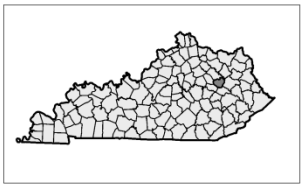
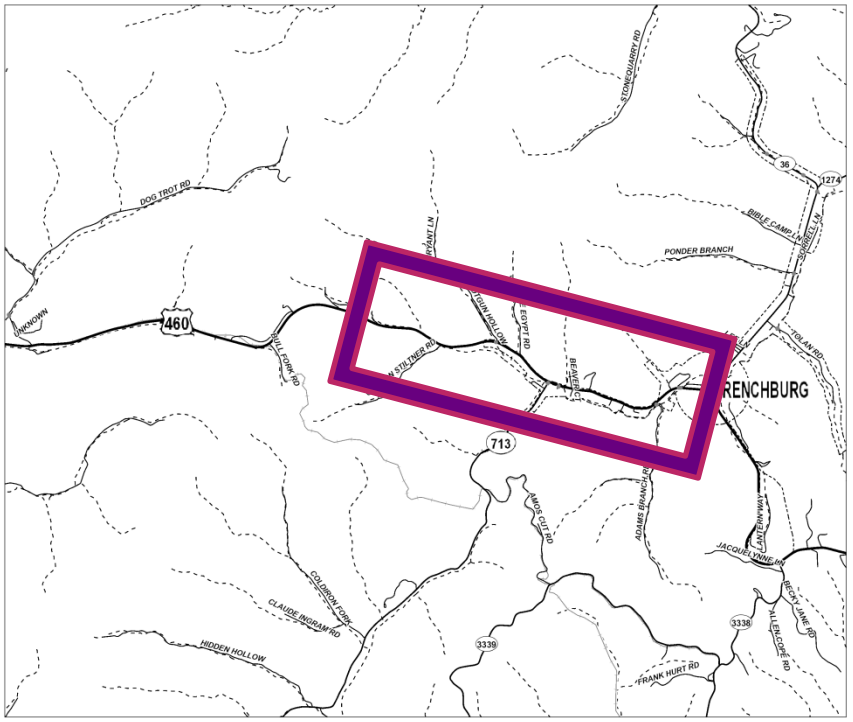
Data Needs Analysis





Scoping Study

US 460, Menifee County
Reconstruction/
Major Widening
Item No. 10-8802.00

Prepared by
KYTC District 10

August 2014

KENTUCKY TRANSPORTATION CABINET

I. PRELIMINARY PROJECT INFORMATION

County: Menifee **Item No.:** 10-8802.00
Route Number(s): US 460 **Road Name:** Mt. Sterling to Frenchburg
Program No.: 8943301D **UPN:** FD04 083 0460 006-009
Federal Project No.: N/A **Type of Work:** Reconstruction/Major Widening

2014 **Highway Plan Project Description:**

IMPROVE SAFETY AND SUBSTANDARD GEOMETRICS FOR US 460 FROM MP 6.2 TO MP 8.5. RECONSTRUCTION FROM END OF ROTHWELL HILL RECONSTRUCTION TO BRIDGE OVER BEAVER CREEK. (14CCN)

Beginning MP: 6.2 **Ending MP:** 8.5 **Project Length:** 2.3

Functional Class.: ☐ Urban ☑ Rural — Minor Arterial
State Class.: ☑ Primary ☐ Secondary
Route is on: ☐ NHS ☐ NN ☐ Ext Wt
MPO Area: NA
Truck Class.: AAA
In TIP: ☐ Yes ☐ No
% Trucks: 6
ADT (current): 4645 2012
Terrain: Mountainous
Access Control: ☑ None ☐ Permit ☐ Fully Controlled ☐ Partial Spacing: NA
Median Type: ☑ Undivided ☐ Divided (Type):
Existing Bike Accommodations: Shared **Ped:** ☐ Sidewalk
Posted Speed: ☑ 35 mph ☑ 45 mph ☑ 55 mph ☐ Other (Specify):
KYTC Guidelines Preliminarily Based on : 45/55 **MPH Proposed Design Speed**

Roadway Data:	**EXISTING**	**COMMON GEOMETRIC PRACTICES***
No. of Lanes	2	2
Lane Width	10'-12'	12'
Shoulder Width	1'-6'	8'
Max. Superelevation**		8%
Minimum Radius**		965'
Maximum Grade		6%
Minimum Sight Dist.		495'
Sidewalk Width(urban)		N/A
Clear-zone***	10'	22'

Existing Rdwy. Plans available? ☐ Yes ☑ No — Year of Plans:
☑ Traffic Forecast Requested — Date Requested: 7/29/2014
☑ Mapping/Survey Requested — Date Requested: 7/31/2014 — Type: Aerial

Project Notes/Design Exceptions?: See Section IV.

*Based on proposed Design Speed, **AASHTO's A Policy on Geometric Design of Highways and Streets, ***AASHTO's Roadside Design Guide

Bridge No.*:	083B00033N	(Bridge #2)
Sufficiency Rating	87.7	
Total Length	25'	
Width, curb to curb		
Span Lengths	12.1'	
Year Built	1990	
Posted Weight Limit		
Structurally Deficient?	NO	
Functionally Obsolete?	NO	
Existing Bridge Type	concrete	

Existing Geotech data available? ☐ Yes ☑ No

Detour Length(s): 44 miles

*If more than two bridges are located on the project, include additions sheets.

II. PROJECT PURPOSE AND NEED

A. Legislation

This Project was added by the General Assembly into the 2014 Highway Plan with the funding levels shown to the right.

Funding	*Phase*	*Year*	*Amount*
SPP	D	2015	$250,000
SPP	R	2015	$1,000,000
SP	U	2016	$750,000
SP	C	2017	$8,000,000

B. Project Status

This project currently has the design funds authorized. This section will be a continuation of a multi-year corridor upgrade.

C. System Linkage

This route connects the Menifee and Montgomery Counties. It was the first major corridor in Eastern Kentucky. It was designed and constructed to connect county seats across the state and still serves that purpose.

D. Modal Interrelationships

This route is used daily by log trucks as well as other trucks hauling commercial goods.

E. Social Demands & Economic Development

This route is used daily by commuters for work and recreation. It is the most used way for residents of Morgan and Menifee County to access the growing area of Mount Sterling and the I-64 corridor. As the Mt. Sterling area continues to grow it is expected that the demand for a better corridor will increase. This route is also used by tourist and visitors wanting to access the Cave Run Lake and Red River Gorge Areas.

II. PROJECT PURPOSE AND NEED (cont.)

F. Transportation Demand

As stated earlier, the US 460 Corridor has been undergoing improvements throughout the Commonwealth for numerous years. There are three (3) sections left to be completed in Menifee including this one. The US 460 route has the highest ADT of all routes in Menifee county.

G. Capacity

This section of US 460 is currently operating at about half of its capacity. It has a V/SF of 0.51. Capacity is not expected to become an issue in the near future.

H. Safety

A review of the Kentucky State Police Collision Database since 2008 shows that there have been 35 collisions along this section of roadway resulting in 16 injuries. The collision types include Run Off Road, Sideswipe, Rear End, Fixed Object and Head-On. The corresponding Critical Rate Factor (CRF)for this project section is 0.66. A map showing the collisions can be seen on page 10.

I. Roadway Deficiencies

KYTC's Common Geometric Practices for Rural Arterial Roads recommends 12' driving lanes and 8' shoulders. This section of roadway contains substandard horizontal curves and guardrail and narrow or no shoulders. It also contains entrances that do not have adequate sight distance due to the horizontal curves.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

Project is in: ☑ Attainment area ☐ Nonattainment or Maintenance Area ☐ PM 2.5 County

STIP Pg.#: **TIP Pg.#:**

B. Archeology/Historic Resources

☑ Known Archeological or Historic Resources are present

Historic buildings are adjacent to the project but should not be impacted.

C. Threatened and Endangered Species

Snuffbox Mussels	Gray Bat
White-haired Goldenrod	Indiana Bat
Virginia Big-eared Bat	Northern long-eared Bat

D. Hazardous Materials

☑ Potentially Contaminated Sites are present ☑ Potential Bridge or Structure Demolition

Project will probably require the removal and replacement of a bridge. The corridor also contains location of current and former fueling locations.

E. Permitting

Check all that may apply: ☑ Waters of the US ☐ MS4 area ☑ Floodplain Impacts ☐ Navigable Waters of the US Impacts

Are 401/404 Permits likely to be required? ☑ Yes ☐ No Impacts to: ☐ Wetlands ☑ Stream/Lake/Pond

☐ ACE LON ☐ ACE NW ☑ ACE IP ☐ DOW IWQC ☐ Special Use Waters

Corridor runs adjacent to Beaver Creek.

F. Noise

Are existing or planned noise sensitive receptors adjacent to the proposed project? ☐ Yes ☑ No

Is this considered a "Type I Project" according to the KYTC Noise Analysis and Abatement Policy? ☐ Yes ☑ No

G. Socioeconomic

Check all that may apply: ☑ Low Income/Minority Populations affected ☑ Relocations ☐ Local Land Use Plan available

Project will require aprrox. 6 residential relocations. Project may also affect low income housing units.

H. Section 4(f) or 6(f) Resources

The following are present on the project: ☐ Section 4(f) Resources ☐ Section 6(f) Resources

NA

Anticipated Environmental Document: None (Completely State funded)

IV. PROJECT SCOPING, NEEDS & PURPOSE

A. Scoping & Need:

The Project Team has identified the following needs for this project: **1.** This route connects Menifee and Montgomery Counties. This route is used daily by commuters for work and recreation. It is the most used way for residents of Morgan and Menifee County to access the growing area of Mount Sterling and the I-64 corridor. As the Mt. Sterling area continues to grow it is expected that the demand for a better corridor will increase. This route is also used by tourist and visitors wanting to access the Cave Run Lake and Red River Gorge Areas. Therefore, regional connectivity needs to be improved. **2.** Continue the improvement of the US 460 Corridor. **3.** Correct the roadway geometry deficiencies and improve the roadway for better safety along the project section.

The Project Team has identified the following issues/concerns that must be considered during the design process:

Proximity of Historic Resources
Avoidance of Streams located adjacent to project
Maintenance of Traffic during Construction
Minimization of Impacts to the various Housing Types along Project

During the study, the Project Team examined various alternates two of which can be seen in Exhibit 1. The Team recommends proceeding to design with Alternate 2 (shown in red on page 8.) It is this Alternate that is the basis of the estimate shown in Section V and the recommendations below.

The Project Team recommends using the following Geometric Design:

m.p. 6.2-7.05 should use a 2-Lane Rural Typical consisting of 12' lanes, 8' shoulder (6' paved), 55 mph design speed.
m.p. 7.05-8.5 should use a 3-Lane (Center turn lane) Urban typical consisting of 12' lanes, curb and gutter, dedicated sidewalk (along the southside), 45 mph design speed

B. Draft Project Purpose:

Purpose: The purpose of this project is to improve the safety and connectivity along US 460 by providing users with an improved roadway facility.

V. PROJECT ESTIMATE & METHODOLOGY

Estimate Methodology:

The following was used for estimating purposes:

RW - Residential-$75,000 per house
Commercial-$200,000 per structure
Land-$1,000 per acre

Const - Earthwork-$5 per cu yd
Asphalt-$85 per ton
Bridge-$125 per sq ft
Sidewalk-$50 per sq yd
Curb and gutter-$25 lin ft
25% Contingency

This estimate exceeds the amount that is currently programmed in the Highway Plan. As a more detailed estimate is developed in the Preliminary Engineering Phase, additional funds may need to be requested.

Current Estimate

Phase		Estimate
Planning	$	-
Design	$	1,750,000.00
R/W	$	700,000.00
Utilities	$	750,000.00
Const	$	10,313,531.00
Total	**$**	**13,513,531.00**

VI. UTILITIES POTENTIALLY AFFECTED - CONTACT INFORMATION

Company Name -	Clark Energy
Contact -	Jerry Wells
Address -	28 Bible Camp Lane Frenchburg, KY 40322
Phone No. -	606-768-2383
Company Name -	Mountain Telephone
Contact -	Rick Pelfrey
Address -	405 Main Street West Liberty, KY 41472
Phone No. -	606-743-3121
Company Name -	Frenchburg Water and Sewer
Contact -	Rob Brown
Address -	PO Box 113 Frenchburg, KY 40322
Phone No. -	606-768-6564
Company Name -	Delta Natural Gas
Contact -	Darrell baker
Address -	58 Water Street Owingsville, KY 40360
Phone No. -	606-674-2213

VII. PRECONSTRUCTION STATUS REPORT

29-Jul-2014 **Preconstruction Status Report** Page 71 of 79

Project No.	Parent No.	Auth. #	Auth. Date
10 - 8802.00	10 - 8802.00	89433	21-Jul-2014

IMPROVE SAFETY AND SUBSTANDARD GEOMETRICS FOR US 460 FROM MP 6.2 TO MP 8.5. RECONSTRUCTION FROM END OF ROTHWELL HILL RECONSTRUCTION TO BRIDGE OVER BEAVER CREEK. (14CCN)

Project No.
10 - 8802.00

Type of Work	SAFETY(P)
Roadway Engineer	CONSULTANT
Bridge Engineer	
Project Manager	MIN JIANG

Countyname	MENIFEE
Route	US-460-
BMP / EMP	6.2 / 8.5

No. Lanes	
Length	2.3
Meas. Type	E

Final Plans		R/W Clearance Date	
Contractor Notice		Utility Clearance Date	
Letting Status / Date			

Syp Pro Brno	
Suffrate	

ENVIRONMENTAL	Name	Date	Type	Sched. Comp.	Actual Comp.	Expire Date
Assigned:						
Requested:						

Concerns

Phase Code	D	R	U	C
Stage	AUTHORIZED	ESTIMATED	ESTIMATED	ESTIMATED
SYP Fund Code	SPP	SPP	SP	SP
PreCon FY		2015	2016	2017
Enacted Plan Cost	250,000	1,000,000	750,000	8,000,000
Current Estimated Cost				
Date of Estimate				
PreCon Escalated Cost	***0***	***1,000,000***	***750,000***	***8,000,000***
Project Auth. Date				
Auth. Amount	700,000			
Auth. Date	21-Jul-2014			
Initial Funding Type	FD04			
EMARS Remaining Balance	700,000			

Prog Cd	Unobligated	Encumbered Remaining
8943301D	700,000	0

R/W Parcel Info.			Completion Date
Total Parcels			
Appraisals		of	
Relocated		of	
Deeds Signed			
Suits Filed			
Right of Entry			
Parcels Cleared			

Utility Information			Completion Date
Negotiated Starts		of	
Agreements		of	
Relocated		of	

Milestone	Sch. Comp. Date	Status	Date	Remarks
PRELIMINARY LINE AND GRADE		UNKNOWN	29-May-2014	
DRAINAGE INSPECTION		UNKNOWN	29-May-2014	
JOINT INSPECTION		UNKNOWN	29-May-2014	
GEOTEC ENGINEERING - ROADWAY		UNKNOWN	29-May-2014	
GEOTEC ENGINEERING - BRIDGES		UNKNOWN	29-May-2014	
BRIDGE AND STRUCTURE PLANS TO CENTRAL OFFICE		UNKNOWN	29-May-2014	
ADVANCE SITUATION TO CENTRAL OFFICE		UNKNOWN	29-May-2014	
RIGHT OF WAY PLANS TO CENTRAL OFFICE		UNKNOWN	29-May-2014	
ROAD PLANS TO CENTRAL OFFICE		UNKNOWN	29-May-2014	
TRAFFIC PLANS - SIGNING		UNKNOWN	29-May-2014	
TRAFFIC PLANS - LIGHTING		UNKNOWN	29-May-2014	
TRAFFIC PLANS - SIGNALS		UNKNOWN	29-May-2014	
TRAFFIC PLANS - TRAFFIC CONTROL		UNKNOWN	29-May-2014	

10-8802 DNA STUDY
EXHIBIT I

VIII. TABLES AND EXHIBITS (cont.)

Start of Project

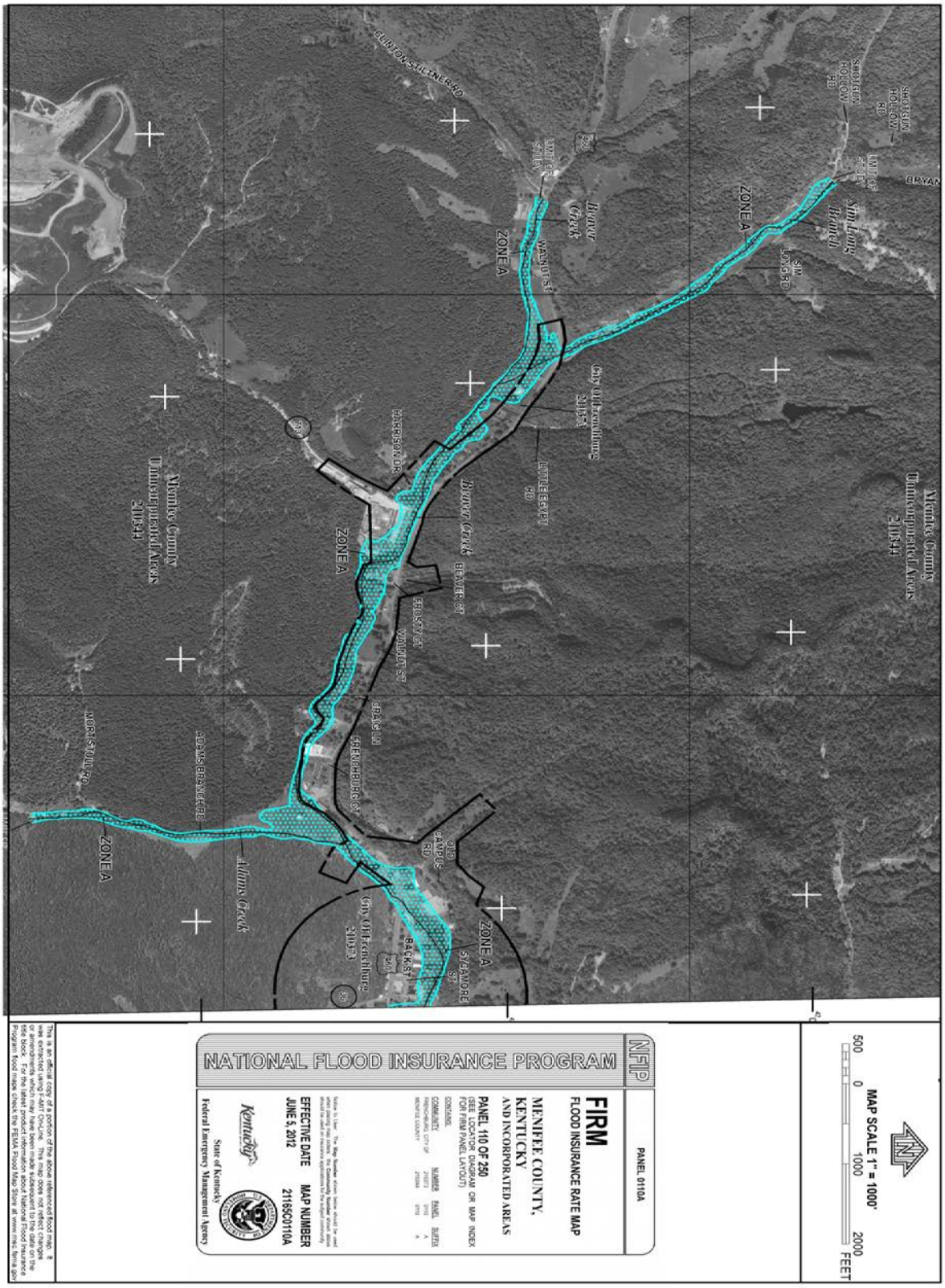
Looking West at Intersection of KY 713 (School Entrance)

VIII. TABLES AND EXHIBITS (cont.)

End of Project

Collisions (2010-2014)

VIII. TABLES AND EXHIBITS (cont.)



VIII. TABLES AND EXHIBITS (cont.)