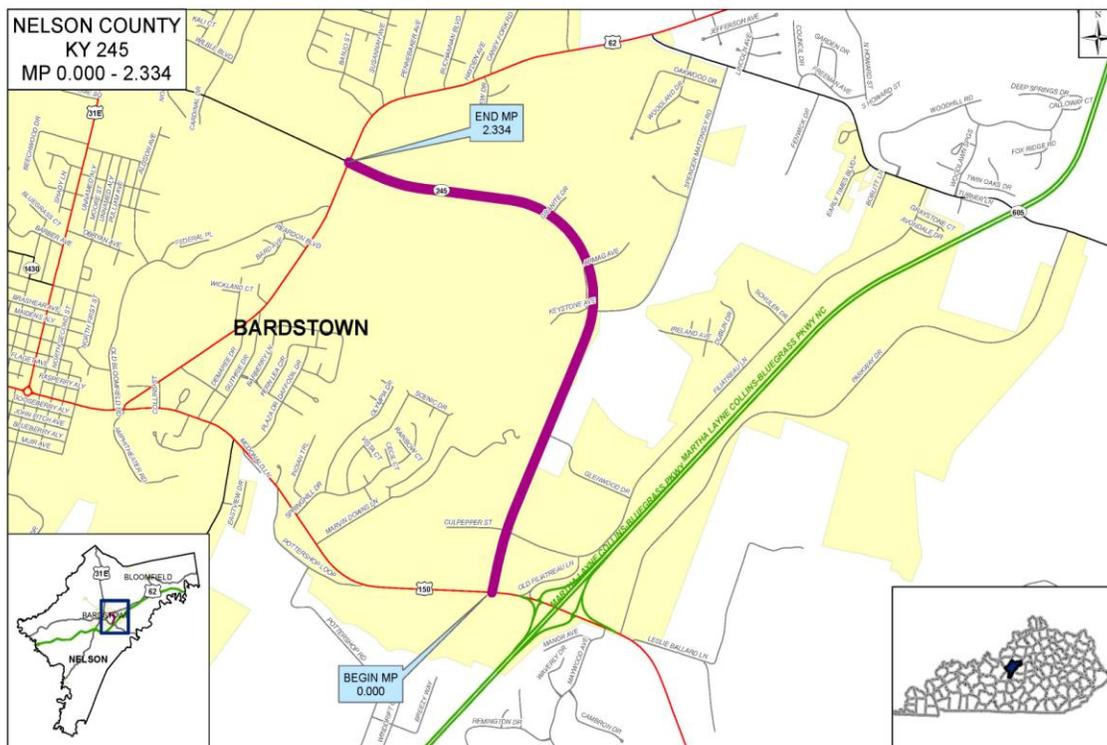


Data Needs Analysis



Scoping Study



KY 245, Nelson County
From US 150 to US 62 in
Bardstown, Ky
Item No. 4-8307.10

Prepared by KYTC
District 4-Charlie Allen

May 2012



I. PRELIMINARY PROJECT INFORMATION

County:	Nelson	Item No.:	4-8307.10
Route Number(s):	KY 245	Road Name:	John Rowan Blvd
Program No.:		UPN:	FD04 090 0245 0-2
Federal Project No.:		Type of Work:	Major Widening

2012 Highway Plan Project Description:

Widen KY 245 From US 150 to US 62

Beginning MP: 0 Ending MP: 2.333 Project Length: 2.333

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

MPO Area: Not Applicable
 In TIP: Yes No
 Truck Class.: AAA
 % Trucks:

ADT (current): 16581 2010
 Terrain: Rolling
 Access Control: None Permit Fully Controlled Partial Spacing: 600 ft

Median Type: Undivided Divided (Type):
 Existing Bike Accommodations: Shoulder Ped: Sidewalk

Posted Speed: 35 mph 45 mph 55 mph Other (Specify):

KYTC Guidelines Preliminarily Based on : 45 MPH Proposed Design Speed

COMMON GEOMETRIC

Roadway Data:	EXISTING	PRACTICES*	
No. of Lanes	2	4	Existing Rdwy. Plans available?
Lane Width	12	12	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Shoulder Width	10' on 12'	8	Year of Plans: 1990
Max. Superelevation**	8.00%	8%	<input checked="" type="checkbox"/> Traffic Forecast Requested
Minimum Radius**	1909.66	600	Date Requested:
Maximum Grade	2%	6%	<input type="checkbox"/> Mapping/Survey Requested
Minimum Sight Dist.	848'	360	Date Requested:
Sidewalk Width(urban)	N/A	5'	Type: Conventional
Clear-zone***	Field Measure	22-24 <=6:1; Else 26-32	Aerial Available

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.*: (Bridge #1) (Bridge #2)
 Sufficiency Rating
 Total Length
 Width, curb to curb
 Span Lengths
 Year Built
 Posted Weight Limit
 Structurally Deficient?
 Functionally Obsolete?

[Existing Geotech data available?](#)
 Yes No

*If more than two bridges are located on the project, include additions sheets.

II. PROJECT PURPOSE AND NEED

A. Legislation

2012-2018 Highway Plan	<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
	SPP	D	2013	\$1,040,000
	SPP	R	2014	\$3,310,000
	SPP	U	2014	\$1,090,000
	SPP	C	2016	\$11,250,000

B. Project Status

Aerial photogrametry and traffic forecasting were completed in 2007-2008. Field survey of drainage structures, pavement edges and property corners need to be completed. Traffic forecast update has been completed. Minimal design work has been completed to date.

C. System Linkage

KY 245 serves as a bypass of Bardstown between US 150 and Bluegrass Parkway to the south and US 62, US 31E (Louisville), and KY 245 (I-65) to the North

D. Modal Interrelationships

A Class III Railroad crosses KY 245. This section is part of the Freight Focus Network. There are no Riverports or Bike Tours associated with this project.

E. Social Demands & Economic Development

This area has grown significantly over the past 15 years with the development of several key traffic generators such as Lowes, Walmart, Keystone Cinema, and multiple restaurants including El Jimador, Cracker Barrel, Chili's and others. Officials with Nelson County Planning and Zoning indicate that this area has numerous area of possible growth. The land use map can be accessed by clicking on the link in **Section VII**.

F. Transportation Demand

The last actual traffic count for this section of roadway was 16,581 in 2010. This is an increase of around 9000 ADT over the past 14 years. The increase is most likely attributable to the growth discussed in Section E above.

II. PROJECT PURPOSE AND NEED (cont.)

G. Capacity

This section of roadway is currently a 2 lane rural design with 10 to 12' shoulders. A capacity analysis was performed using the 2008 Traffic Forecast and it was determined that current conditions are LOS E. Using the same 2008 forecast it can be expected that we will have a 2030 LOS F. A new traffic forecast has been requested using today's traffic volumes. Refer to Design Memo in **Section VII** for help determining number of lanes and auxiliary lane warrants. Traffic signals have not been analyzed.

H. Safety

Collision Stats: (4/1/09-3/31/12) A collision diagram can be seen in Exhibit 2. There were 121 total accidents during the time period including 1 fatality and 24 injury crashes. Section 1 from MP 0.000 (US 150) to 1.113 (Spencer Mattingly Road) has a **CRF=1.301**. Section 2 has a **CRF=1.073** and is from MP 1.113 (Spencer Mattingly Road to 2.334 (US 62). 60% of the crashes (73 total) were Rear End Collisions. Many of these occurred at intersections however there were numerous crashes of this type scattered throughout the corridor.

I. Roadway Deficiencies

Currently there are no apparent geometric deficiencies. The major deficiency is total number of lanes. This section has 2-12' lanes throughout with additional turning lanes at the signalized intersections. A new traffic forecast is underway to determine the adequate number of lanes for this facility.

Draft Purpose and Need Statement:

Need: KY 245 is congested during peak periods especially near the major traffic generators. Growth along this corridor is expected to continue. There are collision patterns at intersections and scattered throughout the corridor. KY 245 serves as a bypass of Bardstown and provides a connection directly to I-65 to the North.

Purpose: The purpose of this study is to address the congestion of KY 245 and to improve the safety, mobility, and connectivity between the Bluegrass Parkway and I-65 by improving the existing bypass of downtown Bardstown.

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]

Project needs to be added to STIP when new 6YP projects are added. CO will take care of this.

B. Archeology/Historic Resources

Known Archeological or Historic Resources are present

There are no known archeological or Historic resources along 245. Although this project is state funded USACE permits will be required. Archeology and Historic resource surveys must be conducted in the permit areas. This can be accomplished with DEA personnel at a cost of approximately \$2500.

C. Threatened and Endangered Species

The area has potential habitat for Indiana Bat and Gray Bat. Although this project is state funded Section 7 coordination will be required to obtain USACE permits. Mitigation will be required for habitat loss with a cost of less than \$75,000 under current mitigation guidelines.

D. Hazardous Materials

Potentially Contaminated Sites are present Potential Bridge or Structure Demolition

There does not appear to be prior land uses that one would suspect as contaminated.

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

There are 3-4 stream crossings that will require USACE permits, either a LON or NW depending on the design.

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

This would be a type I project, but it is state funded and not subject to noise analysis.

G. Socioeconomic

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

There are no socioeconomic issues with this project. The land use is all commercial or vacant land. There will be no residential relocations.

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

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

There are no known 4f or 6f resources within the project area.

Anticipated Environmental Document:

None (Completely State funded)



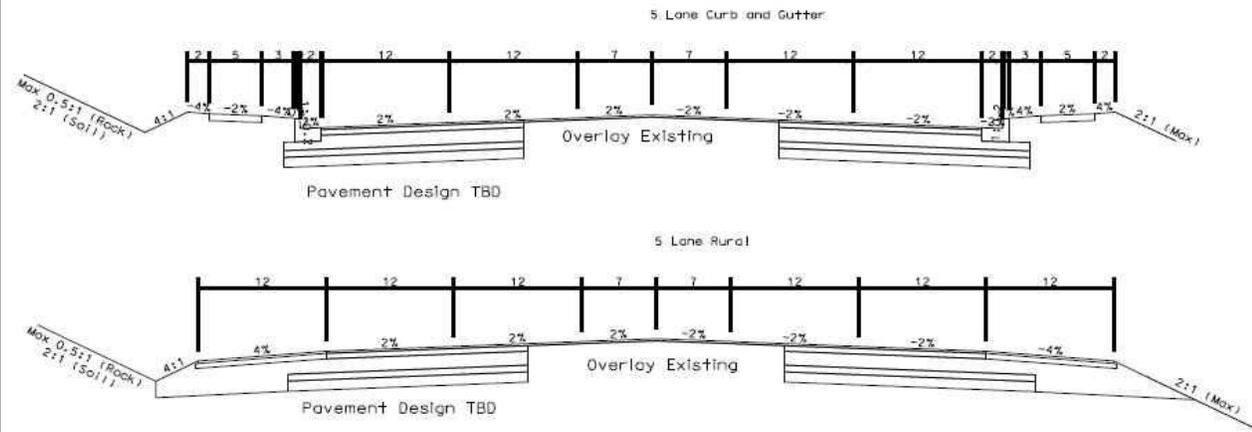
IV. POSSIBLE ALTERNATIVES

A. Alternative 1: No Build

This alternative should be carried forward but does not address the needs identified.

B. Alternative 2

Widen Ky 245 to 5 lanes from MP 0.000 to MP 2.333 using an urban template with 4 thru lanes, a middle turn lane, curb and gutter, and sidewalk or a rural typical to address the congestion issues in this section.



Planning Level Cost Estimate:

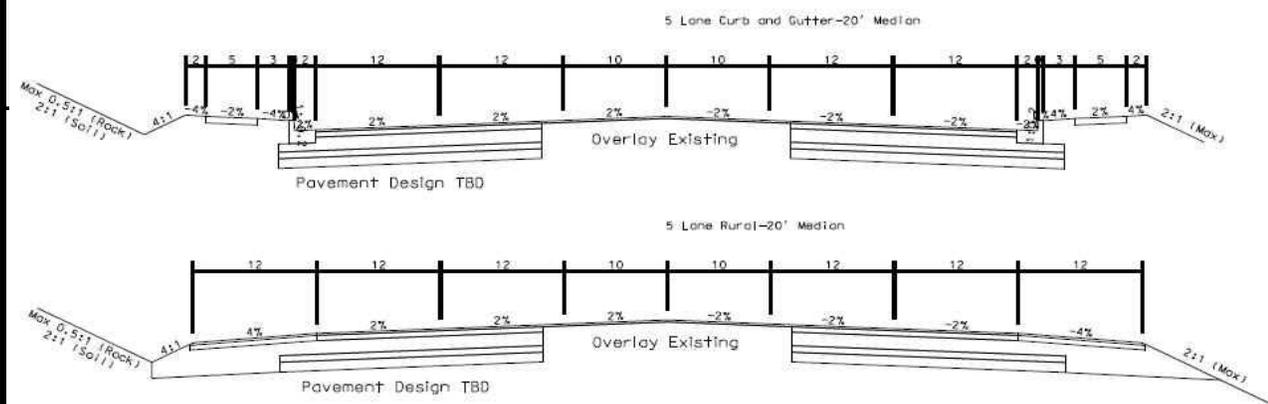
There is a 4" gas line and 10" High Pressure gas line within project. Avoid the High Pressure Line. There are overhead electric transmission lines but clearance appears to be adequate.

Phase	Estimate
Design	\$600,000
R/W	\$3,500,000
Utilities	\$1,000,000
Const	\$6,500,000
Total	\$11,600,000

IV. POSSIBLE ALTERNATIVES (cont.)

B. Alternative #3

Widen KY 245, 4- 12' lanes and a 20' median (portions raised) and turn lanes where appropriate. Either an urban or rural typical may be used.



Planning Level Cost Estimate:

There is a 4" gas line and 10" High Pressure gas line within project.
 Avoid the High Pressure Line.
 There are overhead electric transmission lines but clearance

Phase	Estimate
Design	\$700,000
R/W	\$3,500,000
Utilities	\$1,000,000
Const	\$8,000,000
Total	\$13,200,000

V. Summary

This study is a Data Needs Analysis (DNA) of a roadway project for the KY 245 corridor in Nelson County, Item Number 4-8307.10. Through analysis of the existing roadway geometrics, crash data, site visits, and discussion with the project team, several needs were identified within the project limits. The following were identified as project needs:

- *Congestion throughout the corridor during peak hours. Growth along the corridor is expected to continue.
- * There are collision patterns at various intersections and entrances to high traffic generators.
- *KY 245 is a bypass of downtown Bardstown and connects the BG Parkway to I-65.

The purpose of this study is to address the congestion of KY 245 and to improve the safety, mobility, and connectivity between the Bluegrass Parkway and I-65 by improving the existing bypass of downtown Bardstown. Included in the alternates are a No Build Option, a 5-Lane typical with 4 thru lanes and a center turn lane and a 4-lane typical with a 20' raised median and turn lanes where appropriate.

The project team recommends that Alternate #3 be advanced with a preferred urban typical. If a rural typical is selected then utilize a minimum shoulder width to reduce R/W impacts.

Alt #	Description	D (\$)(SPP)	R (\$)(SPP)	U (\$)(SPP)	C (\$)(SPP)	Total (\$mil)
1		-	-	-	-	-
2	5 Lane TWLTL	600,000	3,500,000	1,000,000	6,500,000	11,600,000
3	4 Lane Divided - 20' median	700,000	3,500,000	1,000,000	8,000,000	13,200,000
-	Current Hwy Plan Estimated Cost	1,040,000	3,310,000	1,090,000	11,250,000	16,690,000
-	Current Pre-Con Estimated Cost					

VI. Tables and Exhibits

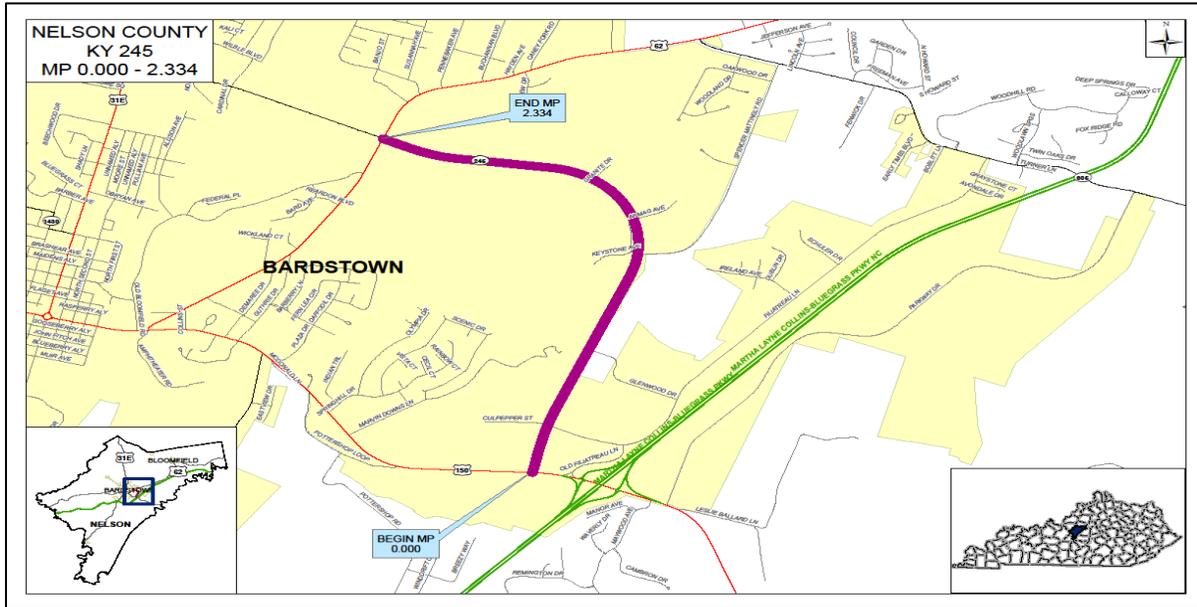


Exhibit 1: Project Location Map

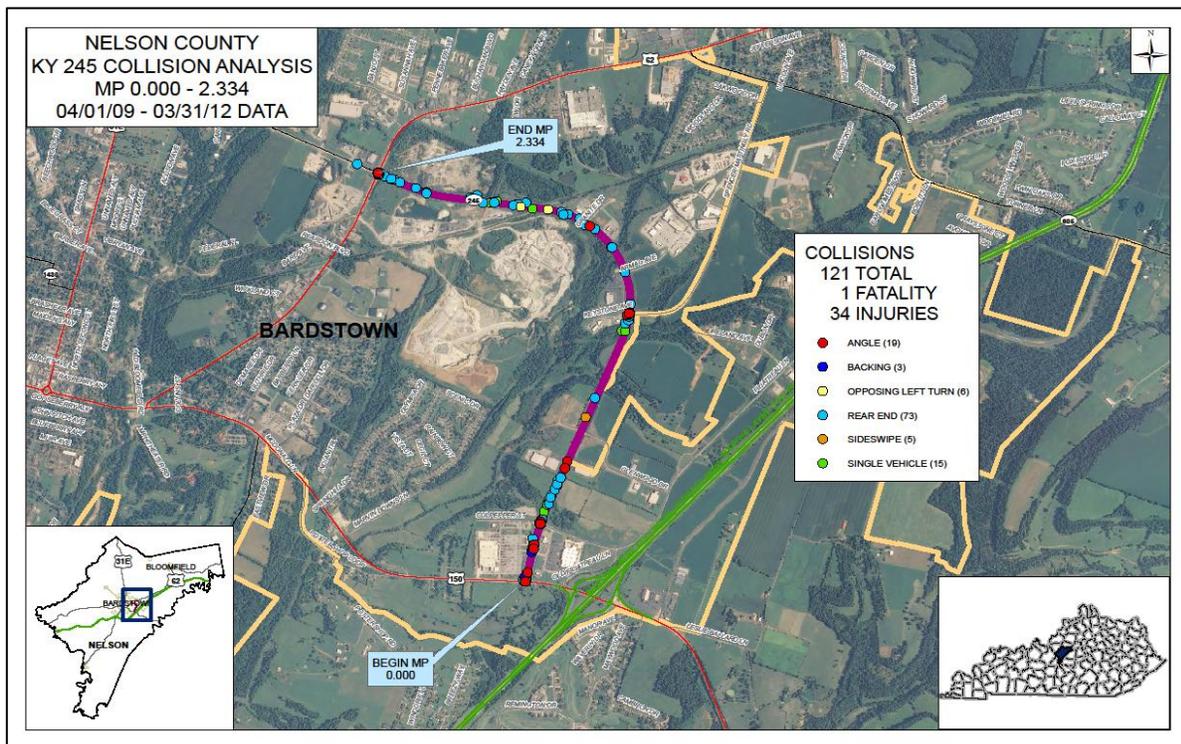


Exhibit 2: Collision Map

VII: Links

Archived Plans	http://maps.kytc.ky.gov/planarc/dms43910/Pj13263.pdf
Maps	Land Use Map
Design Memo	http://transportation.ky.gov/Highway-Design/Memos/Design%2003-11.r

