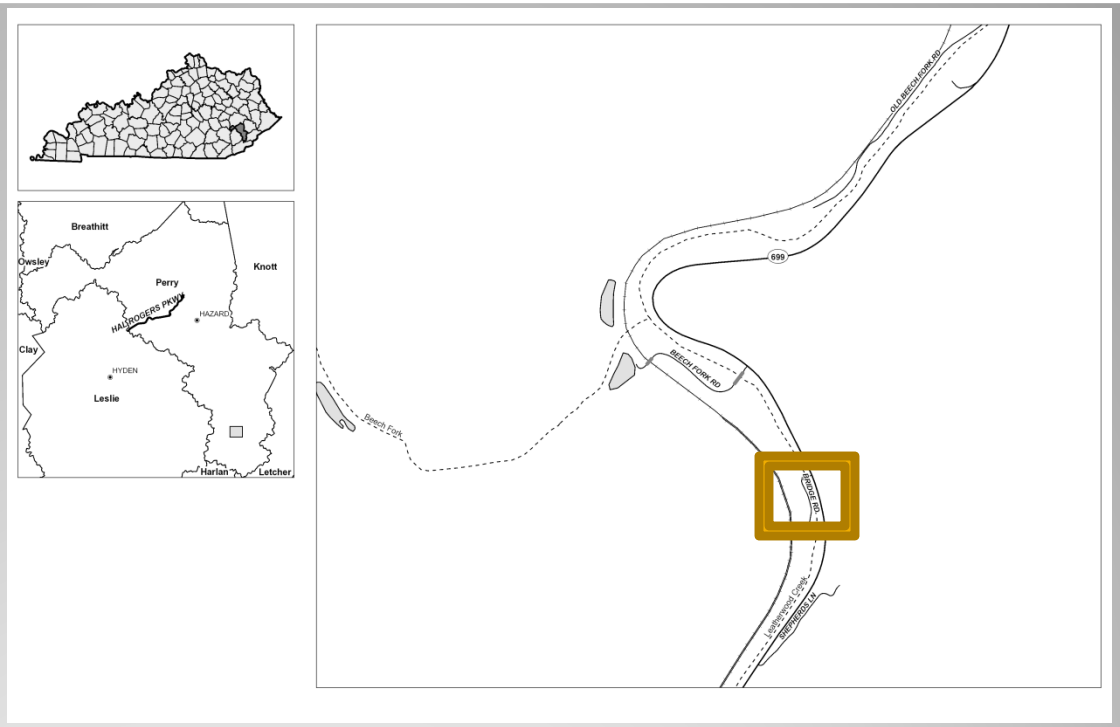
DNA
STUDY

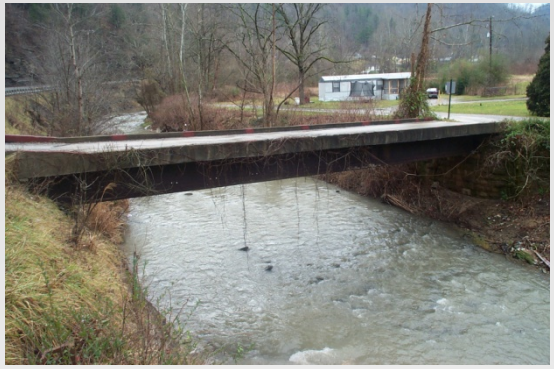


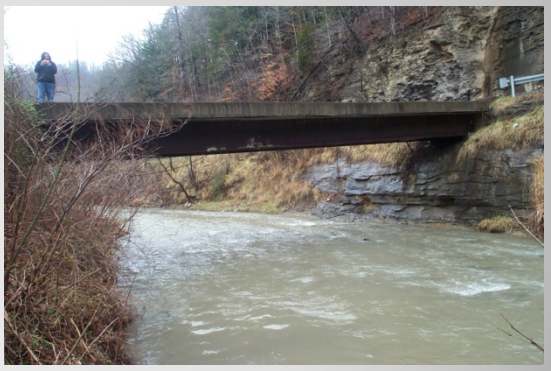
CR 1539
Perry County

2012 Highway Plan
Item No. 10-1104.00

Prepared by:
KYTC District 10

July 2012





I. PRELIMINARY PROJECT INFORMATION

County: Perry **Item No.:** 10-1104.00
Route Number(s): CR 1539 **Road Name:** Old Beech Fork Road
Program No.: **UPN:** (Function) 97 1539 000-001
Federal Project No.: **Type of Work:** Bridge Replacement

2012 **Highway Plan Project Description:**

Replace Bridge on Old Beech Fork Road (CR 1539) over Leatherwood Creek at JCT with Kentucky Highway 699 (KY 699)(SR 7.3) 097C00045N

Beginning MP: 0 **Ending MP:** 0.03 **Project Length:** 0.03 miles

Functional Class.: ☐ Urban ☑ Rural ☐ Local **State Class.:** ☐ Primary ☐ Secondary
Route is on: ☐ NHS ☐ Nat'l Truck Network
MPO Area: Not Applicable **Truck Class.:** A
In TIP: ☐ Yes ☐ No **% Trucks:** 0
ADT (current): **Terrain:** Mountainous
Access Control: ☐ Fully Controlled ☐ Permit ☐ Partial **Detour Length:** none available
Median Type: ☑ Undivided ☐ Divided (Type):
Existing Bike Accommodations: Shared Lane **Ped:** ☐ Sidewalk
Posted Speed: ☑ 35 mph ☐ 45 mph ☐ 55 mph ☐ Other (Specify):
KYTC Guidelines Preliminarily Based on : 35 **MPH Proposed Design Speed**

Roadway Data:	**EXISTING**	**COMMON GEOMETRIC PRACTICES***
No. of Lanes	1	2
Travelled Way Width	12	22
Shoulder Width	0	4
Max. Superelevation**	NA	NA
Minimum Radius**	NA	NA
Maximum Grade	4%	6%
Minimum Sight Dist.		250
Sidewalk Width(urban)	NA	NA
Clear-zone***		

Existing Rdwy. Plans available?
☐ Yes ☑ No
Year of Plans:
☑ Traffic Forecast Requested
Date Requested: 5/10/2012
☐ Mapping Requested
Date Requested:
Type:

Project Notes/Design Exceptions?: Project Team recommends using guidelines for low volume roads

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

Bridge No.*:	097C00045N	(Bridge #2)
Sufficiency Rating	7.3	
Total Length	63	
Width, curb to curb	12.1	
Span Lengths	60	
Max. Span Length	60	
Year Built	1980	
Posted Weight Limit		
Structurally Deficient?	YES	
Functionally Obsolete?	YES	

Existing Geotech data available?
☐ Yes ☑ No

* If more than 2 bridges are present on project, see attached sheets.

II. PROJECT PURPOSE AND NEED

A. Legislation

This project was approved by the General Assembly as part of the Bridge Replacement Program in the 2012 Biennial Highway Plan.

Funding	*Phase*	*Year*	*Amount*
BRZ	D	2013	$225,000
BRZ	R	2014	$50,000
BRZ	U	2014	$50,000
BRZ	C	2015	$500,000

B. Project Status

Design Funds have been requested but not authorized at this time. There are no other projects in this area at this time.

C. System Linkage

CR 1539 is a local road that serves the residents of approximately 6 houses in the Leatherwood community. This bridge serves as the connection to KY 699 and the rest of the State Highway System.

D. Modal Interrelationships

This bridge is located approximately 1300 ft. from the entrance to the Blue Diamond Coal temple. It is adjacent to an active railroad line.

E. Social Demands & Economic Development

There are currently no new plans for further commercial or industrial type development in this area. It is anticipated that this route will continue to function as a local residential route.

F. Transportation Demand

The usage demand for this road is expected to stay the same for the foreseeable future.

II. PROJECT PURPOSE AND NEED (cont.)

G. Capacity

There are no known capacity issues at this time nor are any expected in the near future.

H. Safety

A review f the Kentucky State Police Collision Database shows that no collisions have occurred within the project limits for the last five years.

I. Roadway Deficiencies

CR 1539 is a narrow two lane roadway with little to no shoulders. The bridge is a one lane structurally deficient structure (SR 7.3).

Purpose and Need Statement:

Need: This project will replace a structurally deficient (SR 7.3) bridge along CR 1539. This replacement is needed to ensure a continued linkage for residents of this community to the rest of the highway system. This bridge is the only access for these residents.

Purpose: To ensure continued usage of the existing route by replacing a Structurally Deficient and Functionally Obsolete Bridge.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

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

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

NA

B. Archeology/Historic Resources

☐ Known Archeological or Historic Resources are present

NA

C. Threatened and Endangered Species

Indiana Bat, Kentucky Arrow Darter

D. Hazardous Materials

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

Existing structure will be removed.

G. 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

H. Noise

Are noise sensitive receivers adjacent to the proposed project? ☐ Yes ☐ No

NA

I. Socioeconomic

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

NA

J. 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: CE Level 1

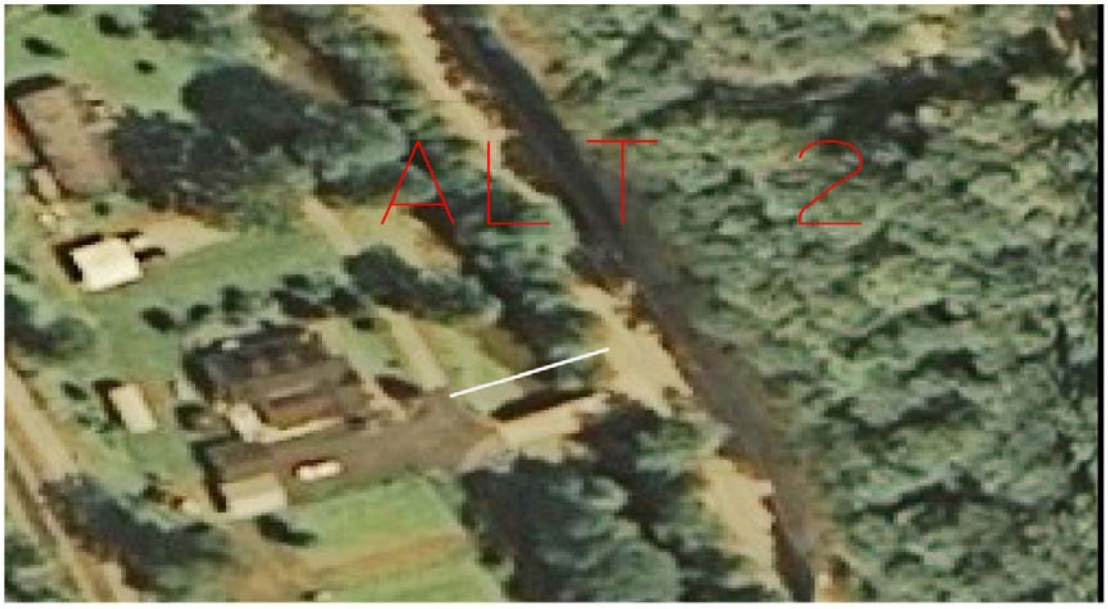
IV. POSSIBLE ALTERNATIVES

A. Alternative 1: No Build

This alternate will not address the identified purpose and need of the project.

B. Alternative 2

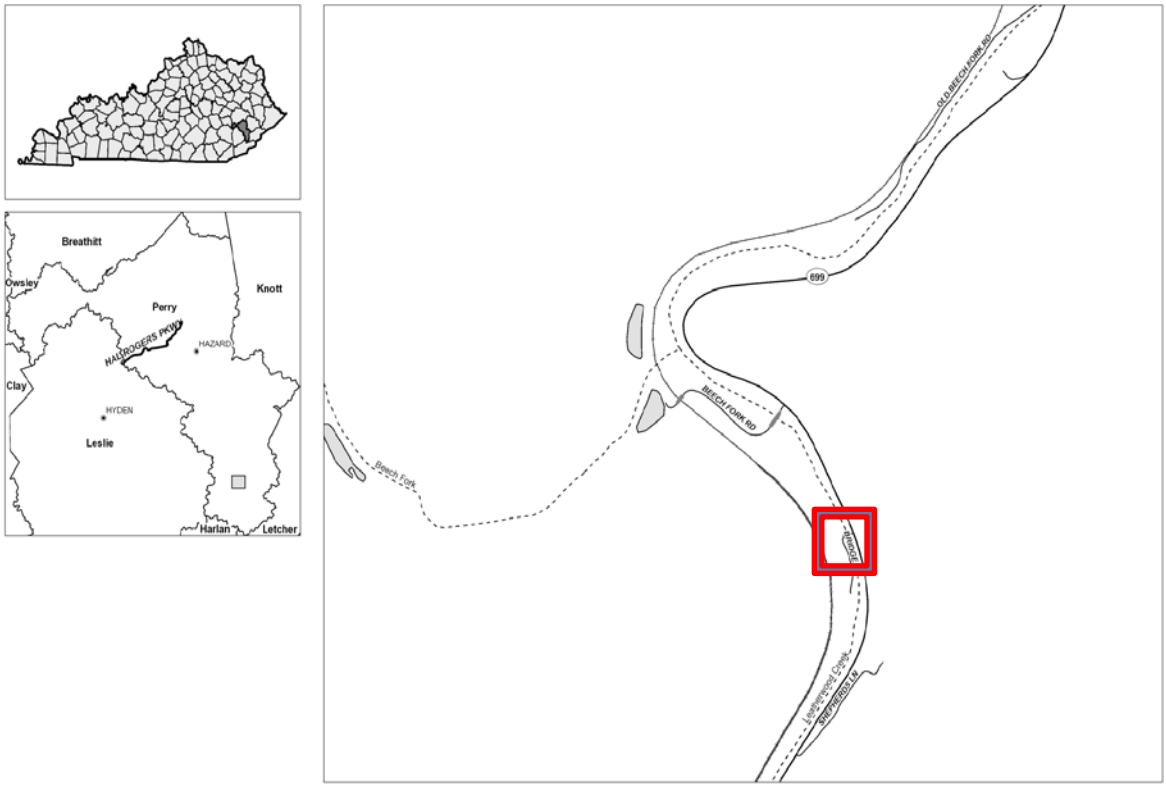
This alternate proposes to construct a new bridge just to the north of the existing structure. This will allow the existing structure to be utilized for Traffic and possibly construction purposes. The only other way out of this area would require the use of railroad owned property for use as a detour and this would only raise cost and slow the project down. The existing bridge may be able to be utilized as part of construction which would save the cost of a temporary low water crossing that would have to be obtained. It appears that no utilities will be impacted as a result of this project but this will have to be verified.



Planning Level Cost Estimate:

Phase	Estimate
Design	$225,000
R/W	$50,000
Utilities	$20,000
Const	$500,000
Total	**$795,000**

V. LOCATION MAP



VI. Summary

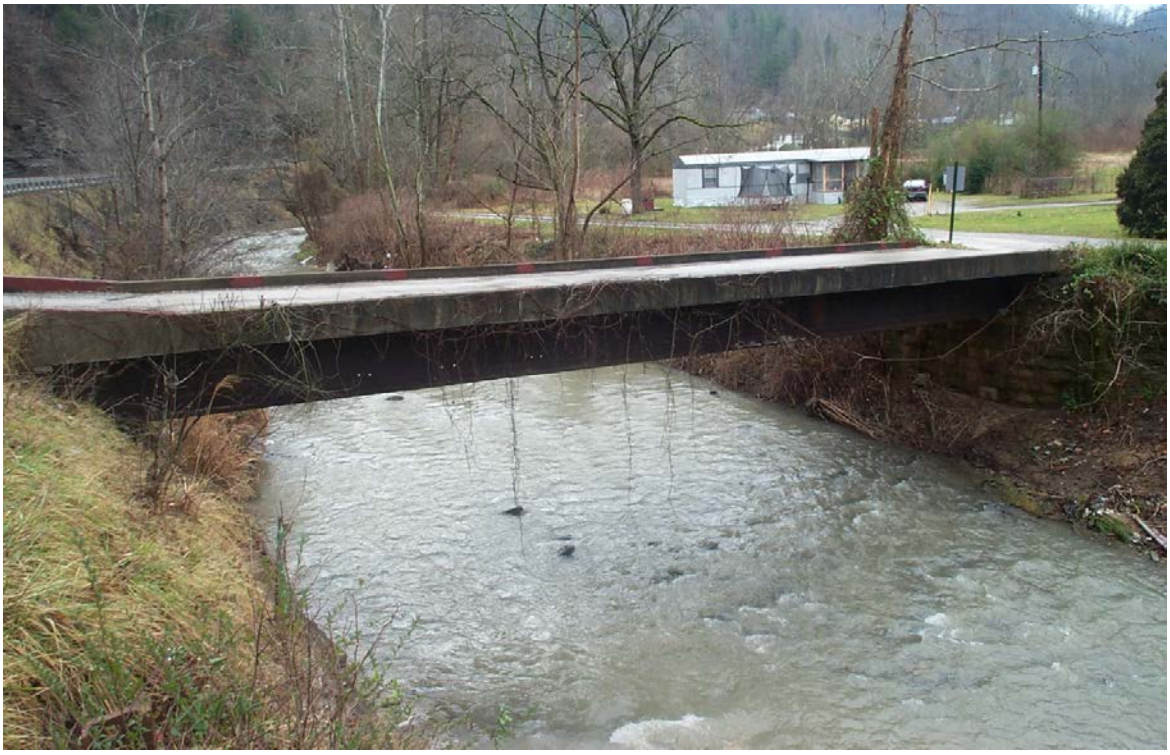
This is a DNA Study of Item # 10-1104.00 as authorized in the 2012 Biennial Highway Plan. The following are the results and recommendations by the Project team:

1. The Purpose of this project is - To ensure continued usage of the existing route by replacing a Structurally Deficient and Functionally Obsolete Bridge.

2. The Project Team recommends to carry Alternate 2 forward into the Design Phase.

Alt #	Description	D ($)(2013)	R ($)(2014)	U ($)(2014)	C ($)(2015)	Total ($mil)
1	No Build	-	-	-	-	-
2	New bridge to the North	$ 225,000.00	$ 50,000.00	$ 20,000.00	$ 500,000.00	$ 795,000.00
3						
-	Current Hwy Plan Estimated Cost	$ 225,000.00	$ 50,000.00	$ 50,000.00	$ 500,000.00	$ 825,000.00
-	Current Pre-Con Estimated Cost	$ 225,000.00	$ 50,000.00	$ 50,000.00	$ 500,000.00	$ 825,000.00

VI. Tables and Exhibits



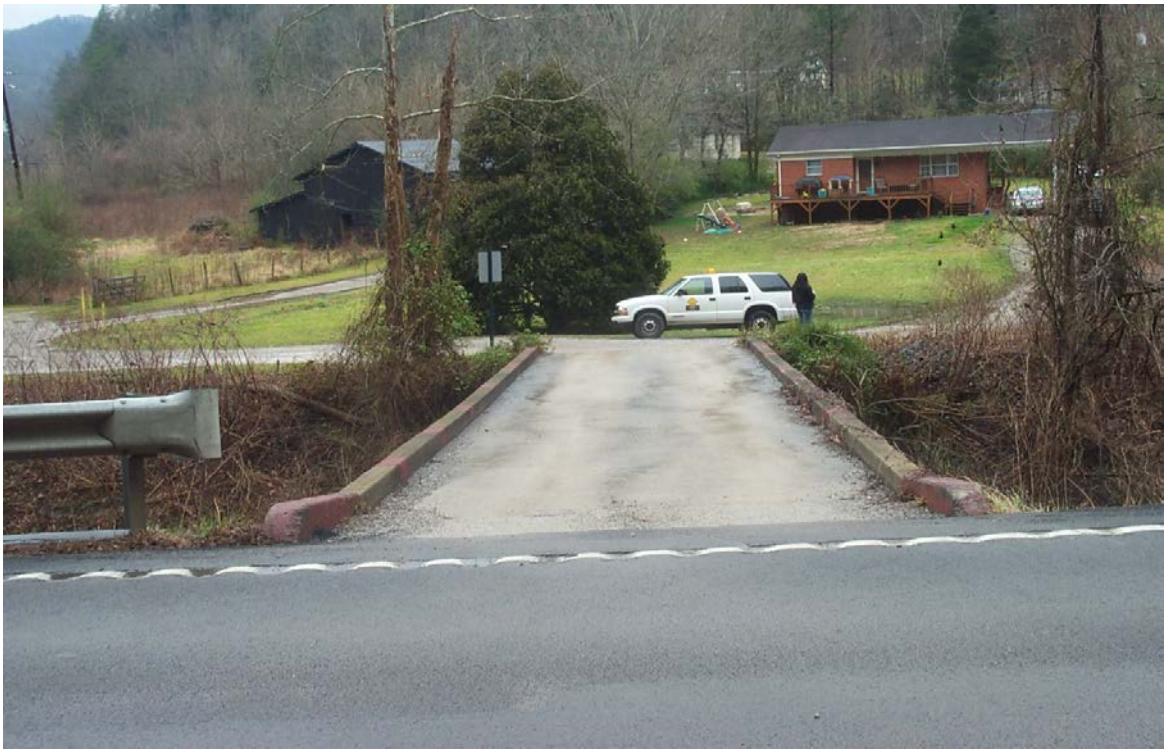


Exhibit 2 & 3: Pictures