

Appendix A Metropolitan Organization Meeting Material

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I-69 Spur, I-66/I-65 Spur and US 60 Connection Strategic Planning Corridor Study: Henderson – Owensboro – Bowling Green, KY

Henderson, Daviess, Ohio, Butler
and Warren Counties

Owensboro-Daviess County MPO
Meeting November 27, 2012



Opening Comments

Nick Hall – Kentucky Transportation Cabinet



I-69 Spur, I-66/I-65 Spur and US 60 Connection Strategic Planning Corridor Study: Henderson – Owensboro – Bowling Green, KY

Henderson, Daviess, Ohio, Butler
and Warren Counties

Bowling Green/Warren Co. MPO
Meeting December 10, 2012



Opening Comments

Jeff Moore – Kentucky Transportation Cabinet

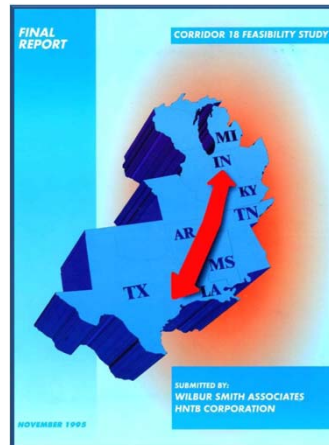
**I-69 Spur, I-66/I-65 Spur and
US 60 Connection Strategic Planning Corridor Study:
Henderson – Owensboro – Bowling Green, KY**

Gary Sharpe – Palmer Engineering



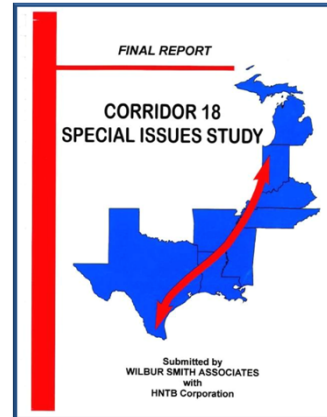
**Project Background: I-69 Corridor
Corridor 18**

- ❑ Intermodal Surface Transportation Efficiency Act (ISTEA)
 - ❑ **Passed in 1991**
 - ❑ Identified Corridors 18 and 20 that were later combined to become I-69
- ❑ Feasibility Study
 - ❑ **Completed November 1995**



Project Background: I-69 Corridor Corridor 18 Special Issues Study

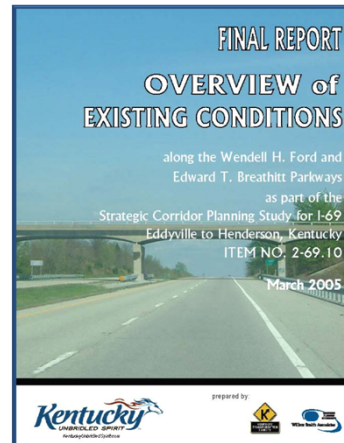
- ❑ Redefined the corridor from Indianapolis, IN to the Lower Rio Grande Valley
- ❑ **Completed July 1997**



Project Background: I-69 Corridor

Strategic Corridor Planning Study for I-69: Eddyville to Henderson, KY

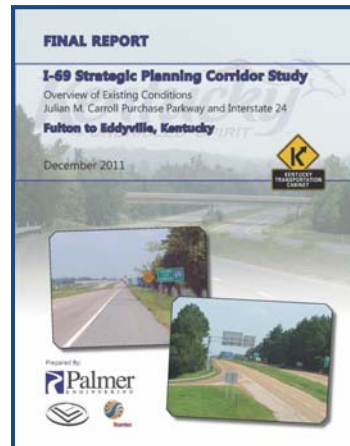
- ❑ Segment of Independent Utility (SIU) 5
- ❑ Overview of Existing Conditions
- ❑ Wendell H. Ford and Edward T. Breathitt Parkways
- ❑ **Completed March 2005**



Project Background: I-69 Corridor

Strategic Corridor Planning Study for I-69: Fulton to Eddyville, KY

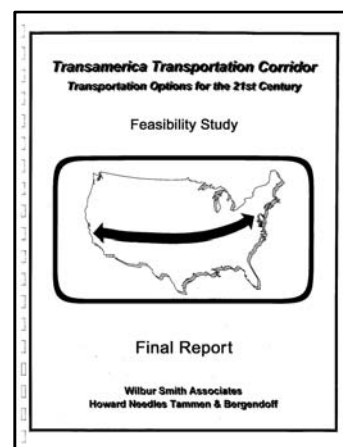
- ❑ SIU 6
- ❑ Overview of Existing Conditions
- ❑ Julian M. Carroll (Purchase) Parkway and I-24
- ❑ **Completed December 2011**



Project Background: I-66 Corridor

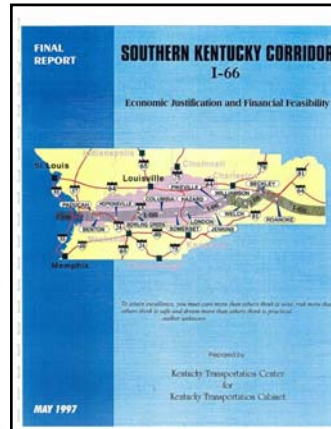
Transamerica Transportation Corridor Feasibility Study

- ❑ Studied the feasibility of a east-west, coast to coast Interstate
- ❑ Found not to be feasible on a national level, but should be **studied further on a regional and state level**
- **Completed May 1994**



Project Background: I-66 Corridor Feasibility Study

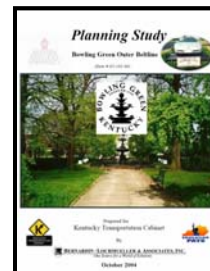
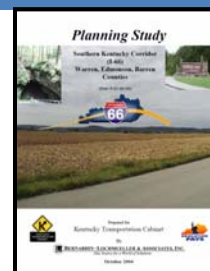
- ❑ Southern Kentucky Corridor
 - ❑ Studied the economic justification and financial feasibility of the Kentucky segment of the I-66 Corridor
 - ❑ Segments were found be feasible
 - **Completed May 1997**



Project Background: I-66 Corridor Planning Studies

- ❑ Southern Kentucky Corridor
 - ❑ **Completed October 2004**

- ❑ Bowling Green Outer Beltline
 - ❑ **Completed October 2004**



Project Background: SAFETEA-LU Technical Corrections Act of 2008

122 STAT. 1608

PUBLIC LAW 110-244—JUNE 6, 2008

(c) REPORT.—Not later than one year after the date of enactment of this Act, the Secretary shall transmit to Congress a report on the results of the study.

SEC. 119. FUTURE INTERSTATE DESIGNATION.

(a) IN GENERAL.—Subject to subsection (b), the Secretary of Transportation shall designate, as a future Interstate Route 69 Spur, the Audubon Parkway and, as a future Interstate Route 66 Spur, the Natcher Parkway in Owensboro, Kentucky. Any segment of such routes shall become part of the Interstate System (as defined in section 101 of title 23, United States Code) at such time as the Secretary determines that the segment—

(1) meets the Interstate System design standards approved by the Secretary under section 109(b) of title 23, United States Code; and

(2) connects to an existing Interstate System segment.

Applicability.

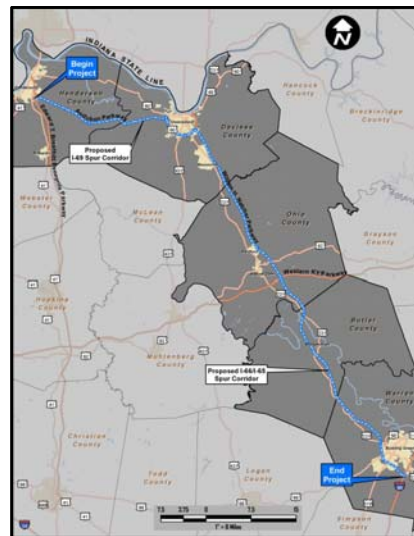
(b) SIGNS.—Section 103(c)(4)(B)(iv) of title 23, United States Code, shall apply to the designations under subsection (a); except that a State may install signs on the 2 parkways that are to be designated under subsection (a) indicating the approximate location of each of the future Interstate System highways.

(c) REMOVAL OF DESIGNATION.—The Secretary shall remove designation of a highway referred to in subsection (a) as a future Interstate System route if the Secretary, as of the last day of the 25-year period beginning on the date of enactment of this Act, has not made the determinations under paragraphs (1) and (2) of subsection (a) with respect to such highway.

Strategic Planning Study:

Audubon Parkway / Natcher Parkway / US 60
Henderson, Daviess, Ohio, Butler, and Warren Counties

- ❑ Audubon Parkway:
 - ❑ Pennyriple Parkway in Henderson to US 60 in Owensboro
- ❑ Natcher Parkway:
 - ❑ I-65 in Bowling Green to US 60 in Owensboro
- ❑ US 60 - Owensboro:
 - ❑ Audubon Parkway to Natcher Parkway



Strategic Planning Study:

I-69 Spur, I-66/I-65 Spur and US 60

Henderson, Daviess, Ohio, Butler, and Warren Counties

□ Anticipated Completion - March 2013



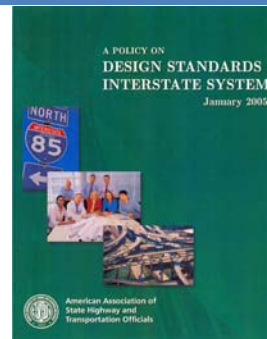
Strategic Planning Study:

I-69 Spur, I-66/I-65 Spur and US 60

Henderson, Daviess, Ohio, Butler, and Warren Counties

□ Scope of Work

- Inventory existing conditions
- Define Interstate criteria
- Determine and evaluate deficiencies
- Identify options and strategies for needed improvements to satisfy Interstate criteria
- Develop recommendations and estimated costs for needed improvements
- Document findings



Interstate Design Standards

□ Fully Controlled Access

- At Ramp Terminals
 - Minimum 100 foot urban
 - Minimum 300 foot rural



□ Design Speed

- 70 MPH – Rural
- 50 MPH – Urban

□ Four Lanes

- 12 feet wide

Interstate Design Standards

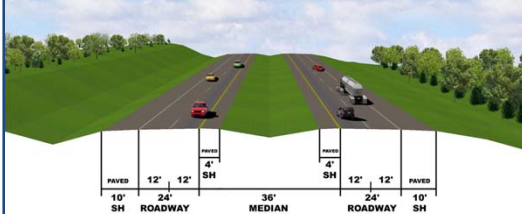
□ Shoulder Widths (paved)

- Inside – 4 foot min
- Outside – 10 foot min

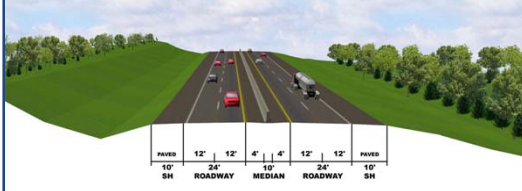
□ Median

- Rural – 36 foot min
- Urban – 10 foot min

Minimum Requirements – Rural Interstates



Minimum Requirements – Urban Interstates



Interstate Design Standards



- ❑ Minimum Horizontal Curvature
 - Rural - 1810 foot radius
 - Urban - 758 foot radius
- ❑ Minimum Stopping Sight Distance
 - Rural - 730 feet
 - Urban - 425 feet

Interstate Design Standards

- ❑ Bridges
 - 16 feet vertical clearance for all lanes and shoulders
 - Full paved shoulder width
 - Crashworthy barrier railing
 - Structurally adequate
- ❑ 17 feet vertical clearance for sign trusses



Interstate Design Standards

□ Interchanges

- Provide all traffic movements
- Spacing between interchanges
 - Minimum 1 mile Urban
 - Minimum 3 mile Rural
- Adequate Acceleration/Deceleration Tapers



Overview of Existing Conditions

□ Traffic – 2011 Vehicles per day (vpd)

- Audubon Parkway
 - Ranges from 8,000 vpd to 9,400 vpd
- US 60
 - Ranges from 19,100 vpd to 32,400 vpd
- Natcher Parkway
 - Ranges from 7,800 vpd to 20,200 vpd



Traffic Forecasts



- Traffic – 2040 Vehicles per day (vpd)
 - Audubon Parkway
 - Ranges from 15,200 vpd to 18,100 vpd
 - US 60
 - Ranges from 36,100 vpd to 49,900 vpd
 - Natcher Parkway
 - Ranges from 11,400 vpd to 49,000 vpd

Overview of Existing Conditions

□ Crash History (2006-2010)

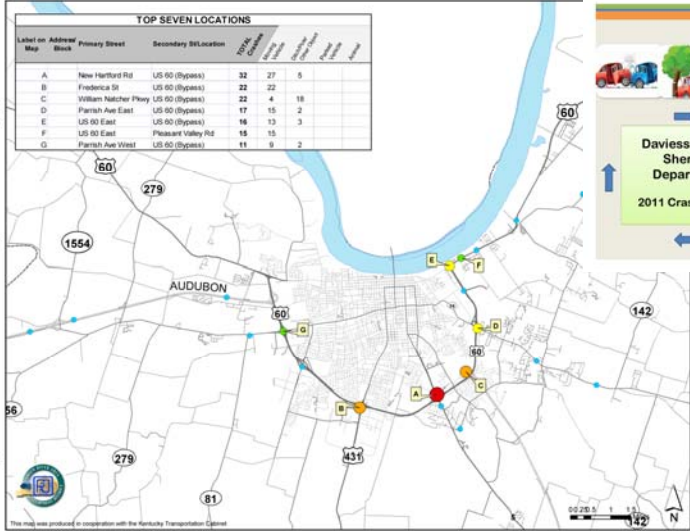
- Audubon Parkway
 - 2 Fatal
 - 58 Injury
 - 202 Property Damage Only
- US 60
 - 1 Fatal
 - 42 Injury
 - 124 Property Damage Only
- Natcher Parkway
 - 8 Fatal
 - 145 Injury
 - 499 Property Damage Only



Crash History (2011) – by GRADD

US 60 Around Owensboro

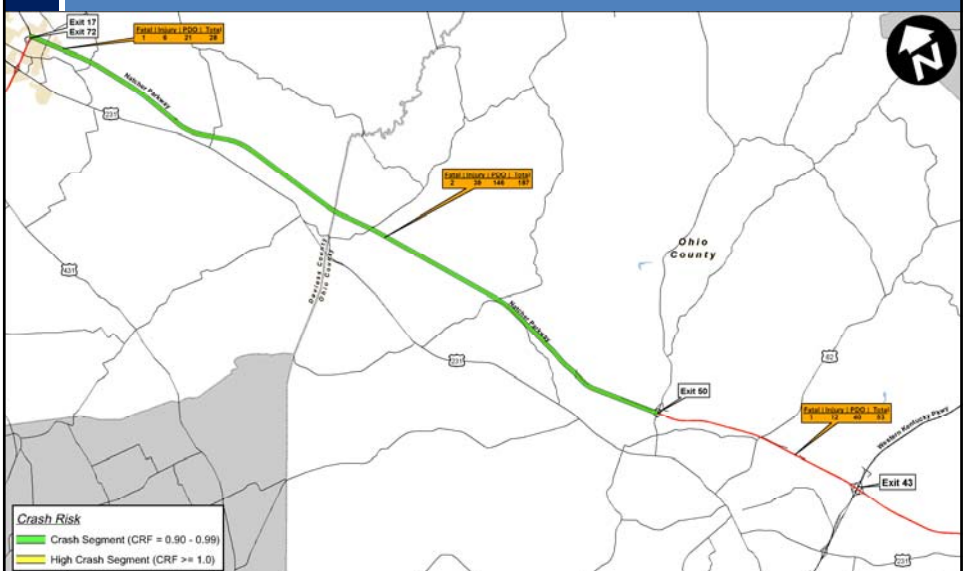
Daviess County Sheriff's Department
2011
Crash Map



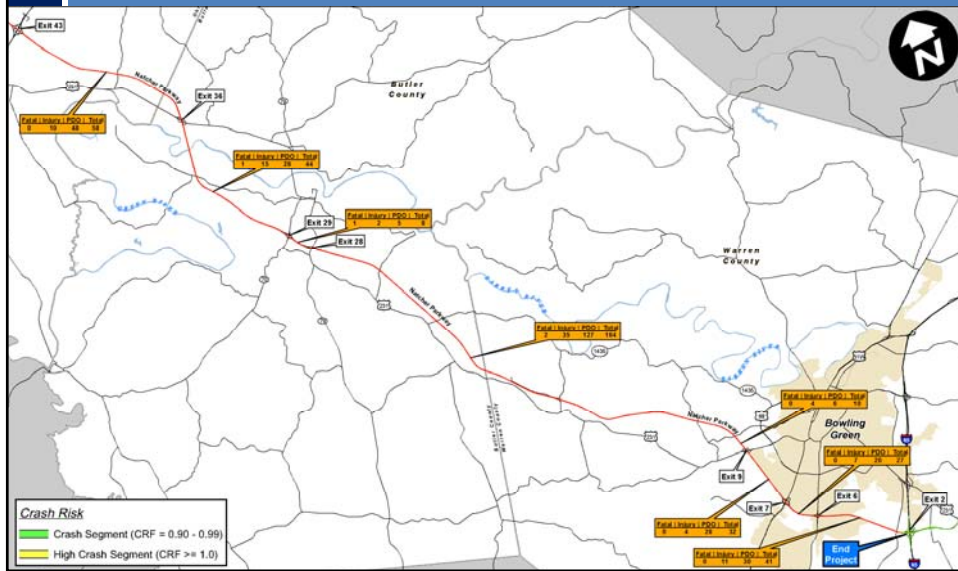
- Locations with FIVE or MORE Crashes**
Excluding Parking Lot Crashes
- 5 - 10 Crashes
 - 11 - 15 Crashes
 - 16 - 20 Crashes
 - 22 - 25 Crashes
 - 32 Crashes

Crash History (2006-2010)

Natcher Parkway North of Western KY Parkway



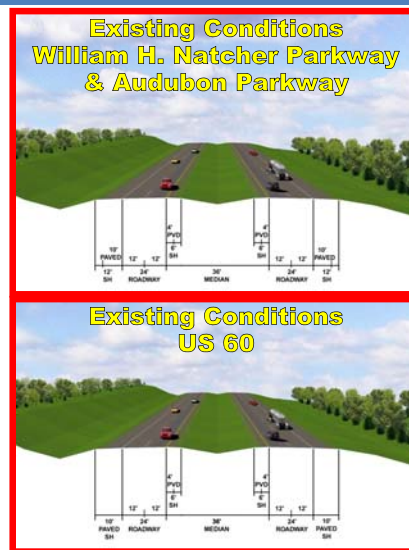
Crash History (2006-2010) Natcher Parkway South of Western KY Parkway



Overview of Existing Conditions

□ Roadway Geometry

- Lane Widths
 - 12 feet wide
- Shoulder Widths
 - Inside - 6 feet total
4 feet paved
 - Outside - 10 -12 feet total
10 feet paved
- Median Widths
 - Urban/Rural 36 feet



Overview of Existing Conditions

▣ Bridges



- Width –
Ranges from 30 to 39.25 feet
36 deficiencies
- Vertical Clearance -
Ranges from 15.31 to 40 feet for overpasses
4 deficiencies
- Bridge Railing -
Upgrade to current standards

Overview of Existing Conditions

▣ Interchanges

- Spacing between interchanges
 - Minimum 1 mile Urban
1 Location
 - Minimum 3 mile Rural
1 Location
- Adequate Acceleration/Deceleration Tapers
19 deficiencies



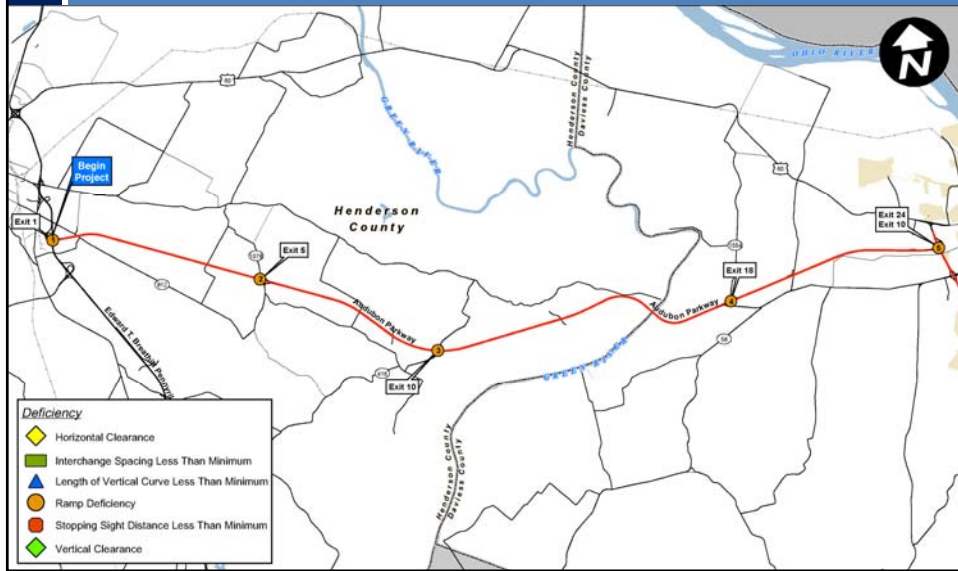
Overview of Existing Conditions Urban Interchanges spaced less than 1 mile



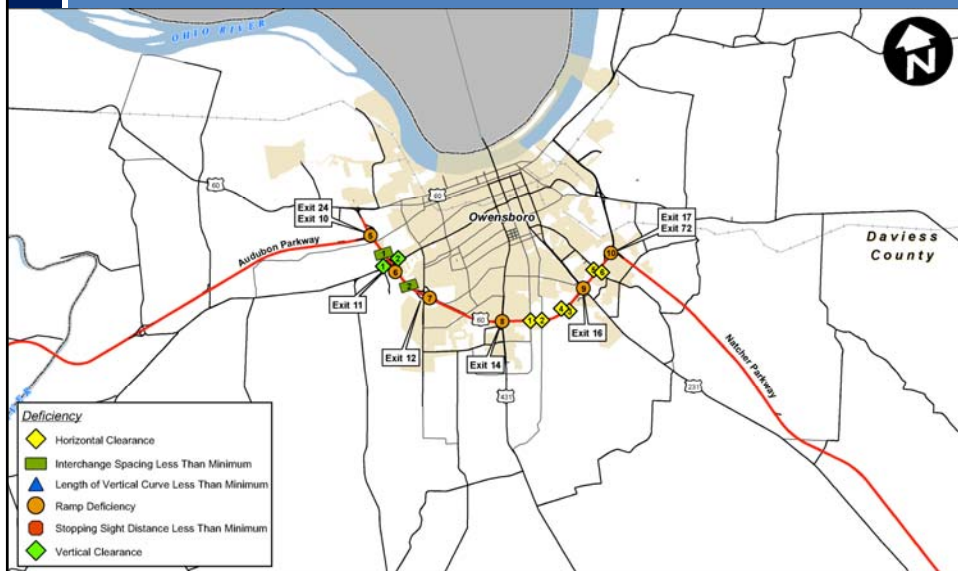
Overview of Existing Conditions Rural Interchanges spaced less than 3 miles



Deficiencies Audubon Parkway

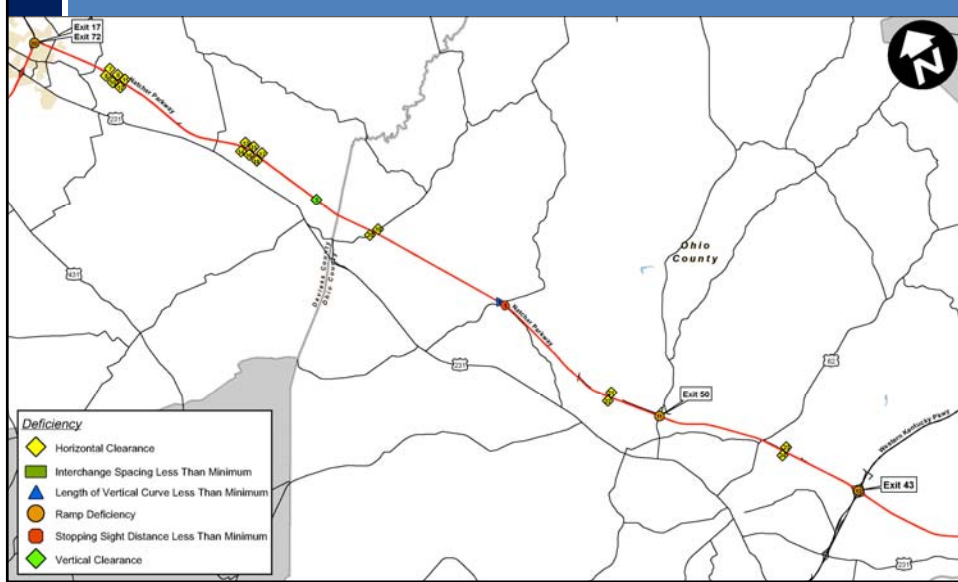


Deficiencies US 60 Around Owensboro



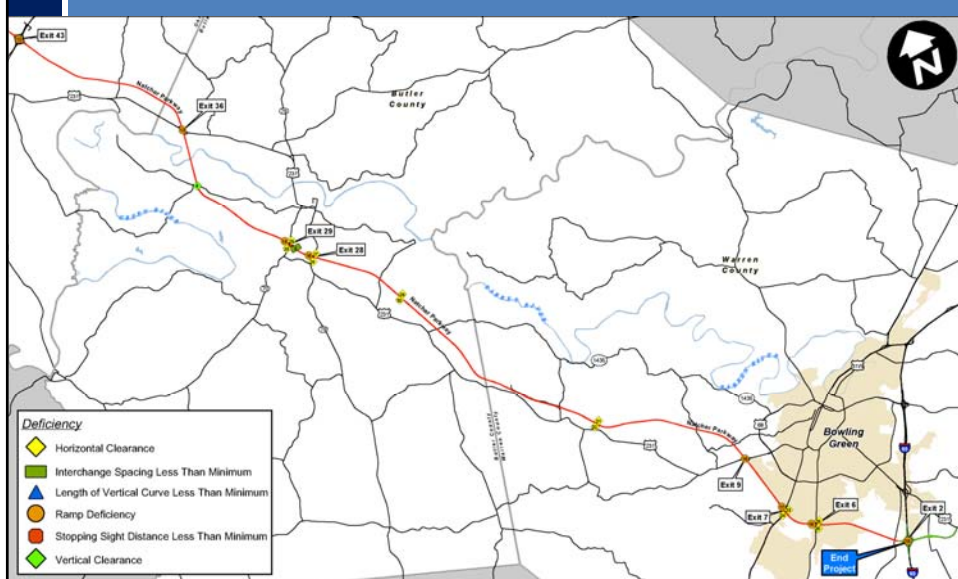
Deficiencies

Natcher Parkway North of Western KY Parkway

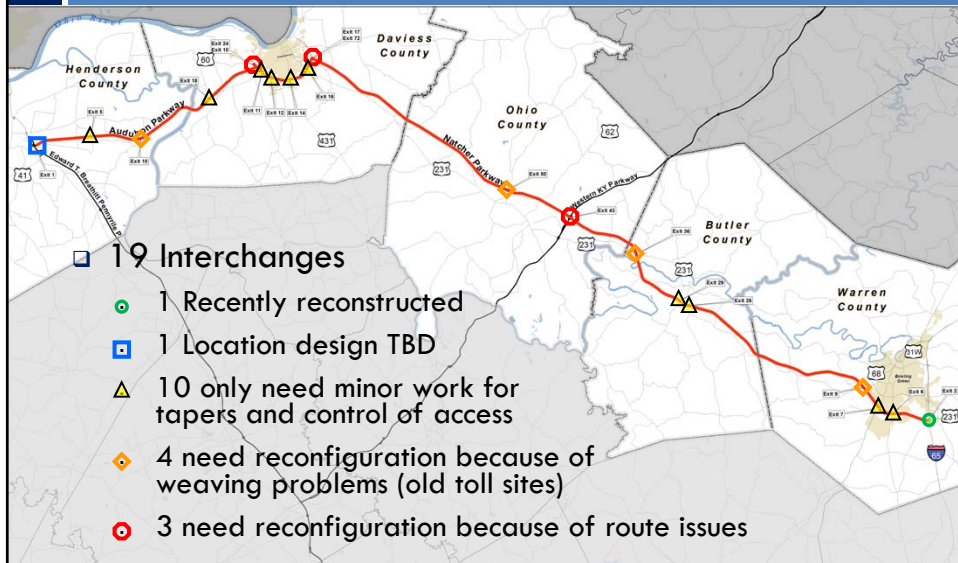


Deficiencies

Natcher Parkway South of Western KY Parkway



Deficiencies (provided at BG MPO) Interchanges



Current Study Status

- Evaluation of Existing Conditions
 - Audubon Parkway --- Completed
 - Natcher Parkway --- Completed
 - US 60 (Audubon Parkway to Natcher Parkway) --- Completed



Current Study Status

- Identify Options and Strategies for Needed Improvements to Satisfy Interstate Criteria
 - Roadway -- In Progress
 - Bridges -- In Progress
 - Interchanges -- In Progress
 - Updating Vehicle Classification Data
 - Evaluating Interchange Configurations
- Develop Recommendations and Estimated Costs
 - In Progress
- Documentation and Report Preparation
 - In Progress



Current Study Status

- Estimate of Costs
 - Necessary Upgrades
 - Fully Compliant Reconstruction
 - Still Being Refined

Segment	Length (miles)	Design & Environmental (million)	ROW and Utilities (million)	Construction Costs (million)								Total Costs ¹ (million)
				Roadwork		Mainline & Overpass Structures		Interchanges				
Henderson to Owensboro (Audubon Parkway) MP 0.0 - MP 23.4	23.4	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Owensboro (US 60) MP 10.8 - MP 17.5	6.7	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2
Owensboro to Western KY Parkway (Natcher Parkway) MP 37.1 - MP 72.6	35.1	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Western KY Parkway to Bowling Green (Natcher Parkway) MP 11.0 - MP 37.1	26.1	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Bowling Green MP 2.0 - MP 11.0	9.0	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Total	100.3	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2

¹ Cost estimate does not include cost associated with connecting to Segment of Independent Utility 5 (Pennyrite Parkway).

Table 8-2 Necessary Upgrades and Spot Safety Improvement Preliminary Cost Estimate

Segment	Length (miles)	Design & Environmental (million)	ROW and Utilities (million)	Construction Costs (million)								Total Costs (million) ¹
				Roadwork		Mainline & Overpass Structures		Interchanges				
Henderson to Owensboro (Audubon Parkway) MP 0.0 - MP 23.4	23.4	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Owensboro (US 60) MP 10.8 - MP 17.5	6.7	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2
Owensboro to Western KY Parkway (Natcher Parkway) MP 37.1 - MP 72.6	35.1	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Western KY Parkway to Bowling Green (Natcher Parkway) MP 11.0 - MP 37.1	26.1	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Bowling Green MP 2.0 - MP 11.0	9.0	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX	\$X.XX
Total	100.3	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2	Option 1 Option 2

¹ Cost estimate does not include cost associated with connecting to Segment of Independent Utility 5 (Pennyrite Parkway).

Table 8-4 Fully Compliant Reconstruction Preliminary Cost Estimate

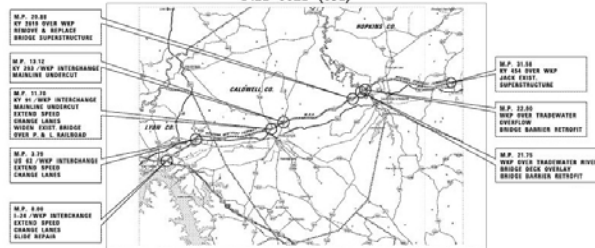
Current Study Status

Western KY Parkway Spot Improvements Example

- Similar Project
- 31.58 Miles
- \$9,910,311
- \$314,000/Mile

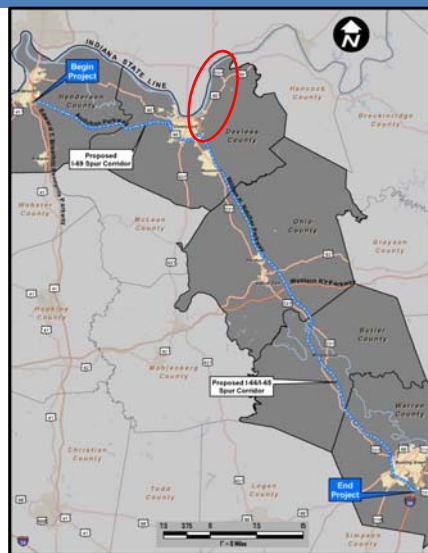
**Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS**

**PLANS OF
PROPOSED PROJECT
LYON, CALDWELL & HOPKINS CO's.
WESTERN KENTUCKY PARKWAY SPOT IMPROVEMENTS
NH 0021 (031)**



I-67

- KYTC High Level Overview
 - US 60 East of Natcher Parkway
 - US 231 incl. Bridge over Ohio R.
- Corridor Feasibility Study
 - Owensboro MPO
 - Cambridge Systematics



I-67

□ KYTC High Level Overview

- Control of Access
- Typical Sections
 - Number of Lanes
 - Lane Widths
 - Shoulder Widths
 - Median
- Design Speed
- Structures
 - Mainline
 - Overpasses
- Interchanges



I-69 Spur, I-66/I-65 Spur and US 60
Henderson, Daviess, Ohio, Butler, and Warren Counties

• Questions & Comments?

