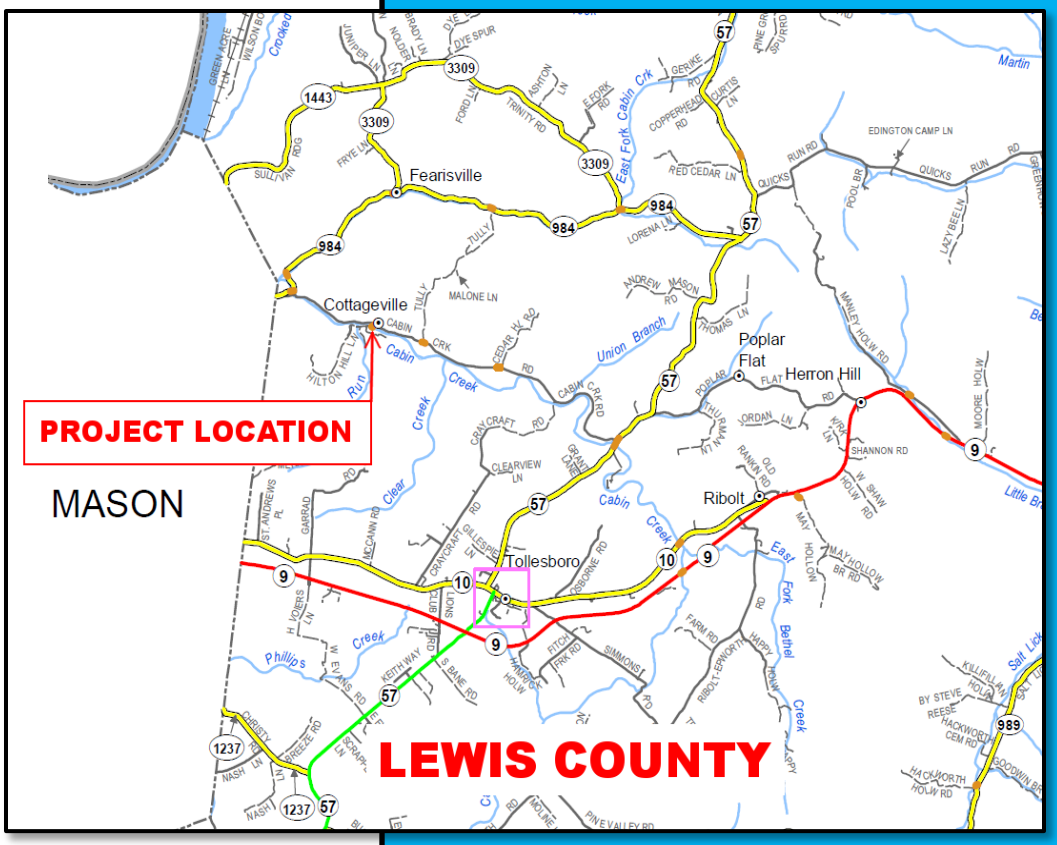
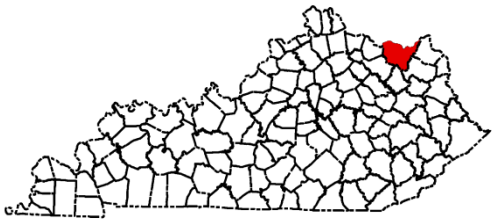
Data Needs Analysis





CR 1338, Lewis County
Bridge Replacement
M.P. 0.0 to M.P. 0.1
Item No. 09-1085.0

Prepared by KYTC
District 9 Design Staff

January 2013

KENTUCKY TRANSPORTATION CABINET

I. PRELIMINARY PROJECT INFORMATION

County: Lewis **Item No.:** 09-1085.00
Route Number(s): CR 1338 **Road Name:** N/A
Program No.: 86995 **UPN:** FD52 068 C1338 000-001
Federal Project No.: BRZ 0903(179) **Type of Work:** Bridge Replacement

2012 **Highway Plan Project Description:**

REPLACE BRIDGE ON BROWNS RUN RD (CR 1338) OVER CABIN CREEK 0.03 MILE SW OF CABIN CREEK RD (CR 1333)(SR 2) 068C00036N

Beginning MP: 0 **Ending MP:** 0.1 **Project Length:** 0.1

Functional Class.: ☐ Urban ☑ Rural ☐ Local
State Class.: ☐ Primary ☐ Secondary
Route is on: ☐ NHS ☐ NN ☐ Ext Wt
MPO Area: Not Applicable
Truck Class.: A
In TIP: ☐ Yes ☐ No
% Trucks:
ADT (current): 94 (2009)
Terrain: Rolling
Access Control: ☐ None ☐ Permit ☐ Fully Controlled ☐ Partial Spacing:
Median Type: ☑ Undivided ☐ Divided (Type):
Existing Bike Accommodations: Shared Lane **Ped:** ☐ Sidewalk
Posted Speed: ☐ 35 mph ☐ 45 mph ☐ 55 mph ☑ Other (Specify): Unposted
KYTC Guidelines Preliminarily Based on : 15 **MPH Proposed Design Speed**

Roadway Data:	**EXISTING**	**COMMON GEOMETRIC PRACTICES***
No. of Lanes	1	1
Lane Width	11.2'	16'
Shoulder Width	0'	0'
Max. Superelevation**		4%
Minimum Radius**		150
Maximum Grade		
Minimum Sight Dist.		130
Sidewalk Width(urban)		
Clear-zone***	0'	N/A

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

Project Notes/Design Exceptions?: One lane, two direction, gravel roadway.

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

Bridge No.*:	(Bridge #1)	(Bridge #2)
Sufficiency Rating	19	
Total Length	73.2	
Width, curb to curb	9.2	
Span Lengths	39.0 & 34.2	
Year Built	1960	
Posted Weight Limit	3 TONS	
Structurally Deficient?	Yes	
Functionally Obsolete?	Yes	
Existing Bridge Type	2-Span Steel Girder	

Existing Geotech data available? ☐ Yes ☑ No

Detour Length(s):

*If more than two bridges are located on the project, include additions sheets.

II. PROJECT PURPOSE AND NEED

A. Legislation

The following funding was listed in the 2012 Highway Plan

Funding	*Phase*	*Year*	*Amount*
STP	D	2013	$350,000
STP	R	2014	$50,000
STP	U	2014	$10,000
STP	C	2015	$400,000

B. Project Status

Design funds were authorized in September, 2012. The project will be advertised to consultants.

C. System Linkage

Brown's Run Road is a dead end local gravel road that serves a church and several houses.

D. Modal Interrelationships

N/A

E. Social Demands & Economic Development

There is little to no potential for economic development in the area outside of the current farm land. The only real social demand of note is the local church which requires its parishoners to cross the bridge in question.

F. Transportation Demand

The last traffic count near this intersection was 94 and was performed in 2009.

II. PROJECT PURPOSE AND NEED (cont.)

G. Capacity

The current single-lane bridge is sufficient for the low ADT that traverses it.

H. Safety

The bridge is both structurally substandard and functionally obsolete. The abutments as well as the pier are cracking, spalling, and scaling. The superstructure is comprised of steel beams that are rusted and exposed to the elements. The concrete deck is cracked, spalling, and parts are missing near the abutments. There is exposed steel and honeycombing on the under side of the deck. The bridge has curbs on both sides but no guardrail or other barriers. The curbs are cracked, spalling, and broken away in some locations.

I. Roadway Deficiencies

The roadway is gravel and approximately 11.2' in width. There are no shoulders.

Draft Purpose and Need Statement:

Need: This project is necessary due to the poor structural condition of the bridge, the poor angle of approach of the roadway to the bridge, and the lack of any safety barriers on the bridge.

Purpose: The purpose of this project is to replace the existing, inadequate bridge with a structure that provides improved access and safety for Brown's Run Road.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

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

STIP Pg.#: Pg 81&82 FY2013-2016 **TIP Pg.#:**

B. Archeology/Historic Resources

☐ Known Archeological or Historic Resources are present

There are no properties in the project area that are listed on the NRHP. However, there is a home and church to the west that are served by Browns Run Road, which appear to be potentially eligible. The existing structure does not appear to be eligible. It is unknown if archaeology sites exist in the project area, but the wide floodplain and fields could be good locations for cultural deposits. A complete survey of the area for both archaeology and historic architecture will be conducted once a footprint of the project area can be established.

C. Threatened and Endangered Species

Indiana bat, freshwater mussels, and Virginia spiraea are federally threatened or endangered species listed for Lewis County. There are few, if any trees, within the immediate vicinity of the existing structure that could provide suitable summer habitat for Indiana bat. However, if future project plans should include suitable summer habitat, then either tree clearing restrictions or an IBCMOA to include payment into the Indiana Bat Conservation Fund would be used to offset any potential impacts to this species. Otherwise, if no trees are disturbed then a No Effect finding for this species might be acceptable. There were no caves, mines, quarries, adits or sinkholes observed. Therefore, it appears that winter habitat for the bat is absent as well. The substrate of the stream does not seem suitable for the sustenance of freshwater mussel species because it was primarily bedrock. The water was very shallow and nearly pooled at the time of the site visit. Therefore, a No Effect finding could likely be made for the freshwater mussel species as well. Although Virginia spiraea is known exclusively from the Kinniconnick Creek drainage basin also in Lewis County, since Cabin Creek is a direct tributary of the Ohio River with similar characteristics of its habitat requirements, a field assessment by a biologist might be necessary to rule out its existence in the project area.

D. Hazardous Materials

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

There were no sites within the immediate project area that appeared to have any potential for being contaminated or containing underground storage tanks. Additionally, because the bridge is basically comprised of a concrete slab on steel beam superstructure, there is little potential for asbestos containing materials (ACM) to be present.

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

Cabin Creek is not considered a Special Use Water and is in Zone A on the most current FEMA maps. Zone A indicates that no base flood elevations have been determined, but that it is considered a Special Flood Hazard Area that is

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

A church and residences.

G. Socioeconomic

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

No relocations are expected to be necessary for the construction of this project. Therefore, there should be no Environmental Justice issues.

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

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

The home and church to the west of the existing structure appear to be potentially eligible for the NRHP. If these properties are determined eligible and impacts from the project occur within the designated boundaries of these properties, then a Section 4(f) evaluation would be necessary. There are no public parks or recreation areas within the project area and therefore neither Section 4(f) nor Section 6(f) would apply for those resources.

Anticipated Environmental Document: CE Level 1

IV. PROJECT SCOPING

The Project Scope and estimated costs are based upon a new structure and approaches to be built adjacent to the existing structure as there is no other access to the community served by the structure/roadway.

Current Estimate	
Phase	Estimate
Planning	
Design	$350,000
R/W	$50,000
Utilites	$10,000
Const	$400,000
Total	**$810,000**

V. Summary

The current Six Year Plan project cost estimate may be adequate to cover the bridge replacement costs.

VI. Tables and Exhibits