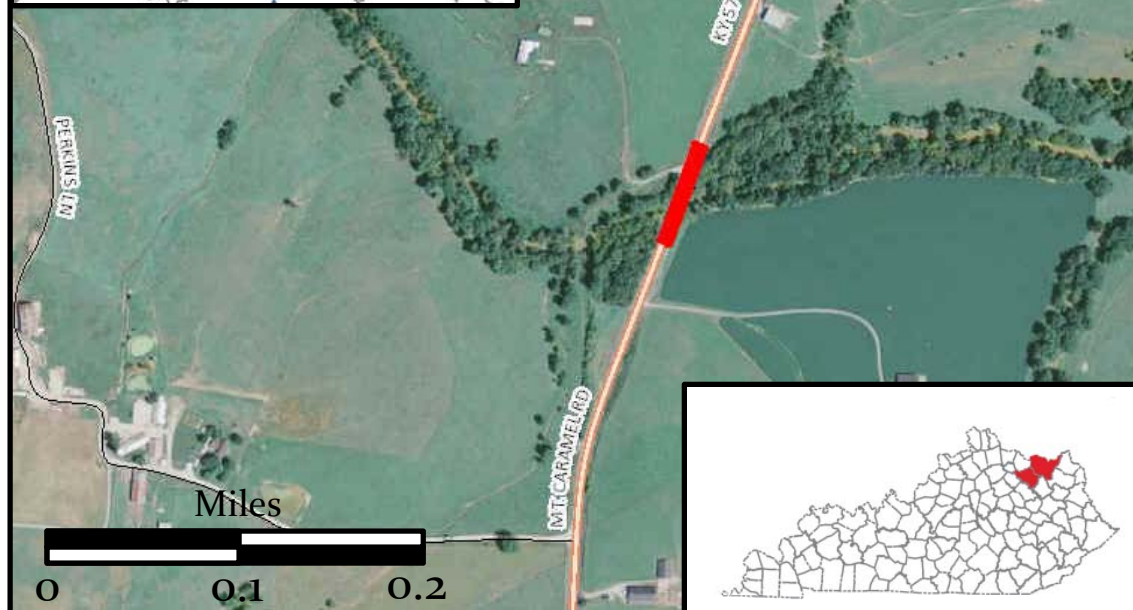


# Data Needs Analysis



## Scoping Study



KY 57 (Flemingsburg-  
Tollesboro Road)  
Lewis/Fleming Co. Line  
Bridge Replacement  
Item No. 9-8507.00

Prepared by the KYTC  
District 9 Project  
Development Team

November, 2014



I. PRELIMINARY PROJECT INFORMATION			
County:	LEWIS/FLEMING	Item No.:	9-8507.00
Route Number(s):*	KY 57	Road Name:	FLEMINGSBURG-TOLLESBORO
Program No.:	8931201D	UPN:	FD04 068 0057 000-001/FD04 035 0057 008-009
Federal Project No.:	N/A	Type of Work:	BRIDGE REPLACEMENT
2014 Highway Plan Project Description:			
Construct a new bridge crossing the North Fork of the Licking River at the Lewis-Fleming County Line.			
Beginning MP:	Fleming 8.512	Ending MP:	Lewis 0.500
Project Length:		1.000	
In TIP:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
<a href="#">Reconcile Project Information in Clearview</a>			
State Class.:	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Secondary		
Functional Class.:	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural Collector		
MPO Area:	Not Applicable		
ADT (current):	1764 (2014)		
Access Control:	<input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Permit <input type="checkbox"/> Fully Controlled <input type="checkbox"/> Partial Spacing: 1		
Median Type:	<input checked="" type="checkbox"/> Undivided <input type="checkbox"/> Divided (Type):		
Existing Bike Accommodations:	Shared Lane		
Posted Speed:	<input type="checkbox"/> 35 mph <input type="checkbox"/> 45 mph <input checked="" type="checkbox"/> 55 mph <input type="checkbox"/> Other (Specify):		
KYTC Guidelines Preliminarily Based on :		55 MPH Proposed Design Speed	
COMMON GEOMETRIC			
Roadway Data:	EXISTING	PRACTICES**	
No. of Lanes	2	2	
Lane Width	9.5 to 10 ft.	12 ft.	
Shoulder Width	2 ft. Paved	6 ft. + 3 ft. for g'rail	
Max. Superelevation***	8.33%	8%	
Minimum Radius***	955 ft.	965 ft.	
Maximum Grade	7.481%	7%	
Minimum Sight Dist.	<495 ft. SSD	495 ft. SSD	
Sidewalk Width(urban)	None	NA	
Clear-zone <sup>†</sup>	Inadequate	30 ft min.	
Project Notes/Design Exceptions?			
Bridge No.:	068B00027N	(Bridge #2)	
Sufficiency Rating	47.9		
Total Length	150 ft		
Width, curb to curb	19.0 ft.		
Span Lengths	50 ft - 50 ft - 50 ft		
Year Built	1935		
Posted Weight Limit	Not Posted		
Structurally Deficient?	Yes		
Functionally Obsolete?	Yes (but categorized only as Struc. Deficient)		
Existing Bridge Type	R. C. D. G. (Tee Beam)		
*If more than one road is included in the project, include additional sheets. **Based on proposed Design Speed ***AASHTO's A Policy on Geometric Design of Highways and Streets +AASHTO's Roadside Design Guide †If more than two bridges are located on the project, include additional sheets.			

## II. PROJECT PURPOSE AND NEED

### A. Legislation

This project was added by the General Assembly into the 2014 Highway Plan with the funding levels shown to the right.

<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
SPP	D	2014	\$1,000,000
	R		\$0
	U		\$0
SPP	C	2015	\$5,200,000

### B. Project Status

This project has been on the 2008, 2010 and 2012 Highway Plans with SP funding. The 2014 Plan funds this with SPP and is funded in the 2014-2016 Biennium. No work has been completed at this time. Completion of the Flemingsburg Bypass extension connecting KY 11 with KY 57 at a point approximately 7 miles south of this bridge is expected to be complete by November, 2014. Project 9-8807 proposes to reconstruct KY 57 from this bridge to the AA Highway (KY 9) in Tollesboro. And, Project 9-8817 proposes to correct geometric and width deficiencies from the end of the bypass extension to this bridge.

### C. System Linkage

This route serves as the primary connection of Flemingsburg and Vanceburg, the largest cities in their respective counties. It also serves as a major connection to the AA Highway in Tollesboro to and from Flemingsburg. A large number of commercial vehicles and commuters utilize this route. Improvements are being discussed to improve the entire route from Flemingsburg to the AA Highway in Tollesboro.

### D. Modal Interrelationships

This bridge is within 20 miles of the Ohio River which lies to the north. The Ohio River provides a mode of the transportation of goods for many industries. Additionally, a CSX railway parallels the river and also provides a source for freight movement. The improvement of the geometry of this bridge in conjunction with proposed improvements to the entire route will allow for a more efficient inter-modal road-rail-river relationship.

### E. Social Demands & Economic Development

No data is available to predict this project's impact of social demands or economic development. The Lewis County Comprehensive Plan cites access to the AA Highway in Tollesboro as important through Lewis County to "prepare for future growth along the AA Highway Corridor."

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

### F. Transportation Demand

<p>Historical ADT's:</p> <p>1998 ADT = 2,550 vpd</p> <p>2002 ADT = 1,840 vpd</p> <p>2005 ADT = 1,830 vpd</p> <p>2008 ADT = 1,730 vpd</p> <p>2011 ADT = 1,740 vpd</p> <p>2014 ADT = 1,764 vpd</p>	<p>Historically, the transportation demand has remained relatively flat with an ADT of around 1800 vehicles per day. Demand may increase as a result of the completion of the Flemingsburg Bypass extension and improvements proposed for the remainder of KY 57 from Flemingsburg to Tollesboro.</p>
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### G. Capacity

Vehicles traveling different directions frequently meet on this bridge. Given the narrow lane width (9.5 feet) and the amount of trucks on this route (10%), motorists either slow or stop to prevent being on the bridge at the same time. Although there are currently no capacity issues, the geometric issues with the bridge may occasionally cause travel delays, especially in the case of the larger vehicles being the one that slows and having to climb a steep grade immediately after crossing the bridge.

### H. Safety

A review of the Kentucky State Police Collision Database since January 2009 shows there were 2 crashes in close vicinity of the KY 57 bridge over the North Fork of the Licking River. The 3-year Critical Rate Factor, CRF, for the 0.1 mile spot is 0.38, showing there are less crashes than what would be expected on an average 2-lane rural highway in Kentucky. The 2 reported crashes were both side-swipe collisions, with one of the crash reports specifically citing the narrow bridge as a contributing factor.

### I. Roadway Deficiencies

This bridge, 068B00027N, is classified as being structurally deficient. The sufficiency rating of the bridge is 47.9. The curb-to-curb width of the bridge is 19.0 feet, which is 5 feet less than the 24-foot pavement width (not including shoulders) specified in KYTC's Common Geometric Practices. Furthermore, one of the approach grades to the bridge is 7.48%, also geometrically substandard for this class of roadway. This bridge also has a history of being overtopped by flooding.

### III. PRELIMINARY ENVIRONMENTAL OVERVIEW

#### A. Air Quality

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

STIP Pg. #:

TIP Pg. #:

As this is a state-funded project, it will not be listed in the STIP.

#### B. Archeology/Historic Resources

☐ Known Archeological or Historic Resources are present

Because this project is state-funded through all phases, Section 4(f) will not apply. However, since a permit will be required from the USACE, then Section 106 will apply. Therefore, SHPO clearances for both archaeology and historic resources will be required. The bridge was constructed in 1935 and therefore would meet the age criteria of being potentially eligible for the NRHP. One side of the structure retains the original cathedral rail, but the other side has been replaced by guardrail barrier. It is expected that there would not be enough historic integrity remaining to deem it eligible for the NRHP, however, that determination has not been made yet. If the structure is eligible, then a MOA with the SHPO will be required, with State Level Documentation likely serving as mitigation for the loss of the structure. There were no other sites observed within the expected environmental footprint that appear to be eligible for the NRHP. However, a survey of the entire project area will be conducted to ensure impacts to eligible sites will be avoided. It is anticipated that a Phase I archaeology survey will be required for the project area.

#### C. Threatened and Endangered Species

Potential habitat for federally listed threatened or endangered species for both Lewis and Fleming counties will be assessed throughout the project limits. Freshwater mussel species are listed for both counties and the North Fork of Licking River where the existing structure crosses is large enough to provide suitable habitat for mussels. Therefore, it is expected that a mussel survey will be conducted. Indiana and northern long-eared bat are listed for both counties. It is anticipated that the IBPCMOA will be used to address impacts to potential summer habitat (trees) for the Indiana bat. Northern long-eared bat is expected to be officially listed in April 2015. Although mitigation for this species has not been determined at this time, it is expected to be similar to measures taken for Indiana bat, such as tree clearing restrictions and possibly a programmatic agreement like the IBPCMOA. Fleming County has two plant species listed that will likely require a habitat assessment by the DEA biologist. Short's goldenrod typically is identifiable from mid-August to early November and is found on limestone soils. Running buffalo clover is identifiable from mid-May to mid-June and is also found on limestone-based soils. Lewis County has one listed plant species, Virginia spiraea, which is known from the Kinniconnick Creek drainage basin. It is expected that a No Effect finding can be used to address Virginia spiraea since the project area lies within the Licking River drainage basin.

#### D. Hazardous Materials

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

There are no parcels along the expected project footprint that would suggest former use as a gas station or other contamination producing operation. The existing concrete structure will require demolition and therefore will be tested for asbestos containing materials (ACMs) prior to letting.

### 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

It is expected that the impacts to North Fork Licking River could meet the criteria for a USACE LON permit. The DEA Permit Coordinator will prepare the documentation for this permit. However, if the existing structure is determined eligible for the NRHP or if the impacts to the stream are greater than expected once final design is complete, then a USACE Nationwide #14 Permit would be used. North Fork of Licking River is not listed as a Special Use Water by KY Division of Water.

### 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

KYTC does not normally consider noise analysis on state-funded projects.

### G. Socioeconomic

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

There are no relocations expected to be required for the construction of this project.

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

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

Section 4(f) does not apply to this state-funded project. There are no Section 6(f) resources listed for Lewis or Fleming counties in the project area.

Anticipated Environmental Document: None (Completely State funded) ▼

## IV. PROJECT SCOPING, NEEDS & PURPOSE

### A. Scoping & Need:

This bridge is extremely narrow with 9.5-foot lanes. KY 57 is used by large trucks, heavy farm equipment and is often too narrow for two large vehicles to pass safely. This bridge often becomes a choke point for KY 57 and poses a safety problem. This route is utilized by vehicles traveling from I-64 via Flemingsburg to Vanceburg, South Shore and southeastern points in Ohio. Additionally, this bridge has been overtopped recently due to flooding.

### B. Draft Project Purpose:

Replace bridge 068B00027N and approaches on KY 57 at the Lewis/Fleming County line. Replacement of the bridge will correct geometric deficiencies present with the existing structure and its approaches as well as structural deficiencies with the bridge.

V. PROJECT ESTIMATE & METHODOLOGY	
<b>Estimate Methodology:</b>	<b>Current Estimate</b>
The estimated costs shown (updated in PIF database on 6/12/13) are \$300,000 less than the 2014 Highway Plan estimated total cost of \$6,200,000. The estimated costs shown at right are derived from a combination of cost/mile for the roadway portion and a cost/sq. ft. for the bridge, both being based upon costs of similar district projects.	<u>Phase</u> <u>Estimate</u>
	Planning \$ 50,000.00
	Design \$ 650,000.00
	R/W \$ 400,000.00
	Utilities \$ 300,000.00
	Const \$ 4,500,000.00
	<b>Total \$ 5,900,000.00</b>
VI. UTILITIES POTENTIALLY AFFECTED - CONTACT INFORMATION	
Company Name -	Fleming-Mason RECC
Contact -	Brandon Hunt, Engineering Manager
Address -	1449 Elizaville Rd.; Flemingsburg, KY 41041
Phone No. -	(606) 845-2661
Company Name -	Fleming County Water Association
Contact -	Kevin Cornette, Superintendent
Address -	2772 Morehead Road; Flemingsburg, KY 41041
Phone No. -	(606) 845-3981
Company Name -	Windstream Communications
Contact -	Larry Potter
Address -	Flemingsburg, KY 41041
Phone No. -	Office (606) 845-0820; Cell (606) 748-9830
Company Name -	Time Warner Cable
Contact -	Elbert Lamb
Address -	1615 Foxhaven Dr., Richmond, KY 40475
Phone No. -	(859) 624-6974 or (859) 626-4816
Company Name -	
Contact -	
Address -	
Phone No. -	
Company Name -	
Contact -	
Address -	
Phone No. -	

## VII. TABLES AND EXHIBITS



Looking south/west toward Flemingsburg.



Looking north/east toward Tollesboro.

**VII. TABLES AND EXHIBITS (cont.)**



**The existing bridge is a three-span RCDG structure, built in 1935.**



**Recent flooding causing bridge to overtop.**