

# DNA

## STUDY

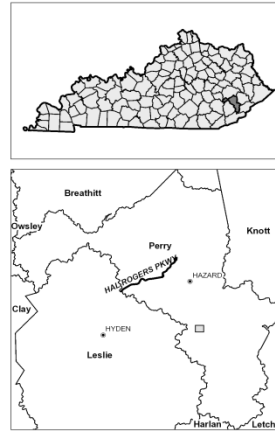


KY 1166  
Perry County

2012 Highway Plan  
Item No. 10-1101.00

Prepared by:  
KYTC District 10

July 2012



## I. PRELIMINARY PROJECT INFORMATION

<b>County:</b>	Perry	<b>Item No.:</b>	10-1101.00
<b>Route Number(s):</b>	KY 1166	<b>Road Name:</b>	Right Fork of Maces Creek
<b>Program No.:</b>		<b>UPN:</b>	(Function) 97 1166 002-003
<b>Federal Project No.:</b>		<b>Type of Work:</b>	Bridge Replacement

2012 Highway Plan Project Description:

Replace Bridge on Right Fork of Maces Creek Road (KY 1166) over Right Fork Maces Creek at Intersection with Hunter Ridge Lane (CR 1226Q3)(SR 36.3) 097B00101N

<b>Beginning MP:</b>	2.137	<b>Ending MP:</b>	2.177	<b>Project Length:</b>	0.04
<b>Functional Class.:</b>	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural	<b>State Class.:</b>	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Secondary		
	Local	<b>Route is on:</b>	<input type="checkbox"/> NHS <input type="checkbox"/> Nat'l Truck Network		
<b>MPO Area:</b>	Not Applicable	<b>Truck Class A</b>			
<b>In TIP:</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>% Trucks:</b>	5		
<b>ADT (current):</b>	1007	<b>Terrain:</b>	Mountainous		
<b>Access Control:</b>	<input type="checkbox"/> Fully Controlled <input checked="" type="checkbox"/> Permit <input type="checkbox"/> Partial	<b>Detour Length:</b>	no detour available		
<b>Median Type:</b>	<input checked="" type="checkbox"/> Undivided <input type="checkbox"/> Divided (Type):				
<b>Existing Bike Accommodations:</b>	Shared Lane	<b>Ped:</b>	<input type="checkbox"/> Sidewalk		
<b>Posted Speed:</b>	<input type="checkbox"/> 35 mph <input type="checkbox"/> 45 mph <input checked="" type="checkbox"/> 55 mph <input type="checkbox"/> Other (Specify):				
<b>KYTC Guidelines Preliminarily Based on :</b>	45	<b>MPH Proposed Design Speed</b>			

### COMMON GEOMETRIC

Roadway Data:	EXISTING	PRACTICES*	
No. of Lanes	2	2	<a href="#">Existing Rdwy. Plans available?</a>
Travelled Way Width	22	22	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Shoulder Width	0	6	Year of Plans:
Max. Superelevation**	NA	4%	<input checked="" type="checkbox"/> <a href="#">Traffic Forecast Requested</a>
Minimum Radius**	NA	420	Date Requested: 5/10/2012
Maximum Grade		NA	<input type="checkbox"/> Mapping Requested
Minimum Sight Dist.		250	Date Requested:
Sidewalk Width(urban)	NA	NA	Type: ▼
Clear-zone***		18	

Project Notes/Design Exceptions?: Possible exceptions for shoulder width

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

<b>Bridge No.*:</b>	097B00101N	(Bridge #2)	
<b>Sufficiency Rating</b>	38.3		<a href="#">Existing Geotech data available?</a>
<b>Total Length</b>	32.2		<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Width, curb to curb</b>	22		
<b>Span Lengths</b>	27.9		
<b>Max. Span Length</b>	27.9		
<b>Year Built</b>	1965		
<b>Posted Weight Limit</b>	NA		
<b>Structurally Deficient?</b>	YES		
<b>Functionally Obsolete?</b>	NO		

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

## II. PROJECT PURPOSE AND NEED

### A. Legislation

This is a new Project added by the General Assembly into the 2012 Biennial Highway Plan.	<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
	BRO	D	2013	\$200,000
	BRO	R	2014	\$50,000
	BRO	U	2014	\$50,000
	BRO	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

KY 1166 is a local road that serves residents of the Right Fork of Maces Creek community. This route connects to the newly constructed section of KY 7 at the Viper Community.

### D. Modal Interrelationships

There are currently no Modal connections in this area. This route once served the coal industry as a haul route.

### 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 collisions along the project section.

### I. Roadway Deficiencies

KY 1166 is a narrow two lane roadway with little to no shoulders. It has numerous substandard horizontal and vertical curves. The bridge is box beam deck two lane structurally deficient structure.

### Purpose and Need Statement:

This project will replace a structurally deficient (SR 38.3) bridge along KY 1166. This replacement is needed to ensure a continued linkage for residents of this community to the rest of the highway system.

Purpose: The purpose of this project is to replace a Structurally deficient bridge in order to allow continued usage of the roadway for residents of the Right Fork of Maces Creek.

### 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

#### 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

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 replace the structure in the existing location utilizing a temporary diversion to the East of the existing structure. A diversion is recommended due to the fact that there is no other suitable way for residents of the community to travel via detour out of this area. The diversion is recommended on the east side because of fewer possible impacts to the utilities in the area.



Planning Level Cost Estimate:

<u>Phase</u>	<u>Estimate</u>
Design	\$200,000
R/W	\$50,000
Utilities	\$100,000
Const	\$500,000
<b>Total</b>	<b>\$850,000</b>

#### IV. POSSIBLE ALTERNATIVES (cont.)

##### B. Alternative #3

This alternate proposes to reconstruct the bridge in the same location utilizing part width construction techniques. This alternative would have the least amount of RW costs but generally takes longer time for construction. This alternate would not require the need for a diversion since part of the existing bridge would be used for maintenance of traffic.



Planning Level Cost Estimate:	<u>Phase</u>	<u>Estimate</u>
	Design	\$200,000
	R/W	\$35,000
	Utilities	\$100,000
	Const	\$500,000
	<b>Total</b>	<b>\$835,000</b>

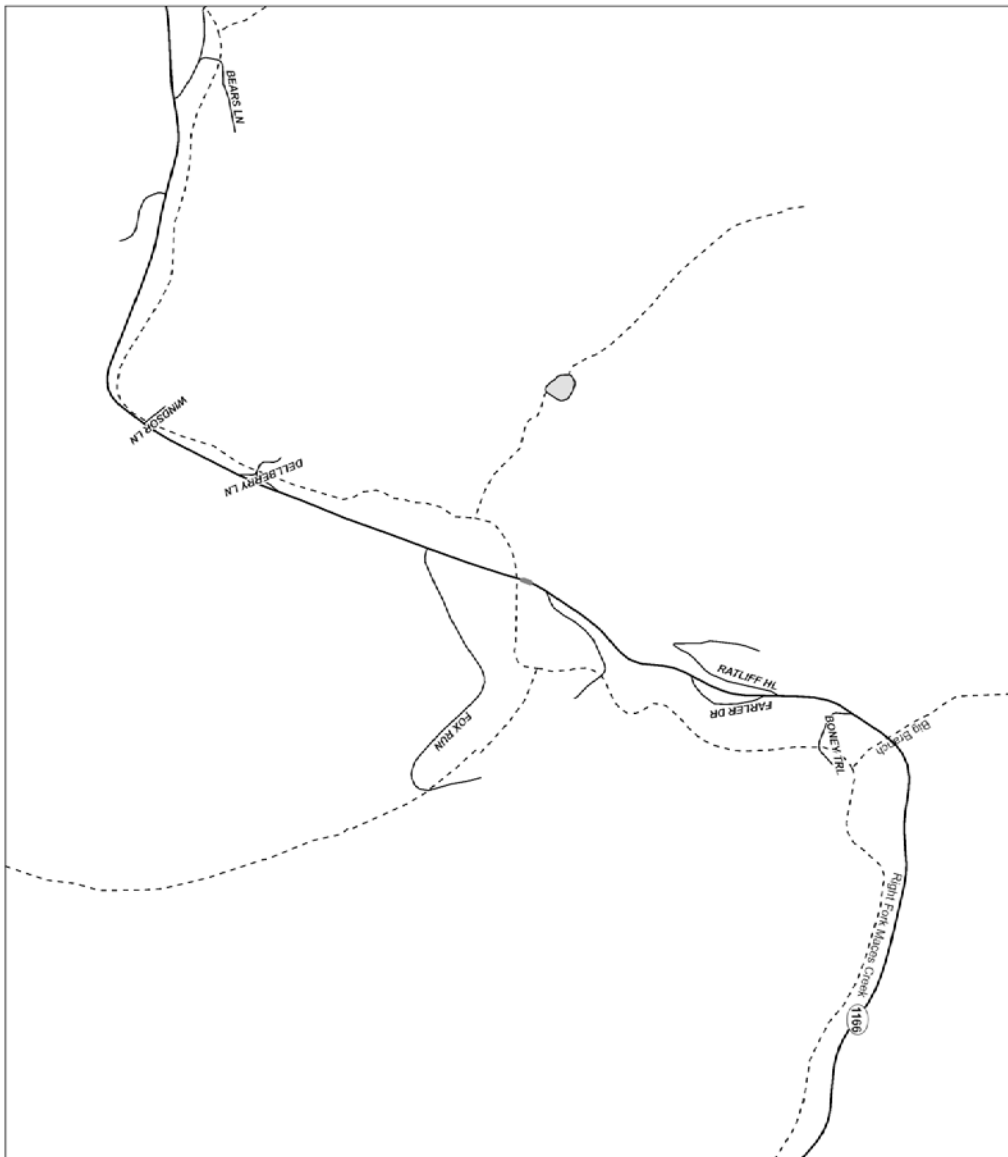
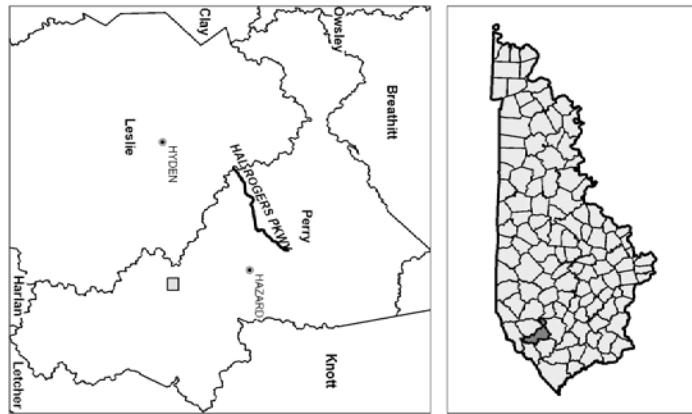
#### V. Summary

This is a DNA Study of Item # 10-1101.00 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 a Structurally deficient bridge in order to allow continued usage of the roadway for residents of the Right Fork of Maces Creek..
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	Diversion	\$ 200,000.00	\$ 50,000.00	\$ 75,000.00	\$ 500,000.00	\$ 825,000.00
3	Part Width	\$ 200,000.00	\$ 35,000.00	\$ 100,000.00	\$ 500,000.00	\$ 835,000.00
-	Current Hwy Plan Estimated Cost	\$ 200,000.00	\$ 50,000.00	\$ 50,000.00	\$ 500,000.00	\$ 800,000.00
-	Current Pre-Con Estimated Cost	\$ 200,000.00	\$ 50,000.00	\$ 50,000.00	\$ 500,000.00	\$ 800,000.00

**VI. Tables and Exhibits**



**Exhibit 2:**



**VI. Tables and Exhibits (cont.)**



**Exhibit 3**



**Exhibit 4**