

5-474.00 I-265/Old Henry Rd (KY 3084) Area Map

3-1-2013



Data Needs Analysis

Scoping Study

Reduce Congestion & Improve
Safety at the I-265 & KY 3084
(Old Henry Road) Interchange
Jefferson County
I-265 MP 28.28 to MP 29.10
Item No. 5-474.00

Prepared by
KYTC District 5

March 2013



I. PRELIMINARY PROJECT INFORMATION

County: Jefferson Item No.: 5-474.00
Route Number(s): I-265 Road Name: Gene Snyder Freeway
Program No.: N/A UPN: O56 O265 MP28.28-29.1
Federal Project No.: N/A Type of Work: Interchange Improvement

2012 Highway Plan Project Description:

Reduce congestion and improve safety at the KY 3084 (Old Henry Road) Interchange. (12CCR)

Beginning MP: 28.28 Ending MP: 29.1 Project Length: 0.82

Functional Class.: ☒ Urban ☐ Rural State Class.: ☒ Primary ☐ Secondary
Interstate Route is on: ☒ NHS ☒ NN ☐ Ext Wt

MPO Area: KIPDA

In TIP: ☒ Yes ☐ No

Truck Class.: AAA

% Trucks: 9%

ADT (current): 64,350 (0.85M S) 59,141 (0.85M N) 2010

Terrain: Rolling

Access Control: ☐ None ☐ Permit ☒ Fully Controlled ☐ Partial Spacing:

Median Type: ☐ Undivided ☒ Divided (Type): Depressed (52')

Existing Bike Accommodations: None Ped: ☒ Sidewalk

Posted Speed: ☐ 35 mph ☐ 45 mph ☐ 55 mph ☒ Other (Specify): 65

KYTC Guidelines Preliminarily Based on : 65 MPH Proposed Design Speed

COMMON GEOMETRIC

Roadway Data:	EXISTING	PRACTICES*
No. of Lanes	<u>4</u>	<u>4</u>
Lane Width	<u>12'</u>	<u>12'</u>
Shoulder Width	<u>5' Median; 11' Right</u>	<u>Min: 4' Median; 10' Right</u>
Max. Superelevation**	<u>N/A</u>	<u>6%</u>
Minimum Radius**	<u>0</u>	<u>1660'</u>
Maximum Grade	<u>2%</u>	<u>4%</u>
Minimum Sight Dist.	<u>N/A</u>	<u>N/A</u>
Sidewalk Width(urban)	<u>N/A</u>	<u>N/A</u>
Clear-zone***	<u>Approx. 45' Min.</u>	<u>1V:6H 30' Min.</u>

[Existing Rdwy. Plans available?](#)

☒ Yes ☐ No

Year of Plans: 1981 As Built

☒ [Traffic Forecast Requested](#)

Date Requested: 10/25/2012

☒ Mapping/Survey 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

I. PRELIMINARY PROJECT INFORMATION

County:	Jefferson	Item No.:	5-474.00
Route Number(s):	KY 3084	Road Name:	Old Henry Road
Program No.:	N/A	UPN:	(Function) 056 3084 000-002
Federal Project No.:	N/A	Type of Work:	Interchange Improvement
Beginning MP:	0.838	Ending MP:	1.475
Project Length:	0.637		
Functional Class.:	<input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural Arterial	State Class.:	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Secondary
MPO Area:	KIPDA	Route is on:	<input type="checkbox"/> NHS <input checked="" type="checkbox"/> NN <input type="checkbox"/> Ext Wt
In TIP:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Truck Class.:	A
ADT (current):	15544 (2010)	% Trucks:	11.10%
Access Control:	<input type="checkbox"/> None <input checked="" type="checkbox"/> Permit <input type="checkbox"/> Fully Controlled <input type="checkbox"/> Partial	Terrain:	Level
Median Type:	<input type="checkbox"/> Undivided <input checked="" type="checkbox"/> Divided (Type):	Spacing:	
Existing Bike Accommodations:	Shared Lane	Ped:	<input type="checkbox"/> Sidewalk
Posted Speed:	<input checked="" type="checkbox"/> 35 mph <input type="checkbox"/> 45 mph <input type="checkbox"/> 55 mph <input type="checkbox"/> Other (Specify):		
KYTC Guidelines Preliminarily Based on :	35 MPH Proposed Design Speed		

COMMON GEOMETRIC

Roadway Data:	EXISTING	PRACTICES*	
No. of Lanes	4	4	Existing Rdwy. Plans available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Lane Width	12'	12'	
Shoulder Width	8'	8'	Year of Plans: 1997
Max. Superelevation**		4%	<input type="checkbox"/> Traffic Forecast Requested
Minimum Radius**		371'	Date Requested:
Maximum Grade		7%	<input type="checkbox"/> Mapping/Survey Requested
Minimum Sight Dist.	N/A	N/A	Date Requested:
Sidewalk Width(urban)	N/A	8' desirable	Type:
Clear-zone***			
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.*:	(056B00339N)	Existing Geotech data available? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sufficiency Rating	93.2	Detour Length(s):
Total Length	308.1'	
Width, curb to curb	73.10'	
Span Lengths	102'	
Year Built	1984	
Posted Weight Limit	T1=20T,T2=22T,T3=22T,T4=22T	
Structurally Deficient?	NO	*If more than two bridges are located on the project, include additions sheets.
Functionally Obsolete?	NO	
Existing Bridge Type	Multiple Box Beam	

II. PROJECT PURPOSE AND NEED

A. Legislation

This project was approved by the General Assembly as part of the 2012 Highway Plan.

<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
IM	D	2013	\$1,000,000
NH	R	2016	\$75,000
NH	U	2016	\$150,000
IM	C	2017	\$2,000,000

B. Project Status

Authorization of Design funds was requested on July 6th, 2012. Design funds will be available in early 2013 when the STIP and KIPDA's model are updated to include this project.

C. System Linkage

I-265 is an Urban Interstate Highway. The I-265 and the KY 3084 (Old Henry Road) interchange provides access to KY 3084, an Urban Minor Arterial Street. I-265 links three major interstates; I-71, I-64, and I-65. The East End Ohio River Bridge is scheduled to be open to traffic by the end of 2016, which will link KY 841 and I-265 with Indiana I-265. A new 6-lane road is planned from the existing north end termination of KY 841, and will connect the approach and new tunnel to the new bridge. This new 6-lane road connection is approximately 8.5 miles northwest of the existing I-265 and Old Henry Road interchange.

D. Modal Interrelationships

The improvement and extension of Old Henry Road included in the 2012 Six Year Highway Plan includes a 10 ft shared use path to the north of the new route and a 5 ft sidewalk to the south for pedestrians and bicycles. There are some existing sidewalks near the project area.

E. Social Demands & Economic Development

Several developments are planned and are in phases of construction in the area near the I-265/Old Henry Road interchange including: the Eastpoint Business Center (550 Acres) northwest of the interchange; Claiborne Crossings Development (120 Acres) a major retail, office, and health care destination northeast of the interchange; Old Henry Crossings northeast and southeast of the interchange; a quarry southwest and southeast of the interchange; the Kroger Distribution Center on Nelson Miller Pkwy; various other commercial sites, office spaces, outpatient medical facilities, and residential areas. There is a proposed auto auction development on the southwest corner of the Nelson Miller Parkway intersection (see attached study in the Appendices). Further to the east of the interchange in the direction of Ash Avenue the area mostly consists of residential developments.

E. Transportation Demand

The I-265/Old Henry Road interchange was opened in 2004. The new East End Ohio River Bridge is projected to have a crossing ADT of 46,694 in 2020, and 58,637 in 2030 according to the unadjusted KIPDA Travel Demand Model Forecast completed in January 2013 (see forecast in the Appendices). This unadjusted forecast includes a 6-lane I-265 and the completion of the Old Henry Rd Extension project 5-367.20. The Old Henry Rd Extension project is comprised of approximately 2 miles of improvement and extensions of Old Henry Road, and is in the Approved 2012 Highway Plan for construction start in 2014. The projected I-265 2020 ADT from the same unadjusted KIPDA Travel Demand Model Forecast (2013) on a 6-lane I-265 ranged from 72,333 north of Old Henry to 95,676 south of Old Henry, an approximately 37% and 69% respective increase of traffic from 2010 ADT's. The Old Henry Road south of Bush Farm Road 2020 ADT from the same study is 34,048, and 34,576 in 2030. This indicates a 125% increase in traffic in 2020 from the most recent count of 15,161. These traffic forecasts all include I-265 as a 6-lane roadway which may still be a 4 lane roadway when the East End Ohio river Bridge opens in 2018, and when the Old Henry Rd Extension begins construction projected in 2014. These major increases in projected ADT percentages indicate a major increase in transportation demand in the immediate future. The WilburSmith Assoc. LSIORB Traffic Forecast from August of 2011, the Parsons Brinkerhoff KIPDA Interchanges Study from June of 2005, and the KYTC Old Henry Rd Scoping Study and the associated traffic forecast completed by KIPDA in August of 2011 were also referred to for this scoping study. All of the studies indicate large ADT increases in the immediate future. I-265 is in the KIPDA MPO MTP Plan for widening from 4 to 6 lanes from MP 10.25 to MP34.73. A new interchange at I-265/Rehl Rd and a reconstruction of the I-265 at I-64 including a 2- lane flyover and a new southbound to westbound 2 lane ramp is also in the KIPDA MPO MTP plan.

II. PROJECT PURPOSE AND NEED (cont.)

G. Capacity

Field observations indicate that traffic queues are building from Old Henry Road south down the NB ramp back onto the I-265 mainline from Old Henry Road for approximately 0.54 miles in the am peak traffic. The queue lengths are exceeding the available right and left turn storage. Field observations also indicate that the left turn movement from Old Henry WB to I-265 SB is experiencing queues that exceed the turn bay length. The current construction of the East End Ohio River Bridge, the new route extension of Old Henry Road east to Ash Ave funded for construction start in 2012 Highway Plan indicate capacity issues in the near future. The KIPDA MPO Long Range Plan for I-265 to widen to six lanes, will also have major impacts on capacity.

H. Safety

Crash data over the past three years shows multiple rear end collisions on the I-265 NB ramp. At the Old Henry Road and I-265 NB ramp intersection there were four angle collisions indicated at the traffic light. Two rear end collisions were indicated at the I-265 SB ramp and Old Henry Road intersection. There is a breakdown point in the I-265 northbound mainline traffic due to the I-265 NB ramp traffic to Old Henry Road queuing onto the mainline, resulting in reoccurring congestion with stop and go traffic. (See Section VI. Tables and Exhibits)

I. Roadway Deficiencies

There do not appear to be any roadway deficiencies on I-265.

Draft Purpose and Need Statement:

Need: This project is needed to manage the congestion problems at the interchange and the resulting safety issues.

Purpose: The purpose of this project is to improve safety, geometrics, and address the volume to capacity ratio for the current and projected traffic demands.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

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

STIP Pg. #: FY 2013-2016 Ad. Mod. 2

TIP Pg. #: FY 2011-2015 Amend. 7

Air quality consultation with the IAC will be required for PM 2.5. No issues anticipated.

B. Archeology/Historic Resources

☐ Known Archeological or Historic Resources are present

No known sites present within project area. It is not anticipated that sites eligible for the NRHP are within the APE for the subject project.

C. Threatened and Endangered Species

Threatened and endangered species are listed in Jefferson County. The list includes; Indiana bat, Gray bat, Running Buffalo Clover, Interior Least Tern, Clubshell mussel, Fanshell mussel, Fat pocketbook mussel, Ring Pink mussel, Pink Mucket mussel, Orangefoot pimpleback mussel, Sheepnose mussel, Rough pigtoe mussel. There is very little potential for T&E habitat in the project area as the area is highly commercialized with increasing development. Some tree habitat for IB exists within ROW at the interchange.

D. Hazardous Materials

☐ Potentially Contaminated Sites are present

☐ Potential Bridge or Structure Demolition

No impacts to UST/HAZ sites anticipated.

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

EB exit ramp adjacent to an abandoned rock quarry partially filled with water. Could be considered waters of U.S.

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

Work within a relatively rural interchange with development scattered on periphery.

G. Socioeconomic

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

No impacts to economically disadvantaged expected with projects. All work anticipated within existing ROW.

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

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

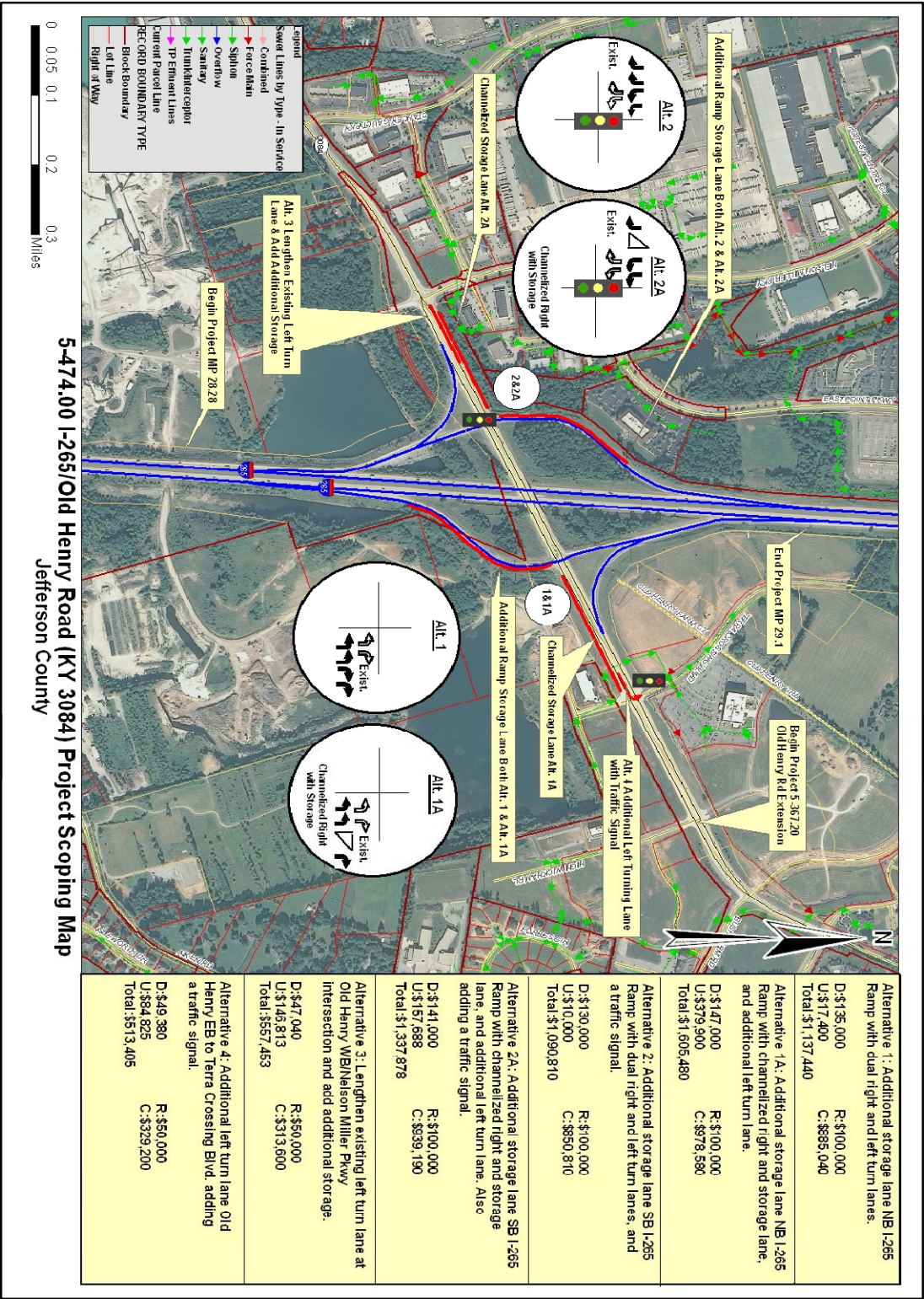
No 4(f) or 6(f) resources are anticipated in project area.

Anticipated Environmental Document:

CE Level 1



IV. PROJECT SCOPING



IV. PROJECT SCOPING (cont.)

Please see the Project Scoping Map for all of the Alternatives below.

Alternative 1 proposes to address the immediate safety and capacity issues of traffic backing up onto the I-265 mainline from the northbound I-265 ramp onto Old Henry Rd. The existing ramp includes a single right and left turn lane, and a traffic signal at Old Henry Rd. This Alternative includes widening the I-265 northbound ramp to create additional storage via dual right and dual left turn lanes at the Old Henry Rd. traffic signal.

Current Estimate:		Design:	\$135,000	R/W:	\$100,000
Total:	1,137,440	Utilities:	\$17,400	Const:	\$885,040

Alternative 1A also proposes to address the immediate safety and capacity issues of traffic backing up onto the I-265 mainline from the northbound I-265 ramp onto Old Henry Rd. The existing ramp includes a single right and a single left turn lane, and a traffic signal at Old Henry. This Alternative includes widening the I-265 northbound ramp to create dual left turn lanes and adding a channelized right turn with a receiving storage lane and a sidewalk onto and along eastbound Old Henry.

Current Estimate:		Design:	\$147,000	R/W:	\$100,000
Total:	\$1,605,480	Utilities:	\$379,900	Const:	\$978,580

Alternative 2 proposes to address the safety and capacity issues of traffic backing up onto the southbound I-265 mainline from the southbound I-265 ramp onto Old Henry Rd. The existing ramp includes a single right and left turn lane with a stop sign. This Alternative includes widening the I-265 southbound ramp to create additional storage via dual right and dual left turn lanes with a new traffic signal at Old Henry. This alternative mirrors Alternative 1 for the southeast side of the interchange.

Current Estimate:		Design:	\$130,000	R/W:	\$100,000
Total:	1,090,810	Utilities:	\$10,000	Const:	\$850,810

Alternative 2A proposes to address the safety and capacity issues of traffic backing up onto the southbound I-265 mainline from the southbound I-265 ramp onto Old Henry Rd. The existing ramp includes a single right and left turn lane, and a stop sign. This Alternative includes widening the southbound I-265 ramp to create dual left turn lanes and a channelized right turn with a receiving storage lane and a sidewalk onto and along westbound Old Henry Rd. Included in this Alternative is the addition of a traffic signal which will then mirror the intersection with Alternative 1A on the southeast side of the interchange.

Current Estimate:		Design:	\$141,000	R/W:	\$100,000
Total:	\$1,337,878	Utilities:	\$157,688	Const:	\$939,190

Alternative 3 proposes to lengthen the existing left turn and add additional storage on westbound Old Henry Rd. at Nelson Miller Pkwy. to solve expected traffic demands. The existing intersection has a traffic signal.

Current Estimate:		Design:	\$47,040	R/W:	\$50,000
Total:	\$557,453	Utilities:	\$146,813	Const:	\$313,600

Alternative 4 proposes to create dual left turn lanes for eastbound Old Henry Rd to Terra Crossing Blvd and install a traffic signal to mitigate projected traffic and safety demands.

Current Estimate:		Design:	\$49,380	R/W:	\$50,000
Total:	\$513,405	Utilities:	\$84,825	Const:	\$329,200

V. Summary

This DNA Scoping Study was prepared for Item 5-474.00 - safety and congestion improvements at the I-265/ Old Henry Road (KY 3084) interchange as funded in the 2012 Highway Plan. The intent of the funding request and subsequent approval in the Highway Plan was to address the immediate safety and capacity issues of traffic backing up from the I-265 northbound ramp to Old Henry Rd onto the northbound I-265 mainline , while concurrently designing the interchange as a whole for improved geometrics, levels of service, and overall capacity for anticipated future traffic demands. The projected opening of the East End Ohio River Bridge in 2016, and the planned 2014 construction start of the 5-367.20 Old Henry Road extension, and the associated forecasted traffic demands for those two blueprints seem to be immediate overriding factors in the future operation of the interchange. Following the original intent of the funding this DNA has been prepared to provide fundable pieces, or "breakout projects" to improve the interchange beginning with addressing the most problematic issue of backup on the I-265 northbound mainline. Additional Alternatives propose to focus on pieces of the interchange which may not be at unacceptable levels of service at this time, however, appear to be strongly impacted by the imminent construction of the East End Ohio River Bridge and the Old Henry Rd extension. Some of the Alternatives have more than one option. It is the recommendation of the project team that all six of the Alternatives be carried forward for analysis and evaluation.

VI. Tables and Exhibits

Links to Existing Roadway Plans

KY-841 (Grade Drain) 1981, 71 sheets

<http://maps.kytc.ky.gov/planarc/dms43695/Pj09493.pdf>

KY-841 (Surfacing) 1983, 36 Sheets

<http://maps.kytc.ky.gov/planarc/dms43695/Pj09500.pdf>

KY State Police Collision Data from 1-1-2010 to 1-15-2013 was obtained using the following link
[http://www.yourmapper.com/map/ff9cd01655245b6a4aed824f8aca94d430fddfa8/?location=2401+Terra+C](http://www.yourmapper.com/map/ff9cd01655245b6a4aed824f8aca94d430fddfa8/?location=2401+Terra+Crossing+Boulevard%2C+Louisville%2C+KY&lat=&lon=)
rossing+Boulevard%2C+Louisville%2C+KY&lat=&lon=



VI. Tables and Exhibits (cont.)

Name	Category	Date
OTHER ROADWAY OR MID-BLOCK COLLISION	Injury Accident	2010-06-03
1 VEHICLE ENTERING/LEAVING ENTRANCE	Multiple Vehicles	2010-12-13
OPPOSING LEFT TURN	Injury Accident	2011-12-14
COLLISION WITH ANIMAL	Single Vehicle	2011-05-21
1 VEHICLE ENTERING/LEAVING ENTRANCE	Multiple Vehicles	2011-09-08
SIDESWIPE COLLISION - SAME DIRECTION	Multiple Vehicles	2011-01-04
COLLISION WITH FIXED OBJECT IN INTERSECTION - FIRST EVENT COLLISION 09 - 32	Single Vehicle	2010-01-30
RAMP - VEHICLE RAN OFF ROADWAY	Injury Accident	2010-05-15
OTHER RAMP RELATED COLLISIONS NOT LISTED ABOVE	Injury Accident	2011-04-29
COLLISION WITH FIXED OBJECT NOT IN GORE	Single Vehicle	2011-11-19
ANGLE COLLISION - ONE VEHICLE TURNING LEFT	Multiple Vehicles	2010-11-11
SIDESWIPE COLLISION - SAME DIRECTION	Multiple Vehicles	2011-12-03
REAR END - ON RAMP	Multiple Vehicles	2011-10-02
REAR END - ON RAMP	Multiple Vehicles	2010-04-08
REAR END - ON RAMP	Multiple Vehicles	2010-05-30
REAR END - ON RAMP	Multiple Vehicles	2010-08-10
ANGLE COLLISION - ONE VEHICLE TURNING LEFT	Multiple Vehicles	2010-08-10
MULTIPLE VEHICLE COLLISION ON RAMP	Multiple Vehicles	2010-08-25
OPPOSING LEFT TURN	Multiple Vehicles	2011-10-29
ANGLE COLLISION - ONE VEHICLE TURNING LEFT	Multiple Vehicles	2010-11-29
REAR END - ON RAMP	Multiple Vehicles	2011-02-26
REAR END - ON RAMP	Multiple Vehicles	2011-04-06
REAR END - ON RAMP	Multiple Vehicles	2011-06-14
REAR END - OTHER	Multiple Vehicles	2010-10-06
REAR END - OTHER	Multiple Vehicles	2010-08-12

Link to 5-367.20 Old Henry road Improvement and Extension Study

<http://transportation.ky.gov/Planning/Pages/Project-Details.aspx?Project=Old Henry Road Improvement>

Link to KIPDA Interchanges Study

<http://162.114.39.15:8888/progress?pages&id=3998616926&fileName=S0IQREFJbnRlcmNoYW5nZVN0dWR5RkIOQUxSRVBPUIQucGRm&url=aHR0cDovL3d3dy5raXBkYS5vcmcvZmlsZXMvcGRmL3RyYW5zcG9ydGF0aW9uX2RpdmlzaW9uL0luZm9ybWFOaW9uL0tJUERBSW50ZXJjaGFuZ2VTdHVkeUZJTkFMUKVQT1JULnBkZg>

Link to WiburSmith Assoc. LSIORB Traffic Forecast from August of 2011

<http://www.in.gov/ifa/2750.htm> under "Technical Information" and "Planning Documents"

I-265 NB Exit to Old Henry Road



I-265 NB Exit to Old Henry Road Backup onto Mainline

