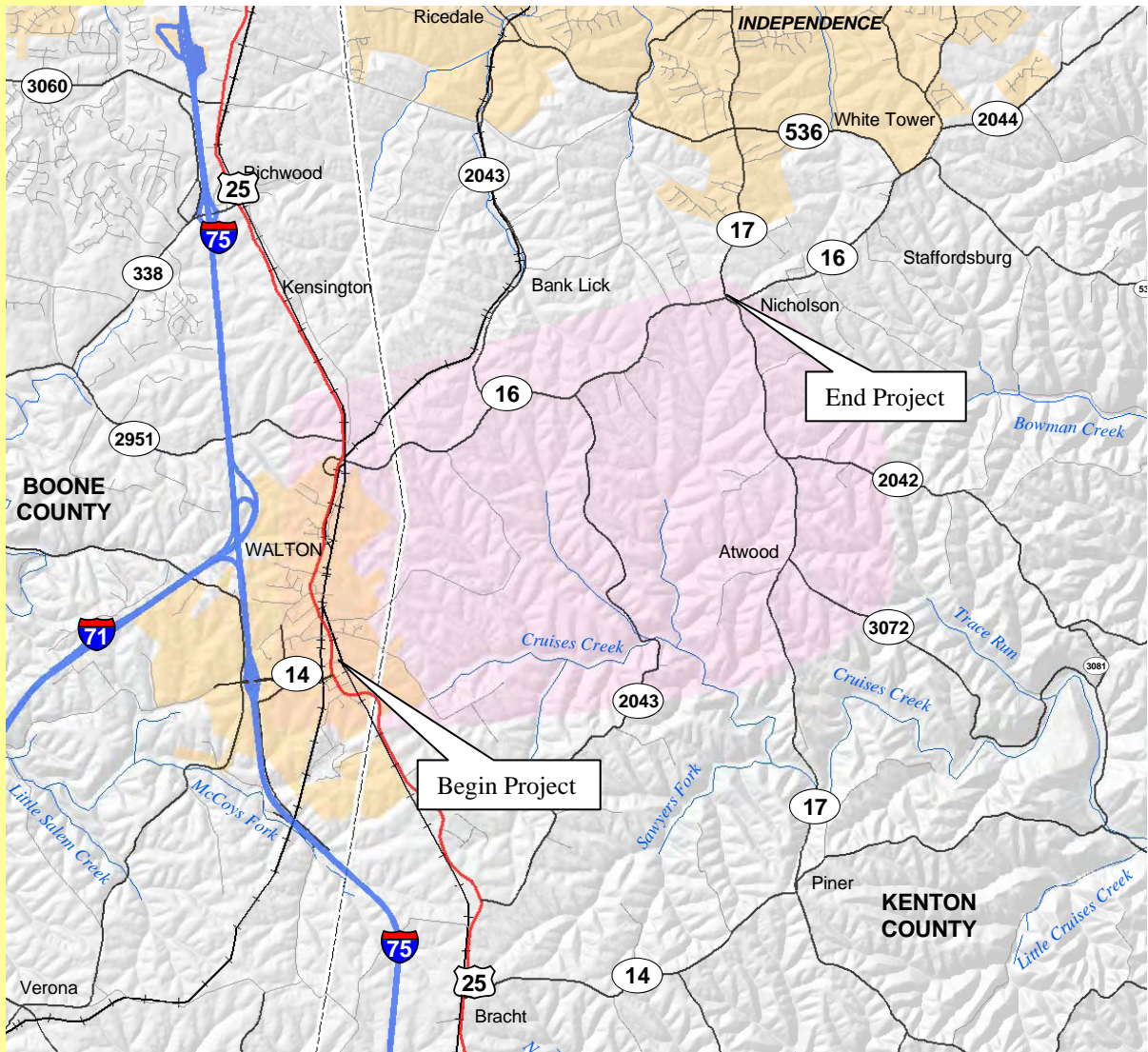


# SCOPING STUDY

## MARY GRUBBS HIGHWAY EXTENSION BOONE AND KENTON COUNTIES FROM WALTON TO NICHOLSON



**FINAL  
REPORT**

**July  
2006**



**EXECUTIVE SUMMARY**  
**SCOPING STUDY**  
**MARY GRUBBS HIGHWAY EXTENSION**  
**BOONE AND KENTON COUNTIES**  
**WALTON TO NICHOLSON**

This study was conducted as an abbreviated scoping study in Boone and Kenton Counties. The project termini are defined as the US 25/ Mary Grubbs Highway (KY 14) intersection in Walton and the KY 16/ KY 17 intersection in Nicholson.

Current year average daily traffic ranges from about 3100 vehicles per day on KY 16 between US 25 and KY 17 to about 7900 vehicles per day on the existing Mary Grubbs Highway. Projected future year (2030) average daily traffic volumes range from 9200 vehicles per day on KY 16 between US 25 and KY 17 to about 15300 vehicles per day on the existing Mary Grubbs Highway.

Primary goals of this project are to improve connectivity and access between KY 17 and I-75, provide an alternative route to road closures on I-75, contend with the rapid growth of the Northern Kentucky area, and improve safety by providing lane and shoulder widths that meet current design standards.

The study recommends:

- A new route connecting the Mary Grubbs Highway to Nicholson should not be built at this time. Low forecasted traffic volumes, poor geological conditions, an inability for a new route to help with road closures on I-75, and lack of local support all contributed to the decision to recommend not building a new route at this time.
- Improvements are needed along KY 16 to bring it up to current design standards in order to improve safety along the route and add capacity for the economic development and population growth needs of Kenton County. The project team recommends continuing to prioritize KY 16 along with other needs in the area. The last prioritization cycle, finished in the fall of 2005, showed KY 16 between US 25 and KY 17 to be a high local priority, medium regional priority, and low district priority. The total estimated cost of this project is estimated at \$25 million.
- US 25 through Walton is very congested and a bypass of US 25 in Walton should be studied.

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## **I. INTRODUCTION**

### ***A. Study Purpose***

The purpose of this Scoping Study was to: (a) evaluate the existing roadway conditions between Walton and Nicholson and determine possible alternatives to improve safety and traffic flow that can be used for future programming documents; (b) provide data to be used when and if the project enters the design phase; and (c) provide background information that can be utilized in the National Environmental Policy Act (NEPA) documentation for the project. Tasks undertaken as part of this effort included:

- Identifying project goals and issues and defining the need for the project,
- Describing the conditions along the existing roadways,
- Determining project termini and potential corridors,
- Initiating contact with public officials and agencies.
- Identifying preliminary environmental concerns,
- Estimating the project costs, and
- Identifying priority segments for future programming activities,

One of the steps in this process was the collection of technical and resource agency input concerning the project. This was accomplished by:

- Compiling information from existing data and reports,
- Establishing a project team to provide direction and review for the study, and
- Coordinating with resource agencies and local officials.

The collected information was evaluated to accomplish the following:

- Evaluate the project description and logical termini,
- Address the geometrics, level of service, vehicle crashes, and other issues that are influencing the project,
- Address, in general terms, the project design criteria,
- Document known environmental concerns, and
- Develop a draft statement of project goals.

### ***B. Programming and Schedule***

As part of a scheduled bridge replacement on High Street in Walton (Item number 06-1046.00), Mary Grubbs Highway (KY 14) is scheduled to be extended from US 25 in Boone County northeasterly across the Norfolk Southern railroad track and connect to High Street. The construction phase for this bridge replacement is scheduled for 2006 and design, right-of-way, and utilities funds have already been authorized.

## II. PROJECT TEAM INPUT

A scoping study project team meeting was conducted on August 22, 2005. The purpose of the meeting was to discuss the project and to assist in determining issues and concerns needed to be addressed by the study. A copy of the minutes is included in Appendix A. The project team developed a list of benefits of an improved route from Walton to Nicholson. These included:

- Allow Southern Kenton County easier access to I-75,
- Economic development opportunities,
- Better regional connection to I-75 from Independence and the KY 17 corridor,
- Improve safety on area roadways,
- Open up southern part of county for development and provide a better east-west connector to I-75, and
- Increase capacity.

The team developed four initial project goals:

- Improve east-west connectivity and access between KY 17 and I-75 in Southern Kenton County,
- Provide an alternative route during incidents or closures on I-75,
- Address highway capacity and growth needs in Southern Kenton County, and
- Improve safety by providing an improved route that complies with current design standards.

The team also came up with four possible alternatives:

1. New Direct Route to Nicholson

Alternative 1 is a new route extending from the existing Mary Grubbs Highway northeasterly to Nicholson. It is the shortest and most direct alternative.

2. New Route to Atwood

The second alternative is a new route extending from the Mary Grubbs Highway easterly to KY 3072. KY 17 from Atwood to Nicholson would also need to be improved with this alternative, along with realigning the existing KY 17/ KY 3072 intersection. This would allow for a better grid alignment by providing a direct east-west route in Southern Kenton County.

3. Combination

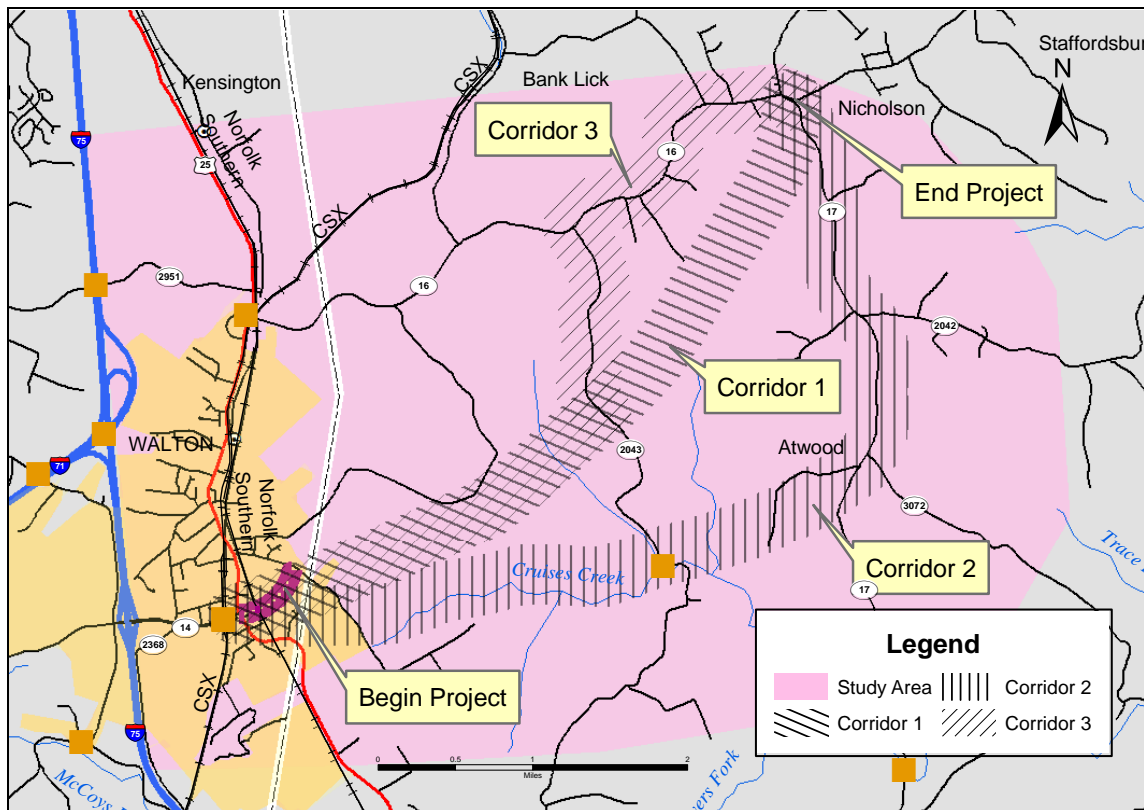
A third alternative discussed at the first team meeting includes extending the Mary Grubbs Highway easterly to KY 2043, improving KY 2043 north to KY 16, and improving KY 16 east to Nicholson. This alternative would mainly improve existing routes with a short (approximately 2 miles) new section connecting KY 2043 to the Mary Grubbs Highway.

#### 4. No Build

The no build option is always considered and will be considered throughout this study.

The three build alternatives discussed at the team meeting are shown below.

**Figure 1: Possible Build Alternatives**

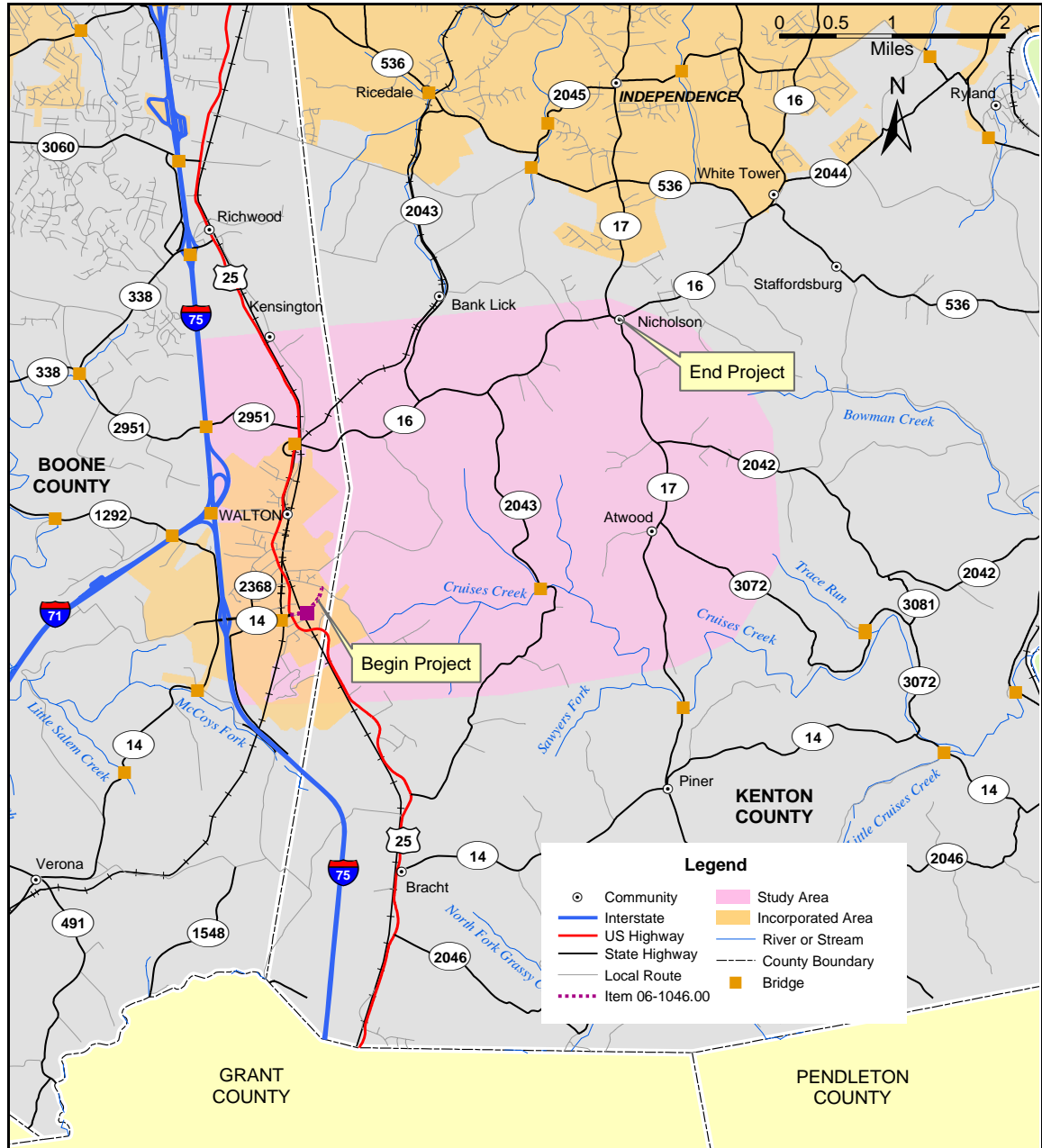


### III. PROJECT LOCATION, EXISTING CONDITIONS, AND TRAFFIC

#### A. Project Location

The project termini are from the end of proposed construction on the Mary Grubbs Highway in Walton to the KY 16/ KY 17 intersection in Nicholson. The study area includes parts of both Boone and Kenton Counties.

Figure 2: Study Area





### ***B. Existing Highway Features***

Data on the existing conditions in the study area were taken from the Division of Planning's Highway Information System (HIS) database. The study area is located in generally rolling terrain. Passing sight distance varies from zero percent to 100 percent with the vast majority of the study segments having zero percent passing sight distance.

The study area includes six horizontal curves greater than 28°. These curves are shown in the table below. (Refer to Appendix E for a complete route log of all state maintained highways in the study area.)

**Table 1: Horizontal Curves**

County	Route	Begin MP	End MP	Curves Between 5.5° and 8.4°	Curves Greater than 8.4°	Curves Greater than 28°
Boone	KY 14	8.114	8.830	0	0	0
Boone	KY 16	2.483	3.380	1	2	0
Kenton	KY 16	0.000	5.788	14	6	0
Kenton	KY 17	3.974	10.970	11	7	0
Kenton	KY 2043	0.000	5.804	7	16	6
Boone	US 25	0.000	2.264	3	4	0
Kenton	US 25	2.875	4.978	2	3	0

The majority of highways in the study area are two-lane highways with ten foot lanes and one foot paved shoulders. Speed limits range from 35 to 55 miles per hour. The table below shows much of the route information for the project area.

**Table 2: Route Information**

County	Route	Begin MP	End MP	Percent Trucks	Lanes	Lane Width (feet)	Shoulder Width (feet)	Speed Limit (MPH)
Boone	KY 14	8.114	8.830	12	4	12	10	45
Boone	KY 16	3.051	3.380	10	2	9	1	55
Kenton	KY 16	0.000	1.824	10	2	10	1	55
Kenton	KY 16	1.824	3.300	10	2	10	1	55
Kenton	KY 16	3.300	3.565	10	2	10	1	35
Kenton	KY 16	3.565	5.788	10	2	10	1	45
Kenton	KY 17	3.974	7.047	9	2	10	1	55
Kenton	KY 17	7.047	7.961	9	2	10	1	55
Kenton	KY 17	7.961	9.431	9	2	10	1	55
Kenton	KY 17	9.431	10.970	9	2	10	1	45
Kenton	KY 2042	0.000	1.937	2	2	10	1	55
Kenton	KY 2043	0.000	5.804	2	2	10	3	55
Kenton	KY 3072	0.000	2.000	2	2	9	1	45
Boone	US 25	0.000	0.470	12	2	11	2' Curb	35
Boone	US 25	0.470	1.270	12	2	11	2' Curb	35
Boone	US 25	1.270	2.264	12	2	10	1	45
Kenton	US 25	2.875	4.978	12	2	11	1	45

### C. Highway Systems

The study area includes roadways of different functional classifications. The functional classes for each segment are shown in the table below.

**Table 3: Roadway Classification**

County	Route	Begin MP	End MP	Urban Area/ Rural	Functional Classification
Boone	KY 14	8.114	8.830	Rural	Rural Major Collector
Boone	KY 16	2.483	3.380	Cincinnati-Northern Kentucky	Urban Minor Arterial Street
Kenton	KY 16	0.000	5.788	Cincinnati-Northern Kentucky	Urban Minor Arterial Street
Kenton	KY 17	3.974	9.431	Rural	Rural Major Collector
Kenton	KY 17	9.431	10.970	Cincinnati-Northern Kentucky	Urban Principal Arterial
Kenton	KY 2042	0.000	1.937	Rural	Rural Minor Collector
Kenton	KY 2043	0.000	5.804	Rural	Rural Minor Collector
Kenton	KY 3072	0.000	2.000	Rural	Rural Local
Boone	US 25	0.000	2.264	Rural	Rural Major Collector
Boone	US 25	2.264	10.603	Cincinnati-Northern Kentucky	Urban Minor Arterial Street
Boone	US 25	10.603	11.407	Cincinnati-Northern Kentucky	Urban Principal Arterial
Kenton	US 25	0.000	4.978	Rural	Rural Major Collector

### D. Vehicle Crash Analysis

A total of 538 vehicle crashes were recorded with valid reference points in the study area during the five-year-period between January 1, 2000 and December 31, 2004. 137 of the crashes produced injuries to at least one person, while five crashes resulted in fatalities. The table below depicts a segmental analysis of the study area. There are six segments with a critical rate factor (CRF) in excess of 1.0, and three others greater than 0.9. A CRF greater than 1.0 indicates the segment of roadway has had a statistically significant number of crashes and that are not occurring at random.

**Table 4: Crash Data**

County	Route	Begin MP	End MP	Crashes				Critical Rate Factor
				Fatal	Injury	PDO	Total	
Boone	KY 14	8.114	8.830	1	11	46	58	1.337
Boone	KY 16	3.051	3.380	1	2	14	17	0.690
Kenton	KY 16	0.000	1.048	0	6	30	36	1.292
Kenton	KY 16	1.048	1.824	1	6	18	25	1.135
Kenton	KY 16	1.824	3.078	0	14	30	44	1.542
Kenton	KY 16	3.078	3.565	0	4	15	19	0.917
Kenton	KY 17	7.047	7.961	0	12	27	39	1.407
Kenton	KY 17	7.961	9.431	0	16	38	54	0.914
Kenton	KY 2042	0.000	1.937	0	5	17	22	0.840
Kenton	KY 2043	0.000	5.804	0	5	15	20	0.882
Kenton	KY 3072	0.000	2.000	0	1	9	10	0.424
Boone	US 25	0.000	0.470	0	3	11	14	0.595
Boone	US 25	0.470	1.270	0	10	50	60	1.307
Boone	US 25	1.270	2.264	0	16	34	50	0.888
Kenton	US 25	2.875	4.978	2	26	42	70	0.949

### E. Traffic and Level of Service

Level of Service (LOS) is a measure of the quality of traffic service provided by a highway facility. It ranges in scale from A to F, with A being the best and F being the worst. LOS C is considered stable flow and is acceptable in most situations. The two tables below show the traffic and level of service for 2005 and 2030, respectively. The traffic projections were provided by the Ohio-Kentucky-Indiana Metropolitan Planning Organization (OKI) and the OKI Travel Demand Model Version 6.3.

**Table 5: 2005 Level of Service**

County	Route	Begin MP	End MP	No Build 2005 ADT	No Build 2005 LOS	Build Alt 1 ADT	Build Alt 1 LOS	Build Alt 2 ADT	Build Alt 2 LOS	Build Alt 3 ADT	Build Alt 3 LOS
Boone	KY 14	8.114	8.830	7900	A	12000	A	14000	B	12600	B
Boone	KY 16	2.483	3.380	3600	D	2300	D	2500	D	3600	D
Kenton	KY 16	0.000	1.048	3600	D	2300	D	2500	D	3600	D
Kenton	KY 16	1.048	1.824	3600	D	2300	D	2500	D	3500	D
Kenton	KY 16	1.824	3.078	3100	D	2300	D	4300	D	6300	C
Kenton	KY 16	3.078	3.565	5300	D	4500	D	6700	D	8600	C
Kenton	KY 17	7.047	7.961	4100	D	4100	D	5400	B	4100	D
Kenton	KY 17	7.961	9.431	6400	D	6400	D	7500	C	6400	D
Kenton	KY 2042	0.000	1.937	1800	B	1800	B	1800	B	1800	B
Kenton	KY 2043	0.000	5.804	500	A	500	A	500	A	2900	B
Kenton	KY 3072	0.000	2.000	600	A	600	A	600	A	600	A
Boone	US 25	0.000	0.470	5800	E	6300	E	5000	E	6200	E
Boone	US 25	0.470	1.270	7800	E	6100	E	8500	E	8700	E
Boone	US 25	1.270	2.264	8000	E	6400	E	8800	E	9200	E
Kenton	US 25	2.875	4.978	5800	E	6300	E	5000	E	6200	E
Alternative 1 MGH to KY 2043				-	-	4000	B	-	-	-	-
Alternative 1 KY 2043 to KY 16/17				-	-	5900	B	-	-	-	-
Alternative 2 MGH to KY 2043				-	-	-	-	5300	B	-	-
Alternative 2 KY 2043 to KY 17				-	-	-	-	6000	B	-	-
Alternative 3 MGH to KY 2043				-	-	-	-	-	-	6200	B

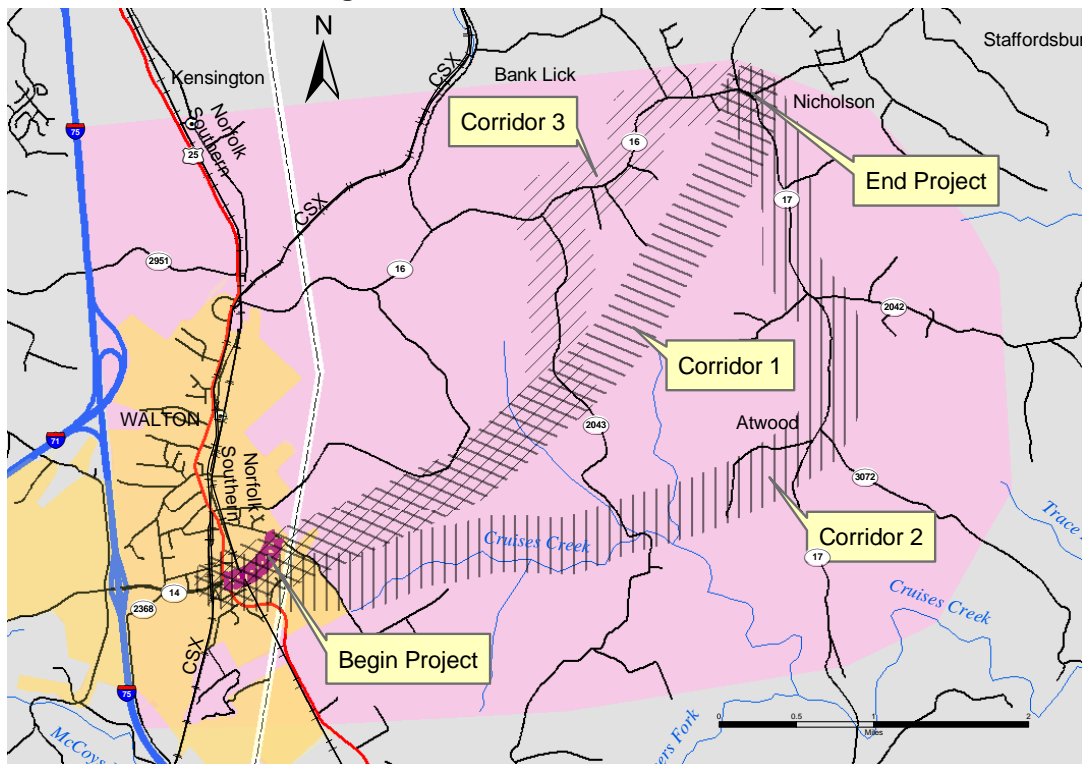
**Table 6: 2030 Level of Service**

County	Route	Begin MP	End MP	No Build 2030 ADT	No Build 2030 LOS	Build Alt 1 ADT	Build Alt 1 LOS	Build Alt 2 ADT	Build Alt 2 LOS	Build Alt 3 ADT	Build Alt 3 LOS
Boone	KY 14	8.114	8.830	15300	B	20300	B	20100	B	20200	B
Boone	KY 16	2.483	3.380	9200	D	3700	C	6600	D	8100	D
Kenton	KY 16	0.000	1.048	9200	E	3700	C	6600	D	8100	D
Kenton	KY 16	1.048	1.824	10500	E	3200	C	6600	D	7600	D
Kenton	KY 16	1.824	3.078	10700	E	3300	D	5800	D	13900	D
Kenton	KY 16	3.078	3.565	17000	E	6700	D	11700	E	18300	E
Kenton	KY 17	7.047	7.961	7000	D	7000	D	9400	C	7000	D
Kenton	KY 17	7.961	9.431	9900	E	9900	E	11400	D	9900	E
Kenton	KY 2042	0.000	1.937	2500	B	2500	B	2500	B	2500	B
Kenton	KY 2043	0.000	5.804	800	A	800	A	800	A	3600	B
Kenton	KY 3072	0.000	2.000	800	A	800	A	800	A	800	A
Boone	US 25	0.000	0.470	8900	E	9400	E	6500	E	8400	E
Boone	US 25	0.470	1.270	15300	E	9900	E	14700	E	15300	E
Boone	US 25	1.270	2.264	15600	E	10300	E	15400	E	15900	E
Kenton	US 25	2.875	4.978	8900	E	9400	E	6500	E	8400	E
Alternative 1 MGH to 2043				-	-	9800	C	-	-	-	-
Alternative 1 2043 to KY 16/17				-	-	12200	D	-	-	-	-
Alternative 2 MGH to 2043				-	-	-	-	6100	B	-	-
Alternative 2 KY 2043 to KY 17				-	-	-	-	8000	C	-	-
Alternative 3 MGH to KY 2043				-	-	-	-	-	-	3000	B

#### IV. PUBLIC AND AGENCY INPUT

No public meetings were held during the course of this study since no further project development phases are currently planned. However, early agency coordination letters were sent out to various resource agencies, interested organizations, local officials, and internal Cabinet offices to obtain input and comments on the study area. The purpose of the letter was to solicit input concerning the potential impacts associated with this project. Copies of the request letter, mailing list, and the responses are included in Appendix B. Three possible alternative corridors were presented in the agency coordination letter. These possible alternatives are shown below.

**Figure 5: Possible Alternatives**



Issues identified, concerns raised, and other comments received as a result of this process include:

- 1) 64<sup>th</sup> Legislative District, State Representative Thomas R. Kerr:  
Representative Kerr made several observations and recommendations:
  - a) Area north of KY 16 and east of KY 2043 has been identified for possible industrial use.
  - b) There are currently no plans or ability to sewer south of KY 16, and that area is identified in the Kenton County Land Use Plan for agricultural use. Therefore, economic benefits to building a road south of KY 16 would be very minimal.
  - c) Study area south of current KY 16 comprises some of the best remaining agricultural resources in Kenton County and contains at least two agricultural districts.

- d) In attempting to divert traffic in case of an I-71/75 backup, the proposals would only be partially effective because they would be of little or no benefit to those traveling on I-71.
- e) KY 16 currently carries a great deal of local traffic and would continue to do so even if the proposed road were built. High accident segments of KY 16 would remain in their current condition.

In addition, Representative Kerr made two proposals which can be seen in their entirety in Appendix B. In summary, proposal one consisted of extending the Mary Grubbs Highway as a US 25 bypass west of KY 2043 (near the Boone/Kenton county line) and improving KY 16 from the new bypass to Nicholson. For his second proposal Representative Kerr proposed a northbound exit only to KY 16 that could be from I-75 only or after I-71 joins it. This proposal would have the advantage of linking KY 16 directly to the interstate and would be accompanied with an upgrade to current KY 16.

2) Boone County Planning Commission:

Comments include:

- a) Proposed improvements would provide better access to I-75. The extension would become a primary transportation route for the City of Walton to expand east across the county line.
- b) Proposed improvements may impact existing or planned residential development located near High Street in Walton.
- c) If the extension is built, then I-75 Exit #172/Walton Interchange should be analyzed for improvements because of the increase in traffic originating from Kenton County.
- d) It may be more appropriate to improve routes north of the Mary Grubbs Highway. Improvements to KY 16 with a possible tie-in to I-71 East are supported by the recommendations in the Boone County Comprehensive Plan and the Boone County Transportation Plan.

3) City of Walton City, Council Member Ann Leake:

Ms. Leake is in favor of extending the Mary Grubbs Highway and believes Corridor 2 would be the best choice.

4) City of Walton, Mayor Phillip W. Trzop:

Mayor Trzop feels there is a need for a road to KY 17 by way of the Mary Grubbs Highway.

5) Northern Kentucky Area Planning Commission (NKAPC):

Unanimous findings and conclusions by the members of NKAPC were:

- a) The proposed road alignments would induce urban sprawl and, therefore, are not consistent with the Northern Kentucky comprehensive plan.
- b) Existing road improvement needs within the urban services area should take priority over this proposed project.

6) Kentucky Cabinet for Health and Family Services, Department for Public Health:

The Department for Public Health does not find any specific issues or concerns regarding the development of this project.

- 7) Kentucky Department of Agriculture:  
Have no specific concerns or issues concerning the project.
- 8) Kentucky Department of Military Affairs, Office of Management and Administration:  
There are no issues or concerns that impact this agency.
- 9) Kentucky Commerce Cabinet, Department of Fish and Wildlife Services:  
The proposed project area is within the natural range and could impact the federally endangered Indiana bat (*Myotis sodalis*), fanshell (*Cyprogenia stegaria*), and clubshell (*Pleurobema clava*). KDFWR recommends that the appropriate US Department of Interior National Wetland Inventory Map be looked at and the appropriate county soil surveys to determine where the proposed project may impact wetlands.
- 10) Kentucky Commerce Cabinet, Department of Parks:  
The study area will not directly impact any park facilities.
- 11) Kentucky Education Cabinet, Office of Budget and Administration:  
The Education Cabinet had no comment on the proposed improvements.
- 12) Kentucky Environmental and Public Protection Cabinet, Division of Conservation:  
The Environmental and Public Protection Cabinet would like to see the issue of the loss of farmland addressed and erosion and sedimentation controlled during construction. They recommend best management practices be utilized to prevent nonpoint source water pollution. The division also sent shapefiles for mapping of prime farmland in the project area.
- 13) Kentucky Environmental and Public Protection Cabinet, Division for Air Quality:  
Stated that the project must meet the conformity requirements of the Clean Air Act as amended and the transportation planning provisions of Title 23 and Title 49 of the United States Code, and meet Kentucky Division for Air Quality Regulations 401 KAR 63:010 and 401 KAR 63:005. The Division also suggests an investigation into compliance with applicable regulations in the local governments.
- 14) Kentucky Environmental and Public Protection Cabinet, Department for Natural Resources:  
Land use is varied between agriculture and forestland. The forestland is composed predominantly of second and third growth forest and reverted agricultural fields, which means that the forestland has no unique or specialized characteristics. The forests will be generally immature with scattered mature saw timber. There may be isolated small pockets of mature forests, which should be given special attention and avoided if possible. Forestland in this area of the state is becoming more precious and the Department for Natural Resources asks that forestland destruction be minimized and best practices be utilized, regardless of the route taken.
- 15) Kentucky Environmental and Public Protection Cabinet, Division of Mine Reclamation and Enforcement:  
Records indicate there are no existing or proposed mining permits within

the evaluation area. The nearest quarry operation is outside of the project area.

- 16) Kentucky Environmental and Public Protection Cabinet, Kentucky State Nature Preserves Commission (KSNPC):  
The KSNPC notes that there will be with impacts to Running Buffalo Clover (USFWS Endangered and KSNPC Threatened) in any of the proposed corridors. There also is potential for impacts to the Indiana Bat (USFWS and KSNPC Endangered) and the habitat for the Redback Salamander (KSNPC Special Concern).
- 17) Kentucky Justice and Public Safety Cabinet, Kentucky State Police (KSP):  
The KSP believes that Corridor 2 would be the best option. Corridor two would allow for the widening and straightening of KY 17 from Atwood to Nicholson. Traffic control devices should be looked at for the KY 17/KY16 intersection. It is an offset intersection that becomes very congested during peak hours. (This intersection is currently being redesigned as part of improvements to KY 17 from Nicholson to the North, item number 06-313.00.) Corridor 3 does not meet one goal of the study, which is to improve east-west connectivity. Corridor 1 would be a second choice, but creates concerns about the impact to Percival Road. Percival Road is a rural residential roadway and many residents' homes would be affected.
- 18) Kentucky Justice and Public Safety Cabinet, Kentucky Vehicle Enforcement:  
foresee no problems with this road project. Kentucky Vehicle Enforcement feels the roadway improvements are very good and needed in this particular area.
- 19) Kentucky Transportation Cabinet, Division of Highway Construction:  
A new road would open this area to more development and could reduce traffic on US 25 which is becoming very congested.
- 20) Kentucky Transportation Cabinet, Geotechnical Engineering Branch:  
The Geotechnical Engineering Branch recommends a corridor be evaluated along existing KY 16 or just to the north. If a corridor is chosen to the south of KY 16, larger cuts and fills would likely be required and be constructed of material with higher percentages of nondurable shale's that would required flatter than normal cut and fill slopes and more right-of-way.
- 21) Kentucky Transportation Cabinet, Kentucky Airport Zoning Commission:  
Only concern is with construction equipment that may exceed the 100:1 slope at a distance of 20,000 feet from the Northern Kentucky/Cincinnati Airport of 200 feet above ground level. If any equipment exceeds these surfaces a permit will be required from the Kentucky Airport Zoning Commission.
- 22) Kentucky Transportation Cabinet, Permits Branch:  
Offered the following comments
  - a) Classify this project as a partially controlled access facility.
  - b) Access points should be set on the plans in accordance with 603 KAR 5:120.

- c) New deeds for all adjoining property owners need to be executed to identify the access control.
- d) Design speed should be the same as anticipated posted speed.
- e) Access control fence should be installed with the project.
- f) Notify the permits branch if this roadway is to be placed on the National Highway System.

23) University of Kentucky, Kentucky Geological Survey:

Comments Include:

- a) Physiographic Region: This study is in the Outer Bluegrass physiographic region, which is underlain by limestone, siltstone, shale, gravel, sand, silt, and clay.
- b) Karst Potential: Karst features such as shallow sinkholes may be encountered.
- c) Landslide Potential: This study would encounter units that would be prone to landslides.
- d) Unconsolidated Sediments: This study would encounter unconsolidated sediments.
- e) Resource Conflicts: The project area would not encounter any resource conflicts such as prior ownership of property for quarrying or mining. Some inactive or abandoned limestone mines might be in the area.
- f) Materials Suitability: This project area would encounter rock units that would be suitable as construction stone.
- g) Fault Potential: This project area would not encounter any faulted areas.
- h) Earthquake Ground Motions: This project has probable peak ground acceleration (PGA) due to earthquake ground motion of 0.09g. There would be a low potential for liquefaction or slope failure in the unconsolidated sediments at or near streams caused by earthquake bedrock ground motion.

24) U.S. Department of Agriculture, National Resources Conservation Service:  
The National Resources Conservation Service is concerned with potential impacts that the proposed highway project might have upon prime farmland soils and additional farmlands of statewide importance.

25) U.S. Department of the Army, U.S. Army Corp of Engineers, Louisville District:

The area under consideration encompasses numerous named streams, such as Cruises Creek, Sawyers Fork, Bullock Pen Creek, Bowman Creek, and Trace Run; as well as unnamed tributaries to those streams, any one of which could potentially include adjacent wetlands. Any wetlands that appear to be isolated due to a lack of any surface connection to a waterway must be reviewed to determine whether or not they are situated within the 100-year floodplain of a stream. In that instance, otherwise isolated wetlands would be considered jurisdictional under our regulatory authority.

26) U.S. Department of Homeland Security, Eighth Coast Guard District:  
Pursuant to the Coast Guard Authorization Act of 1982, it has been



determined that the study area does not include a waterway over which the Coast Guard exercises jurisdiction for bridge administration purposes. A Coast Guard bridge permit is not required.

27) U.S. Department of Health and Human Services, National Center for Environmental Health:

The Center for Environmental Health had no project specific comments, but recommended that the following topics be addressed.

- a) Air Quality
- b) Water Quality/Quantity
- c) Wetlands and Flood Plains
- d) Hazardous Materials/Wastes
- e) Non-Hazardous Solid Waste/ Other Materials
- f) Noise
- g) Occupational Health and Safety
- h) Land Use and Housing
- i) Environmental Justice

28) U.S. Department of Transportation, Federal Aviation Administration (FAA):

A future general aviation airport has been proposed in the Walton, Kentucky vicinity. However, no site selection plan has been conducted. Therefore, the FAA has not identified any impacts the highway proposals would present to establishment of an airport in the Walton, KY vicinity.

## **V. ENVIRONMENTAL AND SOCIOECONOMIC OVERVIEW**

### ***A. Environmental Footprint***

Issues identified as possibly requiring particular consideration in subsequent project development phases include (see Figure 6: Environmental Footprint):

- Culturally sensitive locations:
  - At least five cemeteries
  - Numerous churches
  - Three Schools
- Historic Sites
  - Eight sites and one property boundary along US 25 in Walton are listed on the National Register of Historic Places.
  - Numerous sites along US 25 in Walton are listed as either being a potentially historic site or an undetermined historical site.
  - There are also sites along KY 16, KY 17, and KY 2043 in the study that are listed as undetermined historical sites.
  - A full baseline study will be needed if the project is moved forward.
- The archeological overview revealed the project study area to be largely uninvestigated, but having archaeological potential. Additional archaeological investigations will be required in subsequent project development phases.

- The area under consideration encompasses numerous named streams, such as Cruises Creek, Sawyers Fork, Bullock Pen Creek, Bowman Creek, and Trace Run; as well as unnamed tributaries to those streams, any one of which could potentially include adjacent wetlands. Numerous wetlands are located within the study area. Impacts to streams/ wetlands should be avoided or minimized early in design.
- The study area crosses no nationally or state listed wild and scenic rivers.
- Air quality should not be an issue for this project.
- There is minimal potential for noise issues depending on residential densities and alignment selection.
- Records indicate that there are no existing or proposed mining permits within the evaluation area.
- The study area will not directly impact any park facilities.
- There is significant acreage of prime and/or statewide important farmland in the project study area that would be affected by a new route (See figure 7: Farmland Designation).
- The proposed project area is within the natural range and could impact the federally endangered Indiana Bat (*Myotis sodalis*), fanshell (*Cyprogenia stegaria*), and clubshell (*Pleurobema clava*).

## ***B. Geology***

The Geotechnical Engineering Branch of the Kentucky Transportation Cabinet recommends a corridor be evaluated along existing KY 16 or just to the north. If a corridor is chosen to the south of KY 16, larger cuts and fills would likely be required and be constructed of material with higher percentages of nondurable shales that would require flatter than normal cut and fill slopes and more right-of-way.

The Kentucky Geological Survey at the University of Kentucky also made the following geotechnical observations:

- This study is in the Outer Bluegrass physiographic region, which is underlain by limestone, siltstone, shale, gravel, sand, silt, and clay.
- A project in this area may encounter karst features such as shallow sinkholes.
- This study would encounter units that would be prone to landslides.
- This study would encounter unconsolidated sediments.
- The project area would not encounter any resource conflicts such as prior ownership of property for quarrying or mining. Some inactive or abandoned limestone mines might be in the area.
- This project area would encounter rock units that would be suitable as construction stone.
- This project area would not encounter any faulted areas.
- This project has probable peak ground acceleration (PGA) due to earthquake ground motion of 0.09g. There would be a low potential for liquefaction or slope failure in the unconsolidated sediments at or near streams caused by earthquake bedrock ground motion.

### **C. Environmental Justice**

The Northern Kentucky Area Development District (NKADD) conducted a review to identify environmental justice and community impact issues. The purpose of this review was to assist the Kentucky Transportation Cabinet in meeting the requirements of Federal Executive Order 12898, which states that "... each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations..." and hence to ensure equal environmental protection to all groups potentially impacted by potential improvements inside the study area. Although EO 12898 does not specifically address consideration of the elderly population, the U.S. Department of Transportation encourages the consideration of this demographic subset in Environmental Justice discussions. In addition, NKADD identified a list of community leaders with whom the possible effects on the community of the potential highway project under analysis herein were discussed. A copy of NKADD's Environmental Justice and community Impact Report is included in Appendix D.

The NKADD study concludes that the potential for disproportionately high and/or adverse effects on minority, low income, and/or elderly populations impacted by the project is generally small. The study area encompasses six census blocks. The table below summarizes the pertinent demographic factors of these Census Blocks.

**Table 7: Environmental Justice Information**

Census Unit		%	% Low	% Elderly	%
Tract	Block	Minority	Income	Persons	Disabled
706.03	3	2%	6%	10%	37%
	4	4%	6%	15%	32%
636.05	3	1%	5%	10%	33%
	4	1%	5%	16%	21%
637.01	1	1%	3%	10%	23%
637.02	1	2%	8%	13%	25%
Kentucky		10%	16%	12%	42%
United States		25%	12%	12%	32%

## VI. PROJECT GOALS

As articulated by the Project Team, four goals were envisioned to be achieved by the completion of this project:

- Improve east-west connectivity and access between KY 17 and I-75 in Southern Kenton County,
- Provide an alternative route during incidents or closures on I-75,
- Address highway capacity and growth needs in Southern Kenton County, and
- Improve safety by providing an improved route that complies with current design standards.

In terms of meeting federal (FHWA, CEQ) and KYTC guidance for development of a purpose and need statement for subsequent project development phases, if any, these four draft project goals reflect respectively the factors of system linkage, social demands, capacity, and safety/roadway deficiencies.

## VII. PROJECT FINDINGS

Significant determinations made by the study include:

- Projected current year volumes for the build scenario range from 4000 vehicles per day (vpd) to 6200 vpd (see traffic forecast in Appendix C). These volume projections are much lower than expected.
- There are identified safety problems in the study area, especially along KY 16. A new route connecting Mary Grubbs Highway to KY 17 would do little to improve the safety problems along KY 16.
- The proposed roadway alignments are not consistent with the Northern Kentucky Area Planning Commission's comprehensive plan, and would induce urban sprawl.
- A new route from the Mary Grubbs Highway to Nicholson would not accomplish the stated goal of providing an alternative route during incidents or closures on I-75. Motorists could not be expected to take a new route to Nicholson greatly extending their trip. Instead they would be expected to take US 25 through Walton in the event of a closure on I-75.
- Cost estimates for extending the Mary Grubbs Highway to Nicholson are as follows:

**Table 8: Project Cost**

Project Cost (In Millions)					
Corridor	Design	ROW	Utilities	Construction	Total
1	\$3.5	\$10.0	\$2.0	\$36.0	\$51.5
2	\$4.0	\$12.0	\$2.5	\$42.0	\$60.5
3	\$4.5	\$13.0	\$3.5	\$49.0	\$70.0

- Improving KY 16 instead of building a new route farther south is consistent with the Boone County Comprehensive Plan and the Boone County Transportation Plan.
- There are many transportation needs in both Boone and Kenton Counties. Currently there are forty-five unscheduled high priority projects totaling close to two billion dollars in Boone and Kenton Counties.

## **VIII. RECOMMENDATIONS**

The Mary Grubbs Highway Extension Scoping Study Project Team met January 19, 2006 to evaluate the data produced by the study and then make a final recommendation. The project team's final recommendation is as follows:

- A new route connecting the Mary Grubbs Highway to Nicholson should not be built at this time.
- Improvements are needed along KY 16 to bring it up to current design standards in order to improve safety along the route and add capacity for the economic development and population growth needs of Kenton County. The project team recommends continuing to prioritize KY 16 along with other needs in the area. The last prioritization cycle, finished in the fall of 2005, showed KY 16 between US 25 and KY 17 to be a high local priority, medium regional priority, and low district priority. The total estimated cost of this project is estimated at \$25 million.
- US 25 through Walton is very congested and a bypass of US 25 in Walton should be studied.

## **IX. ACKNOWLEDGEMENTS**

Appreciation is herewith expressed to Casey Grady of Northern Kentucky Area Development District for development and reporting of environmental justice information and to Bob Koehler of Ohio-Kentucky-Indiana Metropolitan Planning Organization for participation in project team meetings and providing traffic forecasts for the project study area.

## **X. CONTACTS**

The following persons may be contacted if additional information is needed concerning the project or the study process:

- Daryl Greer, Director, Division of Planning
- Steve Ross, Transportation Engineer Branch Manager, Strategic Planning Activity Center, Division of Planning
- Jim Wilson, Team Leader, Strategic Planning Activity Center, Division of Planning
- Joe Tucker, Mary Grubbs Highway Extension Scoping Study Project Manager, Strategic Planning Activity Center, Division of Planning

The following address and phone number may be used:

Phone: (502) 564-7183  
Address: Division of Planning  
Kentucky Transportation Cabinet  
Mail Code W5-05-01  
Transportation Office Building  
200 Mero Street  
Frankfort, KY 40622