

Data Needs Analysis

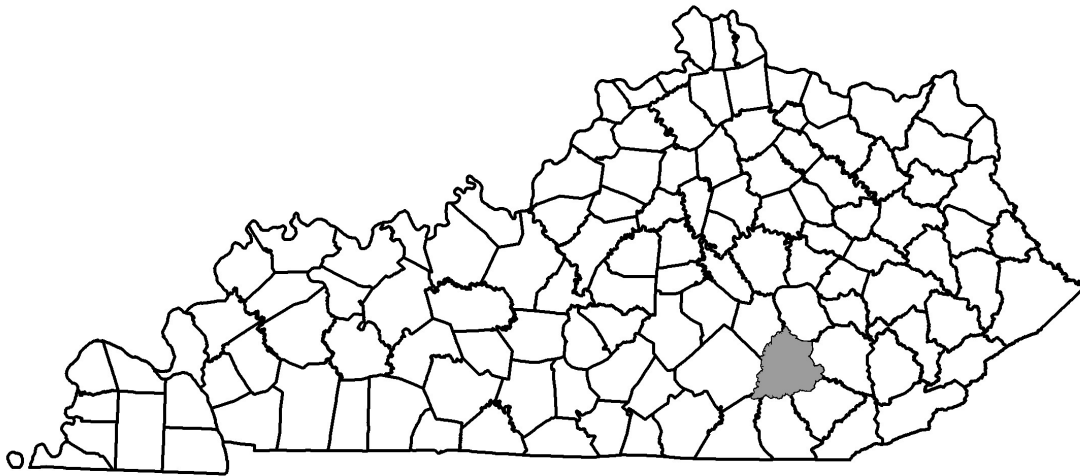
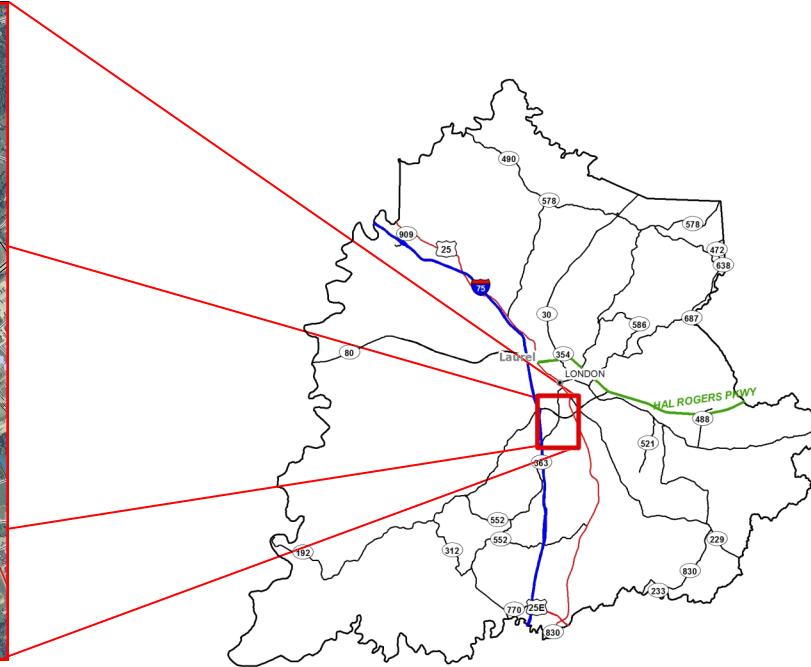
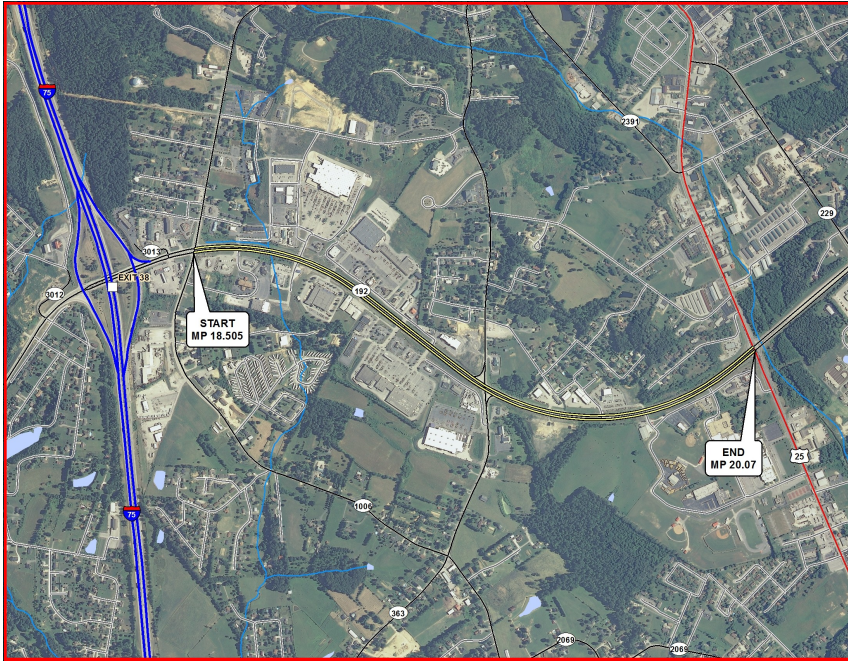
Item Number 11-0187.00 Major
Widening from KY 1006 to US
25 along KY 192 Laurel County

Prepared by KYTC Division of
Highway Design in District 11
July 2013



KY 192 WB @ KY 363

Vicinity Map



Item Number 11-0187.00
KY 192
Laurel County

Data Needs Analysis
Scoping Study

Description:
Major Widening from KY 1006
To US 25 along KY 192

I. Preliminary Project Information

County: Laurel Item Number: 11-0187.00
Route Number(s): KY 192 Road Name: London Bypass
Program Number: 8742701D UPN: FD04 063 0192 18-21
Federal Project Number: [Click here to enter text.](#) Type of Work: Widening

Major widening from KY 1006 to US 25 in London. The proposed widening will increase capacity, improve freight movement, safety, and provide access management.

Beginning MP: 18.505 Ending MP: 20.07 Project Length: 1.565 Miles
Terrain: Rolling
Functional Classification: ☒ Urban ☐ Rural and Arterial In TIP?: ☐ Yes ☒ No
State Classification: ☒ Primary ☐ Secondary Truck Classification: AAA
Route is on: ☒ NHS ☒ NN ☒ Extended Weight Truck %: 7.45%
MPO Area: Not Applicable ADT (2010): 27143
Access Control: ☐ None ☐ Permit ☐ Fully Controlled ☒ Partially Controlled Spacing: 600 ft
Median Type: ☒ Undivided ☒ Divided (type): Raised Barrier Median
Existing Bike Accommodations: Shared Lane Pedestrian: ☐ Sidewalk
Posted Speed: 45 MPH or ☒ Other: 55 MPH Design Speed: 45 MPH

Existing Roadway Plans available? ☒ Yes ☐ No Year of Plans: 1978
Traffic Forecast Requested? ☒ Yes ☐ No Date: 5/13/2013
Mapping/Survey Requested? ☒ Yes ☐ No Date: 1/30/2013 Type: Aerial & Conventional
Existing Geotech Available? ☐ Yes ☒ No
Detour Length: [Click here to enter text.](#)

Project Notes/Design Exceptions?

None.

<u>Roadway Data</u>	<u>Existing</u>	<u>Common Geometric Practices</u>	<u>Bridge No. *</u>	<u>Bridge (#1)</u>	<u>Bridge (#2)</u>
No. Lanes	4	4	Sufficiency Rating		
Lane Width	12'	12'	Total Length		
Shoulder Width	2'-12'	12'	Width, curb to curb		
Max. Super	5.8%	3.2%	Span Lengths		
Min. Radius	2864.79'	2846.79'	Year Built		
Max. Grade	4%	6%	Posted Weight Limit		
Min. Sight Distance		910'	Structurally Deficient		
Sidewalk Width	N/A	N/A	Functionally Obsolete		
Clear Zone	50'-90'	Minimum 30'	Existing Bridge Type		

II. Project Purpose and Need

A. Legislation

In April 2012 the General Assembly scheduled funding for this project in the Enacted Highway Plan.

<u>Funding</u>	<u>Phase</u>	<u>Year</u>	<u>SYP Figure</u>
SPP	D	2013	\$1,250,000
SPP	R	2014	\$2,100,000
SPP	U	2015	\$2,000,000
SPP	C	2016	\$15,000,000

B. Project Status

Design funds were authorized on November 7, 2012. Aerial survey was requested in December 2012 and completed by March 2013. Conventional survey was requested and is expected to be complete by the end of June 2013.

C. System Linkage

The KY 192 corridor is a major four-lane connection between the Hal Rogers Parkway (HR 9006) and the interchange with Interstate 75. This section of KY 192 provides a detour route for Interstate 75 if there were to be any closures near the 41 Exit or 38 Exit. This section of KY 192 is on the National Truck Network, National Highway System, and is a Coal Haul route.

D. Modal Interrelationships

The project area experiences some different modes of transportation. There is a railroad line that is nearby used for freight transportation. There are no at grade crossings in this section of the roadway. There are motor carriers in a public transport system via Greyhound buses. However, there are no interactions with pedestrians, ferries, river ports, or bicycle routes.

E. Social Demands & Economic Development

The communities in this area utilize KY 192 as a means to access various businesses and social hang outs. Along this route are a movie theatre, several restaurants, gas stations, grocery stores, hardware stores, and many specialty businesses. It also has provided major economic development for the city of London, KY. Major chain stores have developed sites along this roadway because of the number of vehicles that utilize this bypass. More businesses are expected to develop the remaining spaces available with the increase population and demand for more goods.

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F. Transportation Demand

Currently the Average Daily Traffic is about 27,000 vehicles. A combination of a strong economic growth in this area coupled with the increase of population is creating a demand that this roadway may not be able to handle. With a good portion of these vehicles are trucks it is important that the capacity issues are addressed before there is a major problem. A mixture of a lot of drivers, with a lot of decision making going on given the number of access points, along with the sheer number of lights create a demand for more frontage/backage roads to relieve some of the congestion.

G. Capacity

This roadway is a four lane, two-way, divided roadway, with turning lanes. This roadway was originally supposed to relieve the congestion in the inner parts of London, KY, but, this section of roadway has created an economic dream for businesses. The roadway is likely going see a significant increase in traffic volumes as more businesses develop along this area. There are a number of traffic signals and these existing signals are timed progressively are not functioning optimally. This causes a vehicle to stop multiple times instead of being able to freely flow through the system of lights.

H. Safety

This section of KY 192 has experienced a high number of crashes from January 2010 to December 2012. There were a total of 356 accidents from MP 18.5 to 20.07. At the major intersections there seem to be a higher rate of incidents which is expected since these are signalized. Out of the 356 accidents there were 140 angle collisions and 172 rear end collisions. There doesn't seem to be an issue with median crossover collisions. There are however 21 same direction sideswipe collisions which may indicate a need for access management since it may be because drivers are trying to make the turns and switching lanes. It appears that most of the accidents have occurred during the daylight hours when the pavement has been wet and is raining. There seems to be no real correlation of grades with collisions or curves with the number of collisions. The incidents that occur at the hours when it is dark appears to be in related to unlit areas. Given the high number of the accidents occurring during wet and rainy weather it shows there may be issues with the drainage for the project area.

Please see the Crash Map in Appendix C.

I. Roadway Deficiencies Continued

The roadway is currently a four lane roadway with a raised (non-mountable) median. Throughout this segment of KY 192 there are also additional turning lanes, even a few dual left turn lanes for some heavy trafficked intersections. With the increase in traffic volumes the turning lanes may not have sufficient storage nor may the number of through lanes be sufficient for the volumes of the design year. These lanes are all approximately 12' in width, this indicates no deficiency. There are paved shoulders through this section which are 12' wide in some areas; there are no deficiencies with the shoulders. It is important to remember when this corridor was first constructed it was designed as a rural bypass. Now with the development of this area it functions more as an urban corridor. The horizontal geometry well exceeds the minimum radius for the design speed for urban or rural classification.

The vertical grade is within acceptable limits of an urban arterial roadway. When this was first constructed as a rural bypass the super elevation rates were significantly higher than would be in an urban classified roadway. The super elevation rates along this section of roadway may need to be reduced. Specifically at one intersection with KY 192 and KY 363 the super elevation rate is such that it is impossible to have the proper sight distance required to make turning movements with the way the signal is set up. It is nearly impossible for a left turning vehicle to see the opposing traffic in order to make the turning movement safely. The signal at KY 192 and KY 363 is set up to where the left turning movements and the through traffic share the same lanes and the turning movements must yield to the opposing traffic. There are several intersections with signals with this configuration of no dedicated left turn lane which may be adding to the high rate of crashes at certain locations.

Originally there were raised non-mountable medians for almost the entire project area that limited the access. However, much of these raised non-mountable medians were removed to be replaced with turning lanes. Because of the removal of a significant portion of these raised non-mountable medians for left turn lanes it has created a serious problem with unmanaged access throughout this section. There are also several dual left turn lanes that have been implemented at various intersections due to the need for storage for the increasingly high volumes of traffic in order to maintain capacity. On top of a less access managed system there is the issue that the roadway is partially access controlled; yet, it appears that in some locations that this control of access has been lost entirely.

One of the major issues with this corridor is the traffic signal progressive timing. There are multiple lights along this section of roadway and they are timed to allow for progressive traffic flow. However, the current timing configuration is not functioning optimally and creating a capacity issues. It is such that it appears to not be progressively timed at all. Some vehicles may be able to travel through all the lights or may have to stop at every light. The traffic signal timing if done correctly could solve a lot of the congestion issues.

Item Number 11-0187.00
KY 192
Laurel County

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III. Preliminary Environmental Overview

L. Air Quality

This Project is in:

☒ Attainment Area ☐ Non-Attainment Area or maintenance Area ☐ PM 2.5 County

STIP PG #'s: 2012 – PG 84

TIP PG #'s:

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

M. 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. The area is predominantly prior disturbed by commercial development. Buildings will be evaluated for historic significance. Lily Quad, 1970, -84.087478 37.107574 Decimal Degrees

N. Threatened and Endangered Species

The USGS Quadrangle is Lily. There are not any DOW listed special use waters in project vicinity. Current species listed for Laurel County are Indiana bat, gray bat, black side dace, Cumberland elk toe, rabbits foot, little spectacle case, oyster mussel, little wing pearly mussel, fluted kidney shell, Cumberland bean pearly mussel, Cumberlandian comb shell, white-fringeless orchid, and Virginia spiraea. Future study will address the requirements of USFWS and prevent detriment to the protected species.

O. Hazardous Materials

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

Project is commercially/urban located in Laurel Co. in London with no structures. Several fuel stations are located in the corridor and in proximity to the project.

P. Permitting

Check all the 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: ☐ Wetland ☐ Stream/Lake/Pond ☐ Special Use Waters

☐ ACE LON ☒ ACE NW ☐ ACE IP ☐ DOW IWQC

The USGS Quadrangle is Lily. At least a couple intermittent blue line streams are crossed by the project and 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.

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KY 192
Laurel County

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Q. Noise

Are there 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

Addition of through travel lanes.

R. Socioeconomic

Check all that apply:

☐ Low Income/Minority Populations Affected

☐ Local Land Use Plan Available

☐ Relocations

No relocations are expected at this time.

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

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

Properties will be evaluated for Historic significance.

Anticipated Environmental Document: None (Completely State Funded)

IV. Project Scoping, Needs & Purpose

Scoping and Need

As a result of high traffic volumes, crash history, and congestion, other arterials in the area are implementing different techniques of access management. A similar practice should be used for this project. In order to reduce crashes, driver expectations should be maintained. However, additional traffic analysis is needed to alleviate the congestion caused by poor progressive signal timing in order to create platoons. Capacity could also be an issue, and consequently widening may be necessary as a result of economic development in the area.

Draft Project Purpose

Improve safety, increase economic development, alleviate congestion, and improve access management.

V. Project Estimate & Methodology

Estimate Methodology

Design estimate was prorated from other projects of similar size and scope in the same project area.

Since there is significant amount of Right-of-Way, the necessity to purchase property could be very low. It may be possible to do most of the work on existing state property.

The number of utilities that will be required to be relocated is numerous. Utilities are typically very expensive depending on the type of utility line, and the length that will be required to move. However, since much of these lines will be on Right-of-Way they may not be eligible for relocations fees.

The controlling item will be pavement as there is marginal earthwork to be executed. An assumed depth of pavement was used for the project for the mainline and additional pavement added for various locations where necessary. Funds were added for the possibility of the use of varying types of access management and traffic control. A large contingency percentage was used since the area is very developed and unknown costs to construction could occur without detailed knowledge at this stage in the process. This estimate is a preliminary design estimate and is apt to change as the design process nears the final stages of the roadway plans.

<u>Current Estimate</u>	
<u>Phase</u>	<u>Estimate</u>
Design	\$995,000
R/W	\$760,000
Utilities	\$1,050,000
Construction	\$14,018,112
Total	\$16,823,112

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VI. Utilities Potentially Affected – Contact Information

Company Name:	C&W Cable Inc.	Company Name:	Windstream Communications South District
Contact:	Brett Williams	Contact:	Bowman Hail
Address:	P.O. Box 490, Annville, KY 40402	Address:	719 North Main Street, London, KY 40741
Phone No.:	606.364.5357	Phone No.:	606.878.3258
Company Name:	Corbin City Utilities	Company Name:	Wood Creek/East Laurel Water District
Contact:	Ron Herd	Contact:	Donta Evans
Address:	New City Hall US 25W, Corbin, KY 40701	Address:	P.O. Box 726, London, KY 40741
Phone No.:	606.528.0099	Phone No.:	606.864.9420
Company Name:	AT&T Southeast	Company Name:	Jackson Energy Cooperative
Contact:	Odell Keene	Contact:	Keith Vickers
Address:	131 Amesbury Avenue, Middlesboro, KY 40965	Address:	115 Jackson Energy Lane, McKee, KY 40447
Phone No.:	606.248.7243	Phone No.:	800.262.7480
Company Name:	Eastern Cable Co. Inc.	Company Name:	Time Warner Cable
Contact:	Derek Eubanks	Contact:	Elbert Lamb
Address:	P.O. Box 126, Corbin, KY 40701	Address:	1615 Foxhaven Drive, Richmond, KY 40475
Phone No.:	606.526.1299	Phone No.:	859.661.1984
Company Name:	LGE-K.U.	Company Name:	Time Warner Communications
Contact:	Chase Mills	Contact:	Darrell Nave
Address:	180 Substation Road, London, KY 40741	Address:	5026 US 27, Somerset, KY 42501
Phone No.:	606.877.2836	Phone No.:	606.678.9215
Company Name:	Laurel Water District #2	Company Name:	East Kentucky Power Cooperative
Contact:	-----	Contact:	Shaun Vance
Address:	3910 S. Laurel Road, London, KY 40741	Address:	4775 Lexington Road PO Box 707, Winchester, KY 40392
Phone No.:	606.878.2494	Phone No.:	859.527.3137
Company Name:	London Utility Commission	Company Name:	Delta Natural Gas Company
Contact:	-----	Contact:	Steve Lewis
Address:	P.O. Box 918, London, KY 40741	Address:	3617 Lexington Road, Winchester, KY 40391
Phone No.:	606.864.2103	Phone No.:	859.744.6171

Auth. No.	Auth. Date	Project No.	Parent No.
87427	07-Nov-2012	11 - 187.00	11 - 187.00

MAJOR WIDENING FROM KY 1006 TO US 25 IN LONDON. THE PROPOSED WIDENING WILL INCREASE CAPACITY, IMPROVE FREIGHT MOVEMENT, SAFETY AND PROVIDE ACCESS MANAGEMENT. (12CCR)

Type of Work	MAJOR WIDENING(O)
Roadway Engineer	DEPARTMENT-D11
Bridge Engineer	DEPARTMENT
Project Manager	KYTC\ERIKA.SMITH

Countyname	LAUREL
Route	KY-192-
BMP / EMP	18.51 / 20.07

No. Lanes	
Length	1.57
Meas. Type	E

Final Plans		Utility Clearance Date	
Contractor Notice		R/W Clearance Date	

Syp Pro Brno	
Suffrate	

Letting Status / Date		
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ENVIRONMENTAL	Name	Date	Type	Sched. Comp.	Actual Comp.	Expire Date
Assigned:						
Requested:		22-May-2013	DNA			

Concerns

Phase Code	D	R	U	C
Stage	AUTHORIZED	ESTIMATED	ESTIMATED	ESTIMATED
Fund Code	SPP	SPP	SPP	SPP
Escalated Cost	0	2,100,000	2,000,000	15,000,000
Fiscal Year		2014	2015	2016
Current Cost				
Auth. Amount	1,250,000			
Auth. Date	07-Nov-2012			
Date of Current Cost				
Year of Proj Auth date				
Program Code				
Remaining Balance	1,153,549.59			

Prog Cd	Unobligated	Encumbered Remaining
8742701D	1,153,549.59	0

<u>R/W Parcel Info.</u>				Completion Date
Total Parcels				
Appraisals		of		
Relocated		of		
Deeds Signed				
Suits Filed				
Right of Entry				
Parcels Cleared				

<u>Utility Information</u>				Completion Date
Negotiated Starts		of		
Agreements		of		
Relocated		of		

Milestone	Sch. Comp. Date	Status	Date	Remarks
PRELIMINARY LINE AND GRADE		UNKNOWN	21-May-2012	
DRAINAGE INSPECTION		UNKNOWN	21-May-2012	
JOINT INSPECTION		UNKNOWN	21-May-2012	
GEOTEC ENGINEERING - ROADWAY		UNKNOWN	21-May-2012	
GEOTEC ENGINEERING - BRIDGES		UNKNOWN	21-May-2012	
BRIDGE AND STRUCTURE PLANS TO CENTRAL OFFICE		UNKNOWN	21-May-2012	
ADVANCE SITUATION TO CENTRAL OFFICE		UNKNOWN	21-May-2012	
RIGHT OF WAY PLANS TO CENTRAL OFFICE		UNKNOWN	21-May-2012	
ROAD PLANS TO CENTRAL OFFICE		UNKNOWN	21-May-2012	
TRAFFIC PLANS - SIGNING		UNKNOWN	21-May-2012	
TRAFFIC PLANS - LIGHTING		UNKNOWN	21-May-2012	
TRAFFIC PLANS - SIGNALS		UNKNOWN	21-May-2012	
TRAFFIC PLANS - TRAFFIC CONTROL		UNKNOWN	21-May-2012	

Location Maps



Crash Locations

