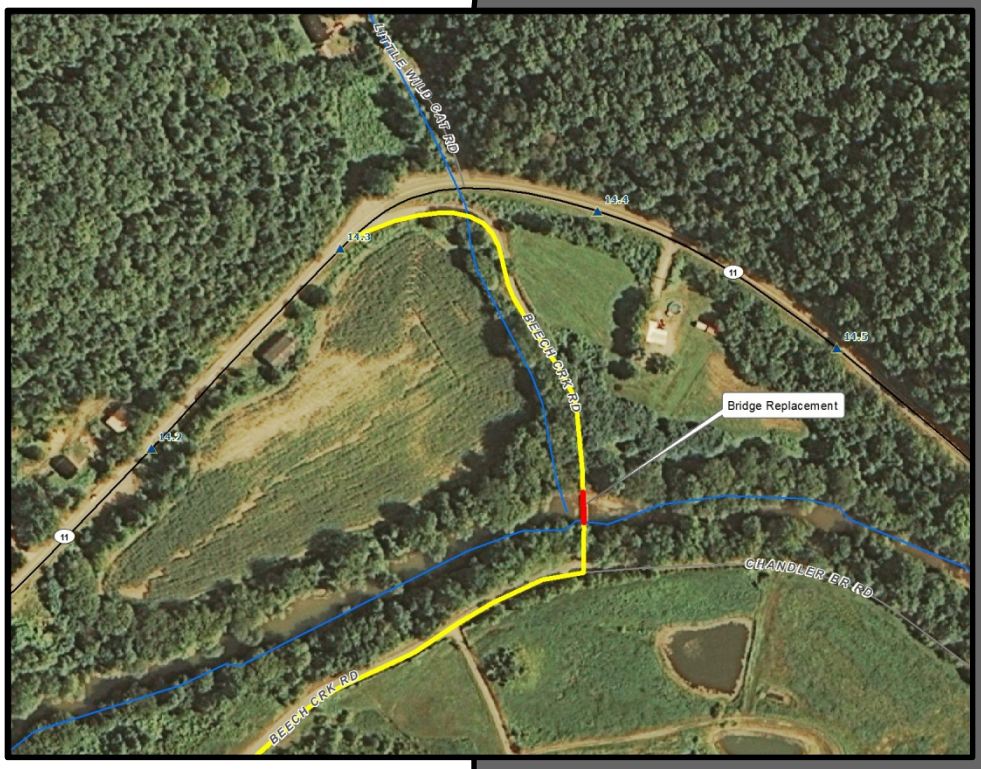
Data Needs Analysis



Scoping Study

CR 1004, Clay County
Replace Bridge on Beech Creek Road over Goose Creek at Junction with Chandler Branch
Item No. 11-1091.00

Prepared by the KYTC
Division of Planning District 11

September 2012

KENTUCKY TRANSPORTATION CABINET

I. PRELIMINARY PROJECT INFORMATION

County: Clay **Item No.:** 11-1091
Route Number(s): CR 1004 **Road Name:** Beech Creek Road
Program No.: 8732901D **UPN:** (Function) 26 1004 000-001
Federal Project No.: BRZ 1103 (257) **Type of Work:** Bridge Replacement

2013 **Highway Plan Project Description: Bridge Replacement**

Replace bridge on Beech Creek Road (CR 1004) over Goose Creek at intersection with Chandler Branch Road (CR 1003) (SR 30.8) C00001N

Beginning MP: 0.144 **Ending MP:** 0.184 **Project Length:** 0.04

Functional Class.: ☐ Urban ☑ Rural Local **State Class.:** ☐ Primary ☐ Secondary
Route is on: ☐ NHS ☐ NN ☐ Ext Wt
MPO Area: Not Applicable **Truck Class.:**
In TIP: ☐ Yes ☐ No **% Trucks:**
ADT (current): 156 (2006) **Terrain:** Rolling
Access Control: ☐ None ☐ Permit ☐ Fully Controlled ☐ Partial Spacing:
Median Type: ☑ Undivided ☐ Divided (Type):
Existing Bike Accomodations: Shared Lane **Ped:** ☐ Sidewalk
Posted Speed: ☐ 35 mph ☐ 45 mph ☑ 55 mph ☐ Other (Specify):
KYTC Guidelines Preliminarily Based on : **MPH Proposed Design Speed**

Roadway Data:	**EXISTING**	**COMMON GEOMETRIC PRACTICES***
No. of Lanes	1	2
Lane Width	12	12
Shoulder Width	0	3
Max. Superelevation**	n/a	
Minimum Radius**	n/a	
Maximum Grade	n/a	
Minimum Sight Dist.	n/a	
Sidewalk Width(urban)	n/a	
Clear-zone***	n/a	

Existing Rdwy. Plans available? ☐ Yes ☑ No
Year of Plans:
☑ Traffic Forecast Requested
Date Requested: 9/19/2012
☐ Mapping Requested
Date Requested:
Type:

Project Notes/Design Exceptions?:

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

Bridge No.*:	026C00001N
Sufficiency Rating	7
Total Length	95.0'
Width, curb to curb	12.1'
Span Lengths	16.1'
Year Built	1960
Posted Weight Limit	3 Tons
Structurally Deficient?	Yes
Functionally Obsolete?	No

Existing Geotech data available? ☐ Yes ☑ No

II. PROJECT PURPOSE AND NEED

A. Legislation

The following funds was listed in the 2012 General Assembly's Enacted Highway Plan.

Funding	*Phase*	*Year*	*Amount*
BRZ	D	2013	$400,000
BRZ	R	2015	$75,000
BRZ	U	2015	$50,000
BRZ	C	2017	$2,000,000

B. Project Status

Design funds for this project have been authorized. This project is for the replacement of a structurally deficient bridge at 0.164 Mile Point.

C. System Linkage

CR 1004 connects KY 11 to KY 2432 and to Beech Creek Park. This road is often used to access Bert T. Combs Lake. The vicinity map can be seen in Exhibit 2.

D. Modal Interrelationships

CR 1004 has no known modal interrelationships.

E. Social Demands & Economic Development

CR 1004 provides residents in northeast Clay County a secondary access to the City of Manchester and primary access to Beech Creek Park and the Bert T. Combs Lake.

F. Transportation Demand

There is no known traffic count information for this county route.

II. PROJECT PURPOSE AND NEED (cont.)

G. Capacity

This bridge has a very low ADT, currently it is one lane.

H. Safety

There are no known accidents on this route, however the bridge is classified as structurally deficient.

I. Roadway Deficiencies

The bridge is classified as structurally deficient. The sufficiency rating is a 7. According to the Structure Inventory and Appraisal Sheet, the one lane bridge received an intolerable rating for the deck geometry. The bridge was built in 1960.

Draft Purpose and Need Statement:

Need: This one lane bridge is structurally deficient. It has a sufficiency rating of 7. With an intolerable rating on the deck, no shoulders or rails and visual decay upon inspection, this bridge needs replaced.

Purpose: By replacing the bridge, CR 1004 in Clay County will allow safer and more reliable access for various Clay County communities.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

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

STIP Pg.#: 30 of 2012 Plan **TIP Pg.#:**

Clay Co is attainment for all monitored air pollutants. Air quality during construction will be controlled with good construction practices.

B. Archeology/Historic Resources

☐ Known Archeological or Historic Resources are present

A phase I archaeological survey will determine cultural significance and if eligible sites are located in the project footprint. No historic resources have been identified. Barcreek Quad, 1979, -83.699000 37.223476 Decimal Degrees

C. Threatened and Endangered Species

The USGS Quadrangle is Barcreek . Current species listed for Clay County are Indiana bat, rabbitsfoot, little spectaclecase, snuffbox and Kentucky arrow darter. Future study will address the requirements of USFWS and prevent detriment to the protected species.

D. Hazardous Materials

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

Fueling stations or where petroleum products have been used can be identified for hazardous materials during phase I investigations and determine if phase II will be necessary. Other possible hazardous materials to investigate will be asbestos in structures.

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

The USGS Quadrangle is Barcreek. Goose Creek is listed as a special use water(exceptional and reference reach) Wetlands are identified near the project. A water of the United States, Goose Creek, with impacts below ordinary high water will require coordination with the officers of the CORP and DOW. Construction activities may need a USACE 404 permit and a DOW 401 permit. Additionally, a surface water KYR 10 permit may be required for construction disturbance.

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

Bridge replacement.

G. Socioeconomic

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

Do not expect relocations.

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

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

None expected.

Anticipated Environmental Document: CE Level 1

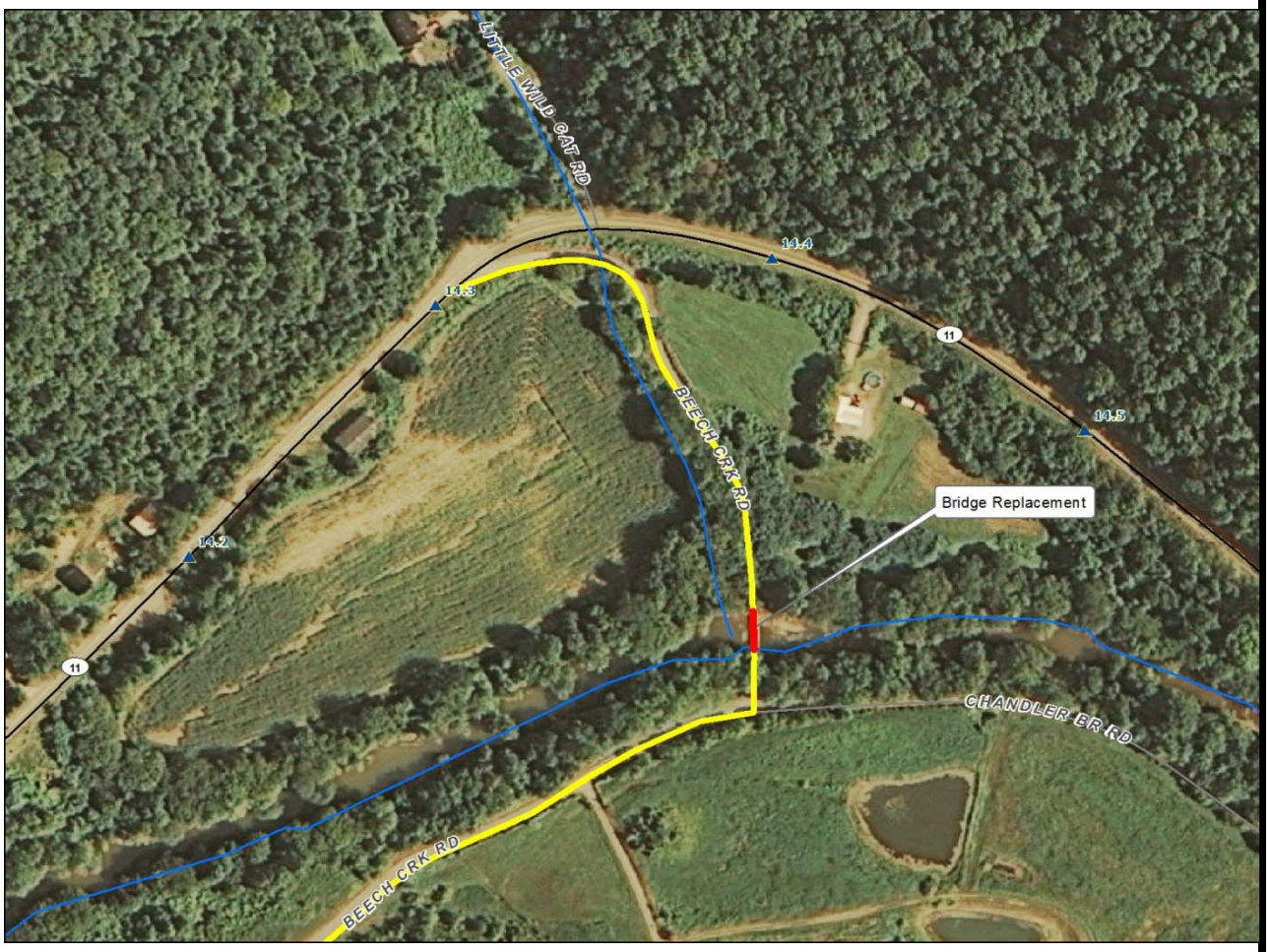
IV. POSSIBLE ALTERNATIVES

A. Alternative 1: No Build

This alternate could be carried forward, but does not address the need to replace this bridge that is structurally deficient.

B. Alternative 2: Build In-Place

Alternate 2 will replace the bridge in the same location as it is now. The road will be closed during construction. Right of way and utilities should be minimal. The detour length is approximately 20 miles.



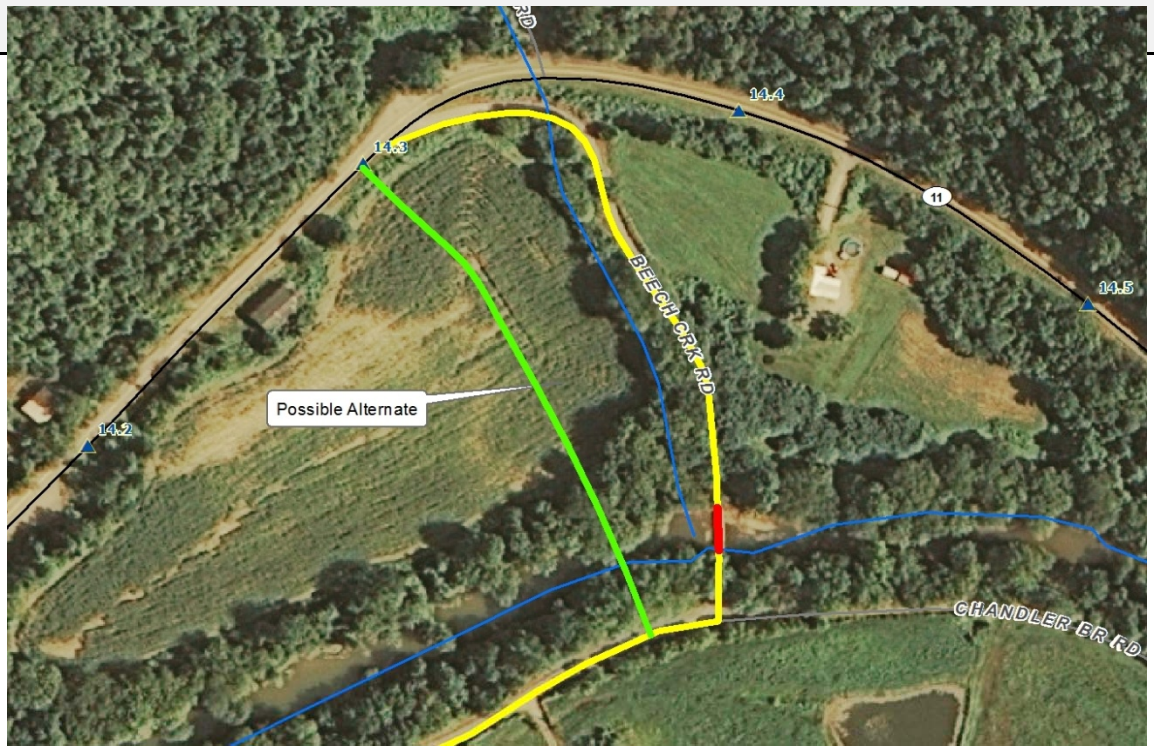
Planning Level Cost Estimate:

Phase	Estimate
Design	$250,000
R/W	$55,000
Utilities	$15,000
Const	$670,000
Total	**$990,000**

IV. POSSIBLE ALTERNATIVES (cont.)

B. Alternative 3: Build New Alignment

Alternate 3 will provide a new alignment for Beech Creek Road. It will improve the intersection of KY 11 and Beech Creek Road, which currently has sight distance deficiencies. Then it will straighten the alignment of the road while raising the elevation of the existing low water bridge.



Planning Level Cost Estimate:

Phase	Estimate
Design	$250,000
R/W	$55,000
Utilities	$15,000
Const	$2,000,000
Total	**$2,320,000**

V. Summary

This study is a Data Needs Analysis (DNA) of a bridge replacement over Goose Creek at the intersection of Beech Creek Road and Chandler Branch Road. The existing low water bridge needs replaced. In order to raise the bridge out of the floodway, the alignment would need to be raised. This would be done best by shifting the alignment away from Beech Creek. However, the project team recommends Alternative 2 due to the low traffic volume and funding.

Alt #	Description	D ($)(BRZ)	R ($)(BRZ)	U ($)(BRZ)	C ($)(BRZ)	Total ($mil)
1	No Build	-	-	-	-	-
2	Build In-Place	250,000	55,000	15,000	670,000	990,000
3	Build New Alignment	250,000	55,000	15,000	2,000,000	2,320,000
-	Current Hwy Plan Estimated Cost	400,000	75,000	50,000	2,000,000	$2,525,000
-	Current Pre-Con Estimated Cost					

VI. Tables and Exhibits

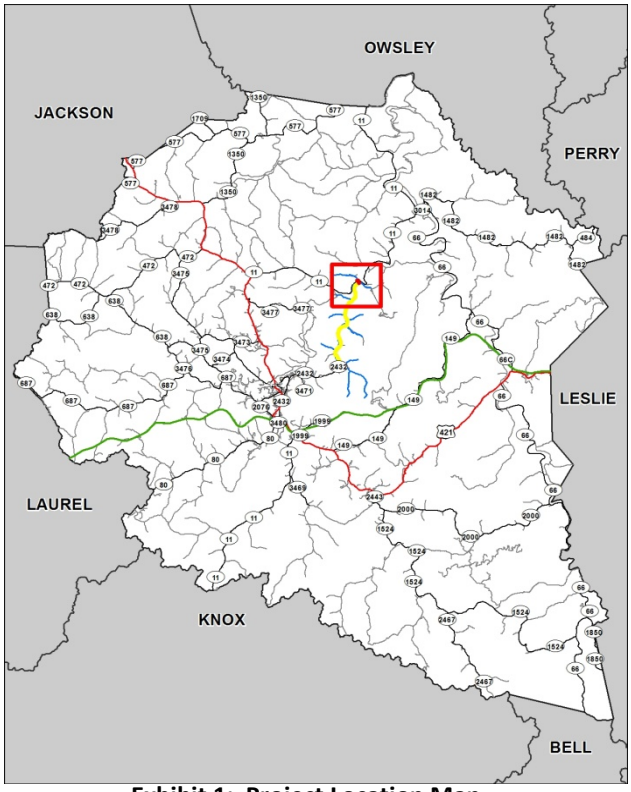


Exhibit 1: Project Location Map

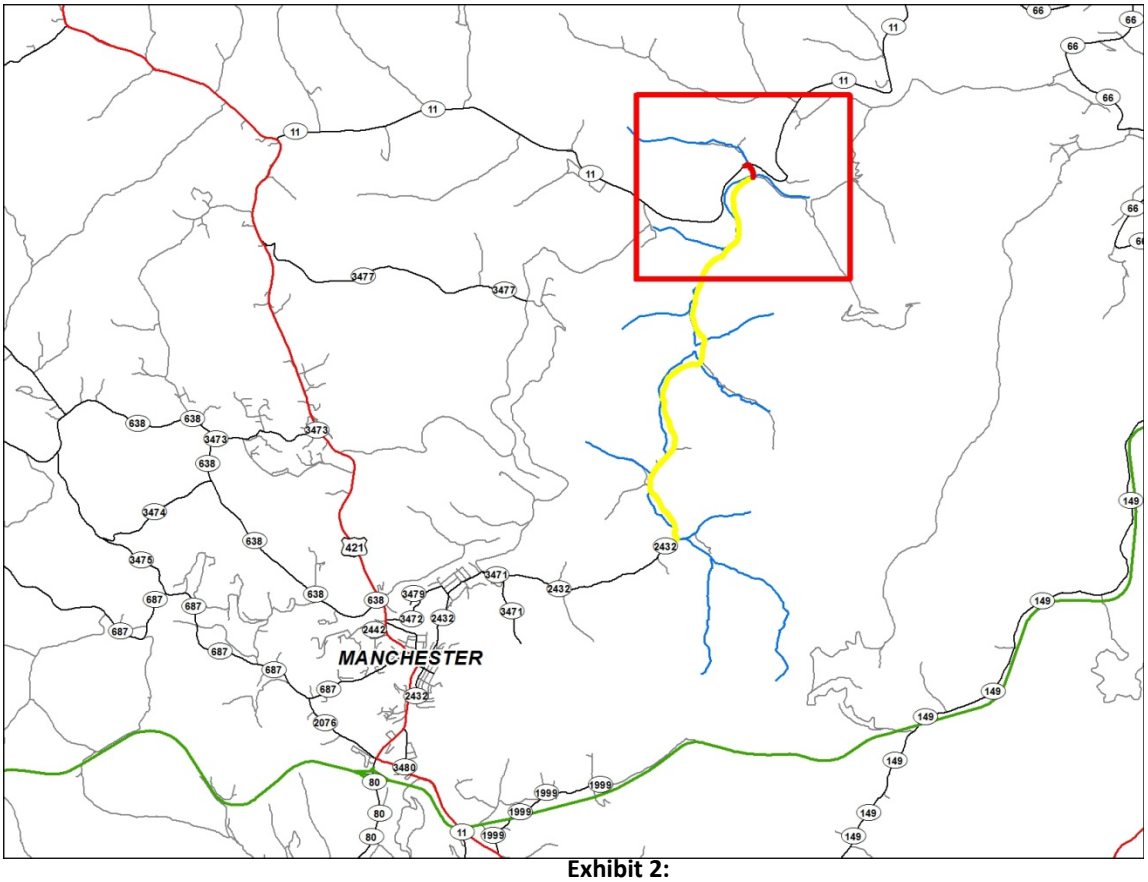


Exhibit 2:

VI. Tables and Exhibits (cont.)

Exhibit 3: Sideview of Bridge

Exhibit 4: Bridge Photo