

# DNA

## STUDY

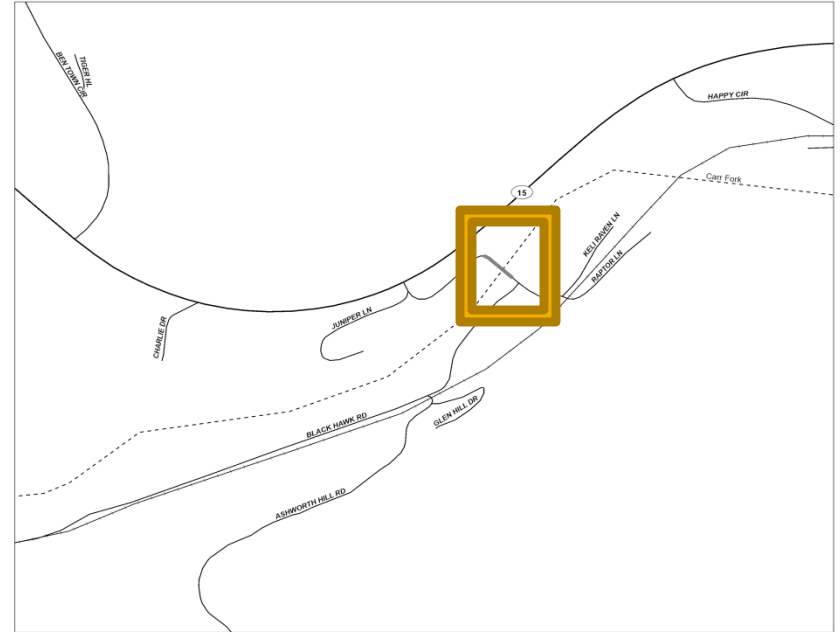
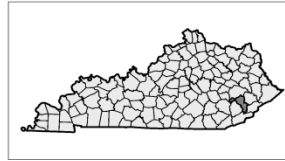


CR 1107  
Perry County

2012 Highway Plan  
Item No. 10-1107.00

Prepared by:  
KYTC District 10

July 2012



## I. PRELIMINARY PROJECT INFORMATION

County: Perry Item No.: 10-1107.00  
Route Number(s): CR 1107 Road Name: Blackhawk Rd.  
Program No.:  UPN: (Function) 97 1107 000-001  
Federal Project No.:  Type of Work: Bridge Replacement

2012 Highway Plan Project Description:

Replace Bridge on Blackhawk Road (CR 1107) over Carr Fork at JCT with Raptor Lane (CR 1179) (SR 4.3)  
097C00006N

Beginning MP: 0.062 Ending MP: 0.102 Project Length: 0.04 miles

Functional Class.: ☐ Urban ☒ Rural State Class.: ☐ Primary ☐ Secondary  
Local Route is on: ☐ NHS ☐ Nat'l Truck Network

MPO Area: Not Applicable

In TIP: ☐ Yes ☐ No

ADT (current): 65

Truck Class.: A

% Trucks: 0

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:         | COMMON     |            |  |
|-----------------------|------------|------------|--|
|                       | EXISTING   | GEOMETRIC  |  |
| No. of Lanes          | <u>1</u>   | <u>2</u>   | <a href="#">Existing Rdwy. Plans available?</a><br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Year of Plans: <u></u>   |
| Travelled Way Width   | <u>10</u>  | <u>22</u>  |  |
| Shoulder Width        | <u>0</u>   | <u>4</u>   | <input checked="" type="checkbox"/> <a href="#">Traffic Forecast Requested</a><br>Date Requested: <u>5/10/2012</u><br><input type="checkbox"/> Mapping Requested<br>Date Requested: <u></u><br>Type: <u></u> ▼ |
| Max. Superelevation** | <u>NA</u>  | <u>4%</u>  |  |
| Minimum Radius**      | <u>NA</u>  | <u>420</u> | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><a href="#">Existing Geotech data available?</a><br><input type="checkbox"/> Yes <input type="checkbox"/> No                                       |
| Maximum Grade         | <u>NA</u>  | <u>5%</u>  |  |
| Minimum Sight Dist.   | <u>250</u> | <u>250</u> |  |
| Sidewalk Width(urban) | <u>NA</u>  | <u>NA</u>  |  |
| Clear-zone***         | <u>1</u>   | <u>18</u>  |  |

Project Notes/Design Exceptions?: Should base design on low volume roadway.

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

Bridge No.\*: 097C00006N (Bridge #2)  
Sufficiency Rating 4.3  
Total Length 116.1  
Width, curb to curb 10.3  
Span Lengths 29.9  
Max. Span Length 29.9  
Year Built 1940  
Posted Weight Limit 13 tons  
Structurally Deficient? YES  
Functionally Obsolete? YES

\* 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.

| <i>Funding</i> | <i>Phase</i> | <i>Year</i> | <i>Amount</i> |
|----------------|--------------|-------------|---------------|
| BRZ            | D            | 2013        | \$200,000     |
| BRZ            | R            | 2014        | \$50,000      |
| BRZ            | U            | 2014        | \$50,000      |
| BRZ            | C            | 2015        | \$750,000     |

### B. Project Status

Funding has been requested but not authorized at this time. There are no other known projects in the vicinity of this project at this time.

### C. System Linkage

This bridge serves to connect a residential community to the KY 15 Corridor.

### D. Modal Interrelationships

NA

### E. Social Demands & Economic Development

The bridge currently serves as the only access to a small residential community.

### F. Transportation Demand

The bridge currently serves a small residential community and there are no known plans of this changing in the future.

## II. PROJECT PURPOSE AND NEED (cont.)

### G. Capacity

There are currently no capacity issues with this bridge and none are expected in the future.

### H. Safety

A review of the Kentucky State Police Collision Database shows no collisions have been reported within the project limits for the last five years.

### I. Roadway Deficiencies

The bridge and approaches are considered narrow by current Design Standards. As stated above, the structure is both Deficient and Functionally Obsolete.

### Purpose and Need Statement:

Need: This project will replace a structurally deficient (SR 4.3) bridge along CR 1107. 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, functionally obsolete bridge in order to allow continued usage of the roadway.

### 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

Original Bridge was built in 1940 making it eligible for Historic Register. County Fiscal Court added to piers and replaced beams and deck in 1980's.

#### 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 to 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

See III B.

Anticipated Environmental Document:

CE Level 1



#### IV. POSSIBLE ALTERNATIVES

##### A. Alternative 1: No Build

This alternate does not meet the stated purpose and need for the project.

##### B. Alternative 2

This alternate proposes to replace the bridge in its existing location. This would require the least amount of impacts to Right of Way and Utilities and would have the least amount of approach work that would be needed. The key to this option is for the county to construct/accept approximately 1000' of new roadway into it's system that would serve as a detour for traffic during construction and would create another way out of the area for residents if the need ever arose.



|                               |              |                    |
|-------------------------------|--------------|--------------------|
| Planning Level Cost Estimate: | <u>Phase</u> | <u>Estimate</u>    |
|                               | Design       | \$250,000          |
|                               | R/W          | \$50,000           |
|                               | Utilities    | \$50,000           |
|                               | Const        | \$750,000          |
|                               | <b>Total</b> | <b>\$1,100,000</b> |



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

##### B. Alternative #3

This alternate proposes to construct a new bridge to the West of the existing structure. This would allow the use of the existing structure for Maintenance of Traffic until the new one is built. This alternate would require the most amount of Right of Way to be purchased. It would not require any work from the county for a detour however.



|                               |              |                    |
|-------------------------------|--------------|--------------------|
| Planning Level Cost Estimate: | <u>Phase</u> | <u>Estimate</u>    |
|                               | Design       | \$275,000          |
|                               | R/W          | \$75,000           |
|                               | Utilities    | \$50,000           |
|                               | Const        | \$850,000          |
|                               | <b>Total</b> | <b>\$1,250,000</b> |

#### V. Summary

This is a DNA Study of Item # 10-1107.00 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 (\$)(Fund)  | R (\$)(Fund) | U (\$)(Fund) | C (\$)(Fund)  | Total (\$mil)   |
|-------|---------------------------------|---------------|--------------|--------------|---------------|-----------------|
| 1     | No Build                        | -             | -            | -            | -             | -               |
| 2     | Replace in existing location    | \$ 250,000.00 | \$ 50,000.00 | \$ 50,000.00 | \$ 750,000.00 | \$ 1,100,000.00 |
| 3     | Replace along Westside          | \$ 275,000.00 | \$ 75,000.00 | \$ 50,000.00 | \$ 850,000.00 | \$ 1,250,000.00 |
| -     | Current Hwy Plan Estimated Cost | \$ 200,000.00 | \$ 50,000.00 | \$ 50,000.00 | \$ 750,000.00 | \$ 1,050,000.00 |
| -     | Current Pre-Con Estimated Cost  | \$ 200,000.00 | \$ 50,000.00 | \$ 50,000.00 | \$ 750,000.00 | \$ 1,050,000.00 |

#####

## VI. Tables and Exhibits

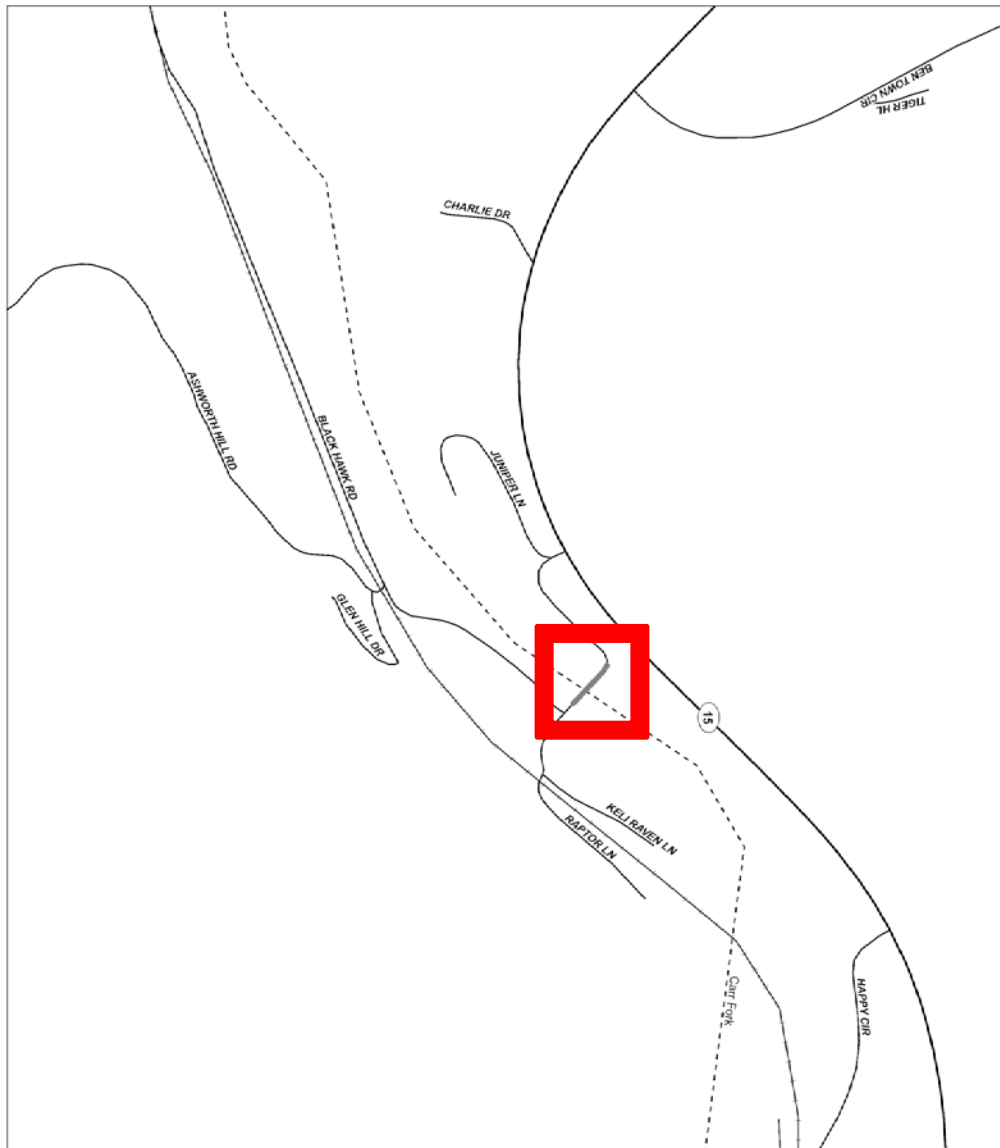
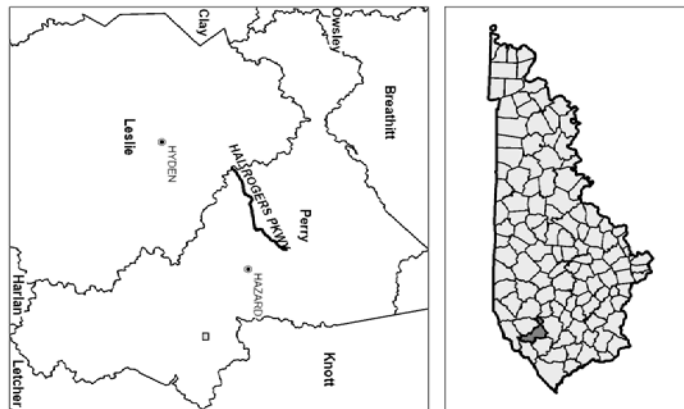


Exhibit 1:



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



**Exhibit 2:**



**Exhibit 3:**