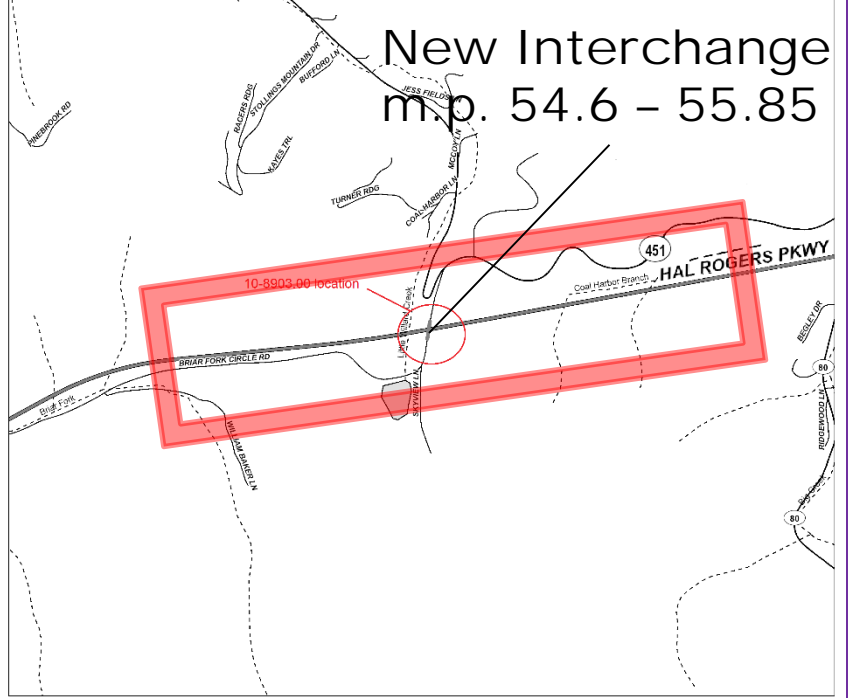
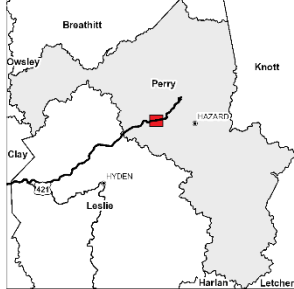
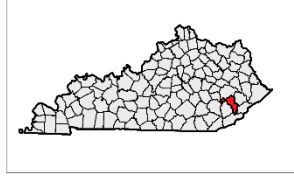


**D**ata

**N**eeds

**A**nalysis



## Scoping Study



HR 9006, Perry County  
New Interchange  
Item No. 10-8903.00

Prepared by  
KYTC District 10

June 2016



**I. PRELIMINARY PROJECT INFORMATION**

<b>County:</b>	Perry	<b>Item No.:</b>	10-8903.00
<b>Route Number(s)*:</b>	HR 9006	<b>Road Name:</b>	Hal Rogers Parkway
<b>Program No.:</b>		<b>UPN:</b>	FD05 97 9006 054-056
<b>Federal Project No.:</b>		<b>Type of Work:</b>	New Interchange

2016 **Highway Plan Project Description:**

NEW INTERCHANGE OFF OF A NEW EXIT 55 HAL ROGERS PARKWAY

<b>Beginning MP:</b>	54.6	<b>Ending MP:</b>	55.85	<b>Project Length:</b>	1.25
<b>In TIP:</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<a href="#">Reconcile Project Information in Clearview</a>			
<b>State Class.:</b>	<input checked="" type="checkbox"/> Primary <input type="checkbox"/> Secondary	<b>Route is on:</b>	<input checked="" type="checkbox"/> NHS <input checked="" type="checkbox"/> NN <input checked="" type="checkbox"/> Ext Wt		
<b>Functional Class.:</b>	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural Arterial	<b>Truck Class.:</b>	AAA	<b>% Trucks:</b>	6.3
<b>MPO Area:</b>	Not Applicable	<b>Terrain:</b>	Mountainous		
<b>ADT (current):</b>	5073 2015				
<b>Access Control:</b>	<input type="checkbox"/> None <input type="checkbox"/> Permit <input type="checkbox"/> Fully Controlled <input checked="" type="checkbox"/> Partial	<b>Spacing:</b>			
<b>Median Type:</b>	<input checked="" type="checkbox"/> Undivided <input type="checkbox"/> Divided (Type):				
<b>Existing Bike Accommodations:</b>	Shoulder	<b>Ped:</b>	<input type="checkbox"/> Sidewalk		
<b>Posted Speed:</b>	<input type="checkbox"/> 35 mph <input type="checkbox"/> 45 mph <input checked="" type="checkbox"/> 55 mph <input type="checkbox"/> Other (Specify):				
<b>KYTC Guidelines Preliminarily Based on :</b>	60 MPH Proposed Design Speed				

**COMMON GEOMETRIC**

Roadway Data:	EXISTING	PRACTICES**	
No. of Lanes	2	2	<a href="#">Existing Rdwy. Plans available?</a>
Lane Width	12	12	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Shoulder Width	11	10	Year of Plans: 1971
Max. Superelevation***	NA	8%	<input checked="" type="checkbox"/> <a href="#">Traffic Forecast Requested</a>
Minimum Radius***	NA	1205	Date Requested: 6/28/2016
Maximum Grade		6%	<input type="checkbox"/> Mapping/Survey Requested
Minimum Sight Dist.	NA	570	Date Requested:
Sidewalk Width(urban)		NA	Type: <input type="text"/>
Clear-zone <sup>†</sup>		27	
<b>Project Notes/Design Exceptions?</b>	Exceptions for Grades may be required.		

<b>Bridge No.†:</b>	097C00061N	(Bridge #2)	
<b>Sufficiency Rating</b>	91.3		<a href="#">Existing Geotech Data Available?</a>
<b>Total Length</b>	157		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Width, curb to curb</b>	21		
<b>Max Span Length</b>	87		
<b>Year Built</b>	1991		
<b>Posted Weight Limit</b>	No		<b>Detour Length(s):</b>
<b>Structurally Deficient?</b>	N		
<b>Functionally Obsolete?</b>	N		
<b>Existing Bridge Type</b>	Prestressed Concrete Box 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 is a new Project added by the General Assembly into the 2016 Biennial Highway Plan.

<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
STP	D	2017	\$1,340,000
STP	R	2018	\$530,000
STP	U	2019	\$159,000
STP	C	2020	\$13,750,000

**B. Project Status**

Design Funds have been requested but have not been authorized at this time. There are no other Projects along the Parkway in Perry County at this time however Preliminary Engineering funds were added in the 2016-2022 Highway Plan for the Laurel, Clay and Leslie Sections. These projects are part of a complete corridor reconstruction of the Parkway and will include the rest of Perry County in the future.

**C. System Linkage**

The Hal Rogers Parkway is one part of Kentucky's East - West Southern Corridor. This Corridor links to several major North-South Routes including I-65, I75, US 31E, US 127, US 27, US 23 and locally to KY 15 which has parts that are being upgraded to four lanes at this time.

The proposed Interchange location would connect the Hal Rogers Parkway with Briar Fork Circle Road. Briar Fork Circle Road is a two lane paved roadway that serves residential traffic. A new Interchange would provide a quicker access for these residents as well as residents of the Willard communities.

**D. Modal Interrelationships**

There are no direct intermodal connections along the Parkway. The Parkway provides access to the Interstate System and other roads that ultimately go to airports, rail, and river connections. As with each of Kentucky's Parkways, the Hal Rogers is also an Extended Weight Coal Haul Route. Over the years, the Parkway has been used to transport coal East to Perry County and some of it's train loadouts and West to London for Power Plants and to access the Interstate System.

**E. Social Demands & Economic Development**

This Interchange would provide direct access to hundreds of acres of reclaimed surface mines. As coal production continues to taper off, local governments are attempting to bring new replacement jobs to the area. This requires large amounts of level land and good access to transportation facilities.

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

**F. Transportation Demand**

At this time, the Transportation Demand is expected to remain the same. As the corridor is improved and Development occurs the Demand will rise.

**G. Capacity**

There are no known capacity issues at this time. The Volume to Service Flow (V/SF) for this section of the Parkway is 0.32. V/SF is one measurement used to assess the ability of a roadway to handle vehicles for which it is designed. By this measurement the Parkway is current handling only 32% of its maximum suggested vehicles each hour.

**H. Safety**

The Critical Rate Factor (CRF) for this section of road is shown as 1.0710. A review of Collision Data since 2010 shows 28 collisions have occurred within the project limits. Of these there were 0 Fatal collisions, 8 are listed as having injuries and the rest were property damage only. A more detailed analysis should be performed in the Preliminary Engineering Phase to ensure the collision reporting accuracy to show any issues that should be corrected. An exhibit showing the collision locations is shown on page 8 below.

**I. Roadway Deficiencies**

When the Parkway was designed and built, it met the standards of it's time. When looking at today's design standards, the grades and eMax used would be considered higher than desirable. Traveling from the East, the grade you climb before the Proposed Interchange location is about 9%. Today's common practices would limit it to 6%. All of the horizontal curves were designed using a 10% eMax whereas today we typically do not exceed 8% in design.

**III. PRELIMINARY ENVIRONMENTAL OVERVIEW**

**A. Air Quality**

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

STIP Pg.#: [Redacted]

TIP Pg.#: [Redacted]

NA

**B. Archeology/Historic Resources**

Known Archeological or Historic Resources are present

NA

**C. Threatened and Endangered Species**

Listed - Indiana Bat

Proposed Listing - Northern Long Eared Bat, Kentucky Arrow Darter

**D. Hazardous Materials**

Potentially Contaminated Sites are present  Potential Bridge or Structure Demolition

Existing Structure will be removed.

**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

**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

**G. Socioeconomic**

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

NA

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

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

NA

Anticipated Environmental Document:

CE Level 2 

**IV. PROJECT SCOPING, NEEDS & PURPOSE**

**A. Scoping & Need:**

The following Needs have been identified by the Project Team for this project: 1. Fulfill the Legislative mandate to improve Kentucky's highway system. 2. Provide an East - West System Linkage for traveler's of Kentucky's southern counties. 3. Provide access to developable land to contribute to the Economic Viability of Eastern Kentucky.

**As part of the Scoping process, the Project Team examined various different Alternatives. Basic concepts of the teams top three can be seen in the exhibits section and are summarized as follows:**

- Alternate 1 is the No Build. This does not fulfill the Project Needs
- Alternate 2 is a Partial Cloverleaf Interchange. This alternate would meet the Project Needs. The southern side of the Parkway lends itself to this configuration as it is a large clear and flat area. The ramp design shown is based on a 25 mph speed.
- Alternate 3 is a Diamond type Interchange. This alternate would meet the Project Needs. To minimize the amount of material that would need to be moved it is styled as a "Tight Diamond Interchange." Despite this being a rural area, the Team feels that due to the location and potential use this style would be suited at this location.
- Alternate 4 is a Folded Interchange. This alternate meets the project Needs. This alternate uses the best of the previous two alternates - a Folded on the south side and Tight Diamond on the North.

**The Project Team has identified the following issues/concerns that must be considered during the design process:**

- The new overpass bridge must be able to accommodate the future widening of the Parkway.
- Maximum Ramp grades should not exceed 10%.
- Project is for New Interchange, not to rebuild KY 451.
- Design Team needs to consider future corridor expansion when making project decisions.
- Project MUST stay in Budget.

**Given the potential complexity and budget constraints, The Project Team recommends that both Alternates 3 & 4 be further studied in the Preliminary Engineering phase.**

**B. Draft Project Purpose:**

**Purpose: The purpose of this project is to improve one of Kentucky's major corridors by constructing a new Interchange that will improve System Connectivity for travelers and potentially contribute to the economic growth of the surrounding area.**

**V. PROJECT ESTIMATE & METHODOLOGY**

<b>Estimate Methodology:</b>	<b>Current Estimate</b>	
The Construction estimate is based on Alternate 4 which includes a new 40' wide bridge and only adding ramps with no Parkway widening.	<u>Phase</u>	<u>Estimate</u>
	Planning	
	Design	\$ 825,000.00
	R/W	\$ 150,000.00
	Utilities	\$ 150,000.00
	Const	\$ 11,039,000.00
	<b>Total</b>	<b>\$ 12,164,000.00</b>

**VI. UTILITIES POTENTIALLY AFFECTED - CONTACT INFORMATION**

Company Name -	Hazard Utilities
Contact -	Bobby Holland
Address -	700 Main Street, Hazard, KY 41701
Phone No. -	606-438-6534
Company Name -	Windstream
Contact -	Gene Dunn
Address -	130 West New Circle Road, Lexington, KY 40505
Phone No. -	859-357-6216
Company Name -	Kentucky Power
Contact -	Greg Sparkman
Address -	1400 East Main Street, Hazard KY 41701
Phone No. -	606-436-1332
Company Name -	
Contact -	
Address -	
Phone No. -	
Company Name -	
Contact -	
Address -	
Phone No. -	
Company Name -	
Contact -	
Address -	
Phone No. -	

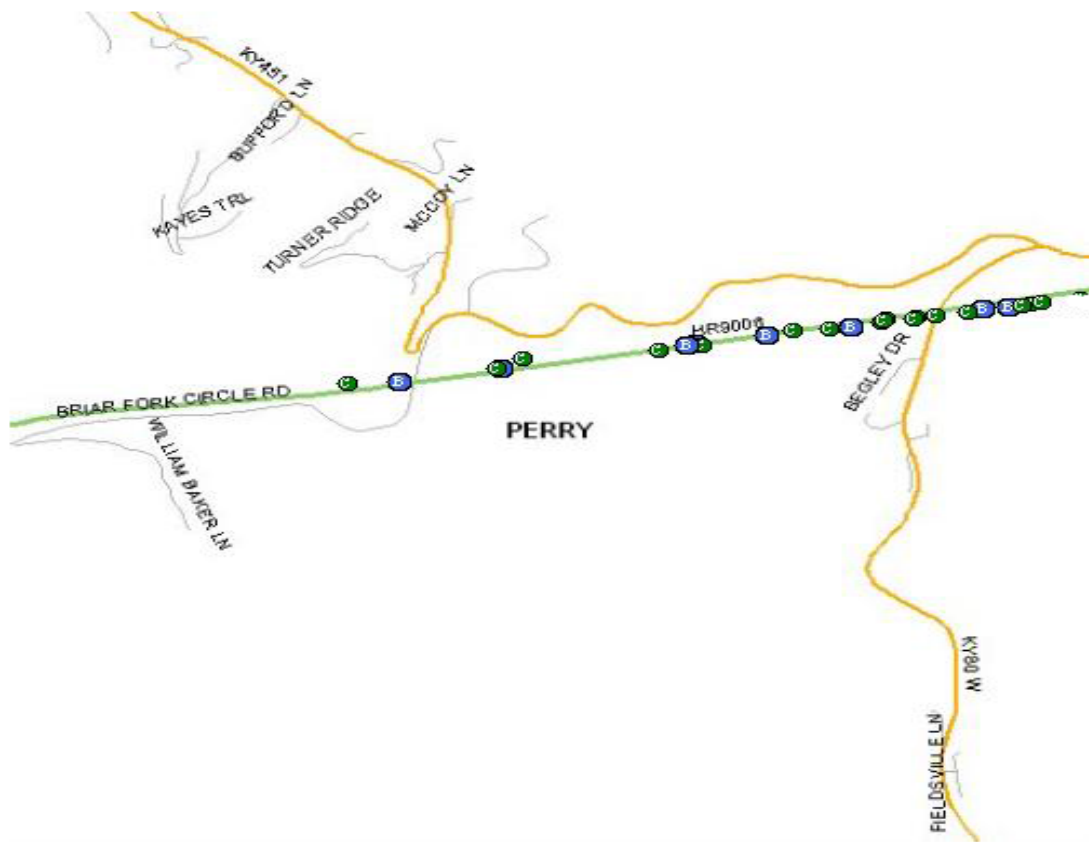





**VII. TABLES AND EXHIBITS**





VII. TABLES AND EXHIBITS (cont.)



- Collision w/Injury 
- Collision w/Fatality 
- Collision w/Prop Damage 



VII. TABLES AND EXHIBITS (cont.)





VII. TABLES AND EXHIBITS (cont.)





VII. TABLES AND EXHIBITS (cont.)

