 south of the existing intersection at US 421 and US 42.

Surveys aided in identifying the primary recommendation and developed the prioritization of spot improvements along the corridor.

Recommendations

Based upon the project goals, corridor issues, technical analysis, access needs, environmental impacts and public/agency input, the project team selected the following alternatives as highest priority:

- 1) Alternate #3a was chosen to be the primary recommendation. This alternate includes the improvements to the large horizontal curve and the widening and upgrading of the existing route to current design standards. The estimated cost for this rebuild is \$42,000,000.
- 2) The team also decided that Alternate #3b has potential to be an interim solution if funding does not become immediately available for the primary recommendation. This would provide the opportunity for lower-cost improvements in the event that

limited funds are available. The following table summarizes the spot improvements for alternative 3b.

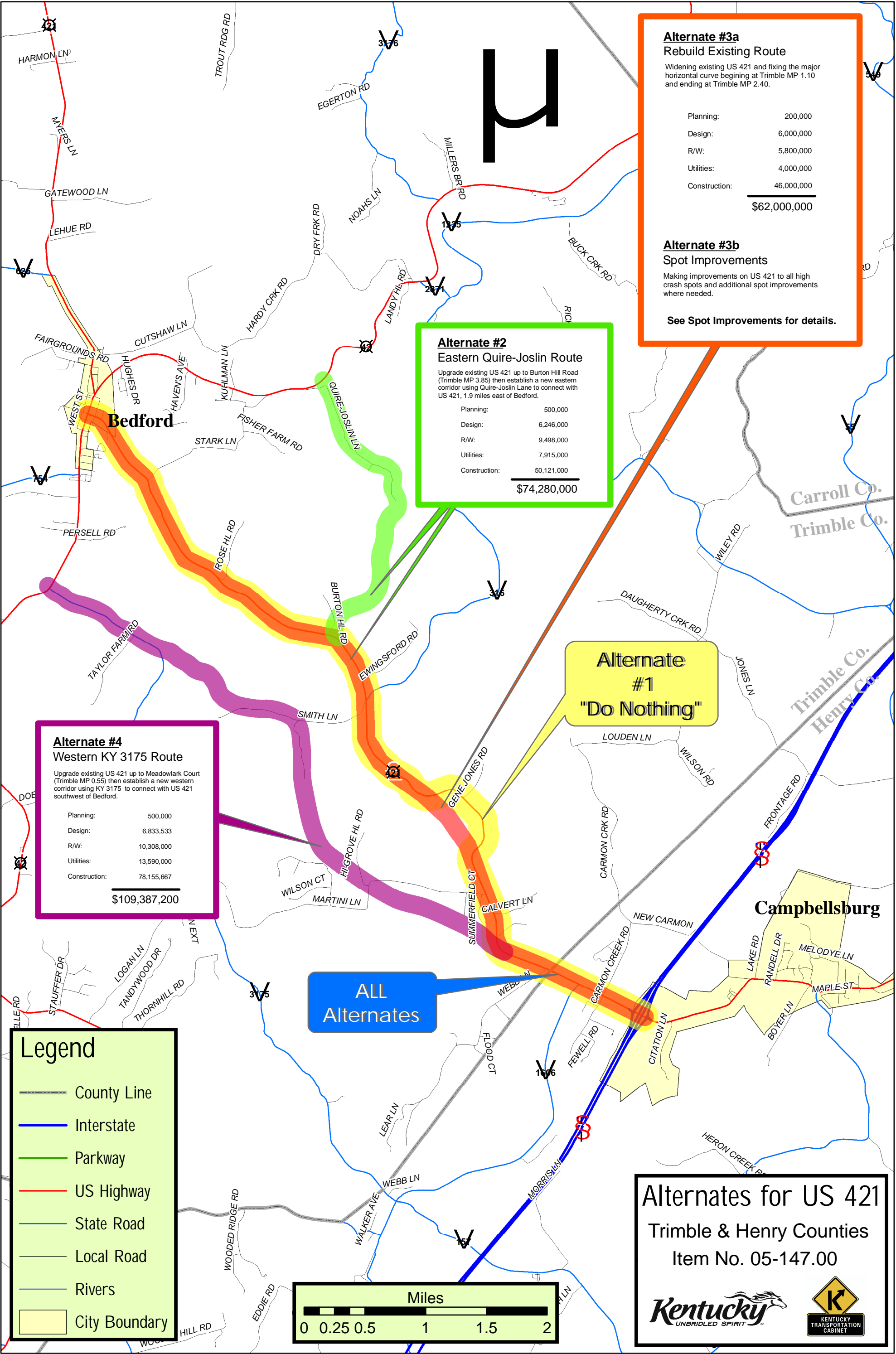
Prioritized Spot Improvements & Estimates		
Rank	Spot #	Total
1	3	\$ 9,800,000.00
2	4	\$ 50,000.00
3	5*	\$ 10,812,000.00
4	2	\$ 2,580,000.00
5	1	\$ 5,250,000.00
6	6	\$ 2,050,000.00
7	7	\$ 250,000.00

*With regard to Spot Improvement #5, of the two options the project team chose to recommend the bypass option (Option #2). The study concluded the bypass option better meets the needs and project goals.

Additional Information

Comments and/or requests for information regarding this US 421 Alternatives Study should be sent to the address listed below:

Mr. Keith R. Damron, P.E.
Kentucky Transportation Cabinet
Division of Planning
200 Mero Street, 5th Floor West
Frankfort, KY 40622

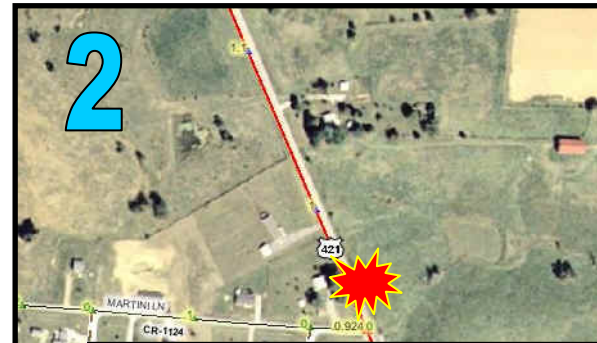




Spot Improvement @ Crash Spot #1

Widen US 421 to 4 lanes for safer access near the I-71 Interchange. (Henry MP 24.113 to 24.486)

Design:	300,000
R/W	350,000
Utilities	300,000
Construction	4,300,000
	\$5,250,000



Spot Improvement @ Crash Spot #2

After a field review, it was concluded that the geometry and sight distances for this spot are adequate and no further improvements are needed. (Trimble MP 0.90 to 1.00)

The field review did identify a spot south of this location with possible sight distance problems. Re-grade the roadway with shoulder improvements and clear vegetation. (Henry MP 24.60 to Trimble MP 0.10)

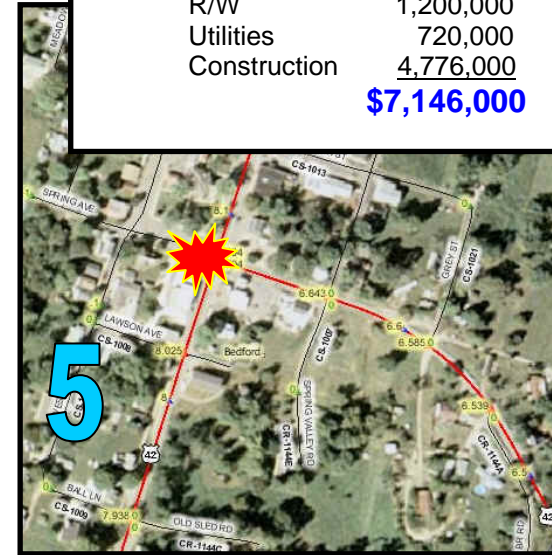
Design:	230,000
R/W	470,000
Utilities	470,000
Construction	1,410,000
	\$2,580,000

OPTION #1

Spot Improvement @ Crash Spot #5

Add turning lanes and widen the combined US 421/US 42 route for improved safety and flow through Bedford. (Trimble MP 6.70 to 6.80)

Design:	450,000
R/W	1,200,000
Utilities	720,000
Construction	4,776,000
	\$7,146,000



OPTION #2

Spot Improvement @ Crash Spot #5

Develop a new alignment between US 421 and US 42 so the approaches cross at and angle closer to 90 degrees. Move both US 421 approaches east near Hughes Drive. (Trimble MP 6.70 to 6.80)

Design:	600,000
R/W	1,440,000
Utilities	1,200,000
Construction	7,572,000
	\$10,812,000

TOTAL SPOT IMPROVEMENTS

Spot #1	5,250,000
Spot #2	2,580,000
Spot #3	9,800,000
Spot #4	50,000
Spot #5	7,146,000 (OPT #1)
Add #6	2,050,000
Add #7	250,000
	\$27,126,000
	\$30,792,000 w/ OPT #2

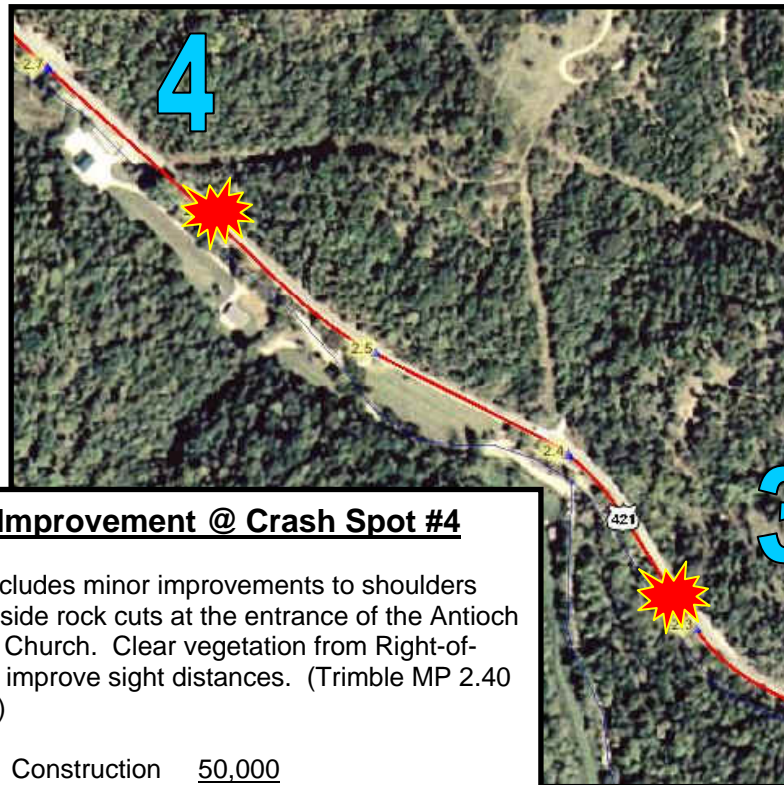


SPOT IMPROVEMENTS

Alternate #3b

Trimble & Henry Counties

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Spot Improvement @ Crash Spot #4

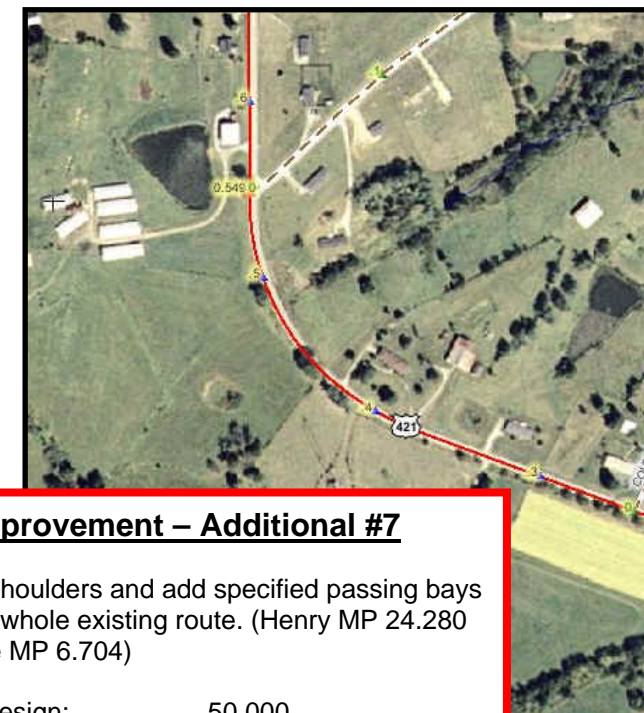
Spot includes minor improvements to shoulders and hillside rock cuts at the entrance of the Antioch Baptist Church. Clear vegetation from Right-of-Way to improve sight distances. (Trimble MP 2.40 to 2.70)

Construction	50,000
	\$50,000

Spot Improvement @ Crash Spot #3

Improvements are to eliminate the major horizontal curve at Trimble MP 1.10 to 2.40.

Design:	650,000
R/W	1,550,000
Utilities	1,300,000
Construction	6,300,000
	\$9,800,000



Spot Improvement – Additional #6

Widen lanes and shoulders through this 40 MPH curve to current standards and soften curve radius. (Trimble MP 0.20 to 0.60)

Design:	200,000
R/W	400,000
Utilities	250,000
Construction	1,200,000
	\$2,050,000

Spot Improvement – Additional #7

Improve shoulders and add specified passing bays along the whole existing route. (Henry MP 24.280 to Trimble MP 6.704)

Design:	50,000
Construction	200,000
	\$250,000

