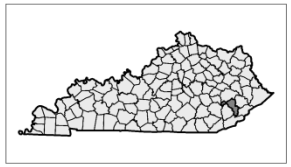
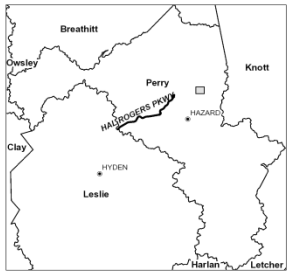
DNA
STUDY

KENTUCKY TRANSPORTATION CABINET





KY 1146
Perry County

2012 Highway Plan
Item No. 10-1102.00

Prepared by:
KYTC District 10

July 2012

I. PRELIMINARY PROJECT INFORMATION

County: Perry **Item No.:** 10-1102.00
Route Number(s): KY 1146 **Road Name:** Bulan - Hiner Road
Program No.: **UPN:** (Function) 97 1146 002-003
Federal Project No.: **Type of Work:** Bridge Replacement

2012 **Highway Plan Project Description:**

Replace Bridge on Bulan Hiner RD (KY 1146) over Trace Fork at Jct with Kentucky Highway 476 (KY 476) (SR 25.5) 097B00103N

Beginning MP: 2.679 **Ending MP:** 2.712 **Project Length:** 0.033 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:** 5
ADT (current): 1242 **Terrain:** Level
Access Control: ☐ Fully Controlled ☑ Permit ☐ Partial **Detour Length:** no detour 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	2	2
Travelled Way Width	20	22
Shoulder Width	0	6
Max. Superelevation**	NA	4%
Minimum Radius**	NA	420
Maximum Grade	NA	NA
Minimum Sight Dist.		250
Sidewalk Width(urban)	NA	NA
Clear-zone***		18

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?: possible design exceptions for lane and shoulder width

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

Bridge No.*:	097B00103N	(Bridge #2)
Sufficiency Rating	25.5	
Total Length	36.1	
Width, curb to curb	20.3	
Span Lengths	11.2	
Max. Span Length	11.2	
Year Built	1950	
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

Ths project was approved by the General Assembly in the 2012 Biennial Highway Plan with the funding listed to the left.

Funding	*Phase*	*Year*	*Amount*
BRO	D	2013	$300,000
BRO	R	2015	$200,000
BRO	U	2015	$150,000
BRO	C	2017	$750,000

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

Ky 1146 serves as a local residential route for the communities of Hardburly and Tribbey. It connects these residents to both the KY 476 and KY 80 corridors.

D. Modal Interrelationships

No known Modal Connections.

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 of the Kentucky State Police Collision Database shows no accidents have occurred since 2008 that could be corrected within the scope of this project.

I. Roadway Deficiencies

KY 1146 has several sections a narrow roadway and little to no shoulders. It has several substandard horizontal curves and buildings are located just off the pavement. The bridge is structurally deficient and is considered functionally obsolete by current design standards.

Purpose and Need Statement:

Need: This project is needed in order to replace the existing Structurally Deficient (SR 25.5) and Functionally Obsolete bridge that serves the residents along KY 1146.

Purpose: The purpose of this project is to replace the existing Structurally Deficient (SR 25.5) and Functionally Obsolete bridge that serves the residents along KY 1146.

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

This bridge is eligible for the Historic Register.

C. Threatened and Endangered Species

Indiana Bat

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

I. Socioeconomic

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

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

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

See III B.

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 replace the existing structure in the same location as the current one. Attempting to move the structure to either side will result in a high RW expense due to the proximity of adjacent houses and businesses. While they are close, it appears that most of the utilities can be avoided with careful planning and execution of the plan. With no other way out for the residents, traffic must be maintained while construction is being performed. The alternate proposes to convert a previous railroad bridge for temporary highway usage while construction is occuring. The bridge would need to be analyzed to make sure that it would be adequate for usage.

Planning Level Cost Estimate:

Phase	Estimate
Design	$275,000
R/W	$200,000
Utilities	$150,000
Const	$950,000
Total	**$1,575,000**

IV. POSSIBLE ALTERNATIVES (cont.)

B. Alternative #3

This alternate proposes to use part width construction which would allow traffic to be maintained during the construction process. This could result in higher utility costs do to the method of construction but would save on construction cost associated with Alternate 2. As always, this method od construction generally takes longer than replacing the entire bridge width at the same time.

Planning Level Cost Estimate:

Phase	Estimate
Design	$250,000
R/W	$100,000
Utilities	$200,000
Const	$750,000
Total	**$1,300,000**

IV. POSSIBLE ALTERNATIVES (cont.)

B. Alternative #4

This alternate proposes replace the existing structure in the same location as the current one. Traffic would be maintained while construction is being performed via a diversion just to the north of the existing bridge. This alternate proposes to remove the existing building to the north which will result in a higher R/W cost but this would also insure adequate room for construction and future maintenance of the new bridge.

Planning Level Cost Estimate:

Phase	Estimate
Design	$300,000
R/W	$200,000
Utilities	$150,000
Const	$750,000
Total	**$1,400,000**

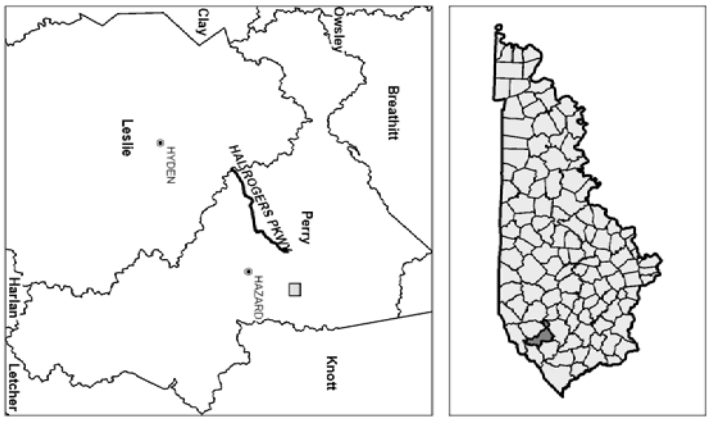
V. Summary

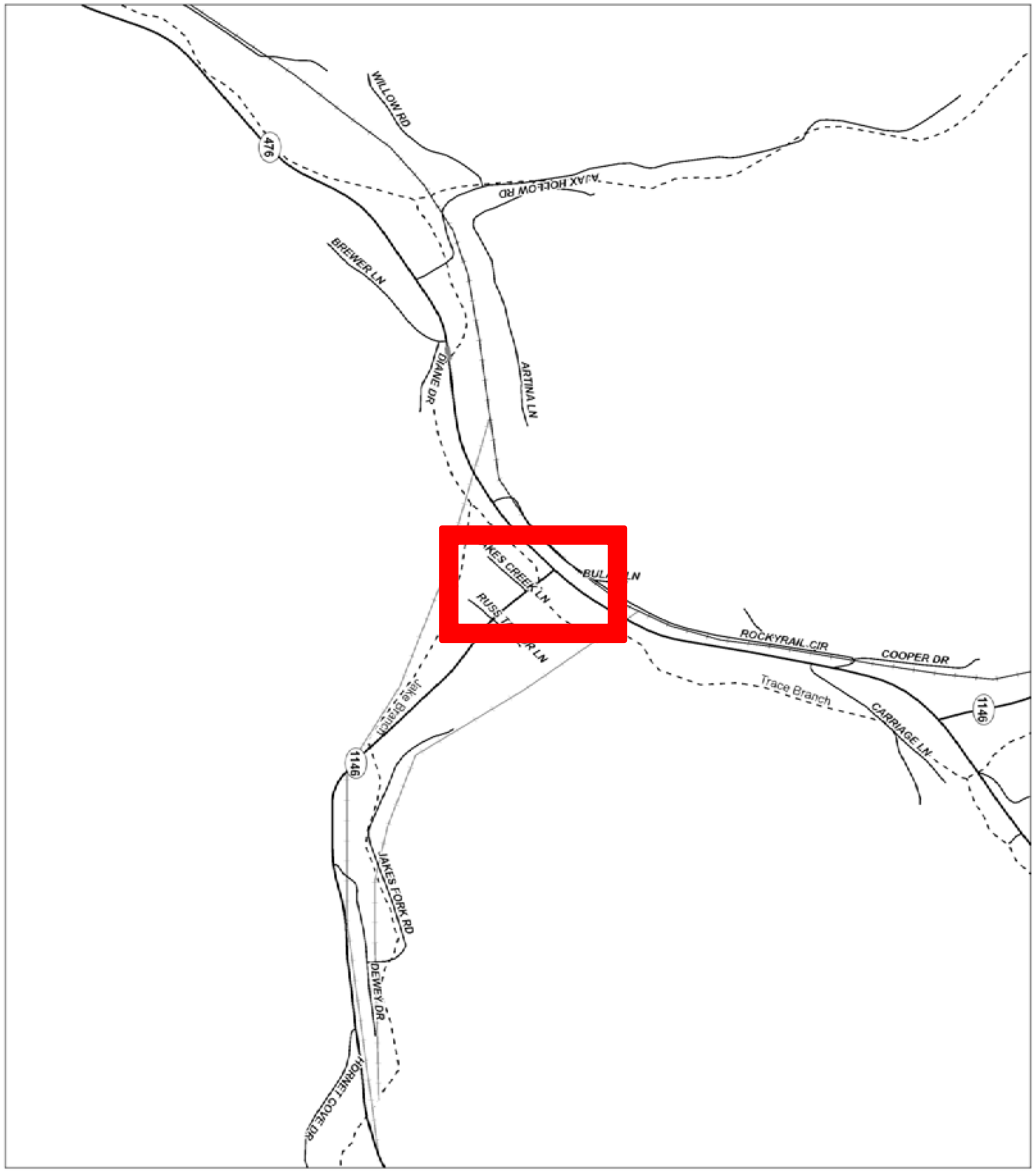
This is a DNA Study of Item # 10-1102.00 as authorized in the 2012 Biennial Highway Plan. The following are the results and recommendations by the Project team:

1. The Purpose of this project is - The purpose of this project is to replace the existing Structurally Deficient (SR 25.5) and Functionally Obsolete bridge that serves the residents along KY 1146.
2. The Project Team recommends to carry Alternate 4 forward into the Design Phase.

Alt #	Description	D ($)(2013)	R ($)(2015)	U ($)(2015)	C ($)(2017)	Total ($mil)
1	No Build	-	-	-	-	-
2	Detour	$ 275,000.00	$ 200,000.00	$ 150,000.00	$ 950,000.00	$ 1,575,000.00
3	Part Width	$ 250,000.00	$ 100,000.00	$ 200,000.00	$ 750,000.00	$ 1,300,000.00
4	Diversion	$ 300,000.00	$ 200,000.00	$ 150,000.00	$ 750,000.00	$ 1,400,000.00
-	Current Hwy Plan Estimated Cost	$ 300,000.00	$ 200,000.00	$ 150,000.00	$ 750,000.00	$ 1,400,000.00
-	Current Pre-Con Estimated Cost	$ 300,000.00	$ 200,000.00	$ 150,000.00	$ 750,000.00	$ 1,400,000.00

VI. Tables and Exhibits





VI. Tables and Exhibits (cont.)