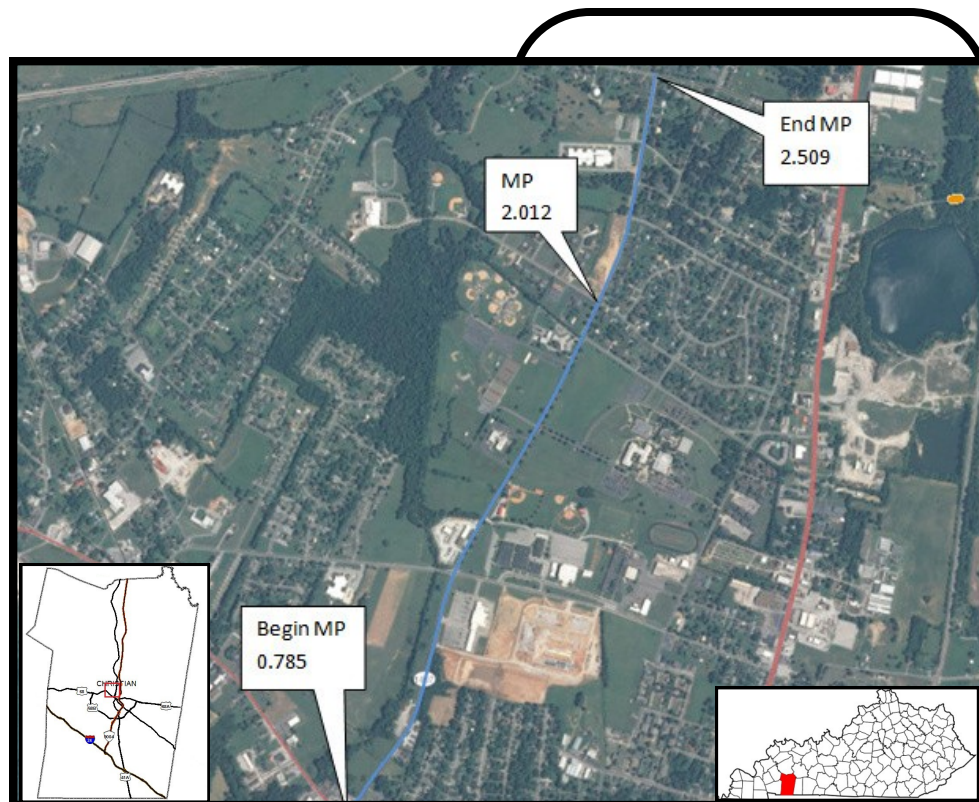


Data

Needs

Analysis



Scoping Study



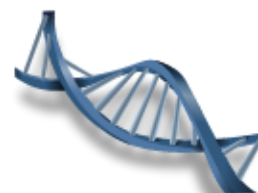
KY 1007, Christian County
From US 68 to Sanderson
Rd.

Item No. 2-227.00

Prepared by

KYTC District 2 Planning

February 2013



I. PRELIMINARY PROJECT INFORMATION

This DNA (Data Needs Analysis) is over 2-227.00, but also encompasses both 2-8706.00 and 2-3700.00, which are also studied in this report.

2-227.00

County:	Christian	Item No.:	02-227.00
Route Number(s):	KY 1007	Road Name:	North Dr.
Program No.:	87001	UPN:	FD04 024 1007 000-003
Federal Project No.:	N/A	Type of Work:	Major Widening

2012 Highway Plan Project Description:

Reconstruct KY 1007 from US 68 to Sanderson Rd. in Hopkinsville

Beginning MP: 0.785 Ending MP: 2.509 Project Length: 1.724

2-8706.00

County:	Christian	Item No.:	02-8706.00
Route Number(s):	KY 1007	Road Name:	North Dr.
Program No.:	N/A	UPN:	FD52 024 1007 001-002
Federal Project No.:	N/A	Type of Work:	Minor Widening

2012 Highway Plan Project Description:

Construct turn lanes into Hopkinsville Community College

Beginning MP: 1.7 Ending MP: 1.8 Project Length: 0.1

2-3700.00

County:	Christian	Item No.:	02-3700.00
Route Number(s):	KY 1007	Road Name:	North Dr.
Program No.:	84610	UPN:	FD52 024 1007 001-002
Federal Project No.:	CM 3017 021	Type of Work:	Minor Widening

2012 Highway Plan Project Description:

North Drive / Glass Avenue traffic congestion improvement project: construction of left-hand turning lanes at the intersection North Drive and Glass Avenue

Beginning MP: 1.3 Ending MP: 1.4 Project Length: 0.1

Functional Class.:	<input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural	State Class.:	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Secondary
MPO Area:	Not Applicable	Route is on:	<input type="checkbox"/> NHS <input checked="" type="checkbox"/> NN <input type="checkbox"/> Ext Wt
In TIP:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Truck Class.:	
ADT (current):	5010 2009	% Trucks:	4.9
Access Control:	<input type="checkbox"/> None <input checked="" type="checkbox"/> Permit <input type="checkbox"/> Fully Controlled	Terrain:	
Median Type:	<input checked="" type="checkbox"/> Undivided <input type="checkbox"/> Divided (Type):	Spacing:	
Existing Bike Accommodations:		Ped:	<input type="checkbox"/> Sidewalk
Posted Speed:	<input checked="" type="checkbox"/> 35 mph <input checked="" type="checkbox"/> 45 mph <input type="checkbox"/> 55 mph <input type="checkbox"/> Other (Specify):		

KYTC Guidelines Preliminarily Based on : 45 MPH Proposed Design Speed

I. PRELIMINARY PROJECT INFORMATION (cont.)

Roadway Data:	EXISTING	COMMON GEOMETRIC	
No. of Lanes	<u>2</u>	<u>Min 2</u>	Existing Rdwy. Plans available?
Lane Width	<u>11</u>	<u>Min 11 ft</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Shoulder Width	<u>4</u>		Year of Plans: <u>1984</u>
Max. Superelevation**	<u>Not Available</u>	<u>4% Max</u>	<input type="checkbox"/> Traffic Forecast Requested
Minimum Radius**	<u>Not Available</u>		Date Requested: _____
Maximum Grade		<u>8%</u>	<input type="checkbox"/> Mapping/Survey Requested
Minimum Sight Dist.		<u>360 ft</u>	Date Requested: _____
Sidewalk Width(urban)		<u>Min 4 ft</u>	Type: <input type="text" value=""/>
Clear-zone***			
Project Notes/Design Exceptions?:	<input type="text" value=""/>		

*Based on proposed Design Speed, **AASHTO's A Policy on Geometric Design of Highways and Streets, ***AASHTO's Roadside Design Guide

Bridge No.*:	<u>(Bridge #1)</u>	<u>(Bridge #2)</u>	
Sufficiency Rating			Existing Geotech data available?
Total Length			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Width, curb to curb			
Span Lengths			
Year Built			
Posted Weight Limit			
Structurally Deficient?			
Functionally Obsolete?			

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

II. PROJECT PURPOSE AND NEED

A. Legislation

The following funding was listed in the 2012 General Assembly's Enacted Highway Plan. The funding in the 2012 Recommended Six Year Plan was \$15,800,000	<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
	SPP	D	2014	\$1,400,000
	SPP	R	2015	\$2,400,000
	SPP	U	2016	\$2,000,000
	SPP	C	2018	\$10,000,000

B. Project Status

This project is intended to be let with projects 02-3700.00 and 2-8706.00. These two projects are intersection projects that lie within the project limits of 02-227.00. The District feels it would be beneficial to let these 3 projects as a group.

C. System Linkage

This segment of KY 1007 connects 68-80 to the community college, high school, and middle school, as well as various businesses. It is classified as an Urban Collector. The classification is not likely to change as a result of this project.

II. PROJECT PURPOSE AND NEED (cont.)

D. Modal Interrelationships

There are no direct modal interrelationships that are affected by this project.

E. Social Demands & Economic Development

There are several schools, including the community college, that will benefit from a safer less congested route. There are no known future developments that would affect or be affected by this route.

F. Transportation Demand

The last actual counts for these sections from CTS are: Section 1 - 5,010, Section 2 - 3010. Traffic has declined slowly over the past 10 years for Section 1; however, Section 2 traffic flow has remained consistent over the same time period.

G. Capacity

There is congestion on this route including student drivers. Once the turn lanes are added, it is possible that capacity won't be as much of an issue.

H. Safety

This route is heavily used by school traffic. The majority of the crashes on this route are rear ends. There are several crashes at the intersections where turn lanes are being proposed. The Critical rate factor for this route ranges from 1.649 near US 68, to 0.9860 near Glass Avenue on down to 0.2910 near the end of the project.

I. Roadway Deficiencies

The route currently does not have turn lanes at two heavily traveled intersections.

Draft Purpose and Need Statement:

Need: KY 9007 (North Drive) is congested and has a lot of school traffic. There are several crashes (mostly rear ends) that lead to a high CRF for a lot of the project.

Purpose: To address the congestion and provide safer access to the schools.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

Project is in: Attainment area Nonattainment or Maintenance Area PM 2.5 County
STIP Pg.#: _____ TIP Pg.#: _____

B. Archeology/Historic Resources

Known Archeological or Historic Resources are present
none known

C. Threatened and Endangered Species

no affect

D. Hazardous Materials

Potentially Contaminated Sites are present Potential Bridge or Structure Demolition
not known

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 affected Relocations Local Land Use Plan available
none known

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

The following are present on the project: Section 4(f) Resources Section 6(f) Resources
Ruff Park funded by Land and Water Conservation (LWC) grants

None (Completely State funded) 

Anticipated Environmental Document:

III. PRELIMINARY ENVIRONMENTAL OVERVIEW- continued
This portion covers project 02-3700, which is a CMAQ project

A. Air Quality

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

STIP Pg.#:

TIP Pg.#:

B. Archeology/Historic Resources

Known Archeological or Historic Resources are present

none known

C. Threatened and Endangered Species

no affect

D. Hazardous Materials

Potentially Contaminated Sites are present Potential Bridge or Structure Demolition

culvert may have to be widened , but it is concrete and no hazardous material is 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

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 affected Relocations Local Land Use Plan available
All public buildings in construction area

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

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

Anticipated Environmental Document:

None (Completely State funded)



IV. POSSIBLE ALTERNATIVES

A. Alternative 1: No Build

The no build does not address the purpose and need of the project.

B. Alternative 2

Construct 3 lanes from US 68 to Sanderson Drive. The third lane will be a two way left turn lane (TWLTL) and will be matched up with the left turn lanes that will be constructed at Glass Avenue (item 2-3700) and at the Community College (item 2-8706.00)



Planning Level Cost Estimate:

<u>Phase</u>	<u>Estimate</u>
Design	\$1,400,000
R/W	\$2,400,000
Utilities	\$2,000,000
Const	\$10,000,000
Total	\$15,800,000

IV. POSSIBLE ALTERNATIVES (cont.)

B. Alternative 3

Construct 5 lanes from US 68 to Sanderson Drive. The middle lane will be a two way left turn lane (TWLTL) and will be matched up with the left turn lanes that will be constructed at Glass Avenue (item 2-3700) and at the Community College (item 2-8706.00)



Planning Level Cost Estimate:

<u>Phase</u>	<u>Estimate</u>
Design	\$1,400,000
R/W	\$4,000,000
Utilities	\$2,000,000
Const	\$10,000,000
Total	\$17,400,000

V. Summary

This project is to widen KY 1007 to improve traffic flow and safety in this area that has a significant congestion due to school traffic. The two build alternates include a 3 lane and a 5 lane. Because it is too early to tell whether the widening will occur on both sides equally or on one side only, it was difficult to estimate the costs. Therefore the planning estimates for Design, Utilities, Construction are the same as the Highway plan numbers for both of these. The ROW is expected to increase for the 5 lane, so the highway plan number was used for the 3 lane, but was increased for the 5 lane.

Alt #	Description	D (\$)(SPP)	R (\$)(SPP)	U (\$)(SPP)	C (\$)(SPP)	Total (\$mil)
1	No Build	-	-	-	-	-
2	3 Lanes	1,400,000	2,400,000	2,000,000	10,000,000	15,800,000
3	5 Lanes	1,400,000	4,000,000	2,000,000	10,000,000	17,400,000
-	Current Hwy Plan Estimated Cost	1,400,000	2,400,000	2,000,000	10,000,000	15,800,000
-	Current Pre-Con Estimated Cost	1,400,000	2,400,000	2,000,000	10,000,000	15,800,000

VI. Tables and Exhibits



Exhibit 1: Project Location Map

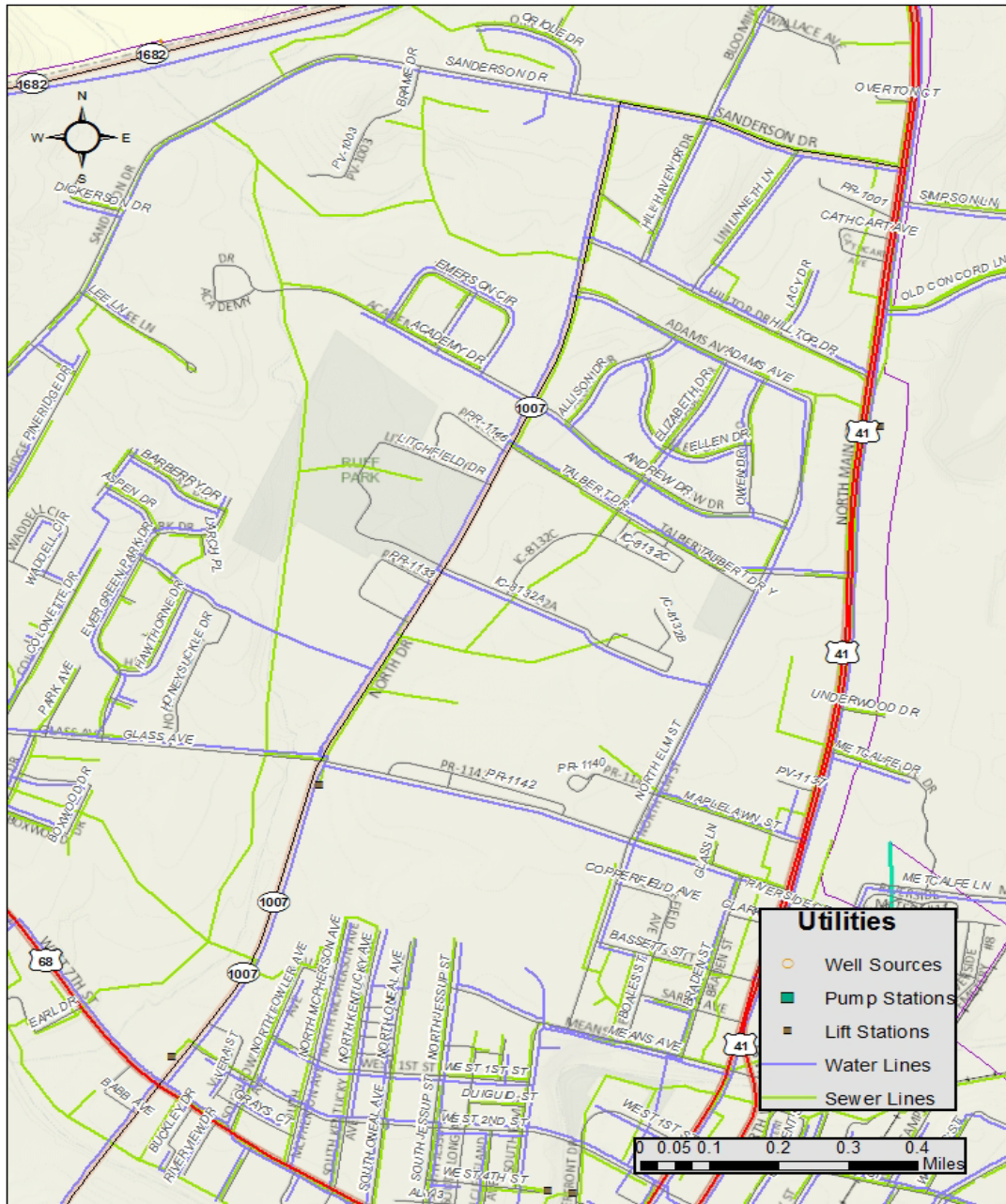
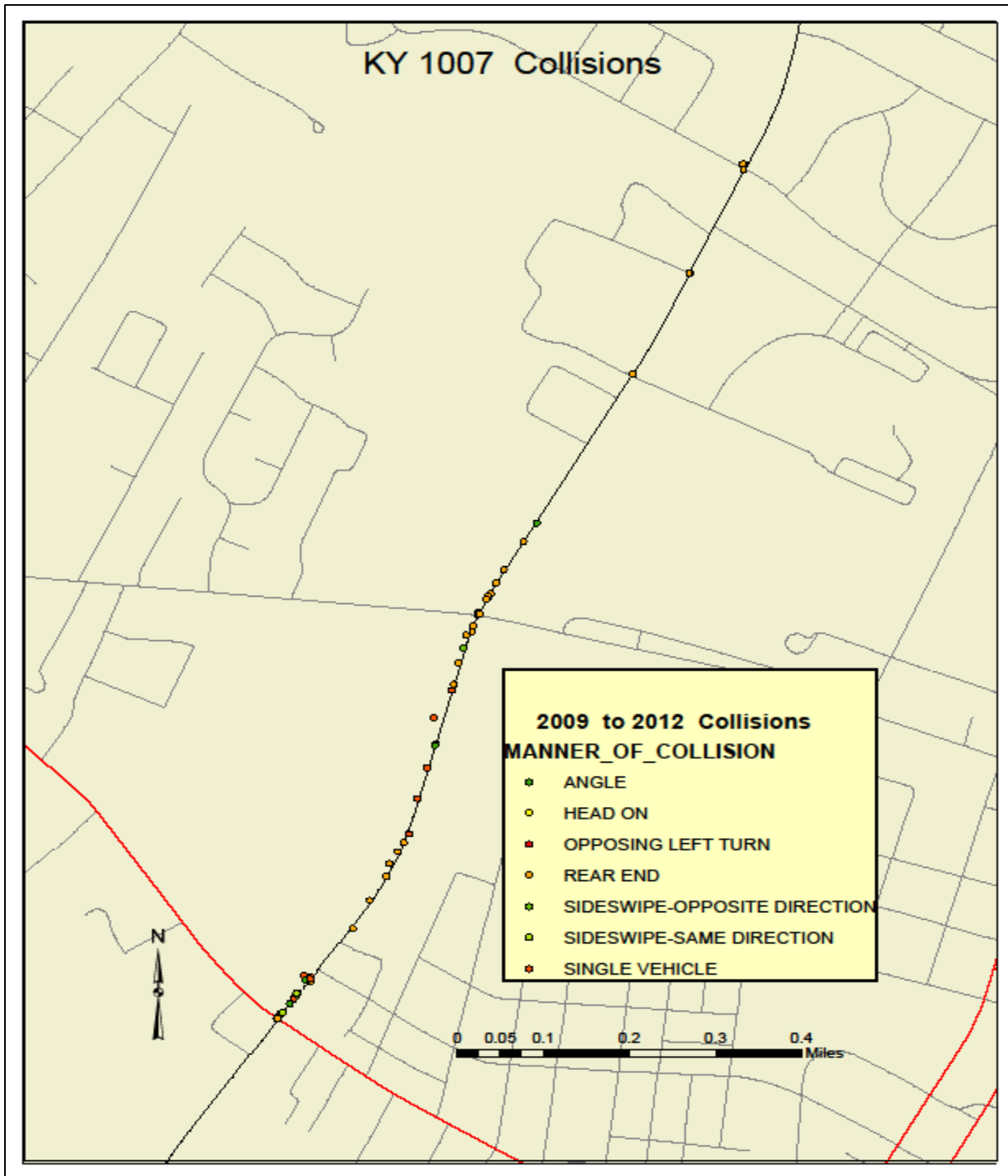


Exhibit 2: Utility Map

Potentially impacted Utilities
HWEA (Water and Sewer)
Atmos Energy
Pennyrile Rural Electric
Hopkinsville Electric System
AT&T
Time Warner Cable
Wind Stream Communication



Rear End		30
Angle		10
Single Vehicle		9
Sideswipe		3
Opposing Left		1
Head on		1

Exhibit 3: Collision Data

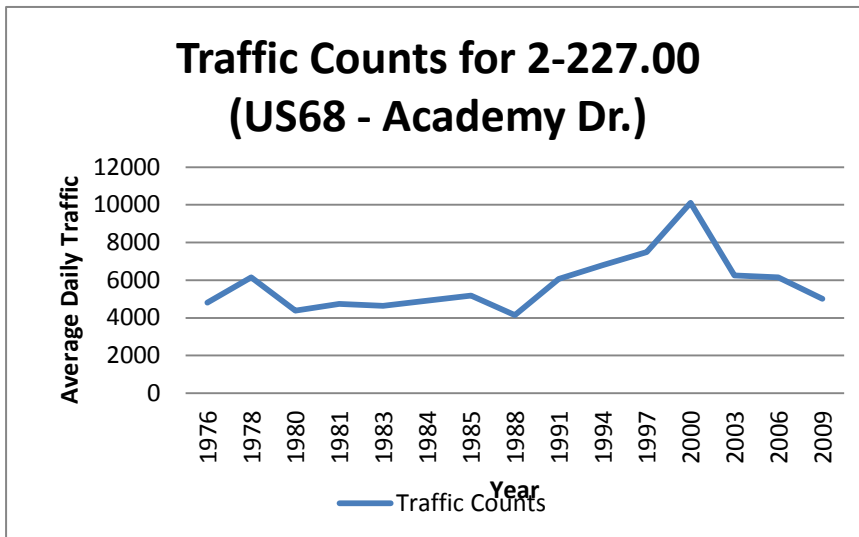
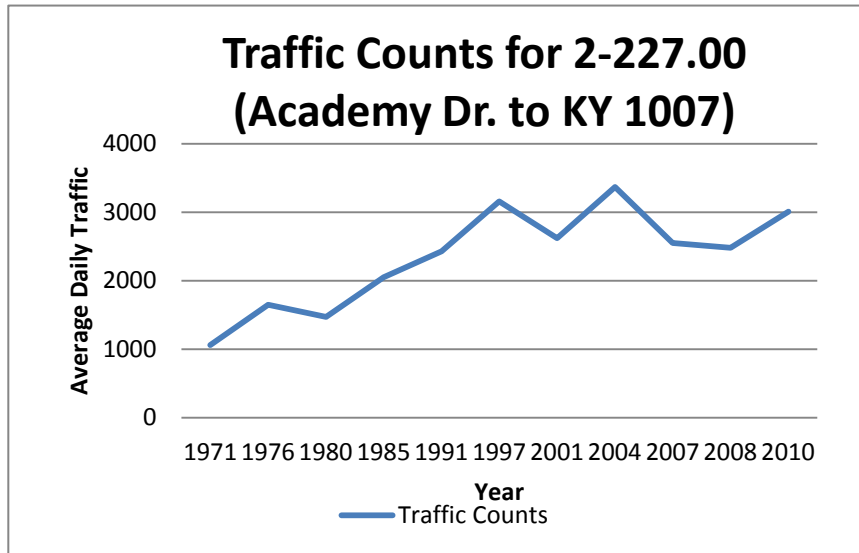


Exhibit 4: Traffic Counts

Helpful Links:

[02-0227.00 - CHRISTIAN - KY 1007 from US-68 to Sanderson Rd](#)
links to archived as-builts of the corridor, threatened/endangered species list for the county, FIRM maps, Bridge Rating Sheets, etc.