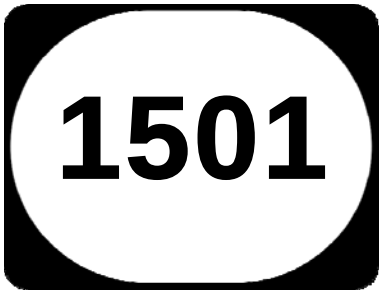
ALTERNATIVES PLANNING STUDY

Final Report



Kentucky 1501 (Hands Pike)

From KY 16 to KY 17 in the City of Covington

Kenton County, Kentucky

Item No. 6-8307.00

Prepared for:

KENTUCKY TRANSPORTATION CABINET

DIVISION of PLANNING

Prepared by:

December 2008

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

Study Background and Purpose

In 2003, the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), the designated metropolitan transportation planning organization for the greater Cincinnati metropolitan area, completed the Kenton County (KY) Transportation Plan in conjunction with the Kentucky Transportation Cabinet, the Northern Kentucky Area Planning Commission, and the Transit Authority of Northern Kentucky. That plan, which included "recommendations for improving a multi-modal transportation system within the constraints imposed by financial resources" listed improvements to KY 1501 (Hands Pike) as a priority project. The 2006-2012 KYTC Six-Year Highway Plan identified this study as Item 6-8307. In 2007 KYTC selected the consulting firm of Qk4 to conduct the study.

Study Location and Limits

Hands Pike is a 2.52-mile state-maintained collector roadway within Kenton County. It is located in southern Covington, south of I-275 between KY 16 and KY 17.

Project Goals

The goals for projects to be evaluated in the Hands Pike study result from discussions with the KYTC Project Team, local officials, and other project stakeholders. The project goals include:

- Improve safety conditions of KY 1501
- Improve access for local traffic

Further, it was explicitly stated that the goals did not include providing for an improved connector between KY 16 and KY 17.

Conditions Analysis

Traffic counts on Hands Pike reveal an estimated 2008 average daily traffic volume (ADT) of 9,600 vehicles a day (vpd) near the intersection with KY 17, with a Level of Service (LOS) of D, and 4,400 vpd near the intersection with KY 16, with an LOS of C. The entire corridor has a critically high crash rate, but the worst section is along Hands Pike Hill, where more than 90 percent of crashes occurred during wet weather. The percentage of trucks in the traffic stream is less than five percent. In the recent past, KY 17 was widened and reconstructed. That project included rebuilding the approach of KY 1501 to current design standards for approximately 1,100 feet east. From that point to KY 16, the lane widths are a substandard 9 feet wide and the shoulders are 1 foot or less. Access control is by permit only, and the posted speed limit is 35 miles per hour (mph). Right-of-way (R/W) widths average 60 feet. It should be noted that KYTC has programmed, and is buying right-of-way for the reconstruction of KY 16, which will include approximately 1,000 feet of KY 1501.

Alternatives Development and Evaluation

There are discreet transportation issues that vary by location along the Hands Pike corridor. Thus, the corridor was segmented into four analysis sections. Those analysis sections and the short- and long-term improvements options considered for each follow:

ANALYSIS SECTIONS AND IMPROVEMENT CONCEPTS

ANALYSIS SECTION 1

Hands Pike Hill

KY 17 (MP 0.22) to near Crystal Lake Drive (MP 0.91)

Short Term Options

❖ **Hands Pike Hill Spot Improvements 1:** This short-term improvement would reconstruct the horizontal curve at the bottom of the hill, just east of Wayman Branch Road (KY 3035). At the direction of the KYTC Project Team, the curve would be improved to 45 mph design speed for an added margin of safety. It would include widening the travel lanes from 9 to 12 feet as well as the addition of 2-foot-wide shoulders with rumble strips and a 4-foot-wide flat bottom ditch along the east side of the roadway. Existing 8-inch and 16-inch sewer lines would be relocated and a box culvert would be replaced and extended.

Approximate Length: 2,200 feet **Estimated Cost:** $6.8 million

❖ **Hands Pike Hill Spot Improvements 2:** This short-term improvement would address the top portion of Hands Pike Hill. Beginning near MP 0.6 and and ending near MP 0.9, it would include widening the travel lanes from 9 to 12 feet as well as the addition of 2-foot-wide shoulders with rumble strips and a 4-foot-wide flat bottom ditch along the north and east side of the roadway (i.e., adjacent to the downhill travel lane). The existing horizontal curve radius would be increased and there would be additional widening on the inside of the curve. Existing cross-drainage structures would be improved and slopes along the north and east side of the roadway would be cut back to improve sight distance.

Approximate Length: 2,400 feet **Estimated Cost:** $1.5 million

Long Term Options

❖ **Alternative Concept 1.0:** This long-term improvement option would reconstruct KY 1501 in its current location—it is essentially a combination of Spot Improvements 1 and 2. It would begin near the intersection of Hands Pike with KY 3035 and include two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists and 4:1 slopes outside the shoulder.

Approximate Length: 4,750 feet **Estimated Cost:** $8.3 million

Alternatives 1.1 through 1.5 are options that would relocate Hands Pike on new alignment from the top, or near the top, of the hill to KY 17. The different options were explored to identify opportunities, constraints, and costs associated with building on new alignment. Each option includes two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists and 4:1 slopes outside the shoulder.

❖ **Alternative Concept 1.1:** This improvement would begin near the intersection of Madison Pike and KY 17 approximately 0.3 mile south of the current intersection of Hands Pike with KY 17 and would traverse an easterly then northeasterly path, tying in with the current Hands Pike alignment near mile point (MP) 0.65. This option is less expensive than the others because it would require less excavation.

Approximate Length: 3,850 feet **Estimated Cost:** $9.0 million

❖ **Alternative Concept 1.2:** As with Alternative 1.1, this improvement would begin near the intersection of Madison Pike and KY 17 but would traverse a more easterly path than Alternative 1.1, tying in with the current Hands Pike alignment near MP 0.9.

Approximate Length: 3,650 feet **Estimated Cost:** $13.2 million

❖ **Alternative Concept 1.3:** This improvement would begin approximately 0.6 mile south of the intersection of Hands Pike and KY 17 and traverse a northerly then easterly corridor, tying in with the current Hands Pike alignment near the intersection with Crystal Lake Road (MP 1.03). The concept's length would enable a vertical grade of less than 5%, but the length is why this option is notably more costly than other options.

Approximate Length: 4,850 feet **Estimated Cost:** $27.0 million

❖ **Alternative Concept 1.4:** This improvement would deviate from the existing Hands Pike alignment near MP 0.4 and traverse north and east of the current road before tying back in near MP 0.9. This alignment is notably more expensive than the others, even though it is shorter, because of right-of-way acquisition costs.

Approximate Length: 3,150 feet **Estimated Cost:** $27.8 million

❖ **Alternative Concept 1.5:** This improvement would deviate from the existing Hands Pike alignment at the junction with KY 3035 near MP 0.17 and traverse south and west of the current road before tying back in near Crystal Lake Road (MP 1.03).

Approximate Length: 4,000 feet **Estimated Cost:** $17.0 million

Figure ES-1: Project Analysis Sections

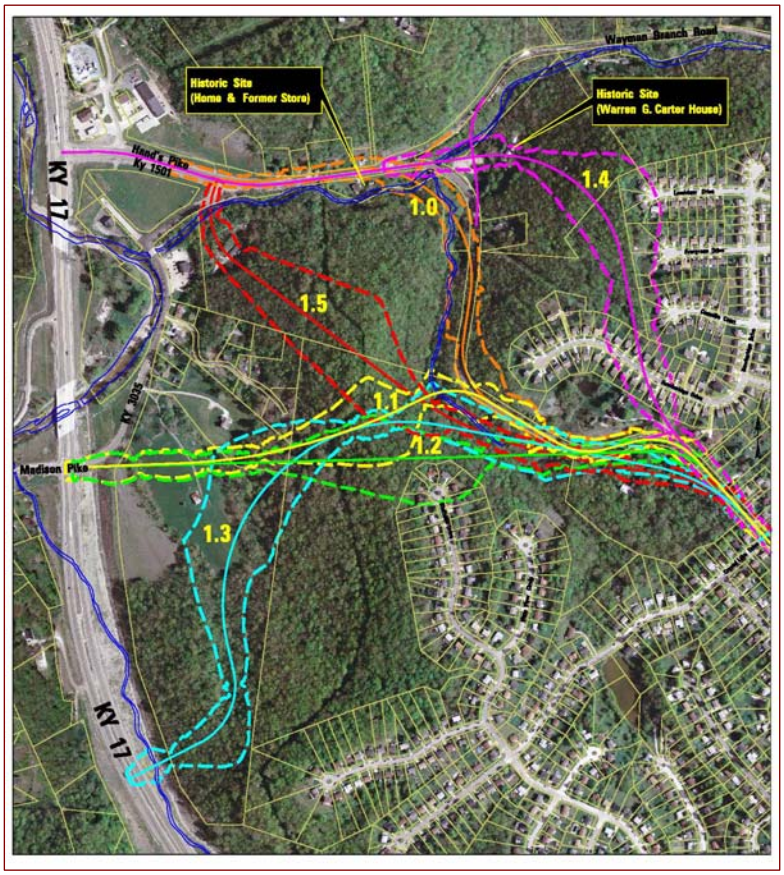


Figure ES-2: Alternate Corridors, Analysis Section 1

ANALYSIS SECTIONS AND IMPROVEMENT CONCEPTS (*Continued*)

ANALYSIS SECTION 2 Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)	❖ **Alternative Concept A:** A 3-lane urban section (curb and gutter) was considered. This concept included a center two-way left-turn lane and improvement of a sag curve between MPs 1.2 and 1.3. A conventional sidewalk would be provided on one side of the road and a wider sidewalk would be provided on the other side as a multi-use bicycle/pedestrian path. **Approximate Length:** 3,000 feet **Estimated Cost:** $4.6 million ❖ **Concept A1:** An additional improvement considered within this section was the construction of a roundabout at the intersection of Tripoli Lane/Tamarack Drive. **Approximate Length:** n/a **Estimated Cost:** $3.7 million **Total Estimated Cost, Both Concepts:** $8.3 million
ANALYSIS SECTION 3 Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)	❖ **Alternative Concept A:** This concept is a new corridor south and west of existing Hands Pike from near the intersection with Otter Court (MP 1.47) to the vicinity of MP 2.17. A 2-lane urban section was envisioned with a conventional sidewalk on one side of the road and a wider sidewalk on the other, provided as a multi-use bicycle/pedestrian path. **Approximate Length:** 3,700 feet **Estimated Cost:** $11.2 million ❖ **Alternative Concept B:** This concept improves the existing corridor. As with Alternative Concept A, this improvement could include a 2-lane urban section with a conventional sidewalk on one side of the road and a wider sidewalk on the other, provided as a multi-use bicycle/pedestrian path. **Approximate Length:** 4,000 feet **Estimated Cost:** $13.5 million
ANALYSIS SECTION 4 East of Edwin Drive (MP 2.17) to KY 16 (MP 2.52)	❖ **Alternative Concept A:** A 2-lane urban section was envisioned along the existing and proposed new alignment associated with the KY 16 improvements with a conventional sidewalk on one side of the road and a wider sidewalk on the other, provided as a multi-use bicycle/pedestrian path. **Approximate Length:** 1,850 feet **Estimated Cost:** $2.0 million

Recommendations

The following project improvements were recommended in priority order:

1. **ANALYSIS SECTION 1: Spot Improvements 2—**Near-term improvements at the top of the hill, estimated to cost $1.5 million.

   Also, carry both **Alternative Concepts 1.0** and **1.1** to the Design phase of project development, where a final decision would be made regarding which alternative to select. The rural cross section is to include 6-foot-wide paved shoulders as a provision for bicyclists. The estimated cost is $8.3 to 9.0 million depending upon the alternative chosen and the extent to which spot improvements ultimately can be integrated into final improvements.

2. **ANALYSIS SECTION 2: Alternative Concept A—**3-Lane Urban Section with Center Left-Turn Lane. A conventional sidewalk would be constructed on one side of the road and a wider sidewalk would be provided on the other side as a multi-use bicycle/pedestrian path. The estimated cost is $4.6 million.

3. **ANALYSIS SECTION 3: Alternative Concept A**—2-Lane Urban Section on New Alignment. A conventional sidewalk would be constructed on one side of the road and

a wider sidewalk would be provided on the other side as a multi-use bicycle/pedestrian path. The estimated cost is $11.2 million.

4. **ANALYSIS SECTION 4: Concept A—**2-Lane Urban Section. A conventional sidewalk would be constructed on one side of the road and a wider sidewalk would be provided on the other side as a multi-use bicycle/pedestrian path along the existing and proposed new alignment associated with the KY 16 improvements. The estimated cost is $2 million.

The total estimated cost of these recommended improvements is **$27.6 or $28.3 million**, depending on which Alternative Concept (1.0 or 1.1) in Section 1 is selected and how the spot improvements are integrated.







1.0 INTRODUCTION

In 2003, the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), the designated metropolitan transportation planning organization for the greater Cincinnati, Ohio, metropolitan area, completed the Kenton County (Kentucky) Transportation Plan in conjunction with the Kentucky Transportation Cabinet, the Northern Kentucky Area Planning Commission, and the Transit Authority of Northern Kentucky. That plan, which included "recommendations for improving a multi-modal transportation system within the constraints imposed by financial resources" listed improvements to KY 1501 (Hands Pike) as a priority project. The 2006-2012 KYTC Six-Year Highway Plan identified this study (referred to herein as the *Hands Pike Study)* as Item 6-8307. In 2007 KYTC selected the consulting firm of Qk4 to conduct the study.

1.1 Project Location and Study Area

Hands Pike (KY 1501) is located in southern Covington in Kentucky County, Kentucky (see Figure 1, *Project Location Map*). Kenton County is in northern Kentucky along the Ohio River. It is bordered by Boone County on the west, Campbell County on the east, Grant and Pendleton Counties on the south, and the Ohio River (and Cincinnati) on the north. Kenton County occupies 163 square miles. The terrain of Kenton County is deeply dissected by numerous stream valleys associated with the Ohio and Licking Rivers. Flat areas are relatively scarce and generally small.

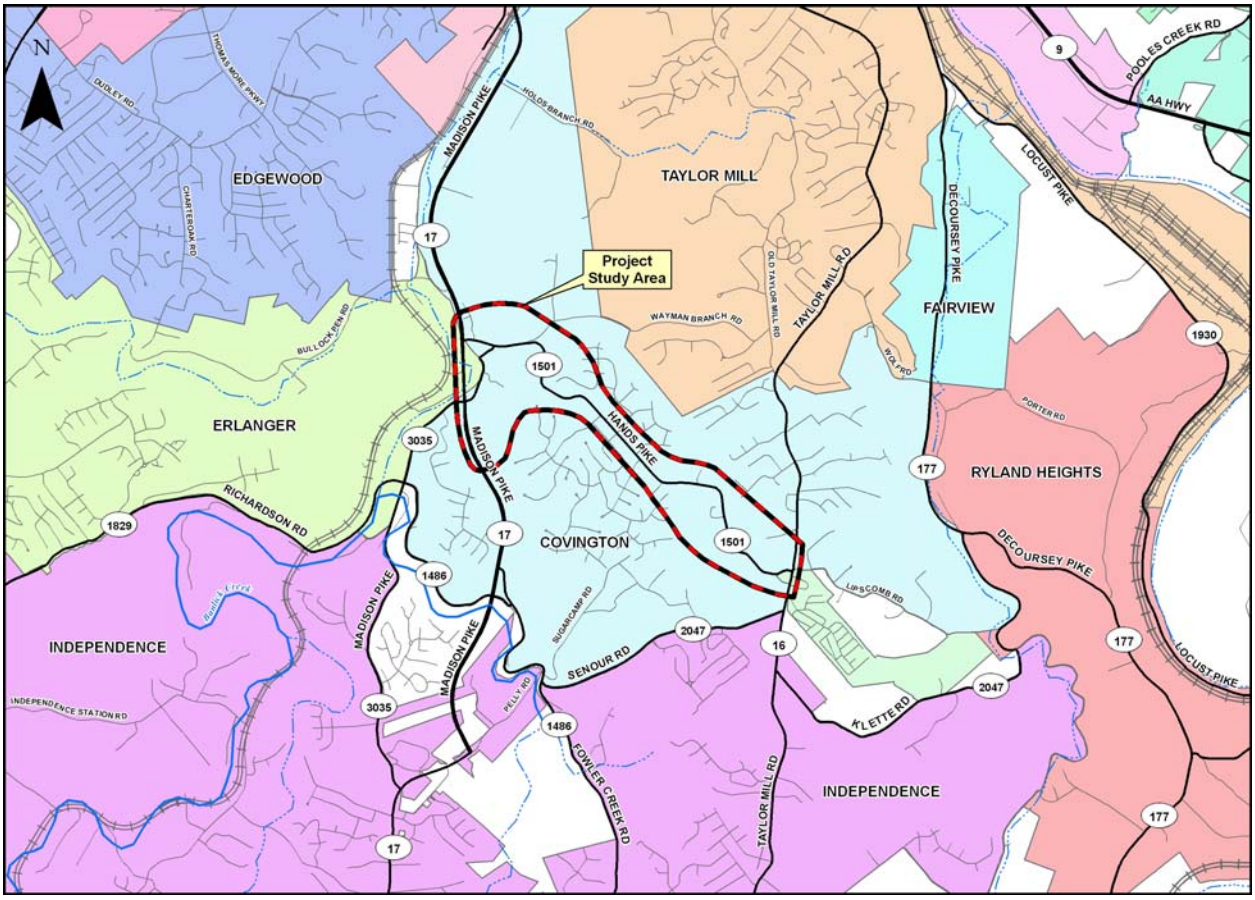


Figure 1: Project Location and Study Area

Although not the county seat, Covington is the county's largest city, with a population of 43,370, according to the 2000 Census. Kenton County's population is 151,464. The major interstate directly serving Covington is the Interstate 275 (I-275) beltway, which connects with I-75 south of the city and also crosses the Ohio River to become the major beltway around Cincinnati to the north, providing access to I-74, I-75, and I-71.

Hands Pike is located in a mixed rural and urban area south of I-275 between KY 16 and KY 17 (see Figure 2, *Hands Pike Study Area*). From KY 17 east, the road travels up a steep hill to the top of a ridge and then, after traversing across the ridge, it descends before intersecting with KY 16. Atop the ridge the terrain is relatively flat and several large residential subdivisions have been constructed. Some commercial and industrial development exists at the Hands Pike intersections with both KY 16 and KY 17, and there are also institutional uses present in the study corridor. As is apparent in Figure 2, forested areas surrounding the subdivisions comprise much of the remaining, undeveloped land use in the Hands Pike study corridor. KY 17 was recently reconstructed, and it included the western end of KY 1501; KY 16 is programmed to be reconstructed (KYTC has finished the design phase and is currently purchasing right-of-way) and it will included the eastern end of KY 1501.

1.2 Study Process

The study of Hands Pike consisted of these major steps:

- Definition of project issues and goals
- Evaluation of existing conditions
- Overview of human and natural environmental conditions
- Solicitation of public and local official input
- Identification of improvement opportunities
- Recommendation of possible solution(s), costs, and phasing

The subsequent chapters in this report follow these steps.

Figure 2: Aerial View of Study Area

2.0 STUDY GOALS

The goals for projects to be evaluated in the Hands Pike study result from discussions with the KYTC Project Team, local officials, and other project stakeholders. The key project goals include:

- Improve safety conditions along Hands Pike, where one of the main safety concerns is the steep and curvy hill west of Crystal Lake Drive as well as the typical section on top of the ridge through the residential area. Traffic volumes are high in the western section of the corridor (see Section 3.1, below) and the entire corridor has a high crash rate (see Section 3.2, below).

- Improve access for local traffic, including local bicycle and pedestrian traffic.

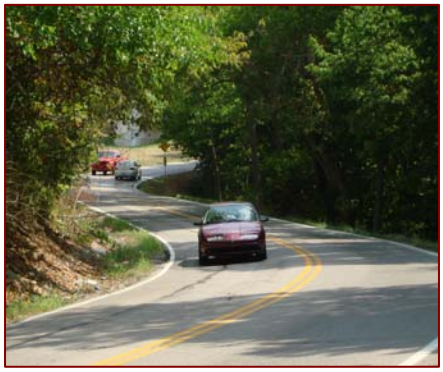
Further, it should be noted that the goals do *not* include providing for an improved connector between KY 16 and KY 17.

Photographs below, taken along Hands Pike, illustrate unsafe conditions such as damaged guard rails indicative of accident locations, the curvilinear and hilly roadway with very narrow/ nonexistent shoulders and narrow travel lanes, conflicting signage, and obstructions (utility poles and mailboxes) within/immediately adjacent to the right-of-way.










3.0 EXISTING AND FUTURE NO-BUILD CONDITIONS

3.1 Highway and Traffic Characteristics

Existing conditions on Hands Pike were compiled from the KYTC Highway Information System (HIS) database and from KYTC crash records. Traffic counts conducted on Hands Pike in recent years by KYTC reveal an estimated year 2008 average daily traffic volume (ADT) of 9,600 vehicles per day (vpd) near the intersection with KY 17 and 4,400 vpd near the intersection with KY 16. The percentage of trucks in the traffic stream is less than 5% and the entire corridor has a critically high crash rate. In the year 2030, ADT volumes at these two sites are projected to be 12,600 vpd and 5,800 vpd, respectively.

In the recent past, KY 17 was widened and reconstructed. That project included rebuilding the approach of KY 1501 to current design standards for approximately 1,100 feet east. From that point to KY 16, the lane widths are a substandard 9 feet wide and the shoulders are 1 foot or less. Access control is by permit only, and the posted speed limit is 35 miles per hour (mph). Right-of-way (R/W) widths average 60 feet. A summary of highway characteristics data for Hands Pike is presented in Table 1.

Table 1: Hands Pike Roadway Characteristics

Roadway Characteristics	Begin MP 0.22 to End MP 1.16	Begin MP 1.16 to End MP 2.17	Begin MP 2.17 to End MP 2.52
Driving Lanes	2	2	2
Lane Width	9	9	9
Shoulder Type	Paved w/ Bituminous Material	Paved w/ Bituminous Material	Paved w/ Bituminous Material
Shoulder Width	1	1	1
2008 ADT	9,600	4,400	4,400
2008 Level of Service	D	C	C
Posted Speed Limit	35	35	35
Average R/W Width	60	60	60
Type Road	Undivided Highway	Undivided Highway	Undivided Highway
Median	None	None	None
Functional Class	Urban Collector	Urban Collector	Urban Collector
State Primary Road System	State Secondary	State Secondary	State Secondary
National Hwy System	NO	NO	NO
National Truck Network	NO	NO	NO
Truck Weight Class	A	A	A
Terrain	Rolling	Rolling	Rolling
Pavement Type	High Flexible	High Flexible	High Flexible – Mixed Bituminous

3.2 Future Traffic Volumes and Level of Service

Level of Service (LOS) is a qualitative indicator of operational conditions in a traffic stream based on speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Levels of service are described according to a letter rating system (similar to school grades) ranging from LOS A (free flow, minimal or no delays—best conditions) to LOS F (stop and go conditions, very long delays—worst conditions). For 2-lane roadways such as Hands Pike, level of service is a function of the average percent of time a vehicle spends following another vehicle. West of the intersection with Tripoli Lane, where traffic

volumes are higher, the current LOS is D. This means one vehicle is following another 70% of the time during peak travel times. East of the intersection with Tripoli Lane, where traffic volumes are somewhat lower, the current Los is C. This means one vehicle is following another less than 70% but more than 55% of the time. Tables 2 and 3, below, and Exhibit 2 in Appendix A show traffic volume/LOS data.

Based on the traffic projections (see Tables 2 and 3) that were developed for Hands Pike for the year 2030, these levels of service are not expected to worsen between now and then due to the relatively low forecasted growth rates in traffic volumes.

Table 2: Hands Pike Levels of Service—Existing (Year 2006) and Projected (Year 2030)

Beginning MP	Beginning Feature	Ending MP	Ending Feature	2006 ADT	2030 ADT	2006 LOS	2030 LOS
0	KY 17	1.163	Tripoli Lane	9,900	12,600	D	D
1.163	Tripoli Lane	2.519	KY 16	4,000	5,800	C	C

Table 3: Historical and Projected Traffic Volumes and Growth Rates

Year	West of Tripoli Lane	East of Tripoli Lane
1979	3390	2200
1982	4030	2310
1988	5240	2310
1991	6690	3230
1994	7470	3300
1996	7970	3110
1999	8170	3430
2008	9600	4400
Historical Average Annual Growth Rate	3.9%	2.1%
% Change from 1979 to 2006	192%	81%
2030	12,600	5,800
Forecasted Average Annual Growth Rate	1.0%	1.5%
Projected % Change from 2006 to 2030	27%	45%

3.3 Crash Analysis

KYTC provided crash data for a five-year period from January 1, 2002, through December 31, 2006. During this period, 201 crashes occurred on Hands Pike. Crash rates were computed for spots with a length of 0.1 mile. Spot crash rates are typically expressed in terms of crashes per 100 million vehicle-miles to take into account the volume of traffic on a particular highway. A spot's crash rate is then compared to a statewide critical crash rate for the same type of roadway to identify high crash locations. Highway spots with a crash rate higher than the critical crash rate are considered statistically significant high crash locations and are potential candidates for safety improvements. Results of this analysis for Hands Pike are shown in Table 4. As shown, the corridor in its entirety is a statistically significant high crash location.

Table 4: Spot Crash Analysis

Beginning MP	Ending MP	Total Number of Crashes	Crash Rate	Critical Crash Rate	Critical Crash Rate Factor
Corridor					
0.0	2.52	201	663.47	340.55	**1.95**
Spots					
0.0	0.1	13	1.198	0.625	**1.918**
0.3	0.4	26	2.504	0.635	**3.945**
0.4	0.5	28	4.131	0.749	**5.518**
0.5	0.6	7	1.033	0.749	**1.379**
0.6	0.7	9	1.328	0.749	**1.774**
0.9	1.0	16	2.361	0.749	**3.153**
1.0	1.1	9	1.328	0.749	**1.774**
1.1	1.2	7	1.033	0.749	**1.379**
1.7	1.8	7	1.033	0.749	**1.379**

With the exception of the spot between MP 1.7 and 1.8 (just east of the intersection with Ken Drive), each of these spots is located west of the intersection with Tripoli Lane/Tamarack Drive (see Exhibit 1, Appendix A). The greatest concentration of crashes is in the westernmost one-mile section known as the "Hands Pike Hill." That one-mile section was the location of 135 crashes between January 1, 2002, and December 31, 2006, and has a critical crash rate factor of 3.317.

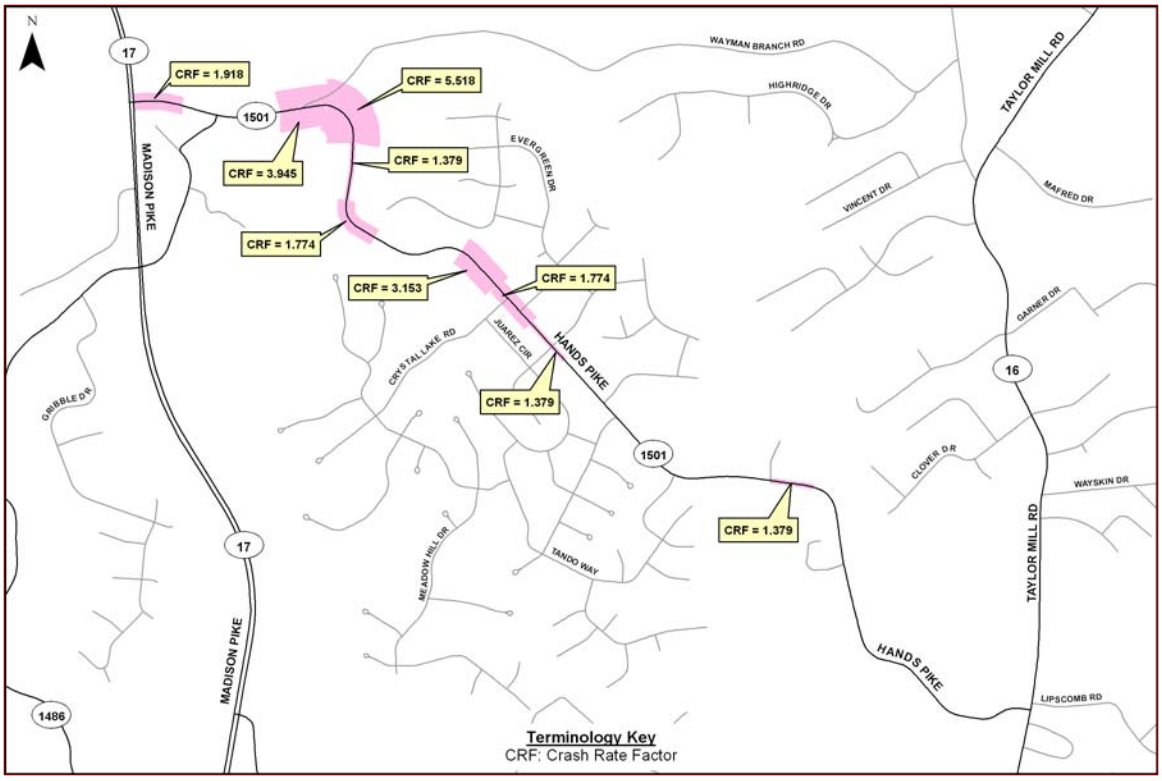


Figure 3: High Crash Spot Locations

4.0 HUMAN ENVIRONMENT OVERVIEW

4.1 Environmental Justice

An *Environmental Justice and Community Impact Report* (EJ Report) that was prepared by the Northern Kentucky Area Development District (NKADD) in June 2008 for this *Hands Pike Study* examined feasible improvement opportunities for Hands Pike. An EJ Report is an assessment of community demographics within the study area and a comparison of these demographics with those of the surrounding area, particularly regarding low income, minority, and elderly populations. The goal of such an effort is to ascertain if any of these populations might be disproportionately impacted by improvements to the Hands Pike corridor. The full EJ Report prepared for this study is included in Appendix G.

NKADD concluded that no defined Environmental Justice community exists within the project study area and hence no disproportionate impacts on minority, low-income, or elderly or disabled populations would occur as a result of any improvements to the Hands Pike corridor.

4.2 Underground Storage Tanks/Hazardous Materials

A record search of environmental data for the Hands Pike corridor, conducted in September 2007, revealed a total of three potential HAZMAT sites exist in the project study area (see Exhibit 2 in Appendix A). The three sites are: 1) a landscaping company along Hands Pike, 2) a gas station at the corner of Hands Pike and KY 17, and 3) a gas station at the corner of Hands Pike and KY 16. None of these sites are undergoing corrective actions or have any known violations.

4.3 Previously Documented Cultural Historic and Archeological Sites

An archaeological resource overview was prepared for this project in May 2008. The overview included a review of the existing databases of the Office of State Archaeology, National Park Service, and the Kentucky Heritage Council and revealed no sites currently listed on the National Register of Historic Places (NRHP) within the project study area. However, the study area was assessed for the potential for prehistoric and/or historic archaeological sites. The type of topography present in Kenton County suggests a probability of seasonal prehistoric archaeological sites. Further, the possibility of historic archaeological sites relating to Civil War battles or camp sites exists due to the documented Civil War activities in Kenton County. Because of this high potential for prehistoric and historic archaeological sites, a Phase 1 Archaeological Survey is recommended as a part of any future project development activities.

A separate cultural historical resource overview was also conducted for the project study area in August 2007. This overview revealed two properties that previous studies had identified as eligible for the NRHP:

- Site A, the Banklick Christian Church (Figure 4)
- Site B, the Log Cabin Inn (Figure 5).

Research conducted specifically for the current study indicated that two additional individual properties appear to meet NRHP criteria:

- Site C, a log house on Hands Pike (Figure 6)

- Site D, the Warren G. Carter House on Hands Pike (Figure 7)

Exhibit 2 in Appendix A shows the locations of the four potentially eligible properties.

Figure 4: Banklick Christian Church

Figure 5: Log Cabin Inn

Figure 6: Log House

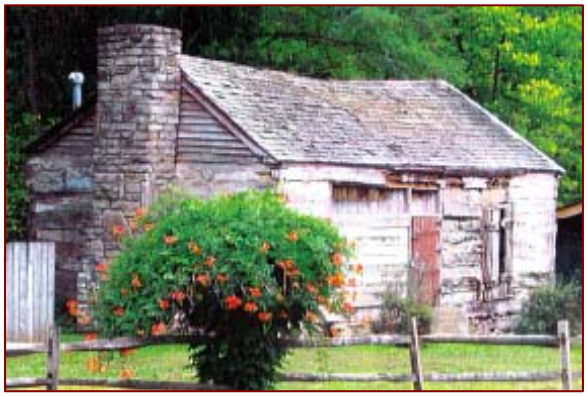


Figure 7: Warren G. Carter House

4.4 Land Use

Single-family residential development is the predominant land use within this mixed rural and urban corridor. Several large subdivisions are located atop the ridge traversed by Hands Pike. Some commercial development exists at the Hands Pike intersections with both KY 16 and KY 17, and there are also institutional uses present in the study corridor—Covington Fire Station #3 and a private Calvary Christian School. As is apparent in the aerial photograph, Figure 2 on page 2, forested areas surrounding the subdivisions comprise much of the remaining, undeveloped land use in the Hands Pike study corridor. This portion of Covington and Kenton County are considered a bedroom area for the larger Cincinnati metropolitan area. Because of the hilly topography the land use is not expected to convert to a more urban-like density; however, some infill residential development could be expected on the less hilly areas near KY 16.

Appendix B contains photographs showing the roadway and land uses along the study corridor from KY 17 to KY 16.

5.0 NATURAL ENVIRONMENT OVERVIEW

Threatened and Endangered Species

Both the Kentucky Department of Fish and Wildlife Resources (KDFWR) and the Kentucky Nature Preserves Commission (KSNPC) provided general information regarding threatened and endangered species throughout Kenton County. KDFWR submitted *Federal Threatened, Endangered, and Candidate Species observations for selected counties: Kenton*, and KSNPC provided its *Report of Endangered, Threatened, and Special Concern Plants, Animals, and Natural Communities for Kenton County, Kentucky*. These lists are included in Appendix E.

KSNPC has noted that the wooded areas near the confluence of Wayman's Branch and Banklick Creek "harbor a significant population of Redback salamander (Plethodon cinereus). This species is very restricted in range in Kentucky, occurring primarily in a small portion of Kentucky's northern tier of counties. Every effort should be made to minimize disturbance to these wooded areas to protect the population of Redback salamanders in the Hands Pike project area." (See KSNPC email dated January 8, 2008, in Appendix E.)

Table 5: KDFWR List of Kentucky Status Endangered Species

Scientific Name and Life History	Common Name and Pictures	KY Status
Epioblasma obliquata	Catspaw	E
Pleurobema clava	Clubshell	E
Cyprogenia stegaria	Fanshell	E
Epioblasma torulosa rangiana	Northern Riffleshell	E
Plethobasus cooperianus	Orangefoot Pimpleback	E
Lampsilis abrupta	Pink Mucket	E
Obovaria retusa	Ring Pink	E
Pleurobema plenum	Rough Pigtoe	E

Areas of Special Concern

No state nature preserves or wildlife management areas are present within the project corridor. No state or national parks and forests or wild and scenic rivers are located in the corridor.

Streams

Two blueline streams exist in the study area: Wayman Branch (also known as Hands Branch Creek) and Banklick Creek. The headwater of Wayman Branch/Hands Branch Creek is crossed by Hands Pike in the eastern portion of the corridor, closer to KY 16. It flows north and then west before going under Hands Pike near Wayman Branch Road in the western portion of the corridor, before flowing into Banklick Creek. Banklick Creek is bridged by KY 17, but does not cross Hands Pike (or any of the proposed realignment alternatives). Any reconstruction of the Hands Pike crossings of Wayman Branch/Hands Branch Creek would require use of best management practices to minimize impacts, and coordination with the Kentucky Division of Water and the US Army Corps of Engineers and receipt of either an Individual Permit or a General Permit (i.e., Nationwide 14) prior to any construction.

6.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

6.1 Public Involvement Program Summary

Project Team—A KYTC Project Team was created for the *Hands Pike Study*. Representatives of the KYTC Planning, Design, Environmental Analysis, Traffic, Utilities, Maintenance, and Construction functions of KYTC met on three occasions during the course of the study to provide guidance and decision-making. Minutes of these meeting are included in Appendix C.

Meetings with Local Officials and Other Project Stakeholders—Meetings with Local Officials and Other Project Stakeholders were held twice during the course of the study. The first meeting was held to introduce local officials to the study and to solicit their input at an early stage in the study process. The second meeting was held to provide a summary of the comments receive at the public meeting regarding preliminary alternative concepts, and to solicit their comments on recommended improvements. Minutes of these meeting are also included in Appendix C.

Public Meeting—One public meeting was held, on February 7, 2008, to present preliminary improvement alternatives and solicit public feedback on those proposals. Fifty-six people signed in at the public meeting. Questionnaires were distributed to those in attendance, and thirty-three completed surveys were returned, either at the meeting or by mail in the following weeks. A summary of the public meeting is included in Appendix D.

6.2 Agency Coordination

One agency mailing was prepared and distributed after base information had been collected. A copy of the mailing and the list of recipients are both included in Appendix F for reference.

Responses were received from a variety of agencies. Many of the responses indicated that their agency did not anticipate any significant project related issues in the study area. Others outlined standard requirements and guidance related to project planning, design, and construction. A third set of agencies did have specific concerns or issues that they wanted to be considered in the study. A summary of the substantive responses received is provided below. A summary of all agency comments and copies of all agency correspondence received are included in Appendix F.

- **Geotechnical Engineering Branch, Division of Structural Design**: Identified no geologic preference among alternative corridors, but the letter did identify concerns about construction in glacial fill areas.

- **Kentucky State Nature Preserves Commission**: Urged minimized disturbance to wooded areas to protect Redback salamander.

- **Kentucky Department of Fish and Wildlife Resources**: Noted that state/federal threatened and endangered species are known to occur near the project area, but impacts to listed species are not anticipated due to the location of the project. Recommended erosion control and other measures to minimize impacts to waterways, and identifying stream mitigation on-site or within the Banklick Creek watershed.

- **Kentucky State Police**: Recommended adding a left-turn to Hands Pike at the KY 16 intersection, cutting back vegetation restricting sight distance at the intersection with Wayman's Branch Road, and installing flashing beacons along Hands Pike on either side of its intersection with Otter Drive. Further suggested making one or more (non-specific) intersections along Hands Pike between Crystal Lake Road and Otter Drive four-way stops.

- **KYTC Bicycle Pedestrian Coordinator**: Urged providing bicycle and pedestrian accommodations.

- **Kentucky Division of Water**: Noted endorsement of the project.

- **Underground Storage Tank Branch, Division of Waste Management**: Reported eight active registered tanks but no facilities undergoing corrective action.

- **Solid Waste Branch, Division of Waste Management**: Reported no mapped landfills in the area.

- **Federal Aviation Administration**: Identified no issues unless cranes (or other equipment) to be used during construction exceed 150 feet in height; in which case a formal FAA assessment of impacts would be required. (The same concern was expressed by the Kentucky Airport Zoning Commission.)

- **Natural Resources Conservation Service**: Noted additional coordination with NRCS would be necessary if the project impacts farmland and federal dollars are to be used to convert important farmlands to non-agricultural uses.

- **Senator Jack Westwood**: Urged expeditious improvements to Hands Pike.

- **Kentucky Geologic Survey**: Noted that karst features may be encountered, some areas may be prone to landslides, and there is a low potential for geologic faults or earthquakes.

- **U.S. Coast Guard**: Stated that no Coast Guard bridge permit would be required.

7.0 ALTERNATIVES DEVELOPMENT AND EVALUATION

7.1 Analysis Sections

The Hands Pike corridor between KY 17 and KY 16 is a distance of approximately 2.5 miles, within which are discreet transportation issues that vary by location along the corridor. Thus, the corridor was segmented into four analysis sections (see Figure 8).

The analysis of Hands Pike focused on four segments:

- **Analysis Section 1:** KY 17 (MP 0.22) to near Crystal Lake Drive (MP 0.91) (Hands Pike Hill)
- **Analysis Section 2:** Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)
- **Analysis Section 3:** Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)
- **Analysis Section 4:** East of Edwin Drive (MP 2.17) to KY 16 (MP 2.52)

Figure 8: Project Analysis Sections

ANALYSIS SECTION 1

KY 17 (MP 0.22) to near Crystal Lake Drive (MP 0.91, Hands Pike Hill)

This segment, excluding the westernmost 0.22 mile section that was reconstructed along with KY 17, is characterized by Hands Pike Hill and four separate, significant horizontal curves:

- MP 0.38 – 0.49: 17.8 degrees
- MP 0.61 – 0.67: 22.9 degrees
- MP 0.76 – 0.82: 14.9 degrees
- MP 0.86 – 0.91: 17.2 degrees

The hill is a 13.0% grade. Traffic volumes along Hands Pike are highest in this section. Drainage problems exist, and travel speeds appear to exceed the 35 mph speed limit. Crashes along this segment are very frequent and disproportionately wet-roadway related.

ANALYSIS SECTION 2

Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)

Section 2 is characterized by providing access to residential subdivisions. It also provides access to the Fire Station, and has an overall more urban character, as compared to the other sections character, including some sidewalks and turning lanes, and access points to several subdivisions and driveways.

Section 2 has a large vertical curve sag between MP 1.2 and MP 1.3. Traffic volumes have decreased from Analysis Section 1. At MP 1.47 there is a 12.7 degree horizontal curve that begins the transition into Analysis Section 3.

ANALYSIS SECTION 3

Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)

Section 3 transitions from the more urban area of Section 2 to a rural residential character. Winding eastward toward KY 16 it provides direct access to several homes adjacent to Hand Pike. This segment has four separate significant horizontal curves.

ANALYSIS SECTION 4

East of Edwin Drive (MP 2.17) to MP 2.52, where the proposed KY 16 reconstruction will rebuild KY 1501

Section 4 is a connector section between Section 3 and the programmed improvements to KY 1501 as part of KYTC's efforts to rebuild KY 16. Traffic volumes are currently averaging 4,400 vpd. The primary problem noted by the public in this section was the difficulty of turning left onto KY 16 due to the high volumes of traffic on that road.

.

7.2 Alternative Development

The stated project goals include improving safety and access for local traffic along Hands Pike. To achieve this goal the alternates that were explored continued to allow Hands Pike to function as a Local Collector Road with out raising this facility to an Urban Arterial Roadway. All alternates that were explored used the concepts of Context Sensitive Design and the new KYTC Practical Solutions Guideline to achieve a roadway that meet the needs expressed by the local community without proposing a roadway that is overly obtrusive or needlessly expensive. The discussion below is structured around sections discussed in Section 7.1, above.

The Analysis Section locations are shown on Figure 8. The recommended alternative concepts are illustrated on Exhibit 3 in Appendix A. Table 7 (p. 20) provides cost estimates for the Section Analysis alternatives, and Table 8 (p. 21) compares the alternatives' costs, right-of-way, relocation, impacts/benefits, public rankings, and cost estimates.

Analysis Section 1: KY 17 (MP 0.22) to near Crystal Lake Drive (MP 0.91, Hands Pike Hill)

As reported in the discussion above concerning the crash history on Hands Pike, this segment has a significant safety problem. Thus, both short- and long-term alternative solutions were developed for Analysis Section 1 to enable potential rapid implementation of short-term measures to improve safety. As depicted in Figure 9, the long-term improvements would be on new alignment for either all or a portion of their distance. Figure 10 shows the typical section for the spot improvement concepts, and Figure 11 shows the typical section for the long-term concepts.

- **Hands Pike Hill Spot Improvements 1:** This short-term improvement would begin near the intersection of Hands Pike with KY 3035. Improvements include the addition of 2-foot-wide shoulders with rumble strips and a 4-foot-wide flat bottom ditch along the east side of the roadway. At the direction of the KYTC Project Team, the horizontal curve beginning just east of the junction with Wayman's Branch Road would be improved to 45 mph design speed for an added margin of safety. Existing 8-inch and 16-inch sewer lines would be relocated and a box culvert would be replaced and extended. Studies at the Kentucky Transportation Center (KTC) at the University of Kentucky (UK) have indicated that improvements to horizontal curves can reduce the occurrence of crashes by 40%.

  Approximate Length: 2,200 feet **Estimated Cost:** $6.8 million

- **Hands Pike Hill Spot Improvement 2:** This short-term improvement would begin near MP 0.6 and end near MP 0.9. Improvements include the addition of 2-foot-wide shoulders with rumble strips and a 4-foot-wide flat bottom ditch along the east side of the roadway. The existing horizontal curve radius would be increased and there would be additional widening on the inside of the curve. Existing drainage structures would be improved, and slopes along the north and east side of the roadway would be cut back to improve sight distance. Nearly all of the crashes in this area occur during wet weather. Studies at KTC have indicated that drainage improvements can reduce the occurrence of all crashes by 20% and wet-weather crashes by 40%.

  Approximate Length: 2,400 feet **Estimated Cost:** $1.5 million

- **Alternative Concept 1.0:** This long-term improvement would begin near the intersection of Hands Pike with KY 3035 and include two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists, and 4:1 slopes outside the shoulder. Studies at KTC have indicated that this type of improvement can reduce the occurrence of crashes by 40%.

  Approximate Length: 4,750 feet **Estimated Cost:** $8.3 million

- **Alternative Concept 1.1:** This long-term improvement would begin near the intersection of Madison Pike and KY 17 approximately 0.3 mile south of the current Hands Pike/KY 17 intersection and would traverse an easterly then northeasterly path, tying in with the current Hands Pike alignment near MP 0.65. The concept includes two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists and 4:1 slopes outside the shoulder. Studies have indicated that this type of improvement can reduce the occurrence of crashes by 40%.

  Approximate Length: 3,850 feet **Estimated Cost:** $9.0 million

- **Alternative Concept 1.2:** As with Alternative 1.1, this long-term improvement would begin near the intersection of Madison Pike and KY 17 approximately 0.3 mile south of the intersection of Hands Pike with KY 17 but would traverse a more easterly path than Alternative 1.1, tying in with the current Hands Pike alignment near MP 0.9. The concept includes two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists and 4:1 slopes outside the shoulder. This type of improvement can be expected to reduce the occurrence of crashes by 40%.

  Approximate Length: 3,650 feet **Estimated Cost:** $13.2 million

- **Alternative Concept 1.3:** This long-term improvement would begin approximately 0.3 mile south of the intersection of Madison Pike and KY 17 and traverse a northerly then easterly corridor, tying in with the current Hands Pike alignment near the intersection with Crystal Lake Road (MP 1.03). This concept includes two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists and 4:1 slopes outside the shoulder. The concept's length would enable a vertical grade of less than 5% percent. This type of improvement can be expected to reduce the occurrence of crashes by 40%.

  Approximate Length: 4,850 feet **Estimated Cost:** $27.0 million

- **Alternate Concept 1.4:** This long-term improvement would deviate from the existing Hands Pike alignment near MP 0.4 and traverse north and east of the current road before tying back in near MP 0.9. The concept includes two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists, and 4:1 slopes outside the shoulder. This type of improvement can be expected to reduce the occurrence of crashes by 40%.

  Approximate Length: 3,150 feet **Estimated Cost:** $27.8 million

- **Alternative Concept 1.5:** This long-term improvement would deviate from the existing Hands Pike alignment at the junction with KY 3035 near MP 0.17 and traverse south and west of the current road before tying back in near Crystal Lake Road (MP 1.03). This concept includes two 12-foot-wide lanes with 8-foot-wide paved shoulders to accommodate bicyclists and 4:1 slopes outside the shoulder, as shown in Figure 11. This type of improvement can be expected to reduce the occurrence of crashes by 40%.

  Approximate Length: 4,000 feet **Estimated Cost:** $17.0 million

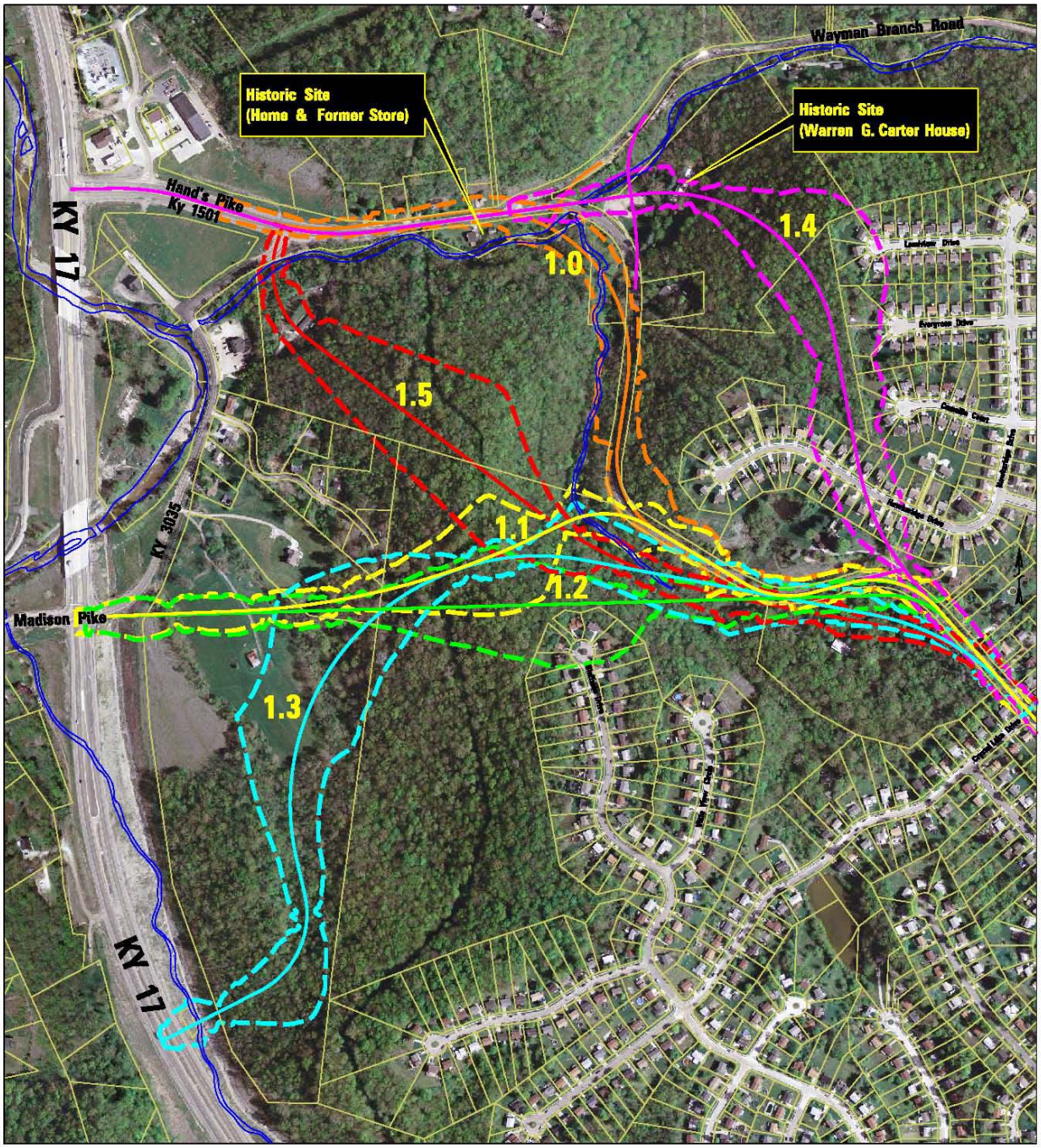


Figure 9: Alternate Corridors, Analysis Section 1

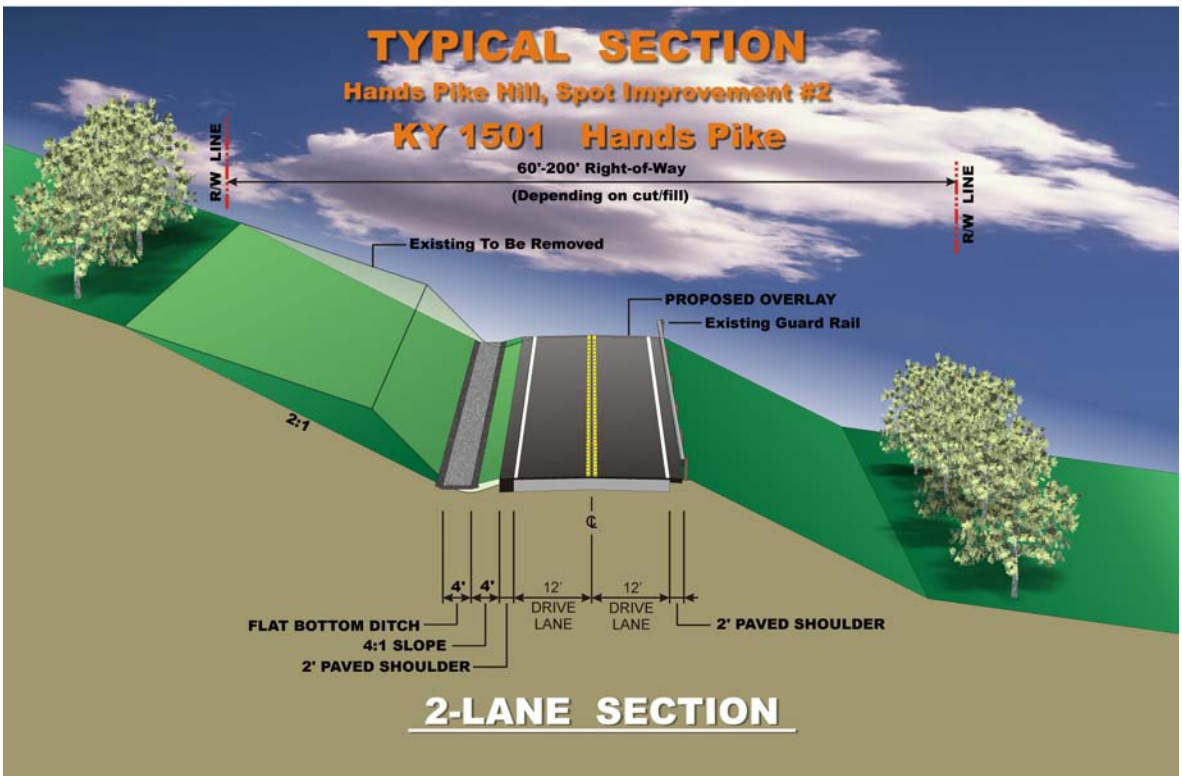


Figure 10: Analysis Section 1—Typical Section for Short-Term Reconstruction

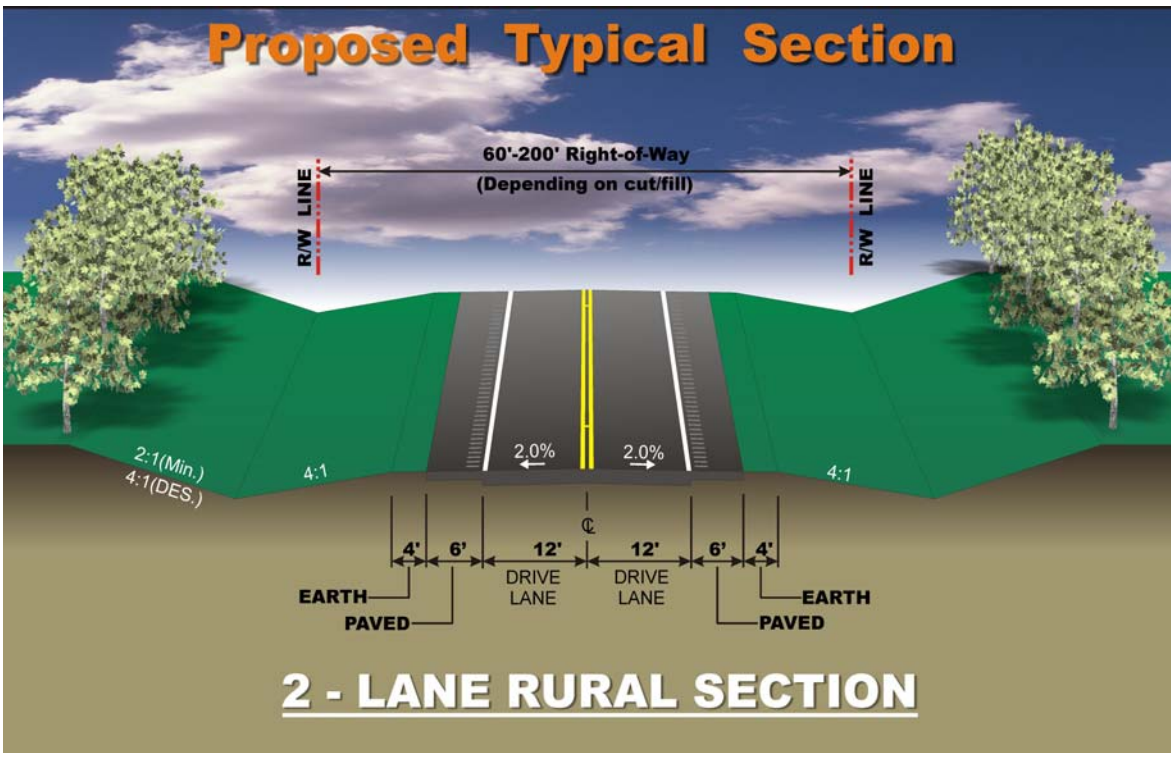


Figure 11: Analysis Section 1—Typical Section for Long-Term Reconstruction

Analysis Section 2: Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)

- **Alternative Concept A:** A 3-lane urban section (curb and gutter) as shown in Figure 11 was considered based on a planning assumption that the roadway centerline would remain as is. The actual centerline alignment (such as shifting it to the right or left) was assessed to be a design detail that could be better addressed in subsequent project development phases. This overall concept includes a center two-way left-turn lane and improvement of a sag curve by raising the grade between MPs 1.2 and 1.3. A conventional sidewalk would be provided on one side of the road and a wider sidewalk would be provided on the other side as a multi-use bicycle/pedestrian path.

Approximate Length: 2,650 feet **Estimated Cost:** $4.6 million

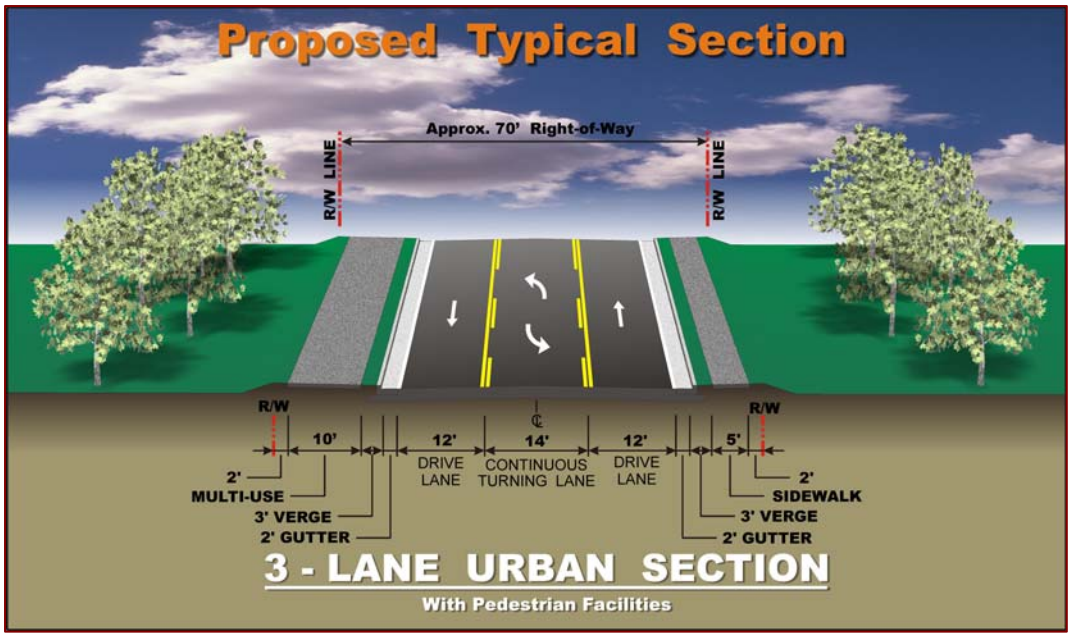


Figure 12: Analysis Section 2—3-Lane Typical Section

- **Concept A1:** An additional improvement considered within this section was the construction of a roundabout at the intersection of Tripoli Lane/Tamarack Drive.

Estimated Cost: $3.7 million

TOTAL ESTIMATED COST, BOTH CONCEPTS: $8.3 million

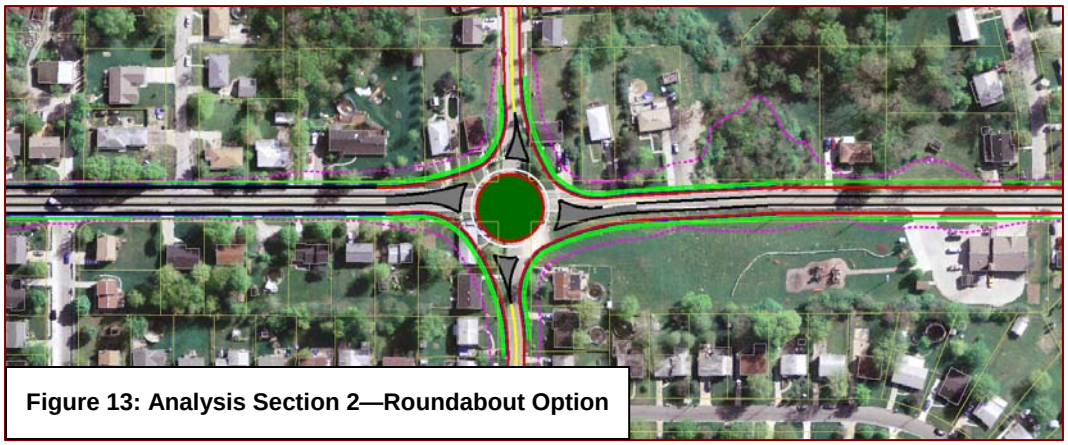


Figure 13: Analysis Section 2—Roundabout Option

Analysis Section 3: Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)

Two alternative improvements were considered. The typical section for these improvements is shown on Figure 13.

- **Alternative Concept A:** This concept is new corridor south and west of existing Hands Pike from near the intersection with Otter Court (MP 1.47) to the vicinity of MP 2.17. A 2-lane urban

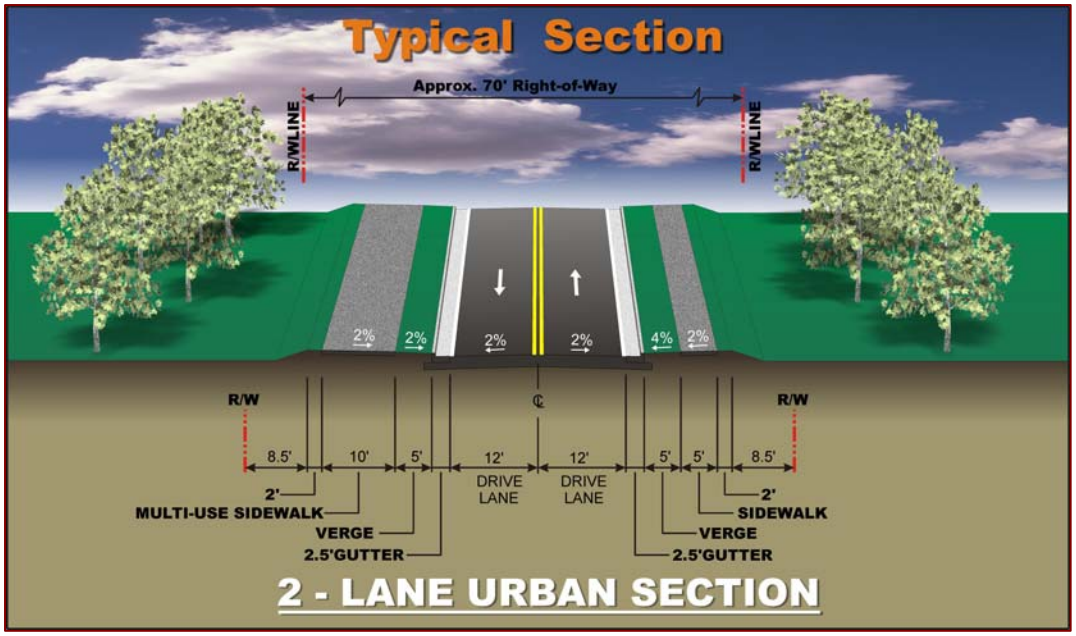


Figure 14: Analysis Sections 3 and 4 Typical Section for Long Term Reconstruction

is section envisioned with a conventional sidewalk on one side of the road and a wider sidewalk on the other to provide a multi-use bicycle/pedestrian path.

Approximate Length: 3,325 feet **Estimated Cost:** $11.2 million

- **Alternative Concept B:** This concept improves the existing corridor. As with Alternative Concept A, this improvement could include a 2-lane urban section with a conventional sidewalk on one side of the road and a wider sidewalk on the other to provide a multi-use bicycle/pedestrian path.

Approximate Length: 4,000 feet **Estimated Cost:** $13.5 million

Analysis Section 4: East of Edwin Drive (MP 2.17) to KY 16 (MP 2.52)

- **Alternative Concept A:** A portion of this eastern-most section (from approximately MP 2.4 east) is planned for improvement in conjunction with a KY 16 reconstruction project. For the remaining short section between Edwin Drive and MP 2.4, a 2-lane urban section (see Figure 14) is envisioned with a conventional sidewalk on one side of the road and a wider sidewalk on the other to provide a multi-use bicycle/pedestrian path.

Approximate Length: 1,400 feet **Estimated Cost:** $2.0 million

7.3 Public Commentary

The public was given the opportunity to comment on, as well as recommend additions to, the initial list of alternative concepts that was presented at an open-house style meeting held on February 7, 2008. A summary of comments and recommendations is provided below. A table of how important it was felt to improve a particular analysis section is summarized in Table 6. The public meeting summary is included in Appendix D.

- Reconstruction of Section 1 is the top priority
- Of the Section 1 options the Spot improvements are the most supported
- For Sections 2, 3, and 4:
    - A 3-lane section, with a continuous left turn lane is supported
    - Sidewalks are supported
    - Bike Lanes are not supported
    - A roundabout at Tripoli is not supported

Analysis Section 1: KY 17 (MP 0.22) to near Crystal Lake Drive (MP 0.91) (Hands Pike Hill)—More than 96% of respondents to the survey form distributed at the public meeting felt that improvements to this section were "important" or "very important." More than 63% felt that Spot Improvement 1 was the highest priority, while 37% favored Spot Improvement 2. Among the long-term alternative concepts, Alternate 1.0 was scored as the highest priority followed closely by Alternate 1.1. Alternate concept 1.3 was clearly the least favorite long-term option.

Analysis Section 2: Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)—Nearly 40% of respondents viewed improvements to this section as not very important. Slightly more than 60% of survey respondents favored the concept of a three-lane, curb and gutter section with a continuous center left-turn lane. Only 30% favored a roundabout at the intersection with Tripoli Lane/Tamarack Drive. Sidewalks were favored by 63% while bicycle lanes were favored by 43% percent.

Analysis Section 3: Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)—A new roadway in a new corridor south and west of existing Hands Pike was preferred by 65% of respondents. Sidewalks were favored by 64% while bicycle lanes were favored by only 36%.

Analysis Section 4: East of Edwin Drive (MP 2.17) to KY 16 (MP 2.52)—Though one commentator suggested that a 5-lane segment with two-way center left-turn lane be added to the alternatives being considered, no improvements to this segment were ranked with a high priority.

Table 6: Analysis Section Priorities As Expressed at Public Meeting

Sections	Public Ranking					Weighted Score (ranking x weight)
	Not Important (1)	(2)	Important (3)	(4)	Very Important (5)	
Section 1:	1	0	0	3	25	138
Section 2:	6	3	9	2	4	67
Section 3:	4	3	11	4	3	74
Section 4:	4	2	6	4	9	87

7.4 Comparison of Alternative Concepts

Table 7 provides the estimated costs for design, right-of-way, utilities, and construction, in Year 2008 dollars, that are associated with each of the Analysis Section alternative concepts evaluated in this study. Table 8 compares the alternatives' right-of-way, relocation, some impacts, public rankings, and total estimated costs.

Table 7: Cost Estimates (2008 Dollars)—Alternative Concepts and Spot Improvements

Analysis Section	Alternative Concept	Cost Estimates (in Millions)				
		Design	R/W	Utility	Construction	Total
ANALYSIS SECTION 1	Hands Pike Hill Spot Impvts 1	$0.5	$1.5	$0.3	$4.5	**$6.8**
	Hands Pike Hill Spot Impvts 2	$0.08	$0.3	$0.3	$0.8	**$1.5**
	Alt. Concept 1.0	$0.6	$1.8	$0.6	$5.3	**$8.3**
	Alt. Concept 1.1	$0.5	$2.3	$1.1	$5.1	**$9.0**
	Alt. Concept 1.2	$0.7	$4.1	$1.1	$7.3	**$13.2**
	Alt. Concept 1.3	$2.03	$3.5	$1.1	$20.3	**$27.0**
	Alt. Concept 1.4	$0.9	$18.0	$0.1	$8.8	**$27.8**
	Alt. Concept 1.5	$1.3	$3.0	$0.1	$12.6	**$17.0**
ANALYSIS SECTION 2	Alt. Concept A	$0.2	$2.2	$0.4	$1.8	**$4.6**
	Concept A1	Would be included in "A"	$2.9	$0.3	$0.5	**$3.7**
	Total A+A1	$0.2	$5.1	$0.7	$2.3	**$8.3**
ANALYSIS SECTION 3	Alt. Concept A	$0.6	$5.0	$0.1	$5.5	**$11.2**
	Alt. Concept B	$0.6	$6.5	$0.4	$6.0	**$13.5**
ANALYSIS SECTION 4	Alt. Concept A	$0.1	$0.8	$0.1	$1.0	**$2.0**

Table 8: Comparison of Alternative Concepts and Spot Improvements

Analysis Section	Alternative Concept	Length (Feet)	R/W (Acres)	Relocations (Approx.)	# of Stream Crossings	Public Survey Results[1], by Section	Cost Estimate (Mil.)
ANALYSIS SECTION 1 KY 17 (MP 0.22 to near Crystal Lake Drive (MP 0.91, Hands Pike Hill)	**Hands Pike Hill Spot Impvts 1**	2,200'	5.2	3	1	Highest ranking of all in Section	**$6.8**
	Hands Pike Hill Spot Impvts 2	2,400'	1.8	0	1	2nd highest ranking of all in Section	**$1.5**
	Alt. Concept 1.0	4,750'	9.3	3	1	Highest ranking long-term improvement in Section	**$8.3**
	Alt. Concept 1.1	3,850'	14.5	2	1	Average Ranking in Section	**$9.0**
	Alt. Concept 1.2	3,650'	16.5	7	1	Average Ranking in Section	**$13.2**
	Alt. Concept 1.3	4,850'	26.7	1	1	Low ranking of all in Section	**$27.0**
	Alt. Concept 1.4	3,150'	22.1	51	1	Low ranking of all in Section	**$27.8**
	Alt. Concept 1.5	4,000'	19.6	2	2	Average Ranking in Section	**$17.0**
ANALYSIS SECTION 2 Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)	**Alt. Concept A**	2,650'	2.3 to 3.3[2]	6 to 20	1	17 yes / 11 no	**$4.6**
	Concept A1	n/a	1.3	9	1	7 yes / 16 no	**$3.7**
	Total A+A1	--					**$8.3**
ANALYSIS SECTION 3 Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)	**Alt. Concept A**	3,325'	14.3	11	1	15 yes / 8 no	**$11.2**
	Alt. Concept B	4,000'	11.4	17	1	6 yes/ 15 no	**$13.5**
ANALYSIS SECTION 4 East of Edwin Drive (MP 2.17) to KY 16 (MP 2.52)	**Alt. Concept A**	1,400'	1.3	2	0	18 yes/ 8 no	**$2.0**

1 *Because of the number of alternatives in Analysis Section 1, the survey questionnaire asked that each alternative be ranked from 1 through 5, with 1 being the lowest priority and 5 the highest. For the other Analysis Sections, those surveyed were asked to simply indicate YES or NO to select/reject an alternative. The survey summary is provided in full in Appendix D.*

2 *Ranges are provided because Section 2 could be widened to the left, right, or equally down the middle.*

8.0 RECOMMENDATIONS

8.1 Recommended Alternatives

In consideration of the existing and projected future transportation system conditions along Hands Pike in Kenton County; the project goals; the preferences of the KYTC Project Team, local officials and stakeholders, and the general public; the alternative concepts considered; and a desire for a set of fiscally responsible recommendations that would result in the greatest chance of implementation, the following project improvements were recommended in priority order: Exhibit 3, Appendix A, shows these recommended improvements.

1. **ANALYSIS SECTION 1—Spot Improvements 2,** full Improvements. **Estimated cost:** $1.5 million.

   Also, carry both **Alternative Concepts 1.0** and **1.1** to the Design phase of project development where a final decision would be made. Six-foot wide paved shoulders are to be included in this rural cross-section as a provision for bicyclists. **Estimated cost**: $8.3 to $9.0 million depending upon the alternative chosen in the Design phase and the extent to which spot improvements ultimately can be integrated into final improvements.

2. **ANALYSIS SECTION 2—Alternative Concept A:** Construct a 3-lane urban section with center left-turn lane along the existing alignment, and provide a conventional sidewalk on one side of the road and a wider sidewalk on the other side to serve as a multi-use bicycle/pedestrian path. **Estimated cost:** $4.6 million.

3. **ANALYSIS SECTION 3—Alternative Concept A:** Construct a 2-lane urban section on new alignment, and provide a conventional sidewalk on one side of the road and a wider sidewalk on the other side to serve as a multi-use bicycle/pedestrian path. **Estimated cost:** $11.2 million. It was noted that, since implementation of improvements in this section is not expected in the near-term, ultimately improvements might instead be made to the existing roadway due to potential development that may occur in the corridor of the proposed new roadway. Under that scenario, the estimated cost would increase to $13.5 million.

4. **ANALYSIS SECTION 4—Alternative Concept A:** Construct a 2-lane urban section. Provide a conventional sidewalk on one side of the road and a wider sidewalk on the other side as a multi-use bicycle/pedestrian path. **Estimated cost:** $2.0 million

The total estimated cost of these recommended improvements is **$27.6 or $28.3 million**, depending on which Alternative Concept (1.0 or 1.1) in Section 1 is selected and how the spot improvements are integrated. If improvements in Analysis Section 3 are made to the existing corriodor rather than on a new alignment, the total cost could be as high as $30.6 million.

8.2 Comparison of Recommendation to Project Goals

Each recommended improvement was reviewed in comparison to the project goals and qualitatively "scored" based on the degree to which satisfaction of each project goal would likely be achieved through implementation of that recommendation. Results of this qualitative scoring are shown in Table 9.

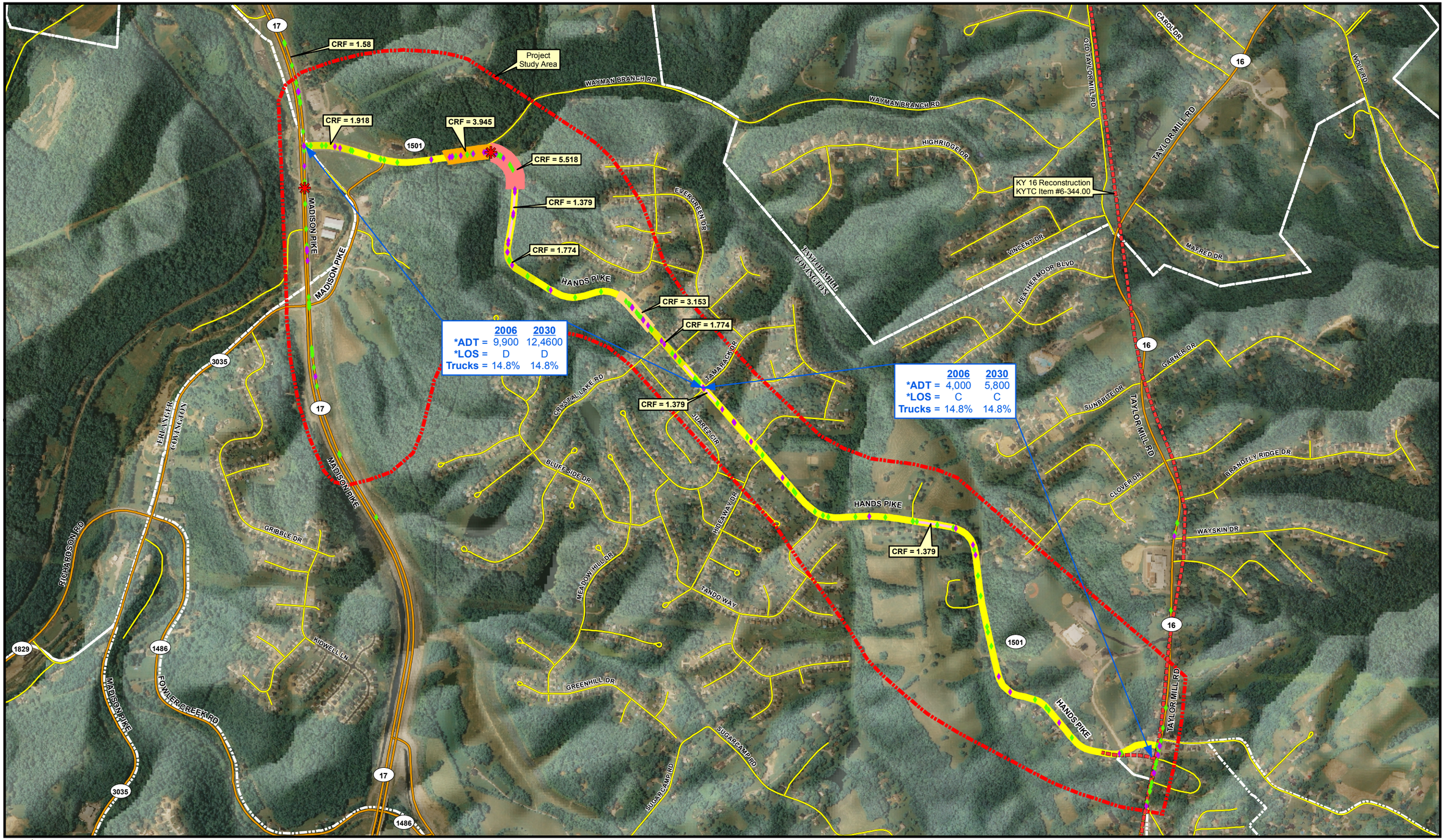
Based on research by the Kentucky Transportation Center at the University of Kentucky, each of the five recommendations would improve safety on Hands Pike by reducing the occurrence of crashes by between 25 and 50 percent. Access for local traffic would be enhanced by improving horizontal and vertical geometry, sight distance, and/or providing storage for left-turning vehicles.

Table 9: Goal Satisfaction of Recommended Improvements

	SECTION 1 Spot Improvement 2, Hands Pike Hill	SECTION 1 Reconstruct Section One Using Either Alternative 1.0 or 1.1	SECTION 2 Construct 3-Lane Urban Section w/ Center Left-Turn Lane	SECTION 3 Construct 2-Lane Urban Section on New Alignment	SECTION 4 Construct 2-Lane Urban Section w/ Center Left-Turn Lane
Improve Safety on Hands Pike	***Good***	***Good***	***Good***	***Good***	***Good***
Improve Access for Local Traffic	***Good***	***Good***	***Good***	***Good***	***Good***

APPENDIX A

EXHIBITS



CRF 2002 - 2006

- 1 - 1.50
- 1.5 - 2.5
- 2.5 - 3.5
- 3.5 - 4.5
- 4.5 - 5.6

Average CRF 2002 - 2006

- 1.95

- Fatal
- Injury
- PDO

Division of Planning

Source Citation
Topographic data, including utilities and imagery and less historic, aquatic and terrestrial courtesy of the Kentucky Office of Geographic Information Systems (KYOGIS.) Qk4 makes no claim to the accuracy of that data shown on this map.

Terminology Key

CRF: Crash Rate Factor
ADT: Average Daily Traffic
LOS: Level of Service

1\1\2002 - 12\31\2006 Crash Data

1 Fatalities
57 Injuries
243 Property Damage Only
301 Total Reported Crashes

VICINITY MAP

0 500 1,000 Feet

N

Exhibit 1

TRAFFIC VOLUMES, LOS AND CRASH DATA

KY 1501 / Hands Pike
Alternatives Planning Study
Kenton County, Kentucky
KYTC Item No. 06-8307.00

Project Study Area

Utility Substation

Site 1

Site 2

Site 3

Site A

Site B

Site C

Site E

KY 16 Reconstruction
KYTC Item #6-344.00

Playground

Covington FD Station #3

Calvary Christian School

Division of Planning

Source Citation
Topographic data, including utilities and imagery and less historic, aquatic and terrestrial courtesy of the Kentucky Office of Geographic Information Systems (KYOGIS) QK4 makes no claim to the accuracy of that data shown on this map.

- Cemetery
- Church
- School
- HAZMAT
- Potential Historic Property
- Active Rail
- Water Tank
- Water Pump Station
- Existing Waterline
- Package Plant
- Lift Station
- Force Main Sewer
- Gravity Sewer
- Potential Flood Area
- Wetlands
- Sink Hole Area

VICINITY MAP

N

0 500 1,000 Feet

Exhibit 2

ENVIRONMENTAL FOOTPRINT

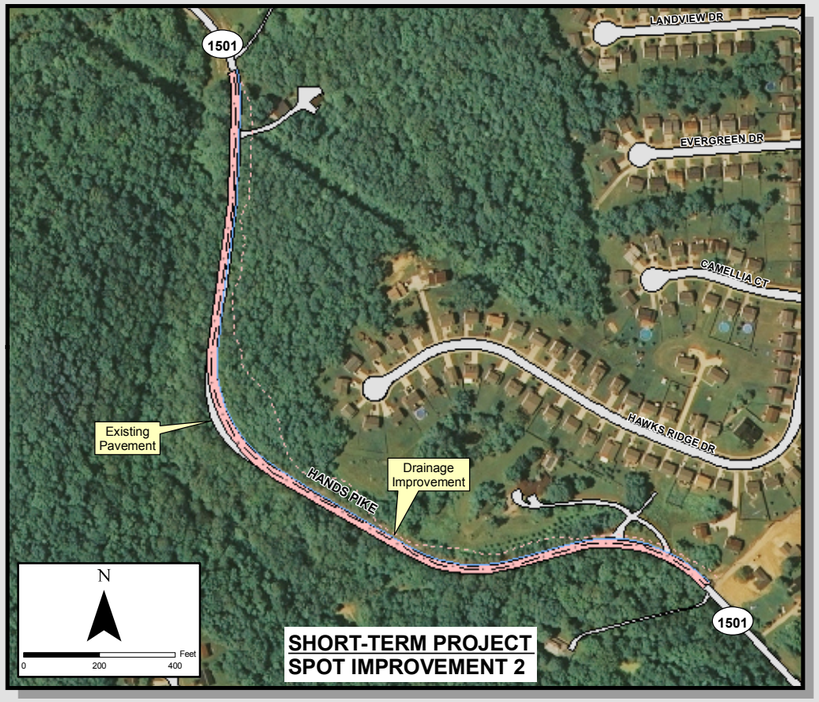
KY 1501 / Hands Pike
Alternatives Planning Study
Kenton County, Kentucky
KYTC Item No. 06-8307.00

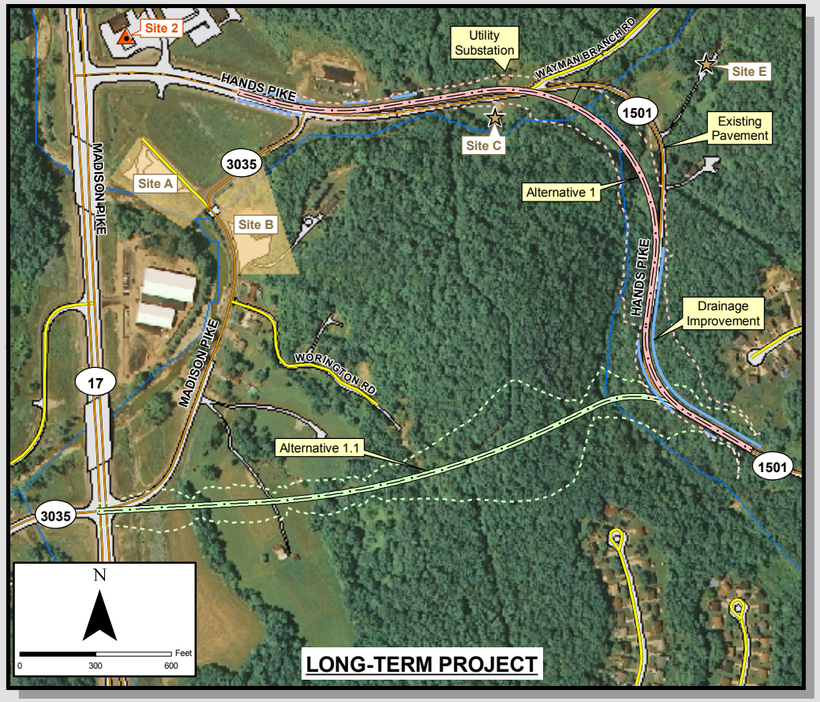
Analysis Section 1:

Hands Pike Hill from East of KY 17 to Crystal Lake Drive (0.69 mi)





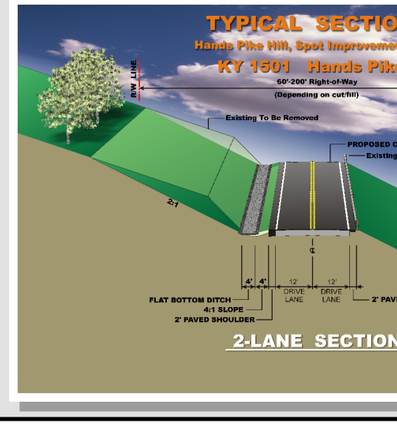


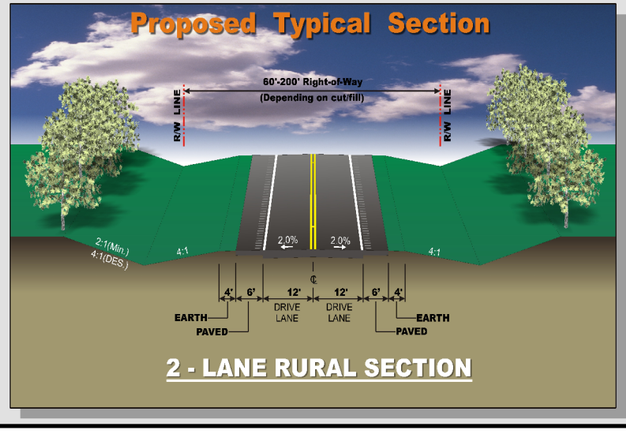
Existing Conditions :
* 2006 ADT = 9,900
* Highest Crash Rates of Corridor (1.4 - 3.9 CRF)
* Hands Pike Hill has a 13% Grade (Fixing hill is publics top concern)

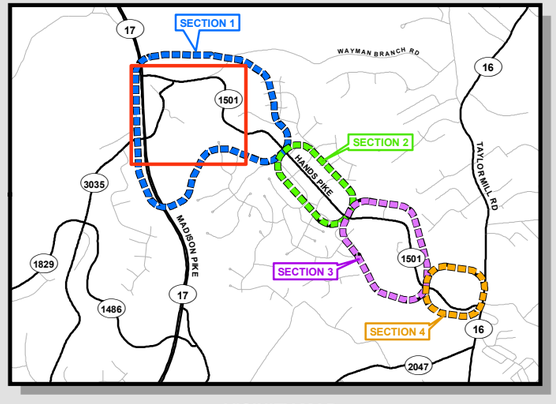
Recommendation :
Priority 1 - Implement Spot Improvement 2 and advance Long-Term project to design phase.

Alternative	Length	R/W (Acres)	Relocations	Stream Crossings	Total Cost
Spot 2	2,400	1.8	0	1	$1.1M
Concept 1	4,750	9.3	3	1	$7.7M
Concept 1.1	3,850	14.5	2	1	$9.0M

HAZMAT
Potential Historic Property
Potential Historic Boundary







VICINITY MAP

Exhibit 3 Sheet 1 of 4

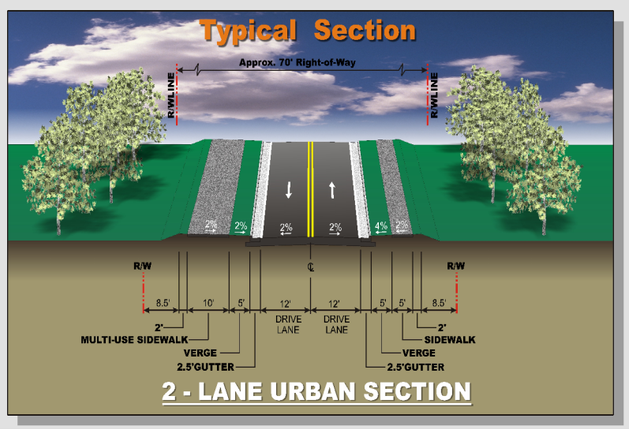
Division of Planning

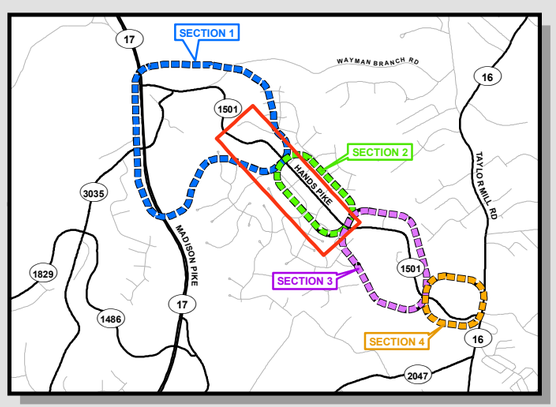
ANALYSIS SECTION 1

KY 1501 / Hands Pike
Alternatives Planning Study
Kenton County, Kentucky
KYTC Item No. 06-8307.00

Analysis Section 2:

From Crystal Lake Drive to Near Otter Court (0.56 mi)





VICINITY MAP

Existing Conditions :

* 2006 ADT = 9,900 - 4,000
* CRF: 1.38 - 1.95
* Numerous Curb Cuts
* Vertical sag west of Fire Station

Recommendation : Priority 2

Alternative	Length	R/W (Acres)	Relocations	Stream Crossings	Total Cost
Concept A	2,650'	2.3 to 3.3	6 to 20	1	$4.6M

Division of Planning

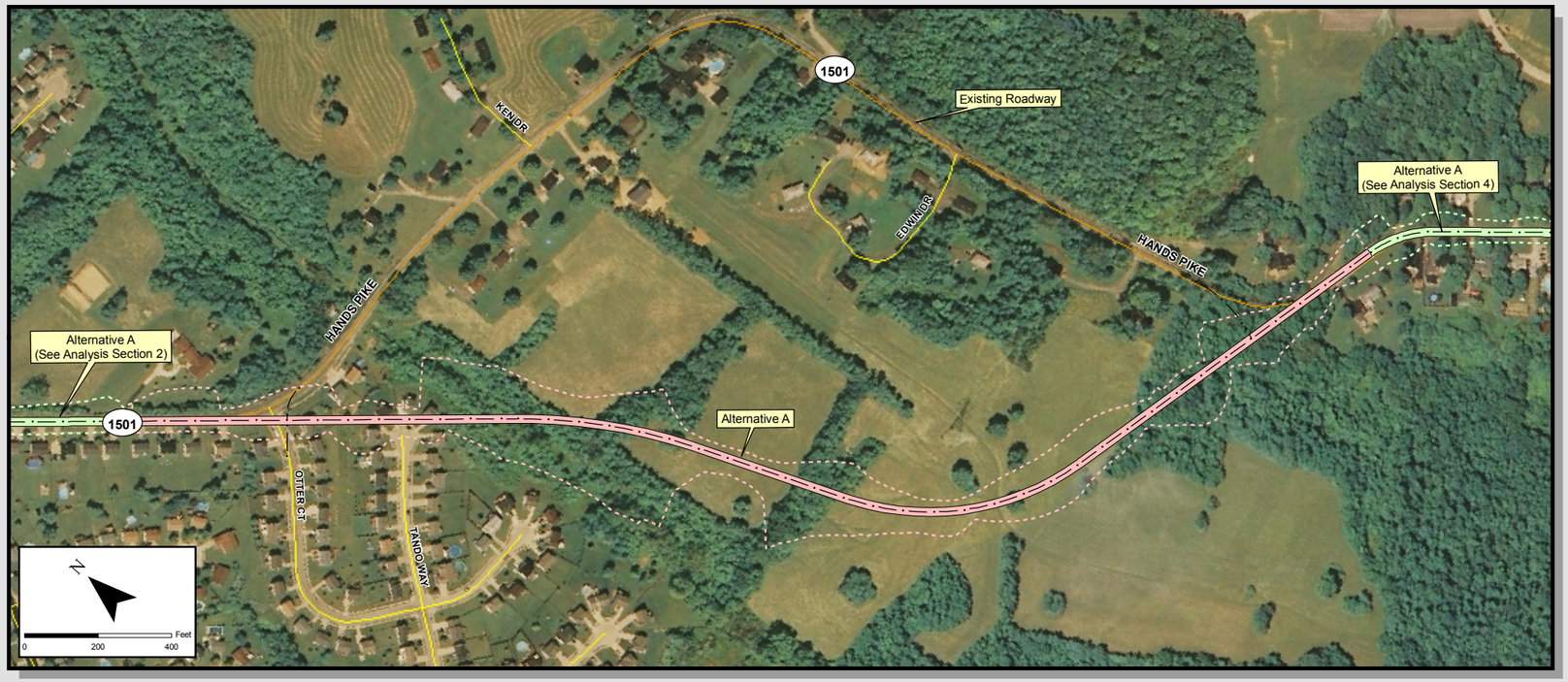
Exhibit 3 Sheet 2 of 4

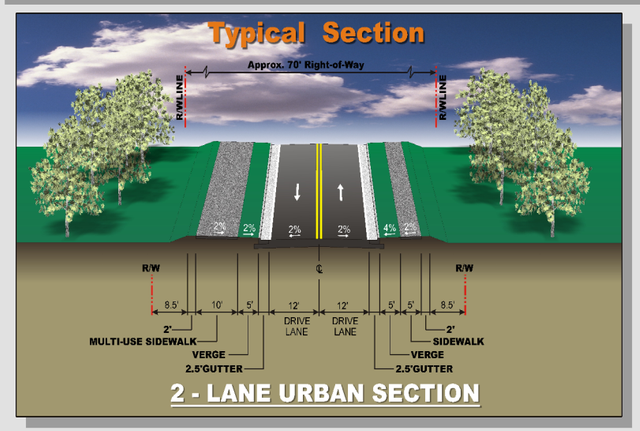
ANALYSIS SECTION 2

KY 1501 / Hands Pike
Alternatives Planning Study
Kenton County, Kentucky
KYTC Item No. 06-8307.00

Analysis Section 3:

From Otter Court to East of Edwin Drive (0.70 mi)



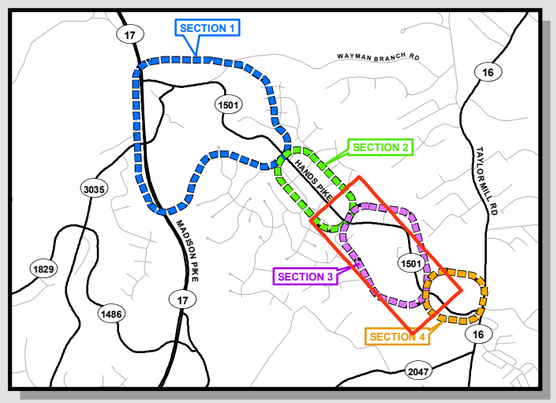


EXISTING TWO-LANE URBAN ROAD
(Shown for illustrative purposes only.)

Existing Conditions :
* 2006 ADT = 4,000
* CRF: 1.38 - 1.95

Recommendation : Priority 3

Alternative	Length	R/W (Acres)	Relocations	Stream Crossings	Total Cost
Concept A	3,325	14.3	11	1	$11.2M



VICINITY MAP

Exhibit 3 Sheet 3 of 4

KENTUCKY TRANSPORTATION CABINET
Division of Planning

Kentucky UNBRIDLED SPIRIT

Quality Engineering Consultants

ANALYSIS SECTION 3

KY 1501 / Hands Pike
Alternatives Planning Study
Kenton County, Kentucky
KYTC Item No. 06-8307.00

Analysis Section 4:
East of Edwin Drive to KY 16 (0.35 mi)

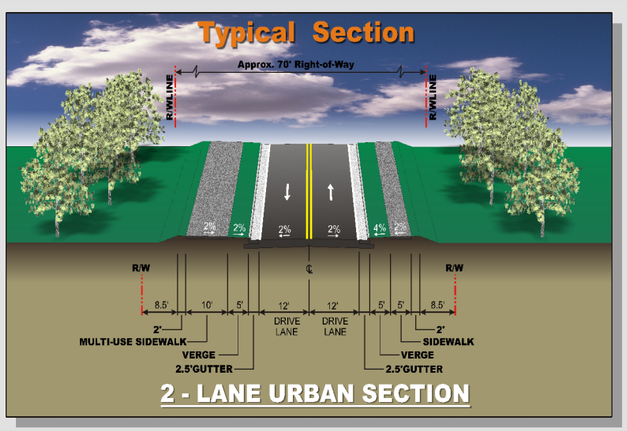




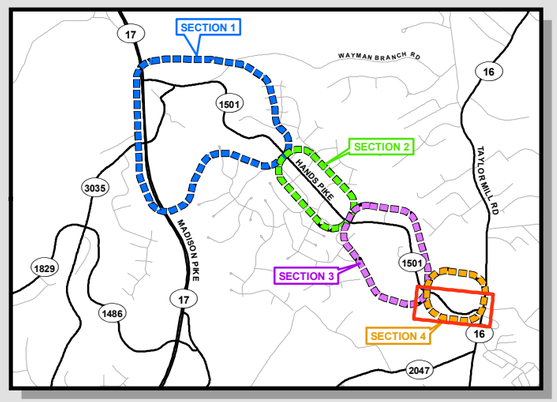
Existing Conditions :
* 2006 ADT = 4,000
* CRF: 1.95

Recommendation : Priority 4

Alternative	Length	R/W (Acres)	Relocations	Stream Crossings	Total Cost
Concept A	1,400	1.3	2	0	$2.0M



EXISTING TWO-LANE URBAN ROAD
(Shown for illustrative purposes only.)



VICINITY MAP

Exhibit 3 Sheet 4 of 4

Division of Planning

ANALYSIS SECTION 4

KY 1501 / Hands Pike
Alternatives Planning Study
Kenton County, Kentucky
KYTC Item No. 06-8307.00

APPENDIX B

PHOTO LOG

SECTION 1

APPENDIX B
PHOTO LOG

1) Old Madison Pike at KY 17

2) Hillside in corridor of Alternative 1.1

3) KY 17 Bridge over Banklick Creek

4) Old Madison Pike Culvert over Wayman Branch

5) Reconstructed Section of KY 1501 at KY 17

6) KY 17 looking south toward the KY 1501 intersection

7) Commercial Building at western end of KY 1501, near KY 17

8) KY 17 looking north toward the KY 1501 intersection

9) Historic Site at KY 1501 and KY 17 intersection

10) Historic Site located along Madison Pike

11) KY 1501, looking east where the reconstructed Section of KY 1501 transitions to the original alignment

12) KY 1501, historic sites located west of Wayman Branch

13) Wayman Branch Road at KY 1501

14) KY 1501 at Wayman Branch Road

15) KY 1501, Utility Substation located west of Wayman Branch Road

16) KY 1501, Hands Pike Hill looking east

17) KY 1501, curve at the bottom of Hands Pike Hill, looking west

18) Wayman Branch

19) Wayman Branch

20) KY 1501 over Wayman Branch looking east

21) KY 1501 culvart over Wayman Branch

22) KY 1501 over Wayman Branch looking west

23) KY 1501 looking east at the bottom of Hands Pike Hill

24) KY 1501, Hands Pike looking east

25) KY 1501, Hands Pike Hill looking east

26) KY 1501, Hands Pike Hill looking east

27) KY 1501, Hands Pike Hill looking east

28) KY 1501, Hands Pike Hill looking east

29) KY 1501, Hands Pike Hill looking east

30) KY 1501, Hands Pike Hill looking west

31) KY 1501, Hands Pike Hill Curve looking west

32) KY 1501, Hands Pike Hill looking east

33) KY 1501, looking east near the top of Hands Pike Hill

34) KY 1501, Hands Pike Hill looking west; Hill on right side is proposed to be removed with Spot Improvement 1

35) KY 1501, Hands Pike Hill looking west at substandard drainage

36) KY 1501, Hands Pike Hill looking west at cross drain

37) KY 1501, looking west from near the top of Hands Pike Hill

38) KY 1501, looking east from near the top of Hands Pike Hill

1) KY 1501, looking east towards the Fire Station

2) KY 1501, Hands Pike at Tripoli Lane

3) KY 1501, Hands Pike looking east at utility boxes

4) KY 1501, looking west from the Fire Station

5) KY 1501, looking west at playground near the Fire Station

6) KY 1501, looking west at playground at the Fire Station

7) KY 1501, looking east from Tripoli Lane

8) KY 1501, looking east from Tripoli Lane


9) KY 1501, looking east


10) KY 1501, looking east


11) KY 1501, looking west


12) KY 1501, looking east

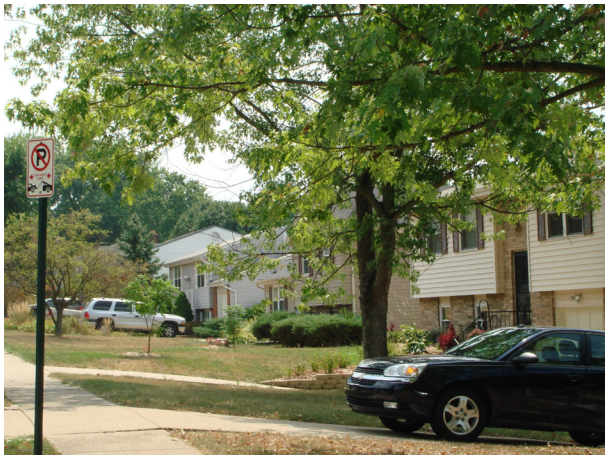
13) KY 1501, looking east

14) KY 1501, looking east towards Section 3

15) Residential neighborhood off Section 2

16) KY 1501, looking east towards Section 3

17) KY 1501 looking west



18) Residential homes along KY 1501, near Crystal Lake Drive

1) KY 1501, looking west


2) KY 1501, looking east


3) KY 1501, looking west


4) KY 1501, looking east


5) KY 1501, looking west

1) KY 1501, looking west


2) KY 1501, looking east


3) KY 1501, looking east


4) KY 1501, looking west

5) KY 16 at KY 1501 looking north


6) KY 16 at KY 1501 looking south

APPENDIX C

TEAM AND STAKEHOLDERS MEETING MINUTES

Architecture
Engineering
Construction

MEETING MINUTES

Project:	KY 1501/Hands Pike, Kenton County Item No: 6-8307.00
Purpose:	Local Officials Meeting #1
Place:	District-6, Covington, Kentucky
Meeting Date:	October 3, 2007, 1:30 PM
Prepared By:	Tom H. Springer
In Attendance:	

Tom Schomaker	KYTC, District 6 Executive Director
Lt. Ron Wilson	City of Taylor Mill Police
Tom Logan	City of Covington
Charles Meyer	Kenton County Public Works
Joe Murphy	Kenton County Public Works
Jim Wilson	KYTC, Division of Planning
Mike Bezold	KYTC, District 6, Planning
Rob Hans	KYTC, District 6, Planning
Tony Blau	KYTC, District 6, Utilities
Albert Zimmerman	Qk4
Bruce Siria	Qk4
Tom Springer	Qk4

The project is an Alternatives Study of KY 1501/Hands Pike in Kenton County between KY 17 and KY 16. The objective of the meeting was to initiate the planning project, review existing conditions, and discuss the project with local officials to solicit their input regarding project issues.

Following a welcoming and introductions by Mike Bezold, Tom Springer facilitated the meeting by first describing the handouts, which included an agenda, a USGS map, an aerial photograph, a 3D map, H.I.S. data, crash data, the scope of work, and the public involvement plan.

The PowerPoint presentation included a map of the study area, an overview of the scope of work, the project schedule, a photo tour of the study area, a review of the H.I.S. data, the Environmental Overview, a summary of the preliminary project goals identified at the morning meeting of the Cabinet's project team, a broad overview of possible alternative concepts, and next steps in the planning process. Key points noted were the high traffic volumes in the western section of the corridor, which are over 10,000 ADT, and the entire corridor has a high critical rate factor, ranging from 1.15 to 2.77.

The majority of the meeting focused around the identification of project goals, alternative concepts to be considered, and the concerns of local officials.

Project Goals

For the preliminary project goals, the Project Team, in its morning meeting, had identified the following:

- Improve safety conditions of KY-1501
- Improve access for local traffic

It was discussed, but decided not to be goal of the project, to provide an east-west connector for regional cut through traffic between KY 16 and KY 17. Instead, the goal to improve access for local traffic was selected. The Local Officials concurred with these project goals.

Alternative Concepts

Alternative concepts were discussed throughout the meeting. Following are items that had been mentioned in the morning project team meeting that could be considered as part of this study:

- Improved cross drains on the Hands Pike Hill to address runoff, which results in a frozen surface in the winter
- Cutting back hills and vegetation to improve sight distance and ability to read warning signs
- Two-lane spot improvements that would correct a small horizontal or vertical deficiency and tie back into the existing road as soon as possible
- Traffic calming concepts, such as roundabouts
- Extension of turning lanes into subdivisions
- An ultimate three-lane section from the top of Hands Pike Hill (at Crystal Lake Drive) east to KY 16 with a 35-MPH design speed. This could be divided into two sections at Otter Court.
- Striped bicycle lanes and sidewalks from the top of Hands Pike Hill east to KY 16. (KY 16 will have bicycle facilities.)
- For Hands Pike Hill, an ultimate two-lane section from the top of Crystal Lake Drive west to KY 17 with a 45-MPH design speed. Various new alternative route locations should be considered for this section.
- An interim spot improvement to correct a reverse curve just west of Crystal Lake Drive

Issues Raised by Local Officials

The following issues were of particular concern to local officials:

- Traffic volumes may be higher than what was shown. Rob Hans confirmed that information shown matched KYTC count data, although it was noted that there was only one count station between KY 17 and Tripoli Lane/Tamarack Drive (though that one station is located between Wayman Branch Road and KY 17 and hence should reflect the highest volumes on that segment).
- KY 1501 is perceived to be used as a "cut-through" for traffic northbound on KY 16 destined for westbound I-275 (and one attendee confirmed his own usage in this manner); future construction on KY 16 between KY 1501 and I-275 is forecast to increase use of KY 1501 as a "cut-through" route.
- It was suggested that spot improvements on the hill west of Crystal Lake Drive would be difficult since this problem area is a mile-long segment rather than a spot.
- That segment between Crystal Lake Drive and KY 17 appears to be the priority issue for local officials.
- Concern was expressed about the safety aspect of providing bicycle lanes, particularly west of Crystal Lake Drive. It was stated that there should be fewer safety problems from Crystal Lake Drive east to KY 16.
- The provision of sidewalks is important.

End of Minutes

cc: attendants

Architecture
Engineering
Construction

MEETING MINUTES

Project:	KY 1501/Hands Pike, Kenton County Item No: 6-8307.00
Purpose:	Local Officials Meeting #2
Place:	District-6, Covington, Kentucky
Meeting Date:	April 29, 2008
Prepared By:	Bruce Siria
In Attendance:	

Jim Wilson	KYTC, Division of Planning
Mike Bezold	KYTC, District 6, Planning
Rob Hans	KYTC, District 6, Planning
Tony Blau	KYTC, District 6, Utilities
Keith Logsdon	Northern Kentucky Area Planning Commission
Caitlin Douglas	Northern Kentucky Area Development District
Jill Bailey	City of Taylor Mill
Bob Haake	City of Taylor Mill
Mark Kreimborg	City of Taylor Mill
Tom Logan	City of Covington
Suzann Gettys	City of Covington
Albert Zimmerman	Qk4
Tom Springer	Qk4
Steve Kurowsky	Qk4
Bruce Siria	Qk4

The project is an Alternatives Study of KY 1501/Hands Pike in Kenton County between KY 17 and KY 16. The objective of the meeting was to review the status of the study and present the preferred alternative(s) and priorities identified by KYTC at the morning project team meeting.

Following introductions, Tom Springer facilitated the meeting using handouts and a PowerPoint presentation which reviewed corridor segments, alternative options, comments received at the public meeting, and KYTC preferences and priorities. Because of little overlap between attendees at this meeting and the previous local officials meeting in October, 2007, Mr. Springer provided additional project background information beyond what was included in the presentation materials.

Respondents to the survey form distributed at the public meeting held in February, 2008 felt Section One (defined below) had the most important improvement need. Within that section, respondents felt the Hands Pike Hill spot improvements were the preferred improvements.

The discussion then moved to the alternate analysis sections.

Section One: From KY 17 (MP 0.0) to near Crystal Lake Drive (MP 0.91) (Hands Pike Hill)

Two short-term and six long-term improvement options were reviewed:

- Short-Term Options:
  - Hands Pike Hill Spot Improvements #1: $4.5 million
  - Hands Pike Hill Spot Improvements #2: $0.5 million
- Long-Term Options
  - Alternate 1.0 (Upgrade Existing Hands Pike): $5 million
  - Alternate 1.1 (New Corridor from KY 17 @ Madison Pike to existing Hands Pike near MP 0.65): $5 million
  - Alternate 1.2 (New Corridor from KY 17 @ Madison Pike to existing Hands Pike near MP 0.95): $8 million
  - Alternate 1.3 (New Corridor from KY 17 approximately 0.75 miles south of current KY 17/Hands Pike junction to existing Hands Pike near Crystal Lake Drive. This alternate would have a vertical grade of less than 5%, or about one-half of each of the other long-term options): $16 million
  - Alternate 1.4 (Partial new corridor east of existing Hands Pike from approximately MP 0.4 to approximately MP 0.9.): $21 million
  - Alternate 1.5 (Partial new construction south and west of existing Hands Pike from near existing Hands Pike junction with KY 3035 to approximately MP 0.9.): $8 million

KYTC prefers that Spot Improvement #2 be constructed as soon as possible, and that full improvements in Section 1 be constructed ultimately. Both Alternate 1.0 and 1.1 will be carried to Design phase of project development where a final decision would be made; six-foot wide paved shoulders are to be included in this rural cross-section as a provision for bicyclists.

Section Two: From Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)

A three-lane urban section (curb and gutter) was considered based on a planning assumption that the roadway centerline would remain as is (actual centerline alignment was assessed to be a design detail that

could be better addressed in subsequent project development phases). More than 60% of survey respondents favored this approach. Nearly ¾ of these same respondents favored elevating the sag curve between MP 1.2 and 1.3. Almost two in three respondents preferred sidewalks on each side, but less than 43% favored bicycle lanes. A continuous left-turn lane was felt best due to the several offset side street intersections. The estimated cost of this improvement is $3.8 million. This concept would include improving the sag curve between MP 1.2 and 1.3. An additional improvement considered within this section was the construction of a roundabout at the intersection of Tripoli Lane/Tanarack Drive. This additional feature was estimated to cost almost as much ($3.5 million) as the section improvement itself, and would bring the total section improvement cost to $7.3 million. Only 30% of respondents favored inclusion of this improvement feature. KYTC prefers that this section be upgraded to three lanes with a center two-way left-turn lane including improving the sag curve, with a conventional sidewalk provided on one side of the road and a wider sidewalk provided as a multi-use bicycle/pedestrian path on the other, and no roundabout.

Section Three: From Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)

Sixty percent of survey respondents favored three lanes with a center two-way left-turn lane. 2/3 favored sidewalks, but only slightly more than one in three favored bicycle lanes. Two alternative locations for improvements were considered:

- Alternate A: A new corridor south and west of existing Hands Pike from near the intersection with Otter Court (MP 1.47) to the vicinity of MP 2.17. This alternate is estimated to cost $7.8 million. Nearly 2/3 of survey respondents favored this alternate.
- Alternate B: Improve the existing corridor. This alternative is estimated to cost more than $11 million. Less than thirty percent of respondents favored this alternate.

KYTC prefers that the new corridor be constructed with two lanes including a conventional sidewalk on one side of the road and a wider sidewalk provided as a multi-use bicycle/pedestrian path on the other.

Section Four: From East of Edwin Drive (MP 2.17) to KY 16 (MP 2.52)

A portion of this eastern-most section (east of approximately MP 2.4) is planned for improvement in conjunction with the KY 16 improvement project. Nearly seventy percent of survey respondents favored three lanes with a center two-way left-turn lane west of that point. Almost two in three respondents preferred sidewalks on each side, but less than 45% favored bicycle lanes. Such an improvement was estimated to cost nearly $1.5 million. KYTC prefers that the new corridor be constructed with two lanes including a conventional sidewalk on one side of the road and a wider sidewalk provided as a multi-use bicycle/pedestrian path on the other.

The KYTC project team preferred that these priorities be reflected in the study's final report:

1. Spot Improvement #2 in Section 1: $1 million (Note: cost estimates included in this portion of the meeting minutes reflect revisions made by KYTC subsequent to the meeting.)
2. Full Improvements in Section 1: $8-9 million depending upon the alternate chosen in Design phase and the extent to which spot improvements ultimately can be integrated into final improvements.

3. Construct 3-Lane Urban Section w/ Center Left-Turn Lane in Section 2: $4.5 million
4. Construct 2-Lane Urban Section 3 on New Alignment : $11 million.
5. Construct 2-Lane Urban Section w/ Center Left-Turn Lane in Section 4: $2 million

The total revised estimated cost of these prioritized improvements is $26 million.

Discussion:

The local officials then engaged in some discussion concerning the recommendations and the priorities for implementation thereof. Particular issues raised in this discussion included:

- Concern that implementation of short-term improvements to Hands Pike Hill would preclude consideration of full improvements to that section. KYTC responded that, due primarily to funding shortfalls, long-term improvements were not likely to be implemented in the near term, but that funding of short-term improvements were possible;
- A preference for Alternate 1.2 over Alternate 1.0 or 1.1 in Section 1 due to the elimination of more horizontal curvature. KYTC responded that either Alternate 1.0 or 1.1 would be designed to eliminate substandard horizontal curvature, and that Alternate 1.2 was significantly more costly than either Alternate 1.0 or 1.1.
- Concern that traffic volumes on the eastern portion of Hands Pike might increase vis-à-vis the western end with improvements to KY 16 and whether the recommended improvements would accommodate this. The consultant believes that the recommended improvements would accommodate this to the extent that it would occur.

The consultant will submit a draft final report to KYTC for their review and comment in June.

End of Minutes

Architecture
Engineering
Construction

MEETING MINUTES

Project:	KY 1501/Hands Pike, Kenton County Item No: 6-8307.00
Purpose:	Project Team Meeting #1
Place:	District-6, Covington, Kentucky
Meeting Date:	October 3, 2007
Prepared By:	Tom H. Springer
In Attendance:	

Jim Wilson	KYTC, Division of Planning
Mike Bezold	KYTC, District 6, Planning
Rob Hans	KYTC, District 6, Planning
Tony Blau	KYTC, District 6, Utilities
Mike Yeager	KYTC, District 6, Traffic
Jason Weathers	KYTC, District 6, Utilities
Andy Yeager	KYTC, District 6, Maintenance
Rick Davis	KYTC, District 6, Construction
Jim Brannon	KYTC, District 6, Preconstruction
Bill Madden	KYTC, District 6, Traffic
Brad Eldridge	KYTC, Central Office, Design
Albert Zimmerman	Qk4
Bruce Siria	Qk4
Tom Springer	Qk4

The project is an Alternatives Study of KY 1501/Hands Pike in Kenton County between KY 17 and KY 16. The objective of the meeting was to initiate the planning project, review existing conditions, and plan for the Local Officials Meeting to be held at 1:00 p.m. the same day.

Following a welcoming and introductions by Mike Bezold, Tom Springer facilitated the meeting by first describing the handouts, which included an agenda, a United States Geological Survey (USGS) map, an aerial photograph, a 3D map, Highway Information System (H.I.S.) data, crash data, the scope of work, the public involvement plan, and the 2002 Programming Study.

The PowerPoint presentation included a map of the study area, an overview of the scope of work, the project schedule, a photo tour of the study area, a review of the H.I.S. data, the Environmental Overview, a blank slide for discussion of project goals, overview of possible alternative concepts, and next steps in the planning process. Key points noted were the high traffic volumes in the western section of the corridor, which are over 10,000 average daily traffic (ADT), and the entire corridor has a high critical rate factor, ranging from 1.15 to 2.77.

The majority of the meeting focused around the identification of project goals and alternative concepts.

Project Goals

For the project goals, the Project Team identified the following:

- Improve safety conditions of KY-1501
- Improve access for local traffic

It was discussed, but decided not to be goal of the project, to provide an east-west connector for regional cut through traffic between KY 16 and KY 17. Instead, the goal to improve access for local traffic was selected.

Alternative Concepts

Alternative concepts were discussed throughout the meeting. Following are items mentioned that could be considered as part of this study:

- Improved cross drains on the Hands Pike Hill to address runoff, which results in a frozen surface in the winter
- Cutting back hills and vegetation to improve sight distance and the ability to read warning signs
- Two-lane spot improvements that would correct a small horizontal or vertical deficiency and tie back into the existing road as soon as possible
- Traffic calming concepts, such as roundabouts
- Extension of turning lanes into subdivisions
- An ultimate three-lane section from the top of Hands Pike Hill (at Crystal Lake Drive) east to KY 16 with a 35-MPH design speed. This could be divided into two sections at Otter Court.
- Striped bicycle lanes and sidewalks from the top of Hands Pike Hill east to KY 16. (KY 16 will have bicycle facilities.)
- For Hands Pike Hill, an ultimate two-lane section from the top of Crystal Lake Drive west to KY 17 with a 45-MPH design speed. Various new alternative route locations should be considered for this section.
- An interim spot improvement to correct a reverse curve just west of Crystal Lake Drive

Other Items

- It was agreed to consider inviting Ohio-Kentucky-Indiana Regional Council of Governments (OKI), Northern Kentucky Planning Commission (NKPC), and Northern Kentucky Area Development District (NKADD) to the Project Team.

- NKPC has a significant amount of Geographic Information System (GIS) data available that we could use for this project. If necessary, District-6 could obtain this for Qk4.
- It was requested to take the study area boundary off the map for the displays at the public meeting.

End of Minutes

cc: attendants

Architecture
Engineering
Construction

MEETING MINUTES

Project:	KY 1501/Hands Pike, Kenton County Item No: 6-8307.00
Purpose:	Project Team Meeting #2
Place:	District-6, Covington, Kentucky
Meeting Date:	December 20, 2007
Prepared By:	Bruce Siria
In Attendance:	

Jim Wilson	KYTC, Division of Planning
Mike Bezold	KYTC, District 6, Planning
Tony Blau	KYTC, District 6, Utilities
Mike Yeager	KYTC, District 6, Traffic
Jason Weathers	KYTC, District 6, Utilities
Andy Yeager	KYTC, District 6, Maintenance
Mike Lorenz	KYTC, District 6, Traffic
Stacee Hans	KYTC, District 6 Environmental
Brad Eldridge	KYTC, Central Office, Design
Albert Zimmerman	Qk4
Bruce Siria	Qk4
Tom Springer	Qk4
Steve Kurowsky	Qk4

The project is an Alternatives Study of KY 1501/Hands Pike in Kenton County between KY 17 and KY 16. The objective of the meeting was to review the status of the study, discuss alternative options, and plan for the public meeting on the project to be scheduled in the next six weeks.

Following introductions, Bruce Siria and Steve Kurowsky facilitated the meeting using a notebook for each attendee and a PowerPoint presentation which focused on alternative options. Discussion concerning each alternative option is summarized below:

Short-Term Solution to the Hill between Milepoints 0.4 and 0.9 (Hands Pike Hill Spot Improvements):

The Project Team members expressed concern that the short-term option did not address the high crash area of Curve 1 (see attachment). Qk4 responded that the cause of crashes was disproportionately wet weather related, and that the proposed improvements to Curve 3 would improve the safety of the roadway segment. The Project Team requested that the Short-Term Solution (which the Project Team asked be called Hands Pike Hill Spot Improvements) include addressing the horizontal curvature at Curve 1. While the current curve barely meets horizontal curve standards for a 35 mph speed, the Project Team asked that the Spot Improvements option look at a horizontal curvature radius that would satisfy, at a minimum, 45 mph design criteria and possibly 55 mph design criteria. Although it was acknowledged as a design detail, the Project Team requested that a two-foot shoulder be added to the "down slope" side of the proposed Spot Improvements in addition to the "up slope" side, as well as using a twelve-foot driving lane, and that the cost estimate be modified to reflect this. The Project Team asked that Qk4 double-check to insure that correcting super elevation deficiencies at Curve 1 was included in the cost estimate. The Project Team also requested the inclusion of raised pavement markers in this alternate.

Rural Section 1, Alternate 0:

The Project Team requested that Qk4 revise this Alternate so that both horizontal and vertical curvature satisfy, at a minimum, 45 mph design criteria and possibly 55 mph design criteria. The Project Team requested that Qk4 consider a revised Alternative 0 that would modify the intersection with Wayman Branch Road and avoid impacts to Historic Properties.

Rural Section 1, Alternate 5:

The Project Team requested that this alternate be eliminated from further consideration.

Urban Section 2, Alternates L, M, and R:

The Project Team requested that Qk4 present only Alternate M on mapping prepared for the upcoming public meeting and that a range of potential impacts reflecting Alternates L, M, and R be shown at that public meeting.

Urban Section 2, Roundabout at Tripoli Lane/Tamarack Drive:

After some discussion, the Project Team agreed to show this Alternate at the public meeting.

Urban Section 3, Alternate A and B:

The Project Team expressed concern that these alternates do little to address the project goals of improving safety conditions on KY 1501 and improving access for local traffic. There was also some discussion

about modifications to the western part of Alternates A and B to reduce impacts on the estimated eleven required residential relocations. Qk4 pointed out an overhead transmission tower that essentially eliminates Alternate B. In consideration of these factors, the Project Team agreed to take Alternate A but not Alternate B to the public meeting, to relabel what had been Alternate C as Alternate B for presentation consistency and take that alternate to the public meeting, and to show Alternate A as is without modifications to the western portion thereof. The Project Team requested that Qk4 check with the Northern Kentucky Area Planning Commission concerning proposed development in the area of Alternate A.

Urban Section 3, Alternate C:

This segment will now be lettered as Urban Section 3, Alternate B.

Urban Section 4, Alternate O:

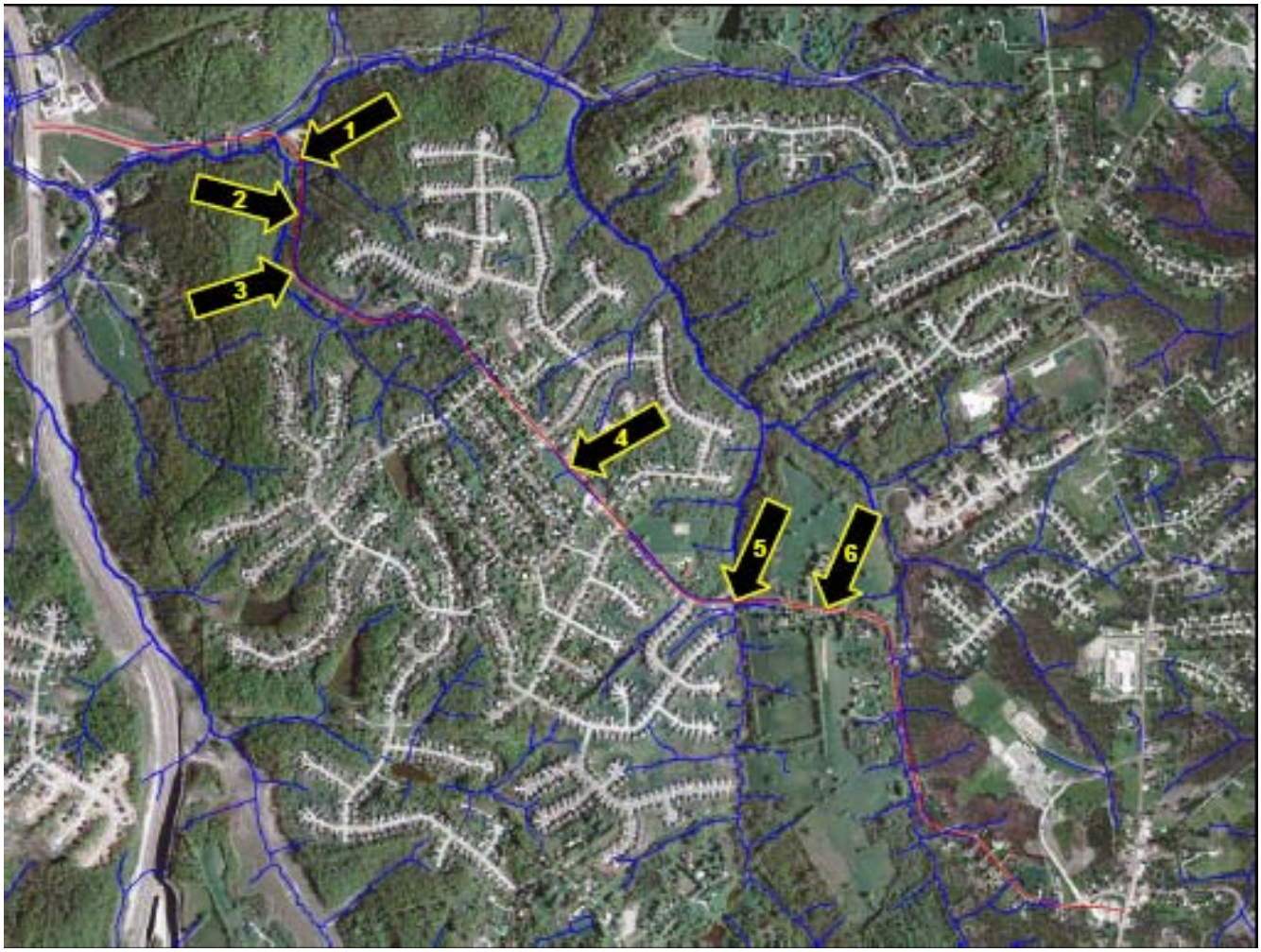
The Project Team suggested that this be relabeled simply as Section 4.

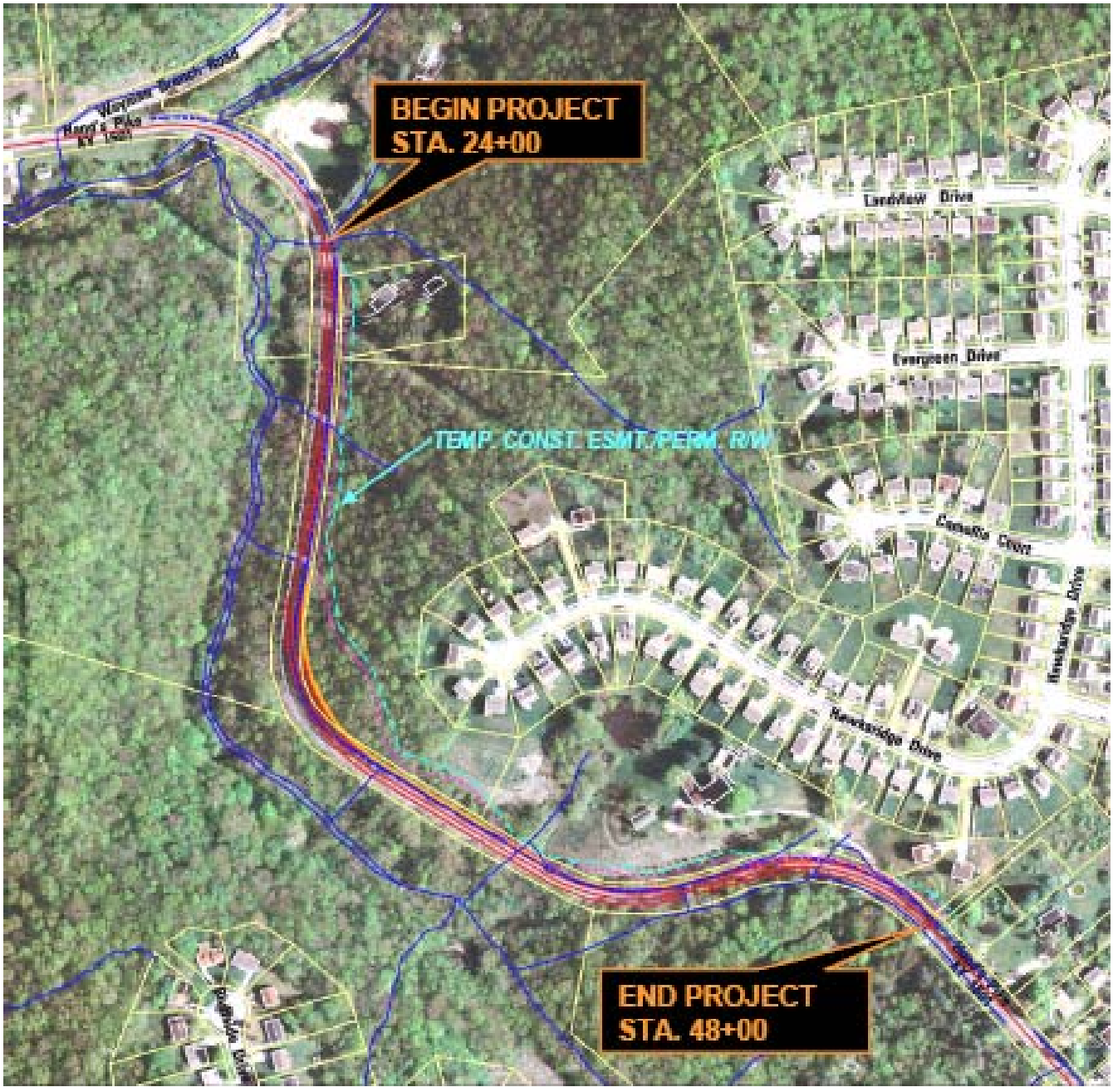
General Comments:

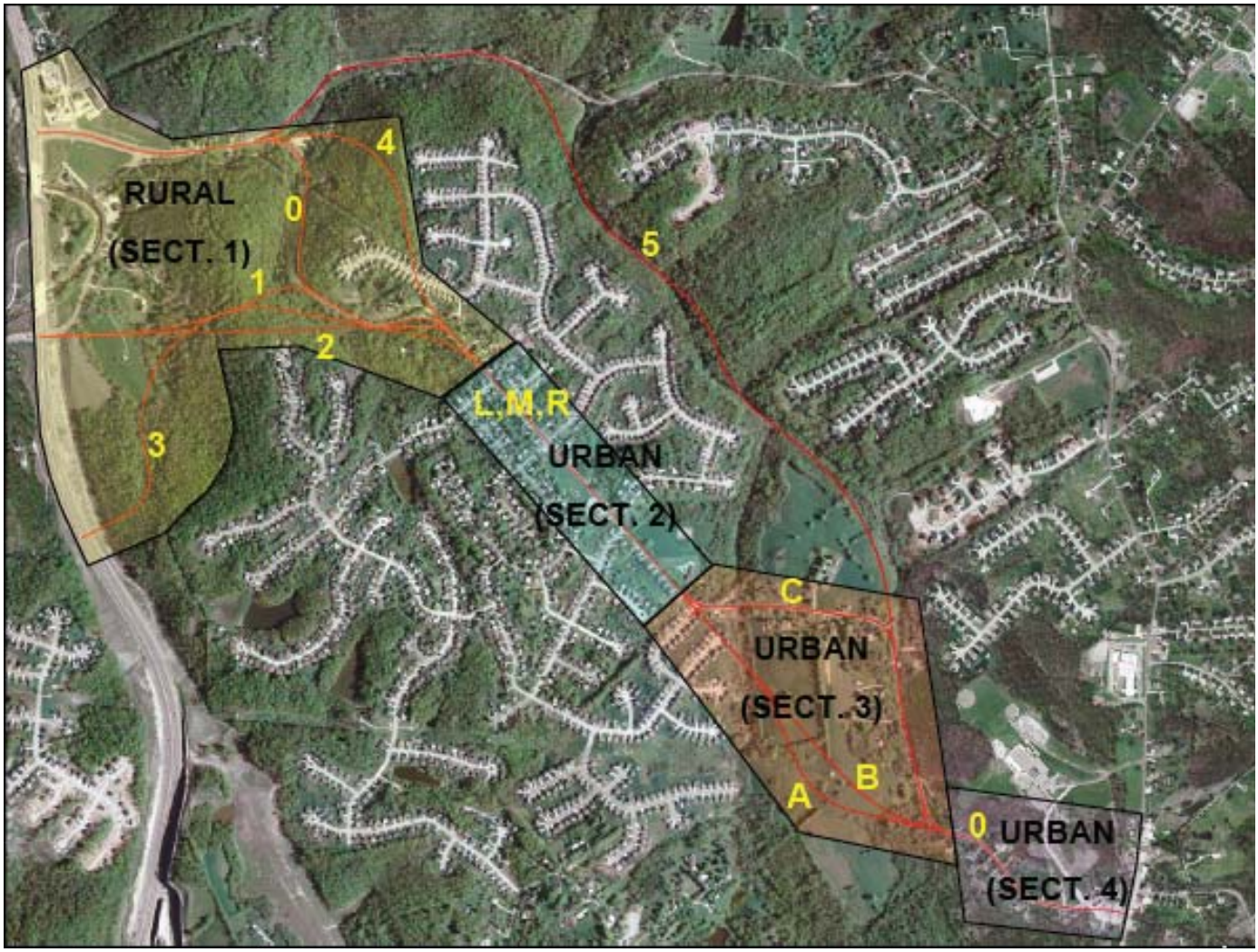
The Project Team suggested that $50/square yard rather than $30 be used for pavement cost, that $40,000/acre be used for Right-of-Way costs for the Spot Improvement and Rural Section Alternatives, that $75,000/acre be used for Urban Section Alternatives, and that $300,000 per residence be used. The Project Team requested that a range of costs from high to low be shown at the public meeting. (Note: After incorporating all discussion items at the project team meeting, the estimated costs range from $14.4 million to $37.2 million, not including the Spot Improvement Option.) In order to simplify the public meeting presentation, the Project Team requested only one or two maps per analysis section for a total of five or six maps. These boards should include key facts and figures on each board with ranges of impacts. Typical sections will be shown on separate boards. Qk4 will e-mail Mike Bezold a copy of these boards at least a week before the public meeting for his review and suggested revisions. Given the necessity to contact the school district, currently on Christmas break, about having the public meeting at the Taylor Mill Elementary School, the Project Team indicated the public meeting would likely be held on or after February 7. The Project Team asked about a comparative geotechnical analysis among the proposed alternates. Qk4 will develop a questionnaire proposed for use at the public meeting and e-mail to KYTC staff at least one week prior to the public meeting for review and comment. Qk4 will also develop a draft flyer advertising the public meeting as soon as the date and location are finalized.

End of Minutes

cc: attendees


1
2
3
4
5
6


BEGIN PROJECT
STA. 24+00
TEMP. CONST. ESMT./PERM. R/W
END PROJECT
STA. 48+00
Landview Drive
Evergreen Drive
Hawksridge Drive


RURAL
(SECT. 1)
0
1
2
3
4
5
L,M,R
URBAN
(SECT. 2)
C
URBAN
(SECT. 3)
A
B
0 URBAN
(SECT. 4)

Architecture
Engineering
Construction

MEETING MINUTES

Project:	KY 1501/Hands Pike, Kenton County Item No: 6-8307.00
Purpose:	Project Team Meeting #3
Place:	District-6, Covington, Kentucky
Meeting Date:	April 29, 2008
Prepared By:	Bruce Siria
In Attendance:	

Jim Wilson	KYTC, Division of Planning
Mike Bezold	KYTC, District 6, Planning
Tony Blau	KYTC, District 6, Utilities
Mike Yeager	KYTC, District 6, Traffic
Jason Weathers	KYTC, District 6, Utilities
Andy Yeager	KYTC, District 6, Maintenance
Stacee Hans	KYTC, District 6 Environmental
Tom Schomaker	KYTC, District 6 Executive Director
Hank Germann	KYTC, District 6, Right-of-Way
Rick Davis	KYTC, District 6, Traffic
Rob Hans	KYTC, District 6, Planning
Jim Brannon	KYTC, District 6, Preconstruction
Albert Zimmerman	Qk4
Tom Springer	Qk4
Steve Kurowsky	Qk4
Bruce Siria	Qk4

The project is an Alternatives Study of KY 1501/Hands Pike in Kenton County between KY 17 and KY 16. The objective of the meeting was to review the status of the study, present the consultant's recommendations and priorities, discuss those recommendations and priorities, and conclude with KYTC identifying its preferred alternative(s) and priorities.

Following introductions, Bruce Siria facilitated the meeting using handouts and a PowerPoint presentation which reviewed corridor segments, alternative options, comments received at the public meeting, consultant recommendations, and satisfaction of project goals.

Respondents to the survey form distributed at the public meeting felt Section One (defined below) had the most important improvement need. Within that section, respondents felt the Hands Pike Hill spot improvements were the preferred improvements.

The discussion then moved to the alternate analysis sections.

Section One: From KY 17 (MP 0.0) to near Crystal Lake Drive (MP 0.91) (Hands Pike Hill)

Two short-term and six long-term improvement options were reviewed:

- Short-Term Options:
  - Hands Pike Hill Spot Improvements #1: $4.5 million
  - Hands Pike Hill Spot Improvements #2: $0.5 million
- Long-Term Options
  - Alternate 1.0 (Upgrade Existing Hands Pike): $5 million
  - Alternate 1.1 (New Corridor from KY 17 @ Madison Pike to existing Hands Pike near MP 0.65): $5 million
  - Alternate 1.2 (New Corridor from KY 17 @ Madison Pike to existing Hands Pike near MP 0.95): $8 million
  - Alternate 1.3 (New Corridor from KY 17 approximately 0.75 miles south of current KY 17/Hands Pike junction to existing Hands Pike near Crystal Lake Drive. This alternate would have a vertical grade of less than 5%, or about one-half of each of the other long-term options): $16 million
  - Alternate 1.4 (Partial new corridor east of existing Hands Pike from approximately MP 0.4 to approximately MP 0.9.): $21 million
  - Alternate 1.5 (Partial new construction south and west of existing Hands Pike from near existing Hands Pike junction with KY 3035 to approximately MP 0.9.): $8 million

The consultant recommended that Spot Improvement #2 be constructed as soon as possible, and that Alternate 1.0 be constructed ultimately. These recommendations were felt to provide good satisfaction of the project goals.

Section Two: From Near Crystal Lake Drive (MP 0.91) to Near Otter Court (MP 1.47)

A three-lane urban section (curb and gutter) was considered based on a planning assumption that the roadway centerline would remain as is (actual centerline alignment was assessed to be a design detail that could be better addressed in subsequent project development phases). More than 60% of survey respondents favored this approach. Nearly ¾ of these same respondents favored elevating the sag curve between MP 1.2 and 1.3. Almost two in three respondents preferred sidewalks on each side, but less than 43% favored bicycle lanes. A continuous left-turn lane was felt best due to the several offset side street intersections. The estimated cost of this improvement is $3.8 million. This concept would include

improving the sag curve between MP 1.2 and 1.3. An additional improvement considered within this section was the construction of a roundabout at the intersection of Tripoli Lane/Tanarack Drive. This additional feature was estimated to cost almost as much ($3.5 million) as the section improvement itself, and would bring the total section improvement cost to $7.3 million. Only 30% of respondents favored inclusion of this improvement feature. The consultant recommended that this section be upgraded to three lanes with a center two-way left-turn lane including improving the sag curve, sidewalks on each side, no bicycle lanes, and no roundabout. These recommendations were felt to provide good satisfaction of the project goals.

Section Three: From Near Otter Court (MP 1.47) to East of Edwin Drive (MP 2.17)

Sixty percent of survey respondents favored three lanes with a center two-way left-turn lane. 2/3 favored sidewalks, but only slightly more than one in three favored bicycle lanes. Two alternative locations for improvements were considered:

- Alternate A: A new corridor south and west of existing Hands Pike from near the intersection with Otter Court (MP 1.47) to the vicinity of MP 2.17. This alternate is estimated to cost $7.8 million. Nearly 2/3 of survey respondents favored this alternate.
- Alternate B: Improve the existing corridor. This alternative is estimated to cost more than $11 million. Less than thirty percent of respondents favored this alternate.

The consultant recommended that the new corridor be constructed with three lanes and a center two-way left-turn lane including sidewalks on each side and no bicycle lanes. These recommendations were felt to provide good satisfaction of the project goals.

Section Four: From East of Edwin Drive (MP 2.17) to KY 16 (MP 2.52)

A portion of this eastern-most section (from approximately MP 2.4 east) is planned for improvement in conjunction with the KY 16 reconstruction project. Nearly seventy percent of survey respondents favored three lanes with a center two-way left-turn lane west of that point. Almost two in three respondents preferred sidewalks on each side, but less than 45% favored bicycle lanes. Such an improvement was estimated to cost nearly $1.5 million. The consultant recommended that alternate, but included both sidewalks and bicycle lanes since both were being provided on Hands Pike near KY 16 as part of that project. These recommendations were felt to provide good satisfaction of the project goals.

The consultant recommended this set of priorities for these improvements:

1. Spot Improvement #2 in Section 1: $0.5 million
2. Construct Alternate 1.0 in Section 1, incorporating Spot Improvements in Item 1: $4.5 million
3. Construct 3-Lane w/ Center Left-Turn Lane in Section 2: $3.8 million
4. Construct 3-Lane w/ Center Left-Turn Lane in Section 3 on New Alignment: $7.8 million
5. Construct 3-Lane w/ Center Left-Turn Lane in Section 4: $1.5 million

The total estimated cost of these recommended improvements is $18.1 million.

Discussion:

The project team then engaged in significant discussion concerning the recommendations and the priorities for implementation thereof. Particular issues raised in this discussion included:

- The efficacy of recommending both short- and long-term improvements on Section One;
- The accommodation, or lack thereof, of bicyclists;
- The recommended cross-section in Section Three;
- How the likely timing of improvements in Section Three might affect the ultimate recommendation

In conclusion, the project team preferred that these projects and priorities should be reflected in the study's final report:

1. Spot Improvement #2 in Section 1: $1 million (Note: cost estimates included in this portion of the meeting minutes reflect revisions made by KYTC subsequent to the meeting.)
2. Full Improvements in Section 1: Both Alternate 1.0 and 1.1 are to be carried to Design phase of project development where a final decision would be made; six-foot wide paved shoulders are to be included in this rural cross-section as a provision for bicyclists: $8-9 million depending upon the alternate chosen in Design phase and the extent to which spot improvements ultimately can be integrated into final improvements.
3. Construct 3-Lane Urban Section w/ Center Left-Turn Lane in Section 2; a conventional sidewalk would be provided on one side of the road and a wider sidewalk would be provided as a multi-use bicycle/pedestrian path on the other: $4.5 million
4. Construct 2-Lane Urban Section 3 on New Alignment: a conventional sidewalk would be provided on one side of the road and a wider sidewalk would be provided as a multi-use bicycle/pedestrian path on the other: $11 million. It was noted that, since implementation of improvements in this section is not expected in the near-term, ultimately improvements might instead be made to the existing roadway due to potential development which may occur in the corridor of the proposed new roadway.
5. Construct 2-Lane Urban Section w/ Center Left-Turn Lane in Section 4: a conventional sidewalk would be provided on one side of the road and a wider sidewalk would be provided as a multi-use bicycle/pedestrian path on the other: $2 million

The total revised estimated cost of these preferred improvements is $26 million.

General Comments:

During the project team meeting, the consultant was provided copies of all responses to the Resource Agency Coordination letter sent out by KYTC. KYTC indicated they would check during the afternoon local officials meeting on the status of the Environmental Justice review being prepared by the Northern Kentucky Area Development District. (Note: During that latter meeting, NKADD advised KYTC that the review was not yet complete.) The consultant will review these items and summarize them, and the significant impacts identified therein, in the draft final report for this study.

The revised cost estimates provided subsequent to the meeting were based on revisions to the recommended improvements and on the following revisions to the estimated unit costs:

- Addition of estimated costs for guardrail in Section one;
- Increased in estimated pavement cost from $\$50/yard^2$ to $\$60/yard^{2;}$
- Increased the area of pavement used in the Hands Pike Hill Spot Improvement 2 to include pavement for half the width of the roadway. This would be enough pavement to widen the roadway to 12' lanes, shoulders, correct the super elevation, widen to the inside of the curves, and surface the entire area;
- Added shoulder to the width of pavement;
- Increased the estimated cost of excavation from $\$3.50/yard^3$ to $\$6/yard^3$;
- Increased the estimated cost of embankment from $\$6.00/yard^3$ to $\$8.00/ yard^3$;
- Increased the R/W cost to $40,000/lot;
- Increased the miscellaneous cost factor to 0.7 to account for drainage, erosion control, striping, etc.

The project team expressed a preference that cost estimates be portrayed with no more than two significant numbers. The consultant will submit a draft final report to KYTC for their review and comment in June.

End of Minutes

APPENDIX D

PUBLIC MEETING SUMMARY

SUMMARY OF COMMENT FORMS

Public Information Meeting

KY 1501-Hands Pike

Between KY 16 and KY 17

Kenton County

KYTC Item No. 6-8307.00

February 7, 2008

This public information meeting was conducted to (1) identify priority segments for improvements along KY 1501-Hands Pike between KY 16 and KY 17 (2) to receive their input/comments about which alternative improvement for that segment they prefer. Citizens were provided a handout consisting of a project fact sheet with the study purpose, issues, and draft project goals, and a comment form with an aerial of the project study area with proposed alignments to submit; and the District 6 point of contact for additional information on both.

A staffed information table with a sign-in sheet was present at the entrance, and the handout/comment forms distributed to attendees. The meeting was conducted from 6:00-8:00 p.m. with an open house type format. Several exhibits illustrated of the build alternative options. Staff members from KYTC and Qk4 were available to answer questions and elicit comments/discussion.

Fifty six (56) people attended the meeting and signed the sign-in sheet. The pre-printed comment forms were returned by 33 people. Summaries and representative statements of the comments received are presented below, with the number of times stated in parentheses.

Following is pieces of the public input regarding the options:

- RECONSTRUCTION OF SECTION 1 IS THE TOP PRIORITY
- OF THE SECTION 1 OPTIONS THE SPOT IMPROVEMENTS ARE THE MOST SUPPORTED
- FOR SECTIONS 2, 3, AND 4:
    - A 3-LANE SECTION, WITH A CONTINUOUS LEFT TURN LANE IS SUPPORTED
    - SIDEWALKS ARE SUPPORTED
    - BIKE LANES ARE NOT SUPPORTED
    - A ROUNDABOUT AT TRIPOLI IS NOT SUPPORTED

1. How did you hear about this public meeting?

Newspaper	15	TV	1	Friend/Family	5
Letter	0	Radio	0	Elected Official	1
Flyer	2	Meeting	11	Other	2

2. How important to you are improvements to the following sections along Hands Pike?

(1 = Not Important, 3 = Important, 5 = Very Important; please check the appropriate number)

SECTIONS	SCORE				
	Not Important (1)	(2)	Important (3)	(4)	Very Important (5)
SECTION 1: Western Segment from KY 17 to Crystal Lake Drive	1	0	0	3	25
SECTION 2: Crystal Lake Drive to Otter Court	6	3	9	2	4
SECTION 3: Otter Court to Edwin Drive	4	3	11	4	3
SECTION 4: Eastern Segment from Edwin Drive to KY 16	4	2	6	4	9

3. For the Western Study Section, Please rank each alternative suggested improvement

(higher number = higher priority; check the appropriate number)

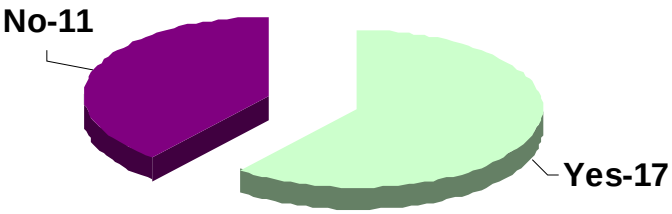
Western Segment (Section 1) From KY 17 to Crystal Lake Drive	SCORE				
ALTERNATES	Lowest Priority (1)	(2)	Important (3)	(4)	Highest Priority (5)
Hands Pike Hill Spot Improvements #1	4	3	2	2	19 (63%)
Hands Pike Hill Spot Improvements #2	7	4	2	4	10 (37%)
Alternate 1.0	10	0	4	4	7 (28%)
Alternate 1.1	8	0	4	7	6 (24%)
Alternate 1.2	5	3	6	4	5 (22%)
Alternate 1.3	17	3	4	0	1 (4%)
Alternate 1.4	12	4	0	3	5 (21%)
Alternate 1.5	10	2	2	6	5 (20%)

4. Please indicate which alternate improvement ideas you would prefer to see implemented

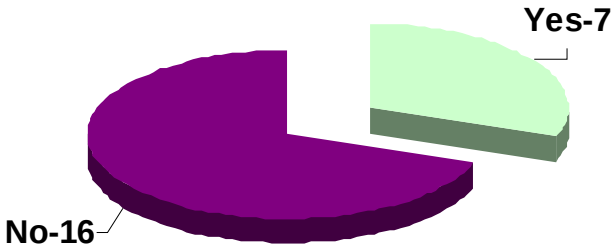
(You may select Yes or No to all or none of the options)

Between Crystal Lake Drive to Otter Court (Section 2); do you prefer:

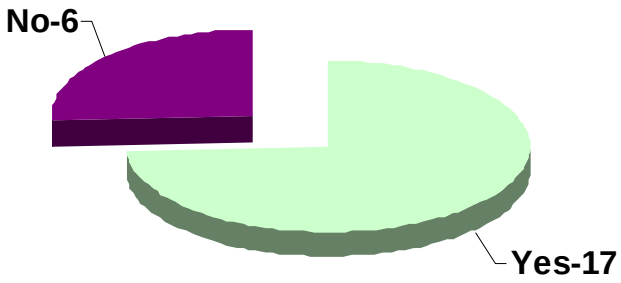
Three Lanes with Continuous Left-Turn Lane in Center



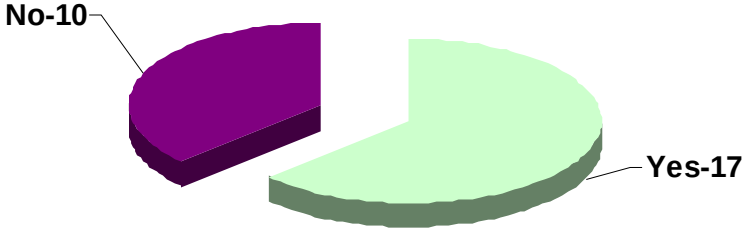
Roundabout at Tripoli Lane / Tanarack Drive



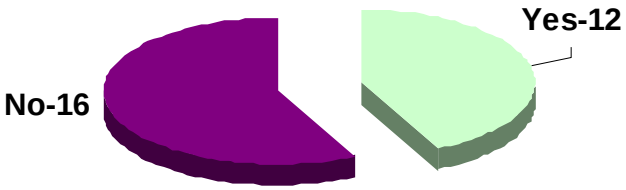
Raise Existing Roadway Grade at Drain Crossing



Sidewalks on Both Sides of Hands Pike

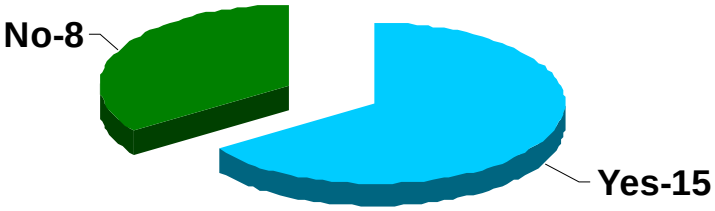


Bicycle Lanes in Both Directions

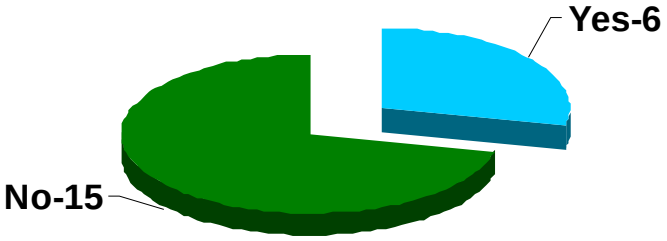


Between Otter Court to Edwin Drive (Section 3), do you prefer:

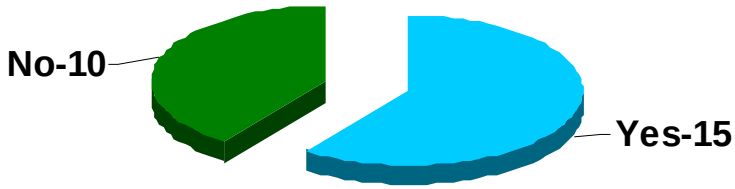
Alternate A (New road on alignment)



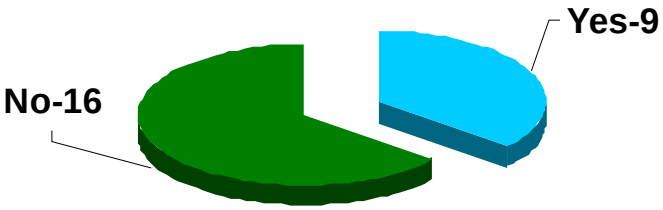
Alternate B (Rebuilding the existing road)



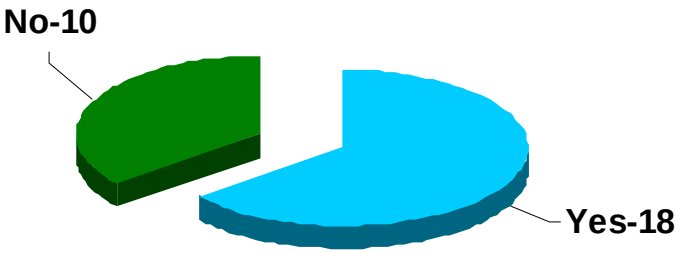
Three Lanes with Continuous Left-Turn Lane in Center



Bicycle Lanes in Both Directions

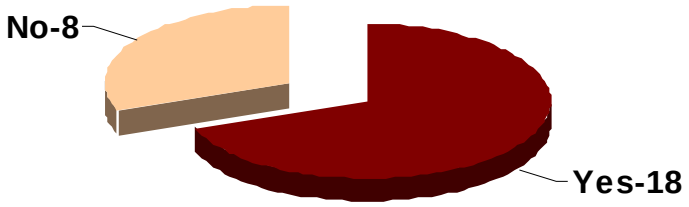


Sidewalks on Both Sides of Hands Pike

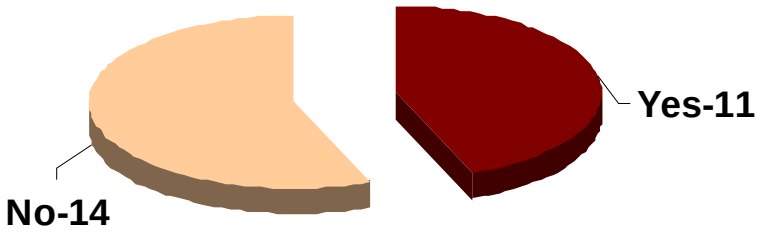


Between Edwin Drive to KY 16 (Section 4), do you prefer:

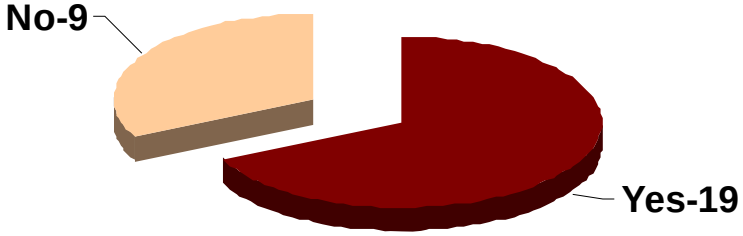
Three Lanes with Continuous Left-Turn Lane in Center



Bicycle Lanes in Both Directions



Sidewalks on Both Sides of Hands Pike



5. Please discuss any other suggestions for Hands Pike you would like to have considered in this study, any environmental, cemeteries, or community features in the study area which we should be aware of, and any additional comments you have regarding the study.

- Short Term Solution – **5x**
- Drainage needs short term solution – **3x**
- From KY 17 to the top of the hill, there are several historic properties: Log Cabin Inn on KY 17 and Hands Pike; 2 log cabin at the bottom of the hill (residential use) **- 3x**
- Consider Environmental and Economic Issues for Residents – **2x**
- Section 1 needs to be improved ASAP at intersection Wayman Branch and Hands Pike - **2x**
- Cut into the hill, add shoulder and yellow reflectors down middle of road, replacing or straightening up guardrails
- The 'ditch' next to the hill needs corrected to prevent draining water from freezing and aiding in cars overturning
- Witnessed 200+ accidents on curve of Hands and downhill corridor from US 17 to Firehouse location
- Concerned that my property at 1089 Hands will become useless
- Move the location of 1080 mailbox
- Better lighting on the hill
- More explicit signs on top and bottom of hill
- Stop light at Wayman Branch and Hands Pike
- Better police on Hands Pike
- Drainage ditches on Hands Pike need better signs instead of a reflection stick
- More street lights would help a lot at the bottom of the hill toward KY 17
- Open alternate route to Sugar Camp from Green Hill when any bad weather appears they close it down
- KY 1501-Hands Pike hill is slipping away fast. To much traffic on this road for its condition, guard rail side is the bad side
- Section #4 needs city sewage
- If going with three lanes and bike paths just buy out all of Section 4
- A traffic light added at KY 16 and Hands Pike would help traffic flow
- A sign posted “No right turn between 6am-8am” on Hands Pike at Wayman Branch
- The 1.5 Alternative brings traffic farther North along KY 17 than any other alternative. I believe most of the traffic turns right to go North on KY 17. Making this section of the road three lanes wide with a middle turn lane, even with a 10% grade, would be safer because of the added buffer of the middle lane and new shoulders. Hands Pike must have a continuous flow with Wayman Branch making a "T" intersection. A dedicated right turn lane from Wayman Branch onto the beginning of the four lane section of Hands Pike would accomplish this
- The right hand side downhill between Hands Pike and KY 17 should be moved back about 10' to widen Hands Pike at major points. The drop off side needs a wider rail to eliminate movement by big trucks, buses, larger vehicles/equipment. If the guardrail was moved 6' to 7' closer to the highway it would help breaking away to be held to a minimum. The other area is around the 1300 area, the bad bend. This hill should be moved back also about 10' to allow traffic to pass without crossing the center line.
- Alternate 1.5 could work only if Wayman Branch "T" into Hands WS. How your drawing has illustrated it! Hands needs to have continuous flow vs. Wayman having a stop sign, because 90% turn right onto Hands

The Kentucky Transportation Cabinet
Needs Your Input!
Concerning the Study of Hands Pike (KY 1501)
in Covington, KY

Public Information Meeting
Thursday, February 7, 2008, 5:00-7:00 p.m.
Taylor Mill Elementary School Cafeteria
5907 Taylor Mill Road, Covington, KY
Open Format (stop by anytime between 5 and 7 p.m.)

The Kentucky Transportation Cabinet is undertaking a planning study to develop and evaluate potential safety improvements for Hands Pike, KY 1501, in Covington, KY.

The purpose of the public meeting is to present preliminary findings and gather input on potential issues, concerns, alternatives, and impacts for the proposed improvement project.

Following the meeting, improvement alternatives will be developed by the project team using the preliminary traffic, geometric, environmental, and geotechnical data gathered to-date, as well as the input received from the local officials, local stakeholders, and the public. These preliminary improvement alternatives will be carried forward for more detailed analysis (including consideration of traffic, environmental, geotechnical, socioeconomic, cost, and constructability) and further local official, local stakeholder, and public input. The result of this planning study will be a recommendation for the improvement of Hands Pike. The no-build option will be given equal consideration.

Handouts containing information about the project, comment sheets and displays will be available at the meeting. Representatives from the KY Transportation Cabinet and their consultants will be available to answer questions. Written comments will be accepted during the meeting and until February 22, 2008 at the District Six Office address listed below.

Comments from this meeting will become a part of the official record for the project. Once compiled, the meeting record will be made available for review and copying only after an Open Records Request has been received and approved. All Open Records Requests must be submitted to the Office of Legal Services, Kentucky Transportation Cabinet, 200 Mero Street Frankfort, Kentucky 40622.

In accordance with the Americans with Disabilities Act (ADA), if anyone has a disability and requires assistance, please notify Nancy Wood no later than January 31, 2008. Please call 859-341-2700 or mail your request to the address listed below.

Please address any questions regarding this project to:
Mike Bezold, Project Manager
Kentucky Transportation Cabinet, Department of Highways
421 Buttermilk Pike
P.O. Box 17130
Covington, Kentucky 41017

COMMENT FORM
Public Information Meeting
February 7, 2008

KY 1501-Hands Pike between KY 16 and KY 17
Kenton County
KYTC Item No. 6-8307.00

We need your help! You can help us by completing this comment form. The Kentucky Transportation Cabinet (KYTC) has initiated a planning study designed to develop and evaluate potential safety improvements for KY 1501-Hands Pike between KY 16 and KY 17 in Kenton County. As part of the study, KYTC would like your assistance (1) in identifying priority segments for improvements along KY 1501-Hands Pike and (2) which alternative improvement for that segment you prefer. Please complete this form and return it to Transportation Cabinet staff here tonight, or use the postage-paid envelope provided to submit your comments by February 22, 2008. We appreciate your participation and value your comments! Each person should complete a separate comment form.

Name: _____

Representing (title, agency, organization, if applicable)**:** _____

Address: _____

_____

Phone (optional)**:**_____ **Date:** _____

Email (optional)**:** _____

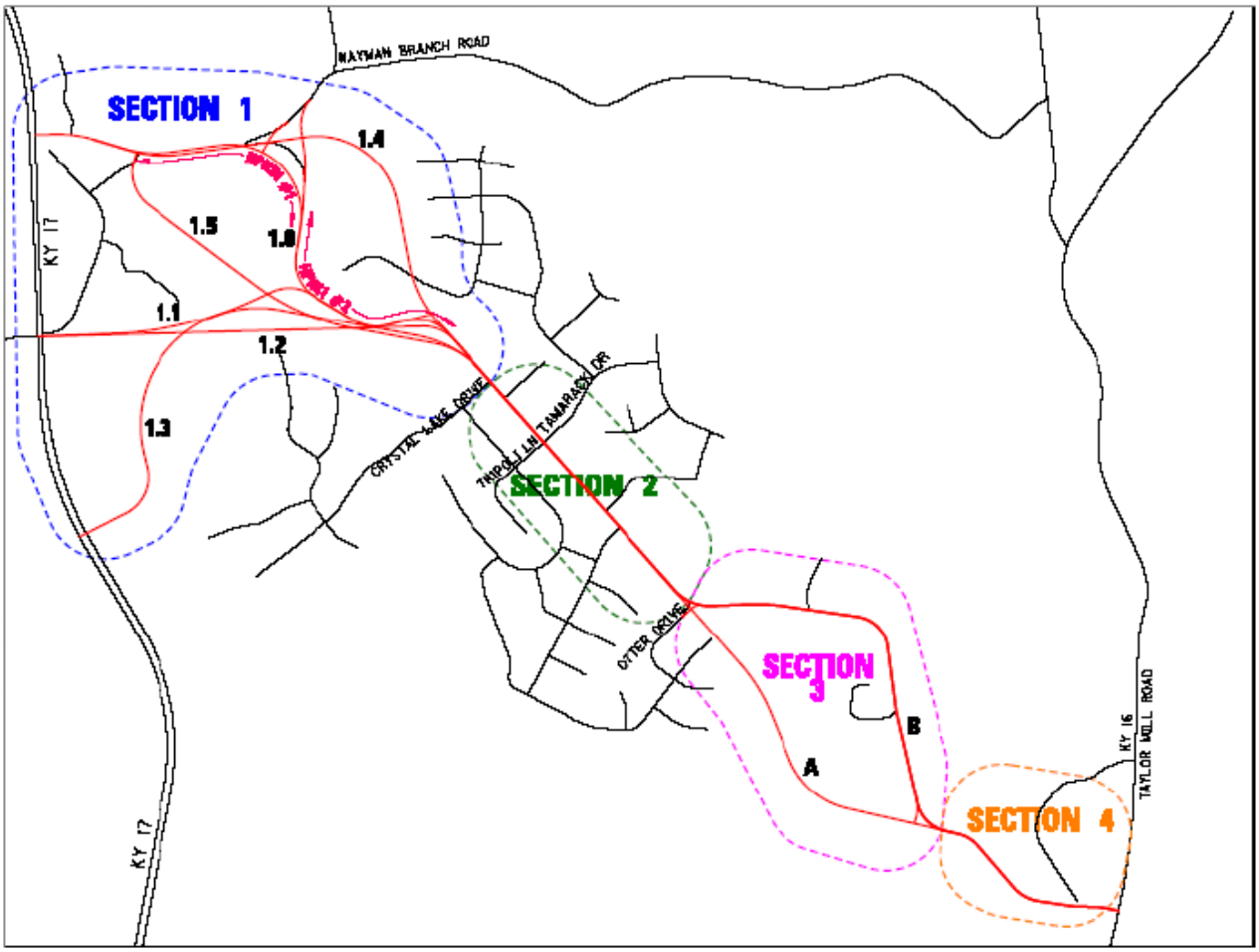
The objective of this form is to solicit your views on the segments and alternatives you think should be prioritized in this study. Each form will be read and tabulated by the project team. All comments are welcome! We appreciate your participation!

1. How did you hear about this public meeting?

☐ Newspaper	☐ TV	☐ Friend/Family	☐ Do Not Recall
☐ Letter	☐ Radio	☐ Elected Official	
☐ Flyer	☐ Meeting	☐ Other	

2. How important to you are improvements to the following sections along Hands Pike?
(1 = Not Important, 3 = Important, 5= Very Important; please check the appropriate number)

SECTIONS	SCORE				
	Not Important		**Important**		**Very Important**
SECTION 1: Western Segment from KY 17 to Crystal Lake Drive	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
SECTION 2: Crystal Lake Drive to Otter Court	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
SECTION 3: Otter Court to Edwin Drive	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
SECTION 4: Eastern Segment from Edwin Drive to KY 16	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐



3. For the western study section, please rank each alternative suggested improvement
(higher number = higher priority; check the appropriate number)

Western Segment (Section 1) **From KY 17 to Crystal Lake Drive**	**SCORE**				
ALTERNATES	**Lowest Priority**				**Highest Priority**
Hands Pike Hill Spot Improvements #1	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Hands Pike Hill Spot Improvements #2	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Alternate 1.0	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Alternate 1.1	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Alternate 1.2	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Alternate 1.3	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Alternate 1.4	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Alternate 1.5	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

4. Please indicate which alternate improvement ideas you would prefer to see implemented
(You may select Yes or No to all or none of the options)

Between Crystal Lake Drive to Otter Court (Section 2); do you prefer:

Three Lanes with Continuous Left-Turn Lane in Center

Yes ☐ No ☐

Roundabout at Tripoli Lane/Tanarack Drive

Yes ☐ No ☐

Raise Existing Roadway Grade at Drain Crossing

Yes ☐ No ☐

Bicycle Lanes in Both Directions

Yes ☐ No ☐

Sidewalks on Both Sides of Hands Pike

Yes ☐ No ☐

Between Otter Court to Edwin Drive (Section 3), do you prefer:

Alternate A (New road on new alignment)

Yes ☐ No ☐

Alternate B (Rebuilding the existing road)

Yes ☐ No ☐

Three Lanes with Continuous Left-Turn Lane in Center

Yes ☐ No ☐

Bicycle Lanes in Both Directions

Yes ☐ No ☐

Sidewalks on Both Sides of Hands Pike

Yes ☐ No ☐

Between Edwin Drive to KY 16 (Section 4), do you prefer:

Three Lanes with Continuous Left-Turn Lane in Center

Yes ☐ No ☐

Bicycle Lanes in Both Directions

Yes ☐ No ☐

Sidewalks on Both Sides of Hands Pike

Yes ☐ No ☐

5. Please discuss any other suggestions for Hands Pike you would like to have considered in this study, any environmental or community features in the study area which we should be aware of, and any additional comments you have regarding the study.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for your comments. Use additional pages if necessary. If you fail to receive a postage-paid envelope, you may send your written comments to:

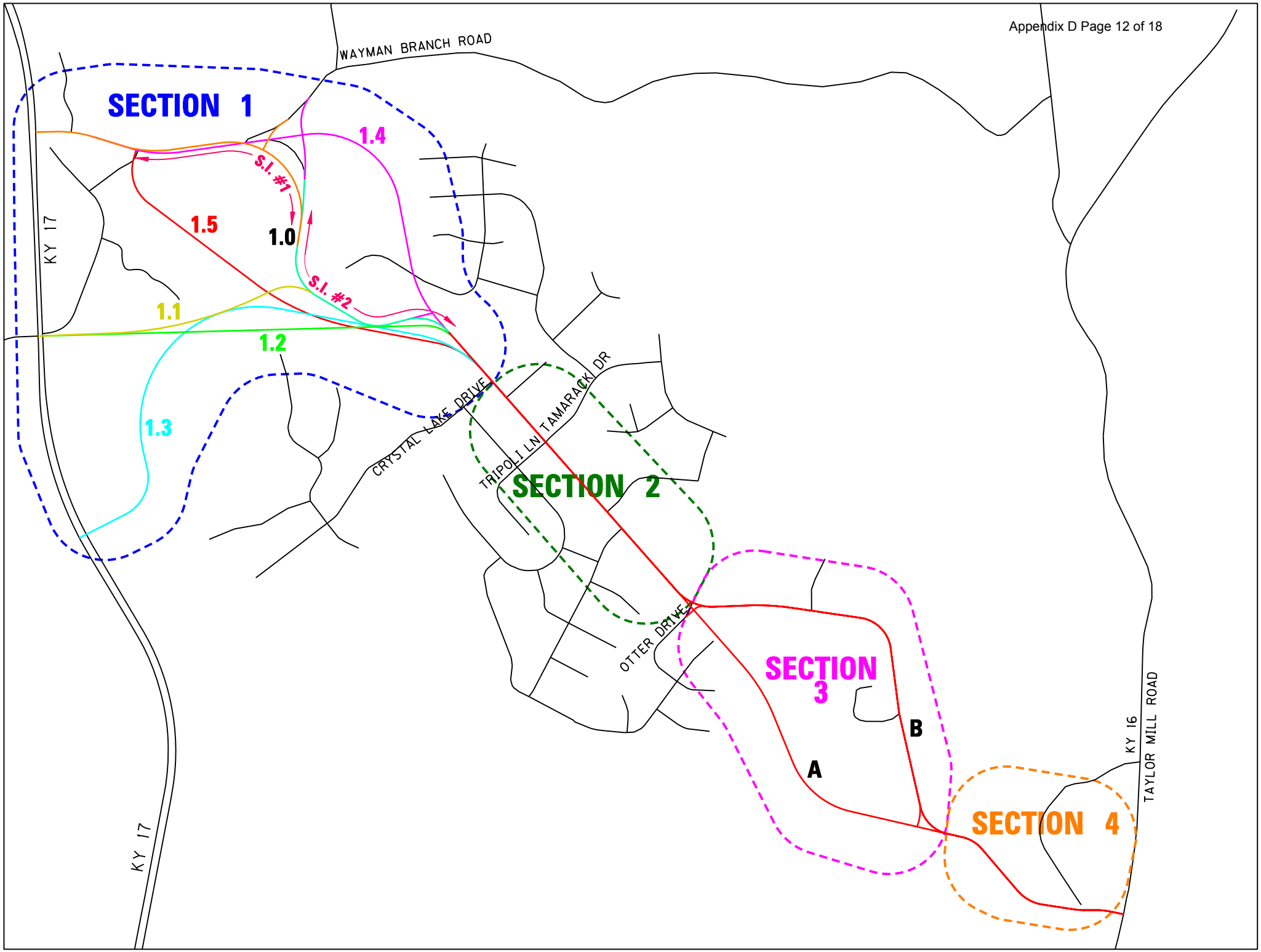
For further information contact:

Daryl J. Greer, P.E.
Director, Division of Planning
Kentucky Transportation Cabinet
200 Mero Street, 5th Floor
Station: W5-05-01
Frankfort, KY 40622

OR
CONTACT

Mike Bezold, P.E.
Project Manager, District 6
Kentucky Transportation Cabinet
Phone: (859) 341-2700
Fax: (859) 341-3661
E-Mail: Mike.Bezold@ky.gov

Please note: Under KRS 516.030, falsely completing, making, or altering this document with the intent to defraud, deceive, or injure another is forgery in the second degree, a Class D felony.


WAYMAN BRANCH ROAD
SECTION 1
1.4
S.I. #1
1.5
1.0
KY 17
S.I. #2
1.1
1.2
1.3
CRYSTAL LAKE DRIVE
TRIPOLI LN
TAMARACK DR
SECTION 2
OTTER DRIVE
SECTION 3
B
A
SECTION 4
KY 16
TAYLOR MILL ROAD
KY 17

KY 1501 – HANDS PIKE - FEBRUARY 7, 2008
KYTC AND QK4 SIGN-IN SHEET

NAME	ADDRESS	PHONE NUMBER
Tom Springer	QK4	502/585-2222
Bruce Sirica	QK4	"
Albert Zimmerman	QK4	"
Steve Kurowski	QK4	"
Jim Wilson	KYTC - Planning	502-564-7183
David Tipton	KYTC - Planning	"
Rick Davis	KYTC - D6 Traffic	859-341-2707
Nick Hendrix	KYTC - D6 Traffic	"
Stacee Hans	KYTC - D6 Environmental	" x 274
Rob Hans	KYTC - D6 Planning	" 256
Caitlin Douglas	NKADD	283-1885
Nancy Wood	KYTC	"

KY 1501 – HANDS PIKE
PUBLIC MEETING SIGN-IN SHEET
FEBRUARY 7, 2008

NAME	REPRESENTING	ADDRESS	PHONE NUMBER
1) Gene Farrell			
2) Wayne Todd			
3) Keith Lawson	HRAPC		
4) W Don Noel			
5) Nancy Ray			
6) Ken Ray			
7) Dan Bishop			
8) Dennis Perkins			
9) Bill Lyle			
10) Dane Hurley			
11) Judy Hurley			
12) ___ ?			
13) ___ ?			
14) Chris Stephens			
15) Tom + Linda Withorn			

KY 1501 – HANDS PIKE
PUBLIC MEETING SIGN-IN SHEET
FEBRUARY 7, 2008

	NAME	REPRESENTING	ADDRESS	PHONE NUMBER
16)	Hugh McQueary		5 Juarez Cir Covington KY	356-6446
17)	Octavia McQueary		" " " "	
18)	Ron Rose		7 Juarez Cir Cov. Ky	356-0525
19)	Jim Hurtt		116 Meadow Hill Cov KY	356-4477
20)	—	—	—	—
21)	—	—	—	—
22)	Dan Bell	City of Taylor Mill	3244 High Ridge	356-1053
23)	Susan Lamb		1473 Hands Pk	356-2569
24)	David Lamb		1473 Hands Pk	" "
25)	GEORGE WORMALD	138 TANDO WAY COVINGTON, KY		363-1756
26)	JULIE GIBEAU		1173 HANDS PIKE	322-6772
27)	Karen Fuchs	—	1474 Hands Pike	630-3424
28)	Cindy Jones		1474 Hands Pike	496-7420
29)	Greg Mattingly		6129 Taylor Mill Rd.	356-5522
30)	Steve Utt	Covington	1809 Greenup	859-431-9944

KY 1501 – HANDS PIKE
PUBLIC MEETING SIGN-IN SHEET
FEBRUARY 7, 2008

	NAME	REPRESENTING	ADDRESS	PHONE NUMBER
31)	Jack Alsip	myself	1439 Hands Pike	3566690
32)	[illegible]			
33)	Steve McCoy	Myself	4 Horizon Ct.	
34)	Brian Houillion		5980 Taylor Mill Rd	
35)	Joe Ising		62 Waterside Way Cov 41017	356-7804
36)	Troy Riegsecker	myself	7145 Hawksridge	
37)	Greg Waller	self	9294 Hawksridge	363-3554
38)	[illegible]	self	1092 Hands Pike	356-9670
39)	Terre Caglia	Self	1092 Hands Pike	356-9670
40)	Sherry Carran	City of Covington	427 Forest	491-0722
41)	Andrea Holland		2644 Evergreen Dr	363-1213
42)	Fritz Kuhlmann	~~Self~~	628 Sunset Ct	291-4808
43)	Jason Feldmann	Myself	(Reporter)	578-1061
44)	Dan Kauffung	SSCC	105 Vista View Circle 41017	356-1524
45)	Ray Maness	MYSELF	2370 Hollsbranch Rd. 41017	356-8677

Q4

KY 1501 – HANDS PIKE
PUBLIC MEETING SIGN-IN SHEET
FEBRUARY 7, 2008

	NAME	REPRESENTING	ADDRESS	PHONE NUMBER
46)	DON PETERS	myself	119 MEADOW HILL DR.	(859) 363-1233
47)	Jay Fossett	City of Covington	~~72~~ 658 Madison	859-292-2160
48)	Sil Eversole			
49)	Arlene Gibeau	1173 Hands Pike		859-491-2584
50)	Richard Gibeau	1173 Hands Pike	1173 Hands Pike	859-491-2584
51)	Valerie Reader	113 Idlewood Dr.	113 Idlewood Dr.	859-356-1654
52)	Jodell McCoy	~~4 Horizon Dr.~~	4 Horizon Dr.	
53)	Tahra Womble		469 W 16th Covington	859-291-4624
54)	John Datlow		1428 Hands Pike	(859) 356-1970
55)	[illegible]		14 Eastside Ct.	~~859~~ 356-8872
56)	Julie Gibeau			
57)	"			
58)	South Covington Com Action Assn.			
59)	↓			
60)				

KY 1501 – HANDS PIKE
PUBLIC MEETING SIGN-IN SHEET
FEBRUARY 7, 2008

	NAME	REPRESENTING	ADDRESS	PHONE NUMBER
61)				
62)				
63)				
64)				
65)				
66)				
67)				
68)	Brian Stephens			
69)	Bill Batson			
70)	Steve Whitaker			
71)	David Batson			
72)	Susan Cook			
73)				
74)				
75)				

APPENDIX E

KENTON COUNTY LISTED SPECIES

Report of
Endangered, Threatened, and Special Concern
Plants, Animals, and Natural Communities
for Kenton County, Kentucky

Kentucky State Nature Preserves Commission
801 Schenkel Lane
Frankfort, KY 40601
(502) 573-2886 (phone)
(502) 573-2355 (fax)

www.naturepreserves.ky.gov

Kentucky State Nature Preserves Commission
Key for County List Report

Within a county, elements are arranged first by taxonomic complexity (plants first, natural communities last), and second by scientific name. A key to status, ranks, and count data fields follows.

STATUS

KSNPC: Kentucky State Nature Preserves Commission status:

N or blank = none E = endangered T = threatened S = special concern H = historic X = extirpated

USESA: U.S. Fish and Wildlife Service status:

blank = none C = candidate LT = listed as threatened LE = listed as endangered
SOMC = Species of Management Concern

RANKS

GRANK: Estimate of element abundance on a global scale:

G1 = Critically imperiled
G2 = Imperiled
G3 = Vulnerable
G4 = Apparently secure
G5 = Secure
GH = Historic, possibly extinct
GX = Presumed extinct
GU = Unrankable
G#? = Inexact rank (e.g. G2?)
G#Q = Questionable taxonomy
G#T# = Infraspecific taxa (Subspecies and variety abundances are coded with a 'T' suffix; the 'G' portion of the rank then refers to the entire species)
GNR = Unranked
GNA = Not applicable

SRANK: Estimate of element abundance in Kentucky:

S1 = Critically imperiled
S2 = Imperiled
S3 = Vulnerable
S4 = Apparently secure
S5 = Secure
SH = Historic, possibly extirpated
SX = Presumed extirpated
SU = Unrankable
S#? = Inexact rank (e.g. G2?)
S#Q = Questionable taxonomy
S#T# = Infraspecific taxa
SNR = Unranked
SNA = Not applicable

Migratory species may have separate ranks for different population segments (e.g. S1B, S2N, S4M):
S#B = Rank of breeding population
S#N = Rank of non-breeding population
S#M = Rank of transient population

COUNT DATA FIELDS

OF OCCURRENCES: Number of occurrences of a particular element from a county. Column headings are as follows:

E - currently reported from the county
H - reported from the county but not seen for at least 20 years
F - reported from county & cannot be relocated but for which further inventory is needed
X - known to have extirpated from the county
U - reported from a county but cannot be mapped to a quadrangle or exact location.

The data from which the county report is generated is continually updated. The date on which the report was created is in the report footer. Contact KSNPC for a current copy of the report.

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed, and new species of plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

KSNPC appreciates the submission of any endangered species data for Kentucky from field observations. For information on data reporting or other data services provided by KSNPC, please contact the Data Manager at:

Kentucky State Nature Preserves Commission
801 Schenkel Lane
Frankfort, KY 40601
(502) 573-2886 (phone)
(502) 573-2355 (fax)
email: naturepreserves@ky.gov
internet: www.naturepreserves.ky.gov

County	Taxonomic Group	Scientific name	Common name	Statuses	Ranks	# of Occurrences E	H	F	X	U
Kenton	Vascular Plants	*Oenothera triloba*	Stemless Evening-primrose	T /	G4 / S1S2	0	1	0	0	0
Kenton	Vascular Plants	*Philadelphus inodorus*	Mock Orange	T /	G4G5 / S1S2	1	0	0	0	0
Kenton	Vascular Plants	*Trifolium stoloniferum*	Running Buffalo Clover	T / LE	G3 / S2S3	1	0	1	2	0
Kenton	Aquatic Snails	*Leptoxis praerosa*	Onyx Rocksnail	S / SOMC	G5 / S3S4	0	0	0	1	0
Kenton	Freshwater Mussels	*Alasmidonta marginata*	Elktoe	T / SOMC	G4 / S2	1	0	0	0	0
Kenton	Freshwater Mussels	*Cumberlandia monodonta*	Spectaclecase	E / C	G2G3 / S1	0	0	0	2	0
Kenton	Freshwater Mussels	*Cyprogenia stegaria*	Fanshell	E / LE	G1 / S1	3	1	0	1	0
Kenton	Freshwater Mussels	*Epioblasma obliquata obliquata*	Catspaw	E / LE	G1T1 / S1	0	0	0	1	0
Kenton	Freshwater Mussels	*Epioblasma torulosa rangiana*	Northern Riffleshell	E / LE	G2T2 / S1	0	0	0	1	0
Kenton	Freshwater Mussels	*Epioblasma triquetra*	Snuffbox	E / SOMC	G3 / S1	0	0	0	1	0
Kenton	Freshwater Mussels	*Fusconaia subrotunda*	Longsolid	S /	G3 / S3	1	0	0	2	0
Kenton	Freshwater Mussels	*Lampsilis abrupta*	Pink Mucket	E / LE	G2 / S1	0	1	0	2	0
Kenton	Freshwater Mussels	*Lampsilis ovata*	Pocketbook	E /	G5 / S1	0	0	0	2	0
Kenton	Freshwater Mussels	*Lasmigona compressa*	Creek Heelsplitter	E /	G5 / S1	0	0	0	1	0
Kenton	Freshwater Mussels	*Leptodea leptodon*	Scaleshell	X / LE	G1 / SX	0	0	0	1	0
Kenton	Freshwater Mussels	*Obovaria retusa*	Ring Pink	E / LE	G1 / S1	0	0	0	2	0
Kenton	Freshwater Mussels	*Plethobasus cooperianus*	Orangefoot Pimpleback	E / LE	G1 / S1	0	0	0	1	0
Kenton	Freshwater Mussels	*Plethobasus cyphyus*	Sheepnose	E / C	G3 / S1	0	0	0	2	0
Kenton	Freshwater Mussels	*Pleurobema clava*	Clubshell	E / LE	G2 / S1	0	0	0	2	0
Kenton	Freshwater Mussels	*Pleurobema plenum*	Rough Pigtoe	E / LE	G1 / S1	0	0	0	1	0
Kenton	Freshwater Mussels	*Pleurobema rubrum*	Pyramid Pigtoe	E / SOMC	G2 / S1	0	0	0	2	0
Kenton	Freshwater Mussels	*Quadrula cylindrica cylindrica*	Rabbitsfoot	T / SOMC	G3T3 / S2	0	0	0	1	0
Kenton	Freshwater Mussels	*Simpsonaias ambigua*	Salamander Mussel	T / SOMC	G3 / S2S3	1	0	0	1	0
Kenton	Insects	*Dryobius sexnotatus*	Sixbanded Longhorn Beetle	T / SOMC	GNR / S1	0	0	1	0	0
Kenton	Fishes	*Acipenser fulvescens*	Lake Sturgeon	E / SOMC	G3G4 / S1	0	1	0	0	0
Kenton	Fishes	*Atractosteus spatula*	Alligator Gar	E / SOMC	G3G4 / S1	0	1	0	0	0
Kenton	Amphibians	*Cryptobranchus alleganiensis alleganiensis*	Eastern Hellbender	S / SOMC	G3G4T3T4 / S3	0	0	0	1	0
Kenton	Amphibians	*Plethodon cinereus*	Redback Salamander	S /	G5 / S3	9	4	0	0	0

County	Taxonomic Group	Scientific name	Common name	Statuses	Ranks	# of Occurrences E	H	F	X	U
Kenton	Amphibians	*Rana pipiens*	Northern Leopard Frog	S /	G5 / S3	0	3	0	0	0
Kenton	Reptiles	*Clonophis kirtlandii*	Kirtland's Snake	T / SOMC	G2 / S2	0	1	0	0	0
Kenton	Breeding Birds	*Aimophila aestivalis*	Bachman's Sparrow	E / SOMC	G3 / S1B	0	0	0	1	0
Kenton	Breeding Birds	*Pooecetes gramineus*	Vesper Sparrow	E /	G5 / S1B	0	0	0	0	1
Kenton	Breeding Birds	*Thryomanes bewickii*	Bewick's Wren	S / SOMC	G5 / S3B	1	0	0	0	0
Kenton	Breeding Birds	*Tyto alba*	Barn Owl	S /	G5 / S3	1	0	0	0	0
Kenton County Total:						**19**	**13**	**2**	**31**	**1**

APPENDIX F

RESOURCE AGENCY COORDINATION

Environmental Review Process
Resource Agencies Responding

	Agency	Date	Response
1	Federal Aviation Administration	1/16/2008	No Impact provided construction is not within 6 miles of nearest airport (CVG) and equipment does not exceed 150' in height
2	US Natural Resources Conservation Service	1/30/2008	Recommend contact local NRCS representative and provided Kenton County soils data
3	US Department of Health and Human Services	1/23/2008	Provided a list of recommend topics to be considered during the NEPA process; requested a draft copy of the document
4	US Coast Guard	1/7/2008	No Impact
5	USDA Forest Service Daniel Boone National Forest	12/19/2007	No Impact
6	Kentucky Department of Fish and Wildlife Resources	1/31/2008	Recommended that endangered species may occur in the area, but are not expected to be impacted and erosion control measures
7	Kentucky State Senate (Sen. Jack Westwood)	1/29/2008	Recommend roadway improvements as soon as possible
8	KYTC Office of Special Programs	1/14/2008	Recommended possible improvement alternatives to serve bicycle and pedestrian movements
9	Kentucky Department of Agriculture	12/18/2007	Recognized the information, but provided no comment
10	Kentucky Department of Military Affairs	1/10/2008	No Impact
11	KY EPPC Division of Waste Management	1/31/2008	Any waste generated must be properly disposed of and any contaminates encountered must be properly addressed
12	KY EPPC Division for Air Quality	1/31/2008	States the Fugitive Emissions Regulation and that open burning is prohibited except under certain circumstances
13	KY EPPC Division of Water	1/31/2008	No objection; KYTC Best Management Practices must be adhered to
14	KY EPPC Div of Waste Management (UST & SW)	12/18/2007	Identified three (3) facilities with eight (8) currently active underground storage tanks in the area; and no landfills
15	Kentucky Airport Zoning Commission	1/7/2008	No negative effect on air navigation; however if equipment usage exceeds 200' AGL, a permit must be obtained
16	KYTC Geotechnical	2/6/2008	Assessment of underlying rock formations and recommendations for the negotiations of the rock formations during construction
17	Kentucky Geological Survey	1/10/2008	Summarization of any geologic concerns for the study area
18	Kentucky Education Cabinet	2/15/2008	No Input
19	Kentucky State Nature Preserves Commission	1/8/2008	Minimize the disturbance to wooded areas to protect the population of Redback Salamanders in the project area
20	Kentucky Justice and Public Safety Cabinet (KVE)	1/7/2008	No Input
21	Kentucky State Police	1/28/2008	Recommended possible improvement alternatives to the study area to improve safety

Bezold, Mike (KYTC-D06)

From: Mike.Thompson@faa.gov
Sent: Wednesday, January 16, 2008 9:38 AM
To: Bezold, Mike (KYTC-D06)
Subject: Proposed Road Work, Hands Pike KY 1501
Attachments: faa7460-1.pdf

Mike:

We recently received a proposal for improvements to KY 1501, Hands Pike in Covington, KY. The Reference Item Number is 07-8307.00. Specifically, this was sent to Phillip Braden, Manager of the FAA Memphis Airports District Office, dated December 14, 2007.

Please be advised that the closest public use airport is the Cincinnati/Northern Kentucky International Airport (CVG). I have approximated the nearest point of your proposal as latitude 38-59-30.5, longitude 84-32-05, which indicates this proposal exceeds 6 miles from the nearest runway at CVG. Please confirm my approximation.

If you agree with my assessment of the location, we have no objections to the proposed project as long as no structure/equipment exceeds 150' in height. If you find that are within 6 miles of CVG or exceed 150' in height, please complete and submit the attached FAA Form 7460 so we can study the impacts. For your calculations, the nearest runway at CVG to your project is Runway 36R located at latitude 39-01-42.24, longitude 84-38-48.46, elevation 896.2.

Contact me if you require additional assistance.

MikeT
Memphis ADO
901-322-8188

NRCS
Natural Resources Conservation Service
771 Corporate Drive, Suite 210
Lexington, KY 40503

January 30, 2008

Mr. Mike Bezold, P.E.
Kentucky Transportation Cabinet
PO Box 17130
Covington, KY 41017

RE: Kentucky Transportation Cabinet (KYTC) Planning Study for KY 1501 (Hands Pike), Kenton County, KY

Dear Mr. Bezold:

The USDA-Natural Resources Conservation Service (NRCS) reviews proposed projects for potential impacts to prime farmland soils and farmlands of statewide importance. If these resources are in or adjacent to the proposed project site, notification of farmland conversion may be warranted. If a project impacts farmlands and if federal dollars are to be used to convert important farmlands from agricultural uses to non-agricultural uses, a Form AD-1006 (or Form NRCS-CPA-106 if the project is a corridor type project) must be submitted to the local NRCS office. These forms may be obtained from the local NRCS office and are also available as electronic forms on the web at http://www.nrcs.usda.gov/programs/fppa/pdf_files/AD1006.PDF and http://www.nrcs.usda.gov/programs/fppa/pdf_files/CPA106.pdf .

Questions regarding prime farmland soils and/or farmlands of statewide importance within Kenton County should be directed to:

Ed Thompson, Jr., District Conservationist
Boone and Kenton Counties
6028 Camp Ernst Road
Burlington, KY 41005
Phone: 859-586-7903.

To further assist with the planning efforts, I am enclosing a CD containing ArcView GIS shapefiles of basic soils information for Kenton County. The GIS shapefiles are in UTM projection, nad83, zone 16, nad83 horizontal datum. The soil database table includes a column for "farmland classification-all components" (farmclac) that identifies prime farmlands and soils of statewide importance. A separate legend file for each county has been provided (County_farmland_classif.avl), which may be used with GIS software to more clearly display the soils that are considered prime farmlands and soils of statewide importance. There is also a

separate ArcGIS version 9.2 layer file for each county for symbolizing based on the "farmland classification" attribute.

Sincerely,

MICHAEL D. HUBBS
State Conservationist

Enclosure: CD (1)

cc: Jacob Kuhn, Assistant State Conservationist, Lexington, KY
J. David Stipes, Area Conservationist, Lexington, KY
Ed Thompson, Jr., District Conservationists, Burlington, KY

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

January 23, 2008

Mr. G. Michael Bezold, P.E.
District Planning Engineer
Kentucky Transportation Cabinet
P.O. Box 17130
Covington, KY 41017

Dear Mr. Bezold:

This is in response to your agency's advance notification concerning the Planning Study, Kenton County, Hands Pike, KY 1501, Item No. 07-8307.00. We are responding on behalf of the Department of Health and Human Services (DHHS), U.S. Public Health Service.

We understand the purpose of the Planning Study is to identify the need and potential impacts for improvements to KY 1501. The study will evaluate current conditions and develop proposed short-term and long-term improvements to KY 1501. We commend your efforts to address public safety by reducing crashes and reducing traffic congestion, as well as by identifying potential environmental issues and impacts that may arise from project construction. Proper planning of mitigation measures to address congestion and environmental issues can also be developed to protect and promote public health. We would like for you to consider all public health options during the Planning Study.

Planning with *health in mind* for future development along this corridor can help to: increase multi-modal transport options that facilitate increased physical activity and reduce air pollution; reduced traffic congestion; and, ensure reduced injuries from vehicular crashes to other motorists, bicyclists, and pedestrians. Our agency is particularly concerned about: an adequate and safe pedestrian infrastructure including safe and convenient walking and crossings for all ages and abilities, adequate signage and signaling, sufficiently marked lanes for bicyclists and HOV/carpools, and appropriate speed limit transitions. Mitigation measures that benefit both environmental and human health also include landscaped sidewalk buffers to separate pedestrians from vehicular traffic and landscaped medians to serve as pedestrian crossing refuges as well as to aid in traffic calming. Aside from the health benefit of reduced injuries, landscaped buffers and medians offer the co-benefits of increasing air quality through carbon sequestration, improving pedestrian environment, and may also offer economic benefit to the surrounding community through increased property values.

Although we have no other specific comments to offer at this time, we do recommend that the topics listed below be considered during the study process, and addressed if appropriate. Mitigation plans protective of the environment and that act to protect and promote public health should be described in the Planning Report wherever warranted.

AREAS OF POTENTIAL PUBLIC HEALTH CONCERN:

1. Air Quality
   - dust control measures during project construction, and mitigation of potential releases of air toxins after project completion
   - compliance with air quality standards

II. Water Quality/Quantity
   - special consideration to private and public potable water supply, including ground and surface water resources
   - ground and surface water contamination (e.g. runoff)
   - compliance with water quality and wastewater treatment standards

III. Wetlands and Flood Plains
- potential contamination of underlying aquifers
- construction within flood plains which may endanger human health
- contamination of the food chain

IV. Hazardous Materials/Wastes
- identification and characterization of hazardous/contaminated sites safety plans/procedures, including use of pesticides/herbicides; worker training
- spill prevention, containment, and countermeasures plan

V. Non-Hazardous Solid Waste/Other Materials
- measures regarding solid waste generation, reduction, and disposal should be considered

VI. Noise
- identify projected elevated noise levels and sensitive receptors (i.e. residential, schools, hospitals) and appropriate mitigation plans during and after construction

VII. Occupational Health and Safety
- compliance with appropriate criteria and guidelines to ensure worker safety and health

VIII. Land Use -- Community and Neighborhood Impacts
- special consideration and planning for pedestrian infrastructure, including sidewalks that are continuous, accessible, safe, and aesthetically pleasing.
- adequate pedestrian crossings that are convenient and easily identified by motorists
- sufficiently marked, continuous lanes and infrastructure needs for bicyclists
- ADA accessibility compliance for all project areas
- consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts
- demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools)
- special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services

IX. Environmental Justice
- minority groups in study area
- economic characteristics of study area residents and workers

While this is not intended to be an exhaustive list of possible impact topics, it provides a guide for typical areas of potential public health concern that may be applicable to this project. Any other health related topics potentially associated with the proposed project should also receive consideration.

Please furnish us with one copy of all NEPA related project documents to the address listed below when they become available for review. Please feel free contact us for further discussion of any topics raised in this response letter.

Sincerely yours,

Andrew L. Dannenberg, MD, MPH
Associate Director for Science
Division of Emergency and Environmental Health Services
National Center for Environmental Health
Centers for Disease Control and Prevention
4770 Buford Highway, MS F-60
Atlanta, GA 30341

U.S. Department of Homeland Security

United States Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: dwb
Phone: (314)269-2378
Fax: (314)269-2737
Email:

16591.1/ KY1501
January 7, 2008

Mr. Mike Bezold
Kentucky Transportation Cabinet, District 6
421 Buttermilk Pike
P.O. Box 17130
Covington, KY 41017-0130

Subj: KENTUCKY HIGHWAY 1501 IMPROVEMENT PROJECT, KENTON COUNTY

Dear Mr. Bezold:

Please refer to your correspondence of December 19, 2007. We have determined that the proposed improvements will involve work over Bullock Pen and Wayman Branch Creeks. Pursuant to the Coast Guard Authorization Act of 1982, the subject project does not involve bridges over navigable waters of the United States. Therefore, a Coast Guard bridge permit is not required for this project.

We appreciate the opportunity to comment on the project.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

USDA United States Department of Agriculture | Forest Service | Daniel Boone National Forest | 1700 Bypass Road Winchester, KY 40391 859-745-3100

File Code: 1950-4
Date: DEC 19 2007

Mr. Mike Bezold, P.E.
District 6 Planning Office
Kentucky Transportation Cabinet
P.O. Box 17130
Covington, KY 41017

Dear Mr. Bezold:

Thank you for the opportunity to provide input on the above referenced Planning Study. The Study Area in Kenton County is approximately 80 miles northwest of, and outside of the proclamation boundary for the Daniel Boone National Forest. Activities designed to improve transportation in this area are not likely to cause impacts to resources or programs on National Forest System lands. Additional coordination with the Daniel Boone National Forest, regarding this Planning Study, is not needed.

Sincerely,

JEROME E. PEREZ
Forest Supervisor

KENTUCKY DEPARTMENT OF FISH & WILDLIFE RESOURCES
COMMERCE CABINET

Ernie Fletcher
Governor

#1 Sportsman's Lane
Frankfort, Kentucky 40601
Phone (502) 564-3400
1-800-858-1549
Fax (502) 564-0506
fw.ky.gov

George Ward
Secretary

Dr. Jonathan W. Gassett
Commissioner

January 31, 2008

Mike Bezold, P. E.
Kentucky Transportation Cabinet
District 6
P. O. Box 17130
Covington, KY 41017

RE: Planning Study
Kenton County
Hands Pike
KY 1501
Item No. 06-8307.00

Dear Mr. Bezold:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) have received your request for the above-referenced information. The Kentucky Fish and Wildlife Information System (KFWIS) indicate that state/federal threatened and endangered species are known to occur within close proximity of the proposed project area. The KDFWR does not expect impacts to listed species due to the location of the project. Please be aware that our database system is a dynamic one that only represents our current knowledge of the various species distributions. We recommend that you contact the U. S. Fish & Wildlife Service Kentucky Field Office at 502-695-0468 for consultation under the Endangered Species Act.

KDFWR recommends that erosion control measures be developed and utilized during any construction to minimize siltation into nearby waterways. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be installed prior to construction and should be inspected and repaired regularly as needed.

KDFWR recommends that you contact the appropriate US Army Corps of Engineers office and the Kentucky Division of Water prior to any work within the waterways or wetland habitats of Kentucky. Additionally, KDFWR recommends the following for the portions of the project that impact streams:

- Avoidance of impacts to intermittent and perennial streams if it is feasible.
- Channel changes located within the project area should incorporate natural stream channel design.
- If culverts are used, the culvert should be designed to allow the passage of aquatic organisms.
- Culverts should be designed so that degradation upstream and downstream of the culvert does not occur.

- To compensate for unavoidable impacts to streams, we recommend that possible stream mitigation sites be identified on-site or within the Banklick Creek watershed. Restoration of those sites should incorporated natural stream channel design along with the restoration of its associated riparian areas.
- Development/excavation during low flow period to minimize disturbances.
- Proper placement of erosion control structures below highly disturbed areas to minimize entry of silt into area streams.
- Replanting of disturbed areas after construction, including stream banks, with native vegetation for soil stabilization and enhancement of fish and wildlife populations. We recommend a 100 foot forested buffer along each stream bank.
- Return all disturbed instream habitat to a stable condition upon completion of construction in the area.
- Preservation of any tree canopy overhanging any streams within the project area.

I hope this information proves helpful to you. If you have any questions or require additional information, please call me at (800) 852-0942 Extension 366.

Sincerely,

Doug Dawson

Doug Dawson
Wildlife Biologist III

Cc: Environmental Section File

Commonwealth of Kentucky

STATE SENATE

2072 Lakelyn Court
Crescent Springs, KY 41017
859-344-6154

State Capitol Annex
Frankfort, KY 40601
Message Line: 800-372-7181
jack.westwood@lrc.ky.gov

JACK WESTWOOD
23rd Legislative District

January 29, 2008

Mr. Mike Bezold, P. E.
Kentucky Transportation Cabinet
P O Box 17130
Covington KY 41017

Dear Mr. Bezold:

Thank you for providing me an opportunity to offer input and comments on the planning study to determine the need and potential impacts for a proposed improvement to Hands Pike (KY 1501).

Hands Pike is, in my opinion, one of the most dangerous corridors in Kenton County. It is on a steep grade with numerous curves and bends that are extremely hazardous to navigate, especially in rain, snow, or ice.

With the improvements to KY 17 (Madison Pike) and the continuing and growing congestion on KY 16 (Taylor Mill Road), many motorists on KY 16 use Hands Pike to access KY 17 where they can then connect to I-275 or I-75 more easily and quickly. This adds a huge number of motorists to the already large number of residents living in the Hands Pike vicinity who use that road every day to get to work. Although most of the area residents are familiar with the dangers on the road and drive cautiously, non-residents seeking a short cut from KY 16 often drive too fast and are involved in accidents, some quite serious.

I would urge the Department of Highways, District 6, to move forward as quickly as possible on the improvements to Hands Pike.

Sincerely,

Jack Westwood

Jack Westwood
State Senator

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Steven L. Beshear
Governor

Joseph W. Prather
Secretary

January 14, 2008

Mike Bezold, P.E.
Kentucky Transportation Cabinet, District 6
P.O. Box 17130
Covington, KY 41017

RE: Comments on Planning study of KY 1501-Hands Pike

After reviewing the project information for the planning study of KY 1501, I have the following comments that I feel should be taken into consideration when identifying improvements for this stretch of roadway:

- Proper bicycle and pedestrian improvements should be looked into since this area appears to be highly residential. Providing proper accommodations will allow residents of that area options for travel and will possibly decrease congestion on that roadway. When the most accommodating facilities are chosen, the roadway can be traveled safely by all users of our transportation system.

Enclosed are a few of the countermeasures that could be possible improvements for this stretch of roadway. If you have any additional questions, please feel free to contact me by phone at (502)564-2060 or by email at tiffani.jackson@ky.gov .

Sincerely,

Tiffani Jackson
Bicycle and Pedestrian Coordinator
Office of Special Programs

BIKESAFE Bicycle Countermeasure Selection Syster

Applicable Countermeasures

Based upon your input, the following countermeasures were found:

- Shared Roadway
  - Roadway Surface Improvements
  - Bridge and Overpass Access
  - Tunnel and Underpass Access
  - Lighting Improvements
  - Parking Treatments
  - Driveway Improvements
  - Reduce Lane Width
- On-Road Bike Facilities
  - Bike Lanes
  - Paved Shoulders
- Maintenance
  - Repetitive/Short-Term Maintenance
  - Major Maintenance
  - Hazard Identification Program
- Markings, Signs, Signals
  - Sign Improvements
  - Pavement Marking Improvements
  - School Zone Improvements
- Education and Enforcement
  - Practitioner Education
- Support Facilities and Programs
  - Wayfinding
  - Aesthetics/Landscaping

Your Input:

Roadway Location:
KY 1501 Kenton County

Your Performance Objective:
Provide safe on-street facilities/ space for bicyclists.

Your answers to the previous questions:

Roadway or Path: Roadway
Location: Urban - Other
Functional Class: Collector & Minor Arterial
Intersection or Midblock: Not Applicable
Volume: Medium (10 - 25,000 ADT)
Speed: High (>45mph)
Lanes:
Signal: Not Applicable
Bike Facilities: None or Other

Next Steps:

Edit:

Change Your Performance Objective
Change Your Answers to Site Description

Save:

Output Results to Microsoft Exce

Start Over

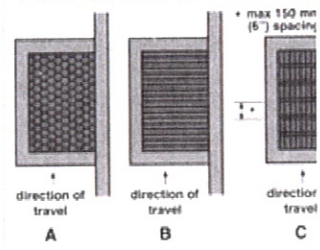
BIKESAFE Bicycle Countermeasure Selection Syster

Applicable Countermeasures

View Other Applicable Countermeasures

Roadway Surface Improvements

view purpose
view considerations
view estimated cost
view case studies



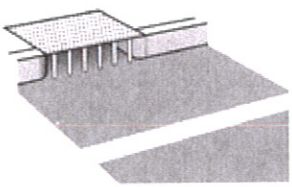
Bicycle safe grates. Note: grates w bars perpendicular to the roadway n not be placed at curb cuts, as bicyc tires could get caught in the slot.

Illustration from Oregon Bicycle ar Pedestrian Plan, Oregon DOT

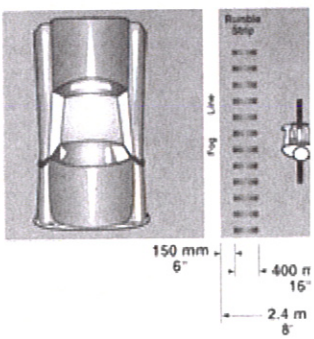
Bicyclists are particularly vulnerable to sudden changes in the roadway (or path) surface, such as potholes or sudden drop-offs. Slippery surfaces, presence of water or debris, broken pavement, and gaps in pavement parallel to the roadway that can trap bicycle tires can also be hazardous. In addition to causing bicyclist falls, surface irregularities may contribute to a sudden weaving movement that may place the cyclist in the path of a motorist. Poor riding surfaces may also increase bicyclist discomfort and potentially discourage riding. Therefore, providing smooth but non-slippery pavement surfaces is a key to maintaining a good level of service for bicyclists. Good initial design can help reduce future repair and maintenance costs.

Several overarching issues warrant particular attention.

- Initial design and materials selection help to prevent problems such as poor drainage, slippery surfaces, gaps in pavement and others. Once design standards are determined, inspectors and project contractors should ensure that standards are met.
- Having a plan for regular sweeping and identifying and making spot repairs is key to keeping surfaces in good condition.
- Bicyclist considerations should also be incorporated into long-term maintenance and upgrades.
- Good design, hazard identification and maintenance practices should be institutionalized. Identification of bicyclist priorities and a system for regular inclusion of best bicyclist facilities practices within a regular maintenance framework can help to improve conditions for bicyclists without substantially increasing costs.



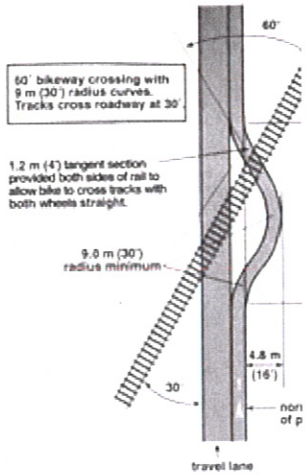
view



view

To provide smooth, level surfaces, the following are some potential hazards that may be minimized by instituting good design and maintenance practices. Drain grates should be maintained level with the surrounding pavement, which may require raising the grates following re-paving, and a bicycle-friendly design should be used so that tires will not be trapped by slots parallel to the roadway (see images). Particularly with new or reconstruction, curb inlets could be installed. Designs should also ensure that utility covers and other potential hazards are placed out of the predominant bicycling pathways, are level with the surrounding pavement, and have non-skid surfaces. Pavement should be kept in good condition, particularly near the edges where bicyclists tend to ride most often.

Additionally, when designing bike facilities, pavement seams should be placed where they minimally conflict with the bicycle right-of-way. Excessively wide gutter pans may unnecessarily reduce bicyclists' space. Paving over the gutter pan is a temporary solution, as seams usually reappear in the pavement within five years. Reflective raised pavement markers also create hazards for bicyclists and should only be used with appropriate consideration of bicyclists. These can deflect a bicycle wheel, causing the cyclist to lose control.



When rumble strips are used as a motorist alert, for example, along a shoulder, a narrower design placed close to the lane edge line allows more usable bicycle-friendly space. If textured pavers are used, these should not compromise bicyclist safety or comfort.

Finally, care must be taken to provide bicycle-safe railroad crossings. Crossings should ideally be close to 90 degrees. If the crossing is smooth, but non-slippery (concrete paving may work best), and the flange opening is kept as narrow as possible, somewhat more flexibility with the angle may be possible.

The Oregon Bicycle and Pedestrian Plan contains more information and illustrations of good surface design practices under the "Other Design Considerations" section (http://www.oregon.gov/ODOT/HWY/BIKEPED/docs/bp_plan_2_ii.pdf).[1]

Purpose

- Provide smooth, safe surfaces for bicyclists.

top of page

Considerations

- Institutionalizing good design, street sweeping, and maintenance practices with respect to bicyclists can help to reduce liability.
- Hazard identification programs can facilitate identification and repair of potential surface hazards.

top of page

Estimated Cost

Many of the costs associated with providing and maintaining good bicyclist surfaces should be incorporated into the overall initial project budget or maintenance plan. The costs of hazard identification, short-term sweeping and spot maintenance programs will be minimized if bicyclist concerns are institutionalized within the regular maintenance and repair framework. Special repairs (such as drain grate repair/replacement) will vary considerably by project.

top of page

Case Studies

- #1 – Minimizing Roadway Surface Hazards for Bikes - Seattle, WA
- #2 – A Tale of Portland Bridges - Portland, OR
- #27 – Comprehensive Maintenance Planning for Bicycle Facilities - Seattle, WA
- #28 – Road Hazard Identification Pilot Project - Green Bay, WI

top of page

U.S. Department of Transportation
Federal Highway Administration

BIKESAFE Bicycle Countermeasure Selection Syster

Applicable Countermeasures

View Other Applicable Countermeasures

Paved Shoulders

view purpose
view considerations
view estimated cost
view case studies

Paved shoulders are very similar to bike lanes as a bicycle facility. The pavement edge line for the paved shoulder provides separated space for the bicyclist much like a bike lane. Depending on the situation, the width of the shoulders may vary. If the paved shoulder is less than 1.2 m (4 ft) in width it should not be designated or marked as a bicycle facility. Widths are typically a function of amount of bicycle usage, motor vehicle speeds, percentage of truck and bus traffic, etc., although widths are sometimes purely a function of available right-of-way. More paved shoulder design details are given in the AASHTO Green Book.[5] Prior research has shown that paved shoulders tend to result in fewer erratic motor vehicle driver maneuvers, more predictable bicyclist riding behavior and enhanced comfort levels for both motorists and bicyclists.3

Red shoulders in Tavares, FL.

Colored shoulders have been used in Europe to visually narrow the roadway. This technique has been tried in Tavares, FL, where a section of roadway added painted red shoulders (see case study #14). The intent was to provide increased room and comfort for walkers and bicyclists. The 0.6 km (1 mi) treated section of roadway was a two-lane rural roadway with approximately 1,700 vehicles per day and had a 56 km/h (35 mi/h) speed limit. Even after the roadway was widened, the use of the red shoulders resulted in motor vehicle speeds similar to the before (narrower roadway) situation.[6]

view

Broward County, FL, has experimented with another paved shoulder variation. Undesignated lanes 0.9 m (3 ft) have been implemented on a number of roadways which formerly had wide 4.3 m (14 ft) curb lanes in place (i.e., 3.4 m (11 ft) travel lane and 0.9 m (3 ft) undesignated lane). The lanes were left as undesignated because they were too narrow to be referred to as bike lanes. The striping resulted in a delineated, although sub-standard, space for bicyclists to operate on these roadways (see case study #15).[7]

Rumble strips are often used on shoulders to alert sleepy or inattentive motorists, but there is considerable debate about what kinds of designs are safe or appropriate for bicycles. AASHTO recommends that 1.2 m (4 ft) of ride-able surface should be present for bicyclists if rumble strips are used on a shoulder.

Purpose

- Create travel facilities for bicyclists.
- Create separated space for bicyclists.
- Reduce or prevent the problems associated with bicyclists overtaking motor

vehicles in narrow, congested areas.

top of page

Considerations

- Provide adequate width by taking into account factors such as the amount of bicycle usage, motor vehicle speeds, percentage of truck and bus traffic, etc.
- Provide ride-able space for bicyclists if rumble strips are used.
- Examine alternative space for bicyclists if there are intersecting side streets.
- Provide a smoothly paved surface and keep free of debris.

top of page

Estimated Cost

Paved shoulder costs can be quite variable. Using data from Iowa DOT average contract prices for calendar year 2000, a minimum design width of 1.2 m (4 ft) of paved shoulder width to accommodate bicycle traffic was estimated at $44,000 per km ($71,000 per mi).[8]

top of page

Case Studies

- #14 – Red Shoulders as a Bicycle Facility - Lake County, FL
- #15 – Conversion of 14-foot-wide Outside Lanes to 11-foot Travel Lanes with a 3-foot Undesignated Lane - Fort Lauderdale, FL

top of page

U.S. Department of Transportation
Federal Highway Administration

BIKESAFE Bicycle Countermeasure Selection Syster

Applicable Countermeasures

View Other Applicable Countermeasures

Sign Improvements

view purpose
view considerations
view estimated cost
view case studies

Signs often convey important information that can improve road safety. The intent is to let bicyclists and motorists know what to expect, thus improving the chances that they will react and behave appropriately. For example, the use of a "No Parking in Bike Lane" sign is intended to keep this space clear for cyclists. Sign use and placement should be done carefully, in that overuse often results in non-compliance and/or disrespect. Excessive use of signs can also create visual clutter and lead to the intended sign and message getting "lost."

Regulatory signs, such as STOP, YIELD or turn restrictions require driver actions and are enforceable. NO TURN ON RED signs can improve safety for bicyclists (and pedestrians). Problems often occur at RTOR locations as motorists look to the left for a gap in traffic, especially if bicyclists are riding wrong way either in the street or on a sidewalk or path.

Warning signs can also provide useful information. An example is the SHARE THE ROAD sign, which serves to let motorists know that bicyclists may be on the road and that they have a legal right to use the road. This sign is typically placed along roads with significant bicycle traffic but relatively hazardous conditions for riding, such as narrow travel lanes with no shoulder, roads or streets with poor sight distance, or a bridge crossing with no accommodation for bicycles. Special signs are sometimes used to indicate the presence of a bicyclist.

All signs should be periodically checked to make sure that they are in good condition, free from graffiti, reflective at night, and continue to serve a purpose.

Regulatory sign restricts curb lane us buses, bicycles, and right-turning vehicles.

Photo by Michael King

view

Purpose

- Provide warning and regulatory messages, as well as useful information.
- NO TURN ON RED signs can increase bicycle safety and decrease crashes with right-turning vehicles.
- SHARE THE ROAD signs can make motorists more aware of bicyclists on roads with poor bicycle accommodations.

top of page

Considerations

view

- Streets with bicycle traffic should be evaluated to determine if sign improvements could improve safety.
- Prohibiting RTOR is a simple, low-cost measure. The change can benefit bicyclists on streets with considerable through bicycle traffic with minimal impact on motor vehicle traffic.
- Part-time RTOR prohibitions during the busiest times of the day may be sufficient to address the problem.
- RTOR signs should be clearly visible to right-turning motorists stopped in the curb lane at the crosswalk.
- Carefully evaluate use of both regulatory and warning signs. Avoid overuse which may lead to non-compliance or visual clutter

top of page

Estimated Cost

Costs range from $30 to $150 per typical sign plus installation at $200 per sign. Electronic sign costs vary widely but tend to be significantly more expensive.

top of page

Case Studies

- #2 – A Tale of Portland Bridges - Portland, OR
- #4 – Back-in Diagonal Parking with Bike Lanes - Vancouver, WA
- #7 – Bicycle Treatments on a Former Pedestrian Mall - Eugene, OR
- #12 – Floating Bike Lanes in Conjunction with Part-time Parking - San Francisco, CA
- #16 – Preferential Transit-Bicycle-Right Turn Lanes on Broadway Boulevard - Tucson, AZ
- #18 – Contraflow Bicycle Lanes on Urban Streets - Cambridge, MA
- #19 – Left Side Bike Lanes on One-Way Streets - Minneapolis, MN
- #21 – Combined Bicycle Lane/Right-Turn Lane - Portland, OR
- #22 – Blue Bike Lanes at Intersection Weaving Areas - Portland, OR
- #24 – Improving Sight Distance between Cyclists and Motorists - San Francisco, CA
- #25 – Grandview Drive Roundabout and Corridor Improvements - University Place, WA
- #26 – Innovative Application of the Bike Box - Eugene, OR
- #27 – Comprehensive Maintenance Planning for Bicycle Facilities - Seattle, WA
- #32 – Bicycle Boulevards — Bryant Street Example - Palo Alto, CA
- #34 – Path and Roadway Intersections - Portland, OR
- #39 – Bicycle Signal Heads - Davis, CA

- #41 – Share the Road Sign Initiative - North Carolina
- #55 – Bicycle Destination Signing System - San Diego, CA

top of page

U.S. Department of Transportation
Federal Highway Administration

BIKESAFE Bicycle Countermeasure Selection Syster

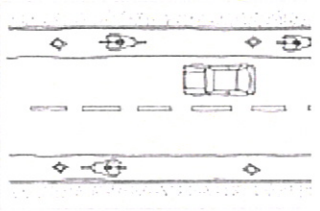
Applicable Countermeasures

View Other Applicable Countermeasures

Bike Lanes

view purpose
view considerations
view estimated cost
view case studies

Bike lanes indicate a preferential or exclusive space for bicycle travel along a street. Bike lanes are typically 1.2 to 1.8 m (4 to 6 ft) in width and are designated by striping and/or signs. Colored pavement (for example, blue or red bike lanes) or a different paving material has also been used in certain situations to distinguish bike lanes from the motor vehicle lanes. Use of colored bike lanes is being considered but is not yet an accepted MUTCD standard.[2] Bike lanes are usually marked along the right side of the roadway and should be designated to the left of parking or right-turn lanes. Sometimes bike lanes are marked on the left side of a one-way street.



Bike lanes on a two-lane roadway

Illustration by A.J. Silva

Adaptations to bike lanes have been used to solve local problems. An innovative bike lane transit stop treatment in Portland, OR, is used to reduce conflicts between bicyclists and streetcar transit stop users adjacent to a bike lane (see case study #13). (Adaptation for this treatment should be possible for a shared roadway situation.) Some communities also employ combination bike and bus lanes, a single lane nearest the curb that is shared by the two modes. This is generally workable unless there is considerable bike and bus traffic.

view

Bike lanes have been found to provide more consistent separation between bicyclists and passing motorists than shared travel lanes. The presence of the bike lane stripe has also been shown from research to result in fewer erratic motor vehicle driver maneuvers, more predictable bicyclist riding behavior, and enhanced comfort levels for both motorists and bicyclists.[3] The extra space created for bicyclists is also a benefit on congested roadways where bicyclists may be able to pass motor vehicles on the right.

view

Purpose

- Create on-street, separated travel facilities for bicyclists.
- Provide separate operational space for safe motorist overtaking of bicyclists.
- Reduce or prevent the problems associated with bicyclists overtaking motor vehicles in narrow, congested areas.
- Narrow the roadway or roadway motor vehicle traffic lanes to encourage lower motor vehicle speeds.

view

top of page

Considerations

- Where bike lanes are to be considered, the road or street should be evaluated to determine if this facility is appropriate.
- Provide adequate bike lane width.
- Provide a smoothly paved surface and keep the bike lane free of debris.
- Provide adequate space between the bike lane and parked cars so that open doors do not create a hazard for bicyclists.
- Avoid termination of bike lanes where bicyclists are left in a vulnerable situation.
- Determine if special signs or markings are necessary for situations such as a high-volume of bike left turns on a busy roadway.

top of page

Estimated Cost

The cost of installing a bike lane is approximately $3,100 to $31,000 per kilometer ($5,000 to $50,000 per mile), depending on the condition of the pavement, the need to remove and repaint the lane lines, the need to adjust signalization, and other factors. It is most cost efficient to create bike lanes during street reconstruction, street resurfacing, or at the time of original construction.

top of page

Case Studies

- #2 – A Tale of Portland Bridges - Portland, OR
- #5 – Valencia Street Road Diet — Creating Space for Cyclists - San Francisco, CA
- #6 – Shoreline Park Expansion Project — Provision of Bicycle and Pedestrian Enhancements - Santa Barbara, CA
- #8 – Bike Lane Safety Evaluation - Phoenix, AZ
- #9 – Establishing Bike Lanes — Chicago's Streets for Cycling Plan - Chicago, IL
- #10 – How Hampshire Street Pavement Markings Influence Bicycle and Motor Vehicle Positioning - Cambridge, MA
- #11 – Raised Bicycle Lanes and Other Traffic Calming Treatments on Ayres Road - Eugene, OR
- #12 – Floating Bike Lanes in Conjunction with Part-time Parking - San Francisco, CA
- #13 – Incorporating a Bicycle Lane through a Streetcar Platform - Portland, OR
- #16 – Preferential Transit-Bicycle-Right Turn Lanes on Broadway Boulevard - Tucson, AZ
- #17 – Taming the Urban Arterial - Madison, WI
- #18 – Contraflow Bicycle Lanes on Urban Streets - Cambridge, MA
- #19 – Left Side Bike Lanes on One-Way Streets - Minneapolis, MN

- #21 – Combined Bicycle Lane/Right-Turn Lane - Portland, OR
- #22 – Blue Bike Lanes at Intersection Weaving Areas - Portland, OR
- #23 – Crossing an Arterial through an Offset Intersection: Bicycle-Only Center-Turn Lane - Portland, OR
- #25 – Grandview Drive Roundabout and Corridor Improvements - University Place, WA

top of page

U.S. Department of Transportation
Federal Highway Administration

Applicable Countermeasures

Based upon your input, the following countermeasures were found:

Pedestrian Facility Design
Sidewalks and Walkways
Curb Ramps
Marked Crosswalks and Enhancements
Transit Stop Treatments

Roadway Design
Raised Medians

Traffic Calming
Chokers
Crossing Islands

Signals and Signs
Traffic Signals
Pedestrian Signals
Pedestrian Signal Timing
Traffic Signal Enhancements

Your Input:

Roadway Location:
KY 1501 Kenton County

Your Performance Objective:
Improve Pedestrian Access and Mobility

Your answers to the previous questions:

Type of Area: **Urban Other**
Functional Class: **Collector or Minor Arterial**
Intersection or Midblock: **Not Applicable**
Volume: **Medium (>=10,000 and <= 25000 ADT)**
Speed: **Low (<= 45 mph)**
No. of Lanes: **2 or fewer lanes**
Traffic Signal: **Not Applicable**

Next Steps:

Edit:

Change Your Performance Objective
Change Your Answers

Save:

Output Results to Excel

Start Over

U.S. Department of Transportation
Federal Highway Administration

Applicable Countermeasures

view purpose
view considerations
view estimated cos
view case studies

View Other Applicable Countermeasures

Sidewalks and Walkways

Sidewalks and walkways are "pedestrian lanes" that provide people with space to travel within the public right-of-way that is separated from roadway vehicles. They also provide places for children to walk, run, skate, ride bikes, and play. Sidewalks are associated with significant reductions in pedestrian collisions with motor vehicles.[1] Such facilities also improve mobility for pedestrians and provide access for all types of pedestrian travel: to and from home, work, parks, schools, shopping areas, transit stops, etc. Walkways should be part of every new and renovated facility and every effort should be made to retrofit streets that currently do not have sidewalks.

Adapted from *Making Streets Tha*
Seattle, 1996

view

view

While sidewalks are typically made of concrete, less expensive walkways may be constructed of asphalt, crushed stone, or other materials if they are properly maintained and accessible (firm, stable, and slip-resistant). In more rural areas, in particular, a "side path" made of one of these materials may be suitable. Both FHWA and the Institute of Transportation Engineers (ITE) recommend a minimum width of 1.5 m (5 ft) for a sidewalk or walkway, which allows two people to pass comfortably or to walk side-by-side. Wider sidewalks should be installed near schools, at transit stops, in downtown areas, or anywhere high concentrations of pedestrians exist. Sidewalks should be continuous along both sides of a street and sidewalks should be fully accessible to all pedestrians, including those in wheelchairs.[2, 3]

A buffer zone of 1.2 to 1.8 m (4 to 6 ft) is desirable and should be provided to separate pedestrians from the street. The buffer zone will vary according to the street type. In downtown or commercial districts, a street furniture zone is usually appropriate. Parked cars and/or bicycle lanes can provide an acceptable buffer zone. In more suburban or rural areas, a landscape strip is generally most suitable. Careful planning of sidewalks and walkways is important in a neighborhood or area

in order to provide adequate safety and mobility. For example, there should be a flat sidewalk provided in areas where driveways slope to the roadway.

Recommended guidelines and priorities for sidewalks and walkways are given in More Info.

Purpose

• Create the appropriate facility for the walking area of the public right-of-way.
• Improve pedestrian safety dramatically.

top of page

Considerations

• While continuous walkways are the goal, retrofitting areas without them will usually occur in phases. Lack of a seamless system is no excuse not to provide parts of the system.
• In retrofitting streets that do not have a continuous or accessible system, locations near transit stops, schools, parks, public buildings, and other areas with high concentrations of pedestrians should be the highest priority.
• Street furniture placement should not restrict pedestrian flow.

top of page

Estimated Cost

The cost for concrete curbs and sidewalks is approximately $49/linear meter ($15/linear foot) for curbing and $118/square meter ($11/square foot) for walkways. Asphalt curbs and walkways are less costly, but require more maintenance, and are somewhat more difficult to walk and roll on for pedestrians with mobility impairments.

top of page

Case Studies

Berkeley, CA
Boulder, CO
Allegheny County, PA
Clemson, SC
Albany, NY
Eureka, CA
Grand Junction, CO
Fort Plain, NY
Marin County, CA
Las Vegas, NV
Oneonta, NY
Prescott, AZ
Tempe, AZ
Fort Pierce, FL
Bern, Switzerland
University Place, WA
West Hollywood, CA

top of page

U.S. Department of Transportation
Federal Highway Administration

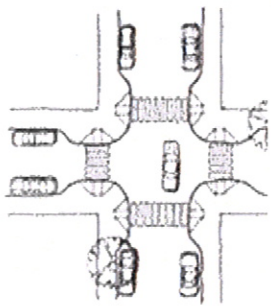
Applicable Countermeasures

view purpose
view considerations
view estimated cos
view case studies

View Other Applicable Countermeasures

Marked Crosswalks and Enhancements

Marked crosswalks indicate optimal or preferred locations for pedestrians to cross and help designate right-of-way for motorists to yield to pedestrians. Crosswalks are often installed at signalized intersections and other selected locations. Various crosswalk marking patterns are given in the MUTCD.[5] Marked crosswalks are desirable at some high pedestrian volume locations (often in conjunction with other measures) to guide pedestrians along a preferred walking path. In some cases, they can be raised and should often be installed in conjunction with other enhancements that physically reinforce crosswalks and reduce vehicle speeds. It is also sometimes useful to supplement crosswalk markings with warning signs for motorists. At some locations, signs can get "lost" in visual clutter, so care must be taken in placement.



City of Cambridge, MA

view

view

view

view

Pedestrians are sensitive to out-of-the-way travel, and reasonable accommodation should be made to make crossings both convenient and safe at locations with adequate visibility.

Recommended guidelines and priorities for crosswalk installation at controlled locations are given in Appendix D. These guidelines are based on a major study of 1,000 marked crosswalks and 1,000 unmarked crossings in 30 U.S. cities. Recommendations are also given for providing other pedestrian crossing enhancements at uncontrolled locations with and without a marked crosswalk.[6]

Crosswalk Materials

It is important to ensure that crosswalk markings are visible to motorists, particularly at night. Crosswalks should not be slippery, create tripping hazards, or be difficult to traverse by those with diminished mobility or visual capabilities. Granite and cobblestones are examples of materials that are aesthetically pleasing,

but may become slippery when wet or be difficult to cross by pedestrians who are blind or using wheelchairs. One of the best materials for marking crosswalks is inlay tape, which is installed on new or repaved streets. It is highly reflective, long-lasting, and slip-resistant, and does not require a high level of maintenance. Although initially more costly than paint, both inlay tape and thermoplastic are more cost-effective in the long run. Inlay tape is recommended for new and resurfaced pavement, while thermoplastic may be a better option on rougher pavement surfaces. Both inlay tape and thermoplastic are more visible and less slippery than paint when wet.

Purpose

- Warn motorists to expect pedestrian crossings.
- Indicate preferred crossing locations.

top of page

Considerations

- Crosswalk locations should be convenient for pedestrian access.
- Crosswalk markings alone are unlikely to benefit pedestrian safety. Ideally, crosswalks should be used in conjunction with other measures, such as curb extensions, to improve the safety of a pedestrian crossing, particularly on multi-lane roads with average daily traffic (ADT) above about 10,000.
- Marked crosswalks are important for pedestrians with vision loss.
- Crosswalk markings must be placed to include the ramp so that a wheelchair does not have to leave the crosswalk to access the ramp.

top of page

Estimated Cost

Approximate installation costs are $100 for a regular striped crosswalk, $300 for a ladder crosswalk, and $3,000 for a patterned concrete crosswalk. Maintenance of the markings must also be considered and varies by region of the country and materials used.

top of page

Case Studies

Clemson, SC
Eureka, CA
Grand Junction, CO
Fort Plain, NY
Bern, Switzerland
Cambridge, MA
Beverly Hills, CA
Hendersonville, NC
Denville, NJ
Clark County, WA
Cupertino, CA
Multiple Cities, NY
Bellevue, WA
Bellevue, WA
Baltimore/Washington International Airport, Maryland

Portland, OR
Rochester, NY
Arlington County, VA
Salt Lake City, UT
New York, NY
Portland, OR
Tucson, AZ
Cambridge, MA

top of page

U.S. Department of Transportation
Federal Highway Administration

Richie Farmer, Commissioner
32 Fountain Place
Frankfort, KY 40601

Phone: (502) 564-5126
Fax: (502) 564-5016
E-mail: richie.farmer@ky.gov

Kentucky Department of Agriculture

A Consumer Protection And Service Agency

December 18, 2007

Mike Bezold, P.E.
Kentucky Transportation Cabinet
P.O. Box 17130
Covington, Kentucky 41017

RE: Kenton County Item No. 07-8307.00

Dear Mr. Bezold:

The Kentucky Department of Agriculture recognizes receipt of information relating to the above noted Item No. At this time, the Department has no comment on the proposed project.

We appreciate the opportunity to provide input.

Yours truly,

Richie Farmer, Commissioner

Bezold, Mike (KYTC-D06)

From: Wilkins, Joe N MR NGKY [joe.wilkins@us.army.mil]
Sent: Thursday, January 10, 2008 11:07 AM
To: Bezold, Mike (KYTC-D06)
Cc: Berthold, Julius L BG(R) NGKY
Subject: Planning Study, Kenton County, Hands Pike, KY 1501, Item Number 07-8307.00

Mr. Bezold,

The Department of Military Affairs can not identify any issues or concerns that affect the development of subject project.

Joe N. Wilkins
Director, Facilities Division
Boone National Guard Center
Frankfort, KY 40601-6168
502-607-1535
DSN 667-1535
502-382-7270 (Cell)
502-607-1270 (Fax)
Joe.Wilkins@ky.ngb.army.mil

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Steven L. Beshear
Governor

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-2150
FAX (502)564-4245
www.dep.ky.gov

Robert D. Vance
Secretary

R. Bruce Scott
Commissioner

January 31, 2008

Mr. Mike Bezold, P.E.
Kentucky Transportation Cabinet
P.O. Box 17130
Covington, KY 41017

Re: Planning Study. Kenton County Hands Pike KY 1501 Item No. 07-8307.00 (SERO 2007-34)

Dear Mr. Bezold,

The Environmental and Public Protection Cabinet serves as the state clearinghouse for review of environmental documents generated pursuant to the National Environmental Policy Act (NEPA). Within the Cabinet, the Commissioner's Office in the Department for Environmental Protection coordinates the review for Kentucky state agencies.

The Kentucky agencies listed on the attached sheet have been provided an opportunity to review the above referenced report. Responses were received from 3 of the reviewing agencies. Comments were received from the Kentucky Divisions of Water, Waste Management, and Air Quality.

If you should have any questions, please contact me at (502) 564-2150, ext. 112.

Sincerely,

Larry C. Taylor
State Environmental Review Officer

Enclosures

Division of Water Comments

Planning Study for Improvements to KY 1501, Hands Pike

Endorsement:

A request for review of the Planning Study for improvements to KY 1501, Hands Pike in Kenton County, Kentucky was received on December 21, 2007. The Division of Water (DOW) completed this review and found that the information provided warranted an endorsement of this project. Below are the comments that were received.

Groundwater Branch:

Proposed improvements to KY 1501 in Kenton County are likely to have minimal, if any, effects to groundwater. However, if they do occur, they are likely to be transitory.

To protect the area's groundwater, the measures found in the following should be adhered to: KYTC Best Management Practices, the Kentucky Department of Highways Standard Specifications, and the KYTC Generic Groundwater Protection Plan. If, during construction, these measures are found to be inadequate, KYTC is strongly encouraged to consult with the Kentucky Geological Survey and the Division of Water in the development of any new measures that may be necessary.

Water Resources Branch:

Any excess material generated from the project activity, if disposed outside the Right of Way of Department of Highways and in the regulatory floodplain will require permit from DOW per KRS 151.250.

Enforcement Branch:

The Division of Enforcement does not object to the project proposed by the applicant.

Division of Waste Management Comments

Project Number: SERO 2007-34

All solid waste generated by this project must be disposed at a permitted facility. If underground storage tanks are encountered they must be properly addressed. If asbestos, lead paint, and/or other contaminants are encountered during this project, they must be properly addressed.

Division for Air Quality Comments

REVIEW DATE: January 10, 2008

TITLE: Planning Study – Kenton County Hands Pike KY 1501, No. 07-8307.00

PROJECT NUMBER: SERO 2007 - 34

SPONSOR: Kentucky Transportation Cabinet

COMMENTS: Kentucky Division for Air Quality's comments are provided below

The following Kentucky Administrative Regulations apply to this proposed project:

Kentucky Division for Air Quality Regulation **401 KAR 63:010** Fugitive Emissions states that no person shall cause, suffer, or allow any material to be handled, processed, transported, or stored without taking reasonable precaution to prevent particulate matter from becoming airborne. Additional requirements include the covering of open bodied trucks, operating outside the work area transporting materials likely to become airborne, and that no one shall allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway. Please note the Fugitive Emissions Fact Sheet located at http://www.air.ky.gov/homepage_repository/e-Clearinghouse.htm.

Kentucky Division for Air Quality Regulation **401 KAR 63:005** states that open burning is prohibited. Open Burning is defined as the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the outdoor atmosphere without passing through a stack or chimney. Open burning may be utilized for the expressed purposes listed on the Open Burning Fact Sheet located at http://www.air.ky.gov/homepage_repository/e-Clearinghouse.htm. Although, vegetative matter accumulated by land clearing is included as a permissible method of disposal, the Division encourages the use of chipping and grinding in order to avoid excessive particulate emissions in the immediate vicinity of the project.

Finally, the projects listed in this document must meet the conformity requirements of the Clean Air Act as amended and the transportation planning provisions of Title 23 and Title 49 of United States Code.

The Division also suggests an investigation into compliance with applicable local government regulations.

Every effort should be made to maintain compliance with the preceding regulations and requirements. The Division also suggests an investigation into compliance with applicable regulations in the local governments. If there are any questions relating to this matter, please contact Joe Forgacs at (502) 573-3382 extension 309.

Bezold, Mike (KYTC-D06)

From: Gruzesky, Ron (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 3:25 PM
To: Gilbert, George (EPPC DEP DWM)
Subject: FW: Planning Study Kenton Co..pdf Transportation Cabinet

FYI

Ron Gruzesky, P.E.
Manager, Solid Waste Branch
Kentucky Dept. for Environmental Protection
502/564-6716 ext. 240

From: Cooley, Tony (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 3:24 PM
To: Gruzesky, Ron (EPPC DEP DWM)
Cc: Anderson, Danny (EPPC DEP DWM)
Subject: RE: Planning Study Kenton Co..pdf Transportation Cabinet

This one was easy. I have no mapped landfills within the project area.

Tony L. Cooley P.E., P.G.
Environmental Engineer II
EPPC-DEP Division of Waste Management
Solid Waste Branch, Closure Section
502-564-6716 or
502-564-8158 ext 298 direct

From: Gruzesky, Ron (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 3:12 PM
To: Cooley, Tony (EPPC DEP DWM)
Cc: Anderson, Danny (EPPC DEP DWM)
Subject: FW: Planning Study Kenton Co..pdf Transportation Cabinet

Tony,

Could you take a look at this?

Ron Gruzesky, P.E.
Manager, Solid Waste Branch
Kentucky Dept. for Environmental Protection
502/564-6716 ext. 240

From: Gilbert, George (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 9:56 AM
To: Daniell, Robert (EPPC DEP DWM); Gruzesky, Ron (EPPC DEP DWM); Maybriar, Jon (EPPC DEP DWM); Sherkat, Fazi (EPPC DEP DWM); Webb, April (EPPC DEP DWM)
Cc: Fant, Michael (EPPC DEP DWM)
Subject: FW: Planning Study Kenton Co..pdf Transportation Cabinet

Please forward facilities within the project area and comments by COB Fri., Jan. 18. Thanks.

From: Perry, Jennie (EPPC DEP DWM)
Sent: Monday, December 17, 2007 3:39 PM
To: Gilbert, George (EPPC DEP DWM)
Subject: Planning Study Kenton Co..pdf

Bezold, Mike (KYTC-D06)

From: Daniell, Robert (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 1:35 PM
To: Gilbert, George (EPPC DEP DWM)
Cc: Baase, Dawn (EPPC DEP DWM)
Subject: FW: Planning Study Kenton Co..pdf Transportation Cabinet

Thanks Dawn.

Rob Daniell, Manager
Underground Storage Tank Branch
81 C. Michael Davenport Blvd.
Frankfort, KY 40601
(502) 564-5981

From: Baase, Dawn (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 1:06 PM
To: Daniell, Robert (EPPC DEP DWM)
Subject: RE: Planning Study Kenton Co..pdf Transportation Cabinet

UST Branch sends the following comments regarding Item No. 7-8307.00

The USTB identified three (3) facilities (AI# 38735, AI# 38732, & AI# 38739) with a total of eight (8) registered tanks that are currently active. It appears there are no facilities undergoing corrective actions within the project area.

Please notify the UST Branch if additional information is required.

Dawn Langford Baase
AEI Section, USTB
Division of Waste Management
81 C. Michael Davenport Blvd
Frankfort, KY 40601
phone: 502-564-5981 ext. 250
fax: 502-564-5047

From: Daniell, Robert (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 10:28 AM
To: Baase, Dawn (EPPC DEP DWM)
Subject: FW: Planning Study Kenton Co..pdf Transportation Cabinet

Rob Daniell, Manager
Underground Storage Tank Branch

81 C. Michael Davenport Blvd.
Frankfort, KY 40601
(502) 564-5981

From: Gilbert, George (EPPC DEP DWM)
Sent: Tuesday, December 18, 2007 9:56 AM
To: Daniell, Robert (EPPC DEP DWM); Gruzesky, Ron (EPPC DEP DWM); Maybriar, Jon (EPPC DEP DWM); Sherkat, Fazi (EPPC DEP DWM); Webb, April (EPPC DEP DWM)
Cc: Fant, Michael (EPPC DEP DWM)
Subject: FW: Planning Study Kenton Co..pdf Transportation Cabinet

Please forward facilities within the project area and comments by COB Fri., Jan. 18. Thanks.

From: Perry, Jennie (EPPC DEP DWM)
Sent: Monday, December 17, 2007 3:39 PM
To: Gilbert, George (EPPC DEP DWM)
Subject: Planning Study Kenton Co..pdf

Bezold, Mike (KYTC-D06)

From: Houlihan, John (KYTC)
Sent: Monday, January 07, 2008 3:10 PM
To: Bezold, Mike (KYTC-D06)
Subject: Item No. 07-8307.00

Mr. Bezold,

Below is our jurisdiction within the state, I believe the only thing that you all might have is construction cranes that may exceed 200 feet in height above ground level. If anything structure temporary or permanent exceeds any of the below sections you will have to have a permit from the State and the FAA.

Section 1. The commission has zoning jurisdiction over that airspace over and around the public use and military airports within the Commonwealth which lies above the imaginary surface that extends outward and upward at one (1) of the following slopes:

(1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use and military airport with at least one (1) runway 3,200 feet or more in length; or

(2) Fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in actual length.

Section 2. The commission has zoning jurisdiction over the use of land and structures within public use airports within the state.

Section 3. The commission has jurisdiction from the ground upward within the limits of the primary and approach surfaces of each public use and military airport as depicted on Airport Zoning Maps approved by the Kentucky Airport Zoning Commission.

Section 4. The commission has jurisdiction over the airspace of the Commonwealth that exceeds 200 feet in height above ground level.

If you have any questions, let me know.

Kentucky Airport Zoning Commission
John Houlihan, Administrator
200 Mero Street
Frankfort KY 40622
502.564.9900 Ext. 3854
Fax 502.564.7953
Cell 502.330.3955
www.transportation.ky.gov/aviation/kyzoning.htm

MEMORANDUM **P-020-2007**

TO: Mike Bezold
Planning
District 6, Covington

FROM: William Broyles, PE
Geotechnical Engineering
Branch Manager
Division of Structural Design

BY: Michael Blevins, PG
Geotechnical Branch

DATE: February 6, 2008

SUBJECT: Kenton County
FD04 059 1501 000-003 P
Hands Pike KY 1501
Planning Study
Item # 06-8307.00
Mars # 8049601P
Geotechnical Review

The Geotechnical Branch has completed a review of the project study area and offers the following comments.

GEOLOGIC OVERVIEW

The project is underlain by Quaternary Alluvium (Qal), Glacial Drift (not mapped); Bull Fork Formation (Ob); Bellevue Tongue of Grant Lake Limestone (Ogb); Fairview Formation (Of) and the Kope Formation (Ok). These Formations are shown on the attached Geologic Quadrangle Map.

The Alluvium consists of clay, silt, sand and gravel and is mainly confined to the flood plain along the Banklick Creek. The depth of the deposits can be up to 25 feet.

Glacial Drift deposits range from 0-15 feet thick and occur in the Northwestern part of the project area. The Southern limits of the Glacial Drift are indicated by the light blue dashed line as shown on the attached Geologic Quadrangle map.

The Bull Fork Formation contains interbedded limestone and shale with limestone being approximately 50% or more. The limestone is normally thin bedded, argillaceous, silty, and weathers to piles of rubble when exposed at the surface. The shale weathers rapidly when exposed. The formation occurs mainly along the ridge tops.

The Bellevue Tongue of the Grant Lake ranges from 6 to 20 feet thick and is argillaceous (shalely), thin bedded and non-resistant and weathers to rubble. The limestone is normally not suitable for use in roadbeds.

The Fairview Formation consists of interbedded Limestone (45 to 65 percent) and Shale. The formation is approximately 90 to 120 feet thick and is exposed at the surface over most of the project area. Limestone beds range in thickness from 8" to 15". The Shale weathers rapidly in the upper portion of the Formation and is relatively resistant in the lower 25 to 30 feet of the Formation. The Shale percentages are more than 50 percent in the lower 25 to 30 feet of the Formation.

The Kope Formation is made up of Shale (75 to 80 percent) interbedded with Limestone. Limestone beds are generally less than 6" thick. The shale also weathers rapidly when exposed at the surface.

GEOTECHNICAL CONCERNS

Structures founded in alluvium may require deeper than normal types of foundations.

Cut slopes constructed in Glacial Drift may be highly erodeable and require some type of slope protection to prevent erosion. Flatter cut slopes may also be required to ensure a stable slope.

Cut slopes in the Bull Fork and Bellevue Tongue of the Grant Lake may be stable on pre-split slopes. Sinkholes may also be encountered in both Formations but should be shallow and present little problems for construction.

Cuts constructed in the Fairview and Kope may require flatter than normal cut slopes and extra Right-of-Way for slopes to be stable. Embankments constructed from this material may require flatter than normal fill slopes. The material from these formations may not be suitable for all roadway applications.

Side hill cut and fill sections should be avoided if possible due to foundation and slope stability issues particularly in the Kope Formation.

The Branch has no preference for either corridor at this time.

If there are any questions, please advise.

UNIVERSITY OF KENTUCKY

Kentucky Geological Survey
Research
228 Mining & Mineral Resources Bldg.
Lexington, KY 40506-0107
Phone: (859) 257-5500
Fax: (859) 257-1147
www.uky.edu/kgs

January 10, 2008

Mike Bezold, P.E.
Kentucky Transportation Cabinet
District 6
P.O. Box 17130
Covington, KY 41017

Dear Mr. Bezold:

This letter is to summarize any geologic concerns for the planning study:

Kenton County
Hands Pike
Ky. 1501
Item No. 07-8307.00

Physiographic Region

The study area is located in the Outer Bluegrass physiographic region, which is underlain by interbedded limestone and shale, interbedded shale and limestone, gravel, sand, silt, and clay.

7.5-Minute U.S. Geological Survey Topographic and Geologic Quadrangle Map

The study area is located in the Independence quadrangle.

County Land-Use Planning Map

For good geologic (with physical parameters) overview of the study area, refer to the county land-use planning map at www.uky.edu/KGS.

On the home page, click on GIS and Maps.

On this page, click on County Land-Use Planning Maps.

On this page, click on the county of interest on the index map. A viewable and downloadable PDF of the county land-use map will be displayed.

Karst Potential

The study area might encounter karst features such as sinkholes, especially in the lower part of the Bull Fork Formation and near the base of the Bellevue Tongue of the Grant Lake Formation.

KGS

Landslide Potential
The study area would encounter units that would be prone to landslides, such as the Kope Formation, where there is a higher percentage of interbedded shales within the limestone. The shales are soft and easily deformed when wet, and become unstable and subject to slumping. Oversteepened banks and artificial cuts should be avoided or be properly designed and drained.

Unconsolidated Sediments
The study area would encounter unconsolidated sediments in drainage areas.

Resource Conflicts
The study area would not encounter any resource conflicts such as prior ownership of property for quarrying or mining. No oil and gas wells were found within a 1-mile radius of the study area (http://kgsweb.uky.edu/DataSearching/OilGas/OGSearch.asp).

Materials Suitability
The study area might encounter rock units that would be suitable for construction stone. A limestone quarry operated prior to 1966 on the west side of Highway 17, 2 miles north of the Independence court house. Selected limestones would be suitable for road construction from the lower half of the Fairview Formation and upper few feet of the Kope Formation.

Fault Potential
The study area would not encounter any faulted areas.

Earthquake Ground Motions
The study area has a probable peak ground acceleration (PGA) due to earthquake ground motion of 0.09g. There would be a low potential for liquefication or slope failure in the unconsolidated sediments at or near streams caused by earthquake bedrock ground motion.

Sincerely,

Richard A. Smath
Geologist

EDUCATION CABINET
DEPARTMENT OF EDUCATION

Steven L. Beshear
Governor

Capital Plaza Tower
500 Mero Street
Frankfort, Kentucky 40601
Phone (502) 564-4770
www.education.ky.gov

Jon E. Draud, Ed.D.
Commissioner of Education

February 15, 2008

Mr. G. Michael Bezold, P.E
District 6 Planning Office
Kentucky Transportation Cabinet
PO Box 17130
Covington, KY 41017

Subject: Planning Study, Kenton County
Hands Pike, KY 1501
Item Number 07-8307.00

Dear Mr. Bezold:

Our office is in receipt of your letter (attached) requesting input and comments on a planning study for the proposed highway project in Kenton County. By copy of this letter, the Kentucky Department of Education will forward your request to the Kenton County Board of Education for review and comment. If you need to discuss this matter further, please contact Mr. Louis Hugg, Planning Branch Manager, Division of Facilities Management, Kentucky Department of Education, (502) 564-4326.

Sincerely,

Mark W. Ryles, Director
Division of Facilities Management

MWR/efh
Attachment: Correspondence 12/14/2007

c: Ms. Helen Mountjoy, Secretary Education Cabinet
Mr. Tim Hanner, Superintendent, Kenton County Schools
Correspondence

Steven L. Beshear
Governor

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov
Department of Highways
District Six
P.O. Box 17130
421 Buttermilk Pike
Covington, Kentucky 41017-0130
(859) 341-2700
(859) 341-3661 (FAX)

Joseph W. Prather
Secretary

December 14, 2007

Ms. Laura Owens
Secretary
Education Cabinet
Capital Plaza Tower, 2nd Floor
Frankfort, KY 40601

Subject: Planning Study
Kenton County
Hands Pike
KY 1501
Item Number 07-8307.00

Dear Ms. Owens:

We are requesting your agency's input and comments on a planning study to determine the need and potential impacts for a proposed highway project. The Kentucky Transportation Cabinet has assembled a study team to evaluate the current conditions and develop short term and long term improvements to KY 1501, Hands Pike, in Covington, KY. The primary goal of this project would be to improve the safety along this corridor. The study is currently in the initial data gathering stage.

We ask that you identify specific issues or concerns of your agency that could affect the development of the project. This planning study will include a scoping process for the earl identification of potential alternatives, environmental issues, and impacts related to the proposed project. We believe that early identification of issues or concerns can help us develop highway project alternatives to avoid or minimize negative impacts. In particular, we are asking that you provide the following information:

- Comments on the project goals or purpose and need for any project
- Significant issues or concerned in the project area that may need to be addressed so that the project can be adequately scoped,
- Any conservation or development plans your agency or organization has ongoing or is aware of in the project area.

- Locations of any known areas, issues, or resources within the project area should be considered when developing alternatives so that impacts can be minimized, mitigated, or avoided early in the process, and
- Any mitigation strategies that should be considered in the development of any project.

We respectfully ask that you provide us with your comments by January 30, 2008, to ensure timely progress in this planning effort.

During the development of the planning study, comments will be solicited from federal, state, and local agencies, as well as other interested persons and the general public, in accordance with principles set forth in the National Environmental Policy Act (NEPA) of 1969.

Other Transportation Cabinet offices or consultants working on behalf of the Transportation Cabinet may also contact you seeking more detailed data or information to assist them in completing their environmental studies for this phase of the project.

We have enclosed the following project information for your review and comment:

- Project Location Map
- Crash, Traffic and Functional Classification Map
- Aerial Photography Environmental Footprint
- USGS Topographic Environmental Footprint

We appreciate any input you can provide concerning this project. Please direct any comments, questions, or requests for additional information to Mike Bezold in the District 6 Planning Office at (859) 341-2707 ext. 259 or Mike.Bezold@ky.gov. Please address all written correspondence to Mike Bezold, P.E., Kentucky Transportation Cabinet, P.O. Box 17130, Covington, KY 41017.

Sincerely,
Thomas Schomaker, P.E.
Executive Director District 6

G. Michael Bezold, P.E.
District Planning Engineer

GMB
Enclosures
Cc: Tom Springer, Qk4
Jimmy Wilson

Bezold, Mike (KYTC-D06)

From: Palmer-Ball, Brainard (EPPC OOS KNPC)
Sent: Tuesday, January 08, 2008 2:21 PM
To: Bezold, Mike (KYTC-D06)
Cc: MacGregor, John (FW)
Subject: KSNPC comment concerning KY 1501 in Kenton Co.

TO: Mike Bezold, KTC

FROM: Brainard Palmer-Ball, Jr., KSNPC

DATE: January 8, 2008

RE: KY 1501 (Hands Pike) Study, Kenton Co.

KSNPC has reviewed the KY 1501 project summary and notes that the wooded areas in the vicinity of the confluence of Wayman Branch and Banklick Creek harbor a significant population of Redback salamander (Plethodon cinereus). This species is very restricted in range in Kentucky, occurring primarily in a small portion of the northern tier of counties. Every effort should be made to minimize disturbance to wooded areas to protect the population of Redback salamanders in the project area.

Bezold, Mike (KYTC-D06)

From: MacGregor, John (FW)
Sent: Tuesday, January 08, 2008 2:23 PM
To: Palmer-Ball, Brainard (EPPC OOS KNPC); Bezold, Mike (KYTC-D06)
Subject: RE: KSNPC comment concerning KY 1501 in Kenton Co.

Thanks, Brainard. I agree.

John MacGregor
Herpetologist - Wildlife Diversity Program
Kentucky Department of Fish and Wildlife Resources
#1 Sportsman's Lane
Frankfort, KY 40601

email: john.macgregor@ky.gov
office phone: 502-564-7109 ext 370
office FAX: 502-564-4519

From: Palmer-Ball, Brainard (EPPC OOS KNPC)
Sent: Tuesday, January 08, 2008 2:21 PM
To: Bezold, Mike (KYTC-D06)
Cc: MacGregor, John (FW)
Subject: KSNPC comment concerning KY 1501 in Kenton Co.

TO: Mike Bezold, KTC

FROM: Brainard Palmer-Ball, Jr., KSNPC

DATE: January 8, 2008

RE: KY 1501 (Hands Pike) Study, Kenton Co.

KSNPC has reviewed the KY 1501 project summary and notes that the wooded areas in the vicinity of the confluence of Wayman Branch and Banklick Creek harbor a significant population of Redback salamander (Plethodon cinereus). This species is very restricted in range in Kentucky, occurring primarily in a small portion of the northern tier of counties. Every effort should be made to minimize disturbance to wooded areas to protect the population of Redback salamanders in the project area.

JUSTICE AND PUBLIC SAFETY CABINET

Steven L. Beshear
Governor

Kentucky Vehicle Enforcement
Frankfort, Kentucky 40601

J. Michael Brown
Secretary

Gregory G. Howard
Commissioner

January 7, 2008

Mr. Mike Bezold, PE
Kentucky Transportation Cabinet
PO Box 17130
Covington, KY 41017

Dear Mr. Bezold:

We are in receipt of your letter requesting any input that Kentucky Vehicle Enforcement might have in regards to a planning study, Kenton County, Hands Pike, KY 1501, item no. 07-8307.00.

After having my staff research the matter, we do not see any concerns as it relates to our agency.

If you need any further information, please do not hesitate to let us know.

Sincerely,

Gregory G. Howard
Commissioner
Department of Kentucky Vehicle Enforcement

KENTUCKY STATE POLICE

Steve Beshear
Governor

919 Versailles Road
Frankfort, Kentucky 40601
www.kentucky.gov

Rodney Brewer
Commissioner

January 28, 2008

Mr. G. Michael Bezold, P.E.
KY Transportation Cabinet
PO Box 17130
Covington, KY 41017

RE: Planning Study
Kenton County
Hands Pike KY 1501

Dear Mr. Bezold,

We have reviewed the project information on the above mentioned study, and we thank you for allowing us the opportunity to contribute our opinions and findings.

I asked Tpr. Chris Steward, an eight year veteran with the Kentucky State Police, who patrols this highway often, to handle your request, and his memorandum is enclosed.

Again, we appreciate the opportunity to contribute our thoughts, and if we can be of further assistance, please do not hesitate to contact us.

Sincerely,

Capt. Mike Crawford

Captain Mike Crawford
Commander Post 6

KENTUCKY STATE POLICE

Steve Beshear
Governor

919 Versailles Road
Frankfort, Kentucky 40601
www.kentucky.gov

Rodney Brewer
Commissioner

MEMORANDUM

TO: Captain Mike Crawford U/14 (Through Channels)

FROM: Tpr. Chris Steward U/1015

DATE: January 16, 2008

SUBJECT: **Ky 1501/Hands Pike Transportation Study**

I have reviewed the documents provided by the Transportation Cabinet in regards to a possible improvement project to Ky 1501/Hands Pike. I also spoke with Mike Bezold, who is the District Planning Engineer for the Department of Highways District Six. The primary goal of the project would be to improve safety along the Ky 1501 corridor. On several different occasions over the past few weeks I patrolled Ky 1501 looking for items to improve the safety of the motorist. I have developed several ideas that might reduce the number of collisions that occur on this roadway.

Hands Pike or Ky 1501 is a busy corridor that runs between two major and very busy roadways in central Kenton County. The roadway intersections with Ky 16/Taylor Mill Road on the north side, and on the south side intersect with Ky 17/Madison Pike. A few yeas ago the intersection with Ky 17/Madison Pike was widened and turn lanes were added as part of the Ky 17 project. The first suggestion to improve safety to the Ky 1501 would be to do the same thing with the intersection of Ky 16. As you approach this intersection you must navigate a sharp curve. The distance between this curve and the intersection does not allow much reaction time if vehicles are stacked on Ky 1501 at the intersection. While at the intersection, there is a line of sight problem due to the grade in the roadway on Ky 16. The site distance to the south is only approximately three hundred and seventy five feet. I am aware of the current improvement plans to Ky 16. As part of those plans, I believe there are plans to move this intersection further south and widen it. This should be a priority when that project goes forward. It should help greatly reduce the number of collisions at that intersection.

The second problem area according to the collisions data provided, is the intersection of Ky 1501 with Wayman Branch Road. According to the collision data, this intersection had several injury collisions including a fatal. This intersection is basically at the bottom of two steep grades. Wayman Branch Road intersects with Ky 1501 at an odd angle, which requires a driver turning from Wayman Branch Road onto Ky 1501 to turn almost one hundred and eighty degrees to view traffic traveling south on Ky 1501 toward the intersection. As the driver looks north to view the on coming traffic, the sight line is less than two hundred feet. A closer look at the realignment of this intersection is needed. A short term and less expensive means to improve the sight line would be to cut and clear some trees on the eastside of Ky 1501. As you travel north on Ky 1501 and pass the intersection of Wayman Branch Road, you round a sharp curve to the right and travel up a steep grade. If you cut the trees on the west side of this curve you would improve the sight line greatly. Cars intending to travel from Wayman Branch Road onto Ky 1501 would be able to have a clear line of site of the vehicles traveling down the grade and around the curve. By removing these trees it would improve the sight line distance.

The third suggestion deals with the section of Ky 1501 between the streets of Crystal Lake Road and Otter Drive. This section of roadway is largely residential with several entrances to subdivisions. The speed limit is currently 35 mph through this stretch. This section of the roadway is straight and level until you reach Otter Drive, which is located on the westside of Ky 1501, in the middle of a grade and near a sharp curve. At this intersection, I would suggest the installation of a yellow flashing light prior to the intersection to the north and south. This light would warn motorists of the approaching intersection. I would also suggest the installation of stop signs, making at least two of the entrances to the neighborhoods four-way intersections. This would break up this section of Ky 1501, causing motorists to be more mindful of the various cross streets.

Finally, as I drove Ky 1501, I observed several breaks in the pavement and several guardrails that are in need of repair. I would suggest looking at repairing these sections throughout the Ky 1501, and repave the damaged areas of the roadway.

As the growth in central and south Kenton County continues, Ky 1501 is going to become a more heavily traveled and vital road. The safety of those who travel it should be of the upmost importance, with the ultimate goal being to reduce the number of collisions that occur on the roadway.

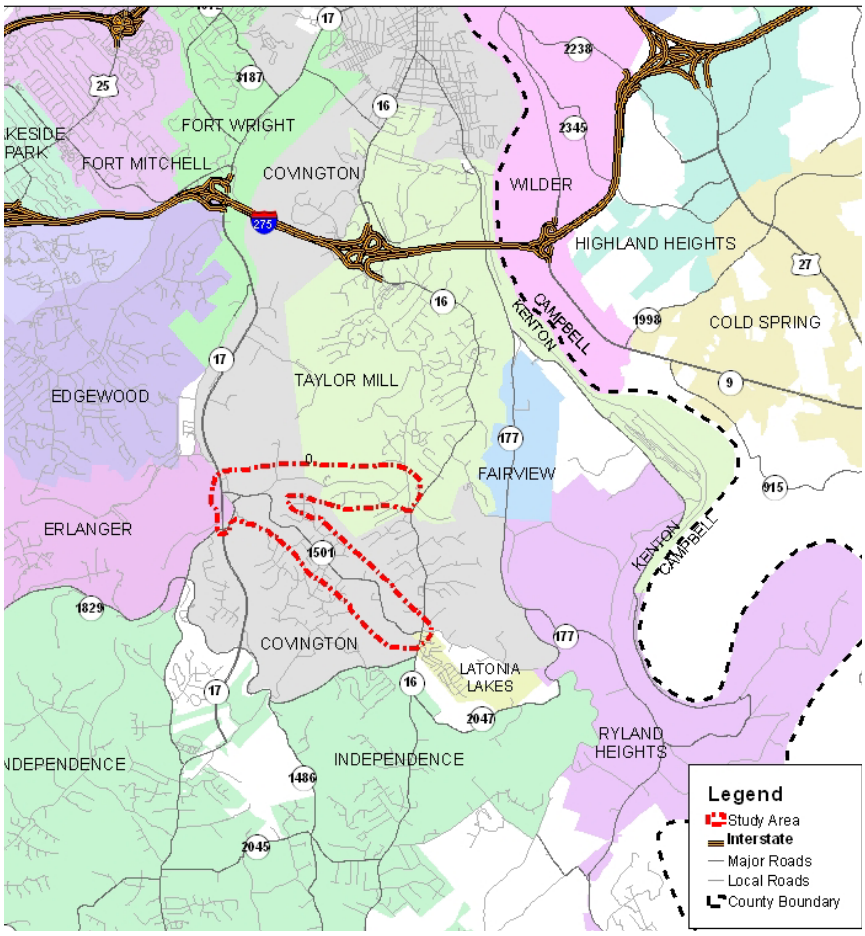
Tpr C. D. Steward 1015
Tpr. C. D. Steward U/1015

APPENDIX G

ENVIRONMENTAL JUSTICE & COMMUNITY IMPACT REPORT

Hands Pike, KY 1501 Alternatives Study
Kenton County, Kentucky

KYTC Item No. 6-8307.00



Environmental Justice & Community Impact Report

Prepared by:
Caitlin Douglas, Transportation Planner
Northern Kentucky Area Development District
22 Spiral Drive
Florence, KY 41042
Phone: (859) 283-1885
June 2008

Table of Contents

1. INTRODUCTION

The following Environmental Justice report is an assessment of community demographics and characteristics related to a defined study area for the proposed alternatives study for Hands Pike (KY 1501) from KY 16 to KY 17 in Kenton County.

The study area is composed primarily of residential land and subdivisions with a limited number of commercial entities located along Hands Pike. Statistical data from the U.S. Census Bureau's 2000 Census is provided to display population by race, population by age, population below poverty level by age, and disabled population for the United States, Kentucky, Kenton County, Cities of Covington, Erlanger, Independence, Latonia Lakes, Taylor Mill, and Census Tracts and Block Groups located in and around the study area.

Resources used during the compilation of this report include, but are not limited to, the following: the U.S. Census Bureau, Kentucky State Data Center, Kentucky Transportation Cabinet (KYTC), local elected officials, community leaders, and field observations of the study area. The list of contacts for this study can be found in Appendix 1. The information and results included herein are intended to assist the Kentucky Transportation Cabinet in making informed and prudent transportation decisions with respect to the study area, particularly with regard to the requirements of Executive Order 12898[1], to ensure equal environmental protection to all groups potentially impacted by this project.

2. WHAT IS ENVIRONMENTAL JUSTICE?

The U.S. Environmental Protection Agency (EPA) Office of Environmental Justice (EJ) defines EJ as:

> "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socio-economic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies."

A disproportionately high and adverse effect on a minority or low-income population means an adverse effect that:

[1] Executive Order 12898 signed on February 11, 1994 states "…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…"

1. Is predominately borne by a minority population and/or low-income population, or
2. Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

3. DEFINITIONS

U.S. Department of Transportation (USDOT) Order 5610.2 on EJ, issued in the April 15, 1997 Federal Register defines what constitutes low income and minority populations.

- Low-Income is defined as a person whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines.
- Minority is defined as a person who is: (1) Black (a person having origins in any black racial groups of Africa); (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (4) American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).
- Low-Income Population is defined as any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant geographically dispersed/transient persons who will be similarly affected by a proposed US DOT program, policy or activity.
- Minority Population is defined as any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed US DOT program, policy or activity.

Executive Order (EO) 12898 and US DOT Order 5610.2 do not address consideration of the elderly population. However, the US DOT encourages the study of these populations in EJ discussions and in accordance with EJ, Title VI of the Civil Rights Act of 1964 and the Kentucky Transportation Cabinet's advocacy of inclusive public involvement and equal treatment of all persons this report includes statistics for persons age 62 and over that are within the study and comparison areas.

4. METHODOLOGY

For this study, data was collected by using the method outlined by the KYTC document, "Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies" (see Appendix 2).

The primary sources of data used in the compilation of this report were the United States Census Bureau's 2000 Census, the Kentucky State Data Center, local elected officials, community leaders, and field observations. Statistics were collected to present a detailed analysis of the community conditions for the study area.

5. CENSUS DATA ANALYSIS

The U.S. Census Bureau defines geographical units as:

- Census Tract (CT) – "A small, relatively permanent statistical subdivision of a county or statistically equivalent entity delineated for data presentation purposes by a local group of census data users or the geographic staff of a regional census center in accordance with Census Bureau guidelines. CTs generally contain between 1,000 and 8,000 people. CT boundaries are delineated with the intention of being stable over many decades, so they generally follow relatively permanent visible features. They may also follow governmental unit boundaries and other invisible features in some instances; the boundary of a state or county is always a census tract boundary."
- Block Group (BG) - "A statistical subdivision of a CT. A BG consists of all tabulation blocks whose numbers begin with the same digit in a CT. BGs generally contain between 300 and 3,000 people, with an optimum size of 1,500 people."
- Census Block (CB) – "An area bounded on all sides by visible and/or invisible features shown on a map prepared by the Census Bureau. A CB is the smallest geographic entity for which the Census Bureau tabulates decennial census data."

The study and comparison area analysis includes percentages for minority, low-income and elderly populations in the United States, Kentucky, Kenton County, Cities of Covington, Erlanger, Independence, Latonia Lakes, Taylor Mill, and Census Tracts and Block Groups located in and around the study area.

6. STUDY FINDINGS

This Environmental Justice and Community Impact Report is to be used as a component of an alternatives study currently being conducted by the Kentucky Transportation Cabinet's Division of Planning and District 6 for the proposed design alternatives along the Hands Pike from KY 16 to KY 17 in Kenton County. This study is intended to help define the location and purpose of the project and meet federal requirements regarding consideration of environmental issues as defined in the National Environmental Policy Act (NEPA).

According to the 2000 Census, there are forty one (41) Census Tracts that encompass the population of Kenton County. The following information displays only the Census divisions located in and around the study area and the total population within each Census division.

U.S. Census 2000 Population Totals for Study Area

Total Population:	**53,015**
Census Tract 636.03	**6,674**
Block Group 1	1,105
Block Group 2	1,118
Block Group 3	1,596
Block Group 4	996
Block Group 5	1,859
Census Tract 636.04	**5,457**
Block Group 1	1,335
Block Group 2	1,824
Block Group 3	2,298
Census Tract 636.05	**5,694**
Block Group 1	1,301
Block Group 2	1,926
Block Group 3	949
Block Group 4	1,518
Census Tract 636.06	**2,877**
Block Group 1	1,229
Block Group 2	1,648
Census Tract 637.02	**4,424**
Block Group 1	1,050
Block Group 2	1,505
Block Group 3	1,869
Census Tract 653	**9,651**
Block Group 1	807
Block Group 2	2,213
Block Group 3	915
Block Group 4	2,597
Block Group 5	1,141
Block Group 6	1,978
Census Tract 654	**1,113**
Block Group 1	952
Block Group 2	161

Census Tract 655.01	**4,958**
Block Group 1	2,323
Block Group 2	2,635
Census Tract 655.02	**4,358**
Block Group 1	2,266
Block Group 2	2,092
Census Tract 658	**2,005**
Block Group 1	750
Block Group 2	1,255
Census Tract 659	**1,463**
Block Group 1	757
Block Group 2	706
Census Tract 668	**4,341**
Block Group 1	1,034
Block Group 9	3,307

Evaluation of the study area consisted of compiling and analyzing Census data for four (4) Census Tracts and seven (7) Census Block Groups within those Tracts directly intersected by the study area. These Census divisions are as follows:

- Tract 636.03 – Block Group 4
- Tract 653 – Block Groups 2, 4, 5 & 6
- Tract 658– Block Group 1
- Tract 668– Block Group 9

Comparative data from twelve (12) Census Tracts and twenty eight (28) Census Block Groups was collected for areas surrounding the study area, but having no direct intersection or inclusion in the area. This data includes the following Census divisions:

- Tract 636.03 – Block Group 1, 2, 3, & 5
- Tract 636.04 – Block Groups 1, 2, & 3
- Tract 636.05 – Block Groups 1, 2, 3, & 4
- Tract 636.06 – Block Groups 1 & 2
- Tract 637.02 – Block Group 1, 2, & 3
- Tract 653 – Block Groups 1 & 3
- Tract 654 – Block Groups 1 & 2
- Tract 655.01 – Block Groups 1 & 2
- Tract 655.02 – Block Groups 1 & 2
- Tract 658 – Block Group 2
- Tract 659 – Block Groups 1 & 2
- Tract 668 – Block Group 1

A map showing the Census divisions for the study area can be found in Appendix 3. Census data can be found in Appendix 4.

7. STUDY FINDINGS – Population by Race

Table 4.1 illustrates that a majority of the Census Tracts and Block Groups that directly intersect and surround the study area contain a population that is not significantly diverse when compared to national and state statistics for population by race. Percentages for White individuals in and around the study area typically exceed the state and national averages, which in turn result in the percentage of minority population being considerably less than state and national averages. The racial demographics of the study area are comparable to those of the surrounding cities, as well as Kenton County as a whole.

Discussions with local elected officials and community members has led to the conclusion that concentrations of minorities are not located in and/or surrounding the study area; therefore, it is anticipated that the implementation of this project would not have a disproportionate impact on minorities. Northern Kentucky Area Development District (NKADD) Staff will continue to monitor racial composition in the study area and report any changes and/or developments that may occur in the future that could alter the findings of this report.

8. STUDY FINDINGS – Population by Poverty Level

The majority of Census Tracts and Block Groups that fall within the study area have a smaller percentage of those living below the poverty level as compared with the national and state averages. The percentage of persons below poverty level for all evaluated Census Tracts and Block Groups displayed in Table 4.2 ranges from a low of 0.0% to a high of 21.4%. There is only one Block Group located within the study area (Block Group 1, Census Tract 658 with 15.6%) and one Block Group located outside of the study area (Block Group 1, Census Tract 668 with 21.4%) that have a higher percentage than both Kentucky and the United States.

The population below the poverty level for Kenton County and the cities of Erlanger, Independence, and Taylor Mill is lower than the national and state averages. However, the City of Latonia Lakes has 24.2% of its population below the poverty level, which is significantly higher than the national and state figures. This would explain the high percentage for Block Group 1, Census Tract 658 since Latonia Lakes falls within that Block Group. The percentage for the City of Covington (17.9%) is also higher than both the state and national percentages.

Table 4.2 shows that the project area does not contain a high percentage of individuals below the poverty level. There are only two block groups located within the study that have higher percentages when compared to the surrounding census tracts and block groups. The U.S. Census data, as well as observations and input from the community, does not reflect a high incidence of poverty for the study area.

9. STUDY FINDINGS – Population by Age

Table 4.3 shows the Population by Age for the study area and surrounded communities. 2000 U.S. Census data indicates that most of the Census Tracts and Block Groups located within the study area have lower percentages of populations over the age of 65 than the state and national percentages. There is one Census Tract (658) and one Block Group (Block Group 1, Census Tract 658) within the study area that have higher percentages than Kentucky and the United States. There is one Census Tract and several block groups located outside of the study that have higher percentages for persons age 62 and over, as well as the City of Latonia Lakes. This data shows that although there are areas where the population of those ages 62 and over may exceed the state and national percentages, there does not appear to be a disproportionate representation of the elderly population within the study area.

10. STUDY FINDINGS – Population by Disability

Table 4.4 shows the Census data for the disabled population for each Census division. The percentages for the Census Tracts and Block Groups located within the study area are all less than the percentages for the U.S. (13.6%) and Kentucky (132%), with the exception of Block Group 1, Census Tract 658 which has 17.1%. This block group is located in the City of Latonia Lakes, which has a much higher percentage (21.8%) than the surrounding cities, the state and national percentage. This would explain the high percentage in that block group.

The percentages for the Census divisions located within the study area are lower than most of the Census divisions located in the surrounding areas. There does not appear to be a disabled population in the study area that would be disproportionately affected by the project.

11. CONCLUSION

Following a comprehensive review of demographic data from the U.S. Census Bureau, discussions with local officials regarding community features, and field observations, the Northern Kentucky Area Development District staff has concluded that a defined Environmental Justice community does not exist within the study area for the proposed alternatives along Hands Pike from KY 17 to KY 16 in Kenton County.

Analysis of racial composition data resulted in none of the Census Block Groups identified in and around the study area that contained a percentage of minorities that exceeded national and/or state averages. Following a comprehensive review of Census Block data and discussions with local officials, no minority concentrations were discovered within or surrounding the immediate study area.

The percentages of persons in the study area below the poverty level were slightly higher for two Block Groups within the study area (Block Group 2, Census Tract 653 and Block Group 1, Census Tract 658) than the national percentage. One Census Block Group located outside of the study area, as well as the City of Covington and City of Latonia Lakes, also had higher percentages than both the national and state percentages; however, discussions with local officials led to the conclusion that no concentration of individuals below the poverty level will be disproportionately affected by this project. Community leaders have expressed support for the proposed project and anticipate that it will provide an economic benefit by significantly improving access and the safety of this corridor.

Age and disability analysis indicates that the distribution of elderly and disabled residents in the study area exceeds the national and state averages for a few Census Tracts and Block Groups, but no specific concentrations of elderly or disabled residents were discovered during the compilation of this report. It has been determined that no elderly or disabled residents living within the study area would be disproportionately affected by this project.

NKADD staff will continue to monitor the progress of this project and reevaluate the Environmental Justice Report to document any demographic and/or socioeconomic changes that may occur in and around the study area throughout the development of the project.

APPENDIX 1

PLANNING STUDY CONTACT LIST

PLANNING STUDY CONTACT LIST

Ralph Drees
Kenton County Judge Executive
P.O. Box 792
Covington, KY 41012

Mayor Mark Kreimbourg
City of Taylor Mill
5225 Taylor Mill Rd.
Taylor Mill, KY 41015

Mayor Butch Callery
City of Covington
638 Madison Avenue
Covington, KY 41011

Aaron Wolfe-Bertling
Covington Housing Department
638 Madison Avenue
Covington, KY 41011

Caitlin Douglas
NKADD
22 Spiral Drive
Florence, KY 41042

Mike Bezold
KYTC District 6
421 Buttermilk Pike
Covington, KY 41017

Tom DiBello
Center for Great Neighborhoods
1650 Russell Street
Covington, KY 41011

APPENDIX 2

METHODOLOGY
FOR ASSESSING POTENTIAL
ENVIRONMENTAL JUSTICE CONCERNS
FOR KYTC PLANNING STUDIES

Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies

Updated: February 1, 2002

The demographics of the affected area should be defined using U.S. Census data (Census tracts and block groups) and the percentages for minorities, low-income, elderly, or disabled populations should be compared to those for the following:

- Other nearby Census tracts and block groups,
- The county as a whole,
- The entire state, and
- The United States.

Information from PVA offices, social service agencies, local health organizations, local public agencies, and community action agencies can be used to supplement the Census data. Specifically, we are interested in obtaining the following information:

- Identification of community leaders or other contacts who may be able to represent these population groups and through which coordination efforts can be made.
- Comparison of the Census tracts and block groups encompassing the project area to other nearby Census tracts and block groups, county, state, and United States percentages.
- Locations of specific or identified minority, low-income, elderly, or disabled population groups within or near the project area. This may require some field reviews and/or discussions with knowledgeable persons to identify locations of public housing, minority communities, ethnic communities, etc., to verify Census data or identify changes that may have occurred since the last Census. Examples would be changes due to new residential developments in the area or increases in Asian and/or Hispanic populations.
- Concentrations or communities that share a common religious, cultural, ethnic, or other background, e.g., Amish communities.
- Communities or neighborhoods that exhibit a high degree of community cohesion or interaction and the ability to mobilize community actions at the start of community involvement.
- Concentrations of common employment, religious centers, and/or educational institutions with members within walking distance of facilities.
- Potential effects, both positive and negative, of the project on the affected groups as compared to the non-target groups. This may include, but are not limited to:
    1. Access to services, employment or transportation.
    2. Displacement of persons, businesses, farms, or non-profit organizations.
    3. Disruption of community cohesion or vitality.

4. Effects to human health and/or safety.

- Possible methods to minimize or avoid impacts on the target population groups.

If percentages of these populations are elevated within the project area, it should be brought to the attention of the Division of Planning immediately so that coordination with affected populations may be conducted to determine the affected population's concerns and comments on the project. Also, with this effort, representatives of minority, elderly, low-income, or disabled populations should be identified so that, together, we can build a partnership for the region that may be incorporated into other projects. Also, we hope to build a Commonwealth-wide database of contacts. We are available to participate in any meetings with these affected populations or with their community leaders or representatives.

In identifying communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect. The selection of the appropriate unit of analysis may be a governing body's jurisdiction, a neighborhood, census tract, or other similar unit that is to be chosen so as not to artificially dilute or inflate the affected population. A target population also exists if there is (1) more than one minority or other group present and (2) the percentages, as calculated by aggregating all minority persons, exceed that of the general population or other appropriate unit of geographic analysis.

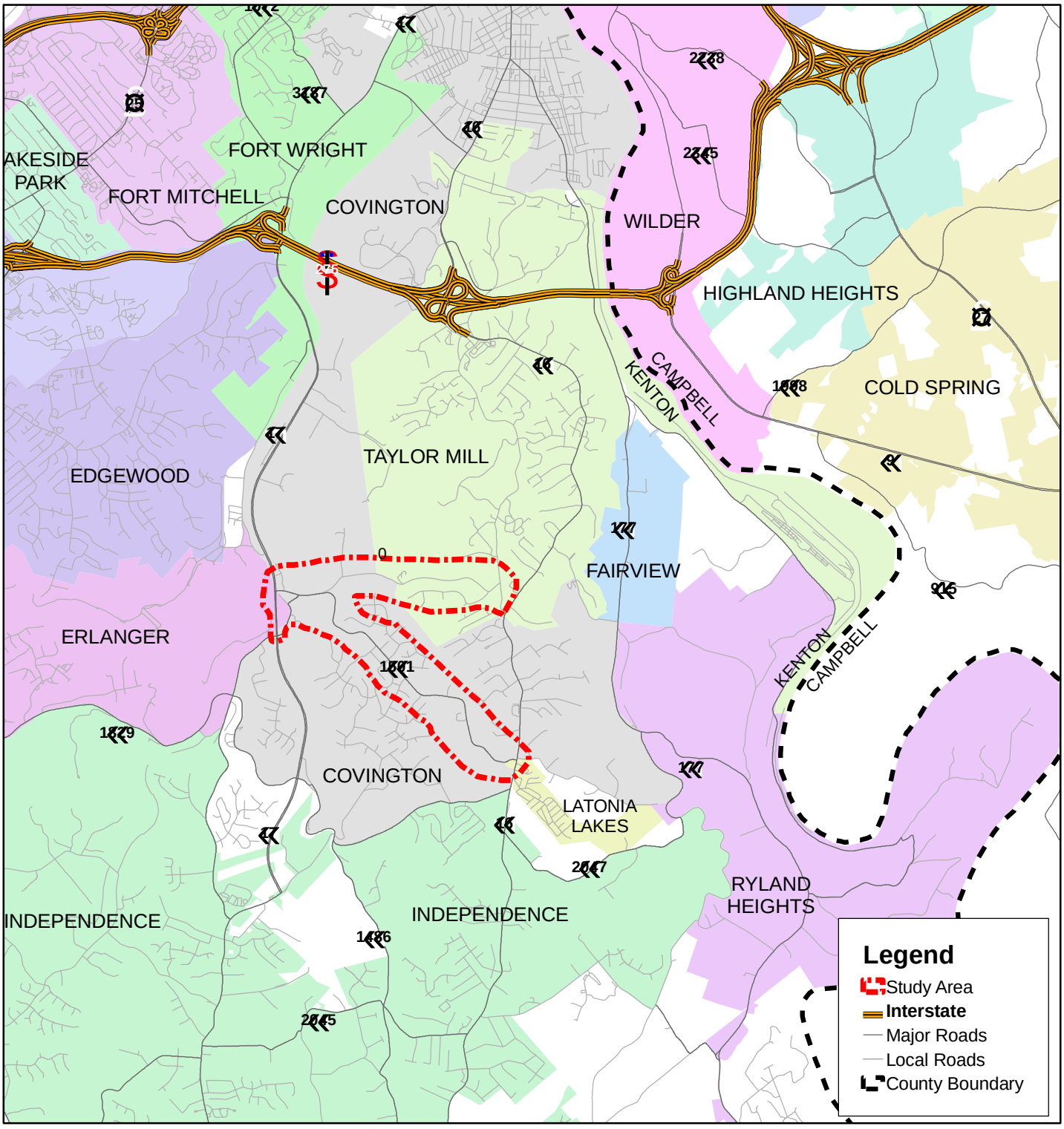
Maps should be included that show the Census tracts and block groups included in the analysis as well as the relation of the project area to those Census tracts and block groups.

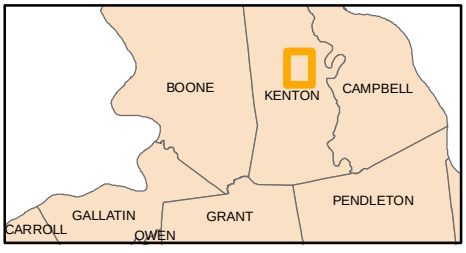
APPENDIX 3

MAPS

Hands Pike Alternatives Study

Location Map

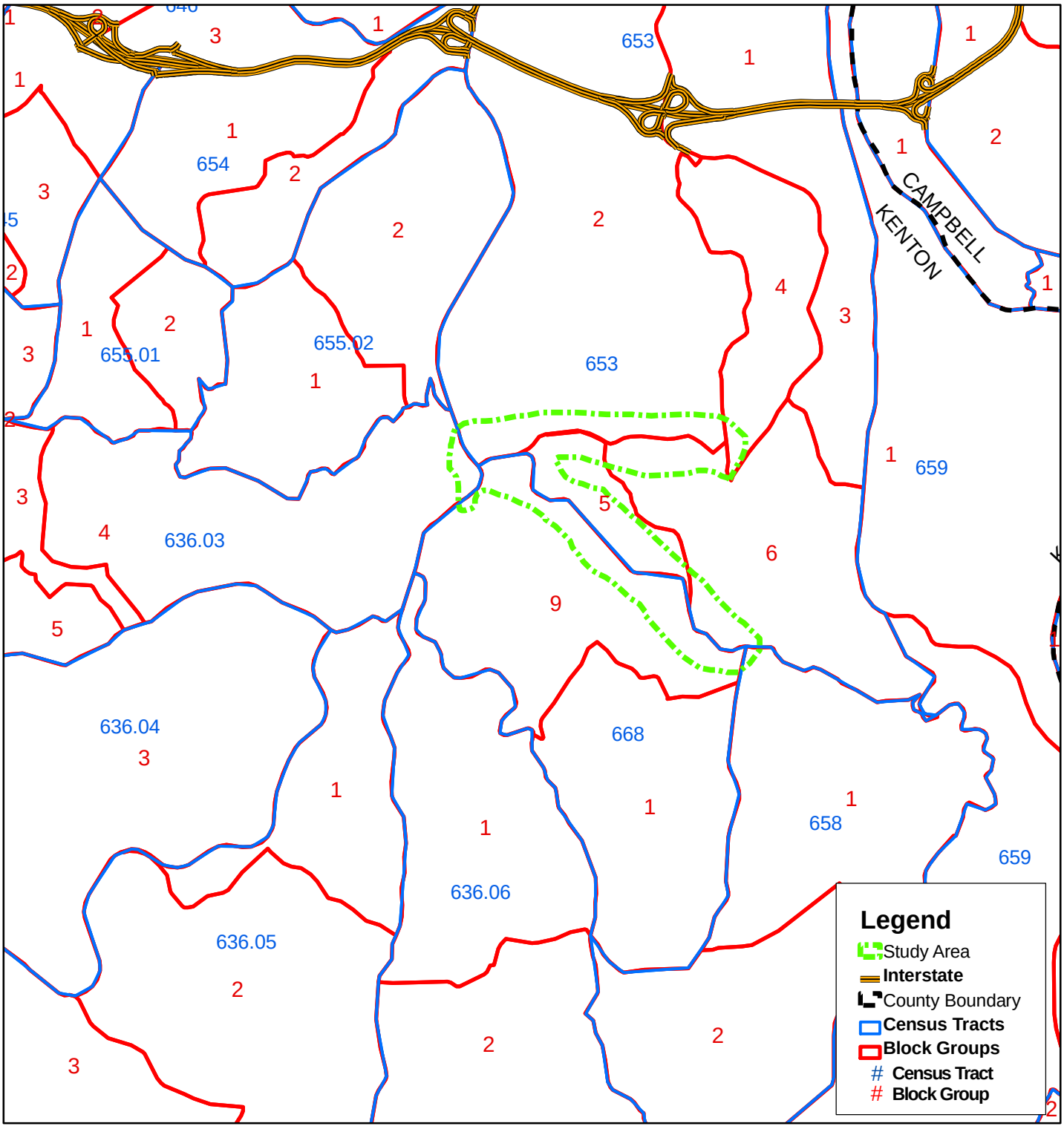


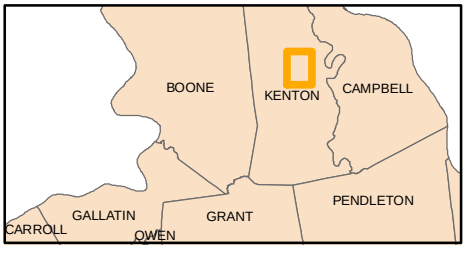


0 0.35 0.7 1.4 2.1 Miles

Hands Pike Alternatives Study

Census Boundary Map





0 0.3 0.6 1.2 1.8 Miles

APPENDIX 4

CENSUS DATA, U.S BUREAU OF THE CENSUS, CENSUS 2000

Table 4.1
Population by Race

Census Boundary	Total population	White	Percent of Total	Black or African American	Percent of Total	American Indian and Alaska Native	Percent of Total	Asian	Percent of Total	Native Hawaiian and Other Pacific Islander	Percent of Total	Other Race	Percent of Total
United States	281,421,906	211,353,725	75.1%	34,361,740	12.2%	2,447,989	0.9%	10,171,820	3.6%	378,782	0.1%	22,707,850	8.1%
Kentucky	4,041,769	3,639,168	90.0%	293,915	7.3%	9,080	0.2%	28,994	0.7%	1,155	0.0%	69,457	1.7%
Kenton County	151,464	142,215	93.9%	5,805	3.8%	293	0.2%	866	0.6%	47	0.0%	2,238	1.5%
City of Covington	43,348	37,624	86.8%	4,183	9.6%	141	0.3%	221	0.5%	0	0.0%	1,179	2.7%
City of Erlanger	16,764	15,987	95.4%	388	2.3%	60	0.4%	61	0.4%	0	0.0%	268	1.6%
City of Independence	14,941	14,622	97.9%	153	1.0%	46	0.3%	21	0.1%	0	0.0%	99	0.7%
City of Latonia Lakes	335	335	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
City of Taylor Mill	7,144	6,981	97.7%	38	0.5%	16	0.2%	44	0.6%	0	0.0%	65	0.9%
												0	
Census Tract 636.03	6,674	6,417	96.1%	141	2.1%	46	0.7%	0	0.0%	0	0.0%	70	1.0%
Census Tract 636.04	5,457	5,317	97.4%	66	1.2%	22	0.4%	0	0.0%	0	0.0%	52	1.0%
Census Tract 636.05	5,694	5,584	98.1%	39	0.7%	5	0.1%	21	0.4%	0	0.0%	45	0.8%
Census Tract 636.06	2,877	2,830	98.4%	15	0.5%	0	0.0%	0	0.0%	0	0.0%	32	1.1%
Census Tract 653	9,651	9,351	96.9%	76	0.8%	10	0.1%	44	0.5%	0	0.0%	170	1.8%
Census Tract 654	1,113	980	88.1%	60	5.4%	0	0.0%	73	6.6%	0	0.0%	0	0.0%
Census Tract 655.01	4,958	4,851	97.8%	37	0.7%	0	0.0%	30	0.6%	0	0.0%	40	0.8%
Census Tract 655.02	4,358	4,292	98.5%	0	0.0%	0	0.0%	66	1.5%	0	0.0%	0	0.0%
Census Tract 658	2,005	2,005	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Census Tract 659	1,463	1,453	99.3%	3	0.2%	0	0.0%	0	0.0%	0	0.0%	7	0.5%
Census Tract 668	4,341	4,182	96.3%	25	0.6%	19	0.4%	52	1.2%	0	0.0%	63	1.5%
Block Group 3, Census Tract 636.03	1,596	1,486	93.1%	67	4.2%	0	0.0%	0	0.0%	0	0.0%	43	2.7%
Block Group 4, Census Tract 636.03	996	988	99.2%	0	0.0%	8	0.8%	0	0.0%	0	0.0%	0	0.0%
Block Group 5, Census Tract 636.03	1,859	1,747	94.0%	74	4.0%	38	2.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 3, Census Tract 636.04	2,298	2,259	98.3%	8	0.3%	10	0.4%	0	0.0%	0	0.0%	21	0.9%
Block Group 1, Census Tract 636.05	1,301	1,261	96.9%	22	1.7%	5	0.4%	0	0.0%	0	0.0%	13	1.0%
Block Group 2, Census Tract 636.05	1,926	1,873	97.2%	17	0.9%	0	0.0%	21	1.1%	0	0.0%	15	0.8%
Block Group 3, Census Tract 636.05	949	949	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 1, Census Tract 653	807	807	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 2, Census Tract 653	2,213	2,079	93.9%	34	1.5%	0	0.0%	12	0.5%	0	0.0%	88	4.0%
Block Group 3, Census Tract 653	915	901	98.5%	3	0.3%	0	0.0%	0	0.0%	0	0.0%	11	1.2%
Block Group 4, Census Tract 653	2,597	2,536	97.7%	22	0.8%	7	0.3%	32	1.2%	0	0.0%	0	0.0%
Block Group 5, Census Tract 653	1,141	1,072	94.0%	7	0.6%	0	0.0%	0	0.0%	0	0.0%	62	5.4%
Block Group 6, Census Tract 653	1,978	1,956	98.9%	10	0.5%	3	0.2%	0	0.0%	0	0.0%	9	0.5%
Block Group 1, Census Tract 654	952	845	88.8%	34	3.6%	0	0.0%	73	7.7%	0	0.0%	0	0.0%
Block Group 2, Census Tract 654	161	135	83.9%	26	16.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 1, Census Tract 655.01	2323	2310	99.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	13	0.6%
Block Group 2, Census Tract 655.01	2635	2541	96.4%	37	1.4%	0	0.0%	30	1.1%	0	0.0%	27	1.0%
Block Group 1, Census Tract 655.02	2,266	2,219	97.9%	0	0.0%	0	0.0%	47	2.1%	0	0.0%	0	0.0%
Block Group 2, Census Tract 655.02	2,092	2,073	99.1%	0	0.0%	0	0.0%	19	0.9%	0	0.0%	0	0.0%
Block Group 1, Census Tract 658	750	750	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 2, Census Tract 658	1,255	1,255	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 1, Census Tract 659	757	754	99.6%	3	0.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 2, Census Tract 659	706	699	99.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	7	1.0%
Block Group 1, Census Tract 668	1,034	1,003	97.0%	0	0.0%	19	1.8%	0	0.0%	0	0.0%	12	1.2%
Block Group 9, Census Tract 668	3,307	3,179	96.1%	25	0.8%	0	0.0%	52	1.6%	0	0.0%	51	1.5%

Census divisions that intersect the study area

Source: U.S. Bureau of the Census, Census 2000, Summary File 3

Table 4.2
Population by Poverty Level

Census Boundary	Total population	Population for whom poverty status is determined: Income in 1999 below poverty level	Percent of Total	Population for whom poverty status is determined: Income in 1999 below poverty level; 0 to 17 years	Percent of Total	Population for whom poverty status is determined: Income in 1999 below poverty level; 18 to 64 years	Percent of Total	Population for whom poverty status is determined: Income in 1999 below poverty level; 65 to 74 years	Percent of Total	Population for whom poverty status is determined: Income in 1999 below poverty level; 75 years and over	Percent of Total
United States	281,421,906	33,899,812	12.0%	11,746,858	4.2%	18,865,180	6.7%	1,550,969	0.6%	1,736,805	0.6%
Kentucky	4,041,769	621,096	15.4%	203,547	5.0%	350,072	8.7%	33,140	0.8%	34,337	0.8%
Kenton County	151,464	13,487	8.9%	4,877	3.2%	7,374	4.9%	611	0.4%	625	0.4%
City of Covington	43,348	7,763	17.9%	2,809	6.5%	4,327	10.0%	305	0.7%	322	0.7%
City of Erlanger	16,764	923	5.5%	363	2.2%	476	2.8%	41	0.2%	43	0.3%
City of Independence	14,941	975	6.5%	417	2.8%	516	3.5%	23	0.2%	19	0.1%
City of Latonia Lakes	335	81	24.2%	28	8.4%	44	13.1%	9	2.7%	0	0.0%
City of Taylor Mill	7,144	344	4.8%	108	1.5%	193	2.7%	28	0.4%	15	0.2%
Census Tract 636.03	6,674	330	4.9%	134	2.0%	181	2.7%	8	0.1%	7	0.1%
Census Tract 636.04	5,457	381	7.0%	164	3.0%	217	4.0%	0	0.0%	0	0.0%
Census Tract 636.05	5,694	258	4.5%	131	2.3%	111	1.9%	7	0.1%	9	0.2%
Census Tract 636.06	2,877	110	3.8%	59	2.1%	51	1.8%	0	0.0%	0	0.0%
Census Tract 637.02	4,424	366	8.3%	121	2.7%	179	4.0%	56	1.3%	10	0.2%
Census Tract 653	9,651	631	6.5%	222	2.3%	344	3.6%	50	0.5%	15	0.2%
Census Tract 654	1,113	35	3.1%	0	0.0%	35	3.1%	0	0.0%	0	0.0%
Census Tract 655.01	4,958	52	1.0%	29	0.6%	23	0.5%	0	0.0%	0	0.0%
Census Tract 655.02	4,358	38	0.9%	0	0.0%	31	0.7%	7	0.2%	0	0.0%
Census Tract 658	2,005	191	9.5%	60	3.0%	100	5.0%	25	1.2%	6	0.3%
Census Tract 659	1,463	104	7.1%	32	2.2%	59	4.0%	1	0.1%	12	0.8%
Census Tract 668	4,341	245	5.6%	138	3.2%	101	2.3%	2	0.0%	4	0.1%
Block Group 1, Census Tract 636.03	1,105	23	2.1%	7	0.6%	8	0.7%	8	0.7%	0	0.0%
Block Group 2, Census Tract 636.03	1,118	43	3.8%	8	0.7%	35	3.1%	0	0.0%	0	0.0%
Block Group 3, Census Tract 636.03	1,596	55	3.4%	17	1.1%	31	1.9%	0	0.0%	7	0.4%
Block Group 4, Census Tract 636.03	996	23	2.3%	16	1.6%	7	0.7%	0	0.0%	0	0.0%
Block Group 5, Census Tract 636.03	1,859	186	10.0%	86	4.6%	100	5.4%	0	0.0%	0	0.0%
Block Group 1, Census Tract 636.04	1,335	94	7.0%	36	2.7%	58	4.3%	0	0.0%	0	0.0%
Block Group 2, Census Tract 636.04	1,824	202	11.1%	104	5.7%	98	5.4%	0	0.0%	0	0.0%
Block Group 3, Census Tract 636.04	2,298	85	3.7%	24	1.0%	61	2.7%	0	0.0%	0	0.0%
Block Group 1, Census Tract 636.05	1,301	49	3.8%	34	2.6%	15	1.2%	0	0.0%	0	0.0%
Block Group 2, Census Tract 636.05	1,926	50	2.6%	5	0.3%	29	1.5%	7	0.4%	9	0.5%
Block Group 3, Census Tract 636.05	949	70	7.4%	38	4.0%	32	3.4%	0	0.0%	0	0.0%
Block Group 4, Census Tract 636.05	1,518	89	5.9%	54	3.6%	35	2.3%	0	0.0%	0	0.0%
Block Group 1, Census Tract 636.06	1,229	42	3.4%	31	2.5%	11	0.9%	0	0.0%	0	0.0%
Block Group 2, Census Tract 636.06	1,648	68	4.1%	28	1.7%	40	2.4%	0	0.0%	0	0.0%
Block Group 1, Census Tract 637.02	1,050	85	8.1%	23	2.2%	26	2.5%	36	3.4%	0	0.0%
Block Group 2, Census Tract 637.02	1,505	163	10.8%	67	4.5%	86	5.7%	0	0.0%	10	0.7%
Block Group 3, Census Tract 637.02	1,869	118	6.3%	31	1.7%	67	3.6%	20	1.1%	0	0.0%
Block Group 1, Census Tract 653	807	42	5.2%	9	1.1%	33	4.1%	0	0.0%	0	0.0%
Block Group 2, Census Tract 653	2,213	288	13.0%	102	4.6%	168	7.6%	18	0.8%	0	0.0%
Block Group 3, Census Tract 653	915	26	2.8%	0	0.0%	14	1.5%	9	1.0%	3	0.3%
Block Group 4, Census Tract 653	2,597	206	7.9%	99	3.8%	95	3.7%	12	0.5%	0	0.0%
Block Group 5, Census Tract 653	1,141	26	2.3%	9	0.8%	17	1.5%	0	0.0%	0	0.0%
Block Group 6, Census Tract 653	1,978	43	2.2%	3	0.2%	17	0.9%	11	0.6%	12	0.6%
Block Group 1, Census Tract 654	952	35	3.7%	0	0.0%	35	3.7%	0	0.0%	0	0.0%
Block Group 2, Census Tract 654	161	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 1, Census Tract 655.01	2,323	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Block Group 2, Census Tract 655.01	2,635	52	2.0%	29	1.1%	23	0.9%	0	0.0%	0	0.0%
Block Group 1, Census Tract 655.02	2,266	20	0.9%	0	0.0%	13	0.6%	7	0.3%	0	0.0%
Block Group 2, Census Tract 655.02	2,092	18	0.9%	0	0.0%	18	0.9%	0	0.0%	0	0.0%
Block Group 1, Census Tract 658	750	117	15.6%	37	4.9%	55	7.3%	25	3.3%	0	0.0%
Block Group 2, Census Tract 658	1,255	74	5.9%	23	1.8%	45	3.6%	0	0.0%	6	0.5%
Block Group 1, Census Tract 659	757	39	5.2%	9	1.2%	23	3.0%	1	0.1%	6	0.8%
Block Group 2, Census Tract 659	706	65	9.2%	23	3.3%	36	5.1%	0	0.0%	6	0.8%
Block Group 1, Census Tract 668	1,034	221	21.4%	124	12.0%	93	9.0%	0	0.0%	4	0.4%
Block Group 9, Census Tract 668	3,307	24	0.7%	14	0.4%	8	0.2%	2	0.1%	0	0.0%

Census divisions that intersect the study area

Source: U.S. Bureau of the Census, Census 2000, Summary File 3

Table 4.3
Population by Age

Census Boundary	Total population	Population: 0-17 Years	Percent of Total	Population: 18-61 Years	Percent of Total	Population: 62 and Over	Percent of Total
United States	281,421,906	72,142,757	25.6%	168,027,646	59.7%	41,251,503	14.7%
Kentucky	4,041,769	993,841	24.6%	2,446,567	60.5%	601,361	14.9%
Kenton County	151,464	39,870	26.3%	91,726	60.6%	19,868	13.1%
City of Covington	43,348	11,280	26.0%	26,037	60.1%	6,031	13.9%
City of Erlanger	16,764	4,484	26.7%	9,972	59.5%	2,308	13.8%
City of Independence	14,941	4,268	28.6%	9,373	62.7%	1,300	8.7%
City of Latonia Lakes	335	89	26.6%	186	55.5%	60	17.9%
City of Taylor Mill	7,144	1,933	27.1%	4,323	60.5%	888	12.4%
Census Tract 636.03	6,674	2,059	30.9%	4,305	64.5%	310	4.6%
Census Tract 636.04	5,457	1,706	31.3%	3,447	63.2%	304	5.6%
Census Tract 636.05	5,694	1,623	28.5%	3,458	60.7%	613	10.8%
Census Tract 636.06	2,877	831	28.9%	1,763	61.3%	283	9.8%
Census Tract 637.02	4,424	1,248	28.2%	2,656	60.0%	520	11.8%
Census Tract 653	9,651	2,880	29.8%	5,788	60.0%	983	10.2%
Census Tract 654	1,113	174	15.6%	723	65.0%	216	19.4%
Census Tract 655.01	4,958	1,396	28.2%	3,158	63.7%	374	7.5%
Census Tract 655.02	4,358	1,437	33.0%	2,546	58.4%	375	8.6%
Census Tract 658	2,005	453	22.6%	1,175	58.6%	377	18.8%
Census Tract 659	1,463	349	23.9%	874	59.7%	240	16.4%
Census Tract 668	4,341	1,524	35.1%	2,588	59.6%	229	5.3%
Block Group 1, Census Tract 636.03	1,105	296	26.8%	734	66.4%	75	6.8%
Block Group 2, Census Tract 636.03	1,118	314	28.1%	740	66.2%	64	5.7%
Block Group 3, Census Tract 636.03	1,596	571	35.8%	1,010	63.3%	15	0.9%
Block Group 4, Census Tract 636.03	996	324	32.5%	608	61.0%	64	6.4%
Block Group 5, Census Tract 636.03	1,859	554	29.8%	1,213	65.3%	92	4.9%
Block Group 1, Census Tract 636.04	1,335	421	31.5%	864	64.7%	50	3.7%
Block Group 2, Census Tract 636.04	1,824	580	31.8%	1,155	63.3%	89	4.9%
Block Group 3, Census Tract 636.04	2,298	705	30.7%	1,428	62.1%	165	7.2%
Block Group 1, Census Tract 636.05	1,301	372	28.6%	844	64.9%	85	6.5%
Block Group 2, Census Tract 636.05	1,926	600	31.2%	1,186	61.6%	140	7.3%
Block Group 3, Census Tract 636.05	949	308	32.5%	525	55.3%	116	12.2%
Block Group 4, Census Tract 636.05	1,518	343	22.6%	903	59.5%	272	17.9%
Block Group 1, Census Tract 636.06	1,229	397	32.3%	740	60.2%	92	7.5%
Block Group 2, Census Tract 636.06	1,648	434	26.3%	1,023	62.1%	191	11.6%
Block Group 1, Census Tract 637.02	1,050	341	32.5%	528	50.3%	181	17.2%
Block Group 2, Census Tract 637.02	1,505	440	29.2%	912	60.6%	153	10.2%
Block Group 3, Census Tract 637.02	1,869	467	25.0%	1,216	65.1%	186	10.0%
Block Group 1, Census Tract 653	807	161	20.0%	564	69.9%	82	10.2%
Block Group 2, Census Tract 653	2,213	786	35.5%	1,323	59.8%	104	4.7%
Block Group 3, Census Tract 653	915	201	22.0%	536	58.6%	178	19.5%
Block Group 4, Census Tract 653	2,597	665	25.6%	1,556	59.9%	376	14.5%
Block Group 5, Census Tract 653	1,141	458	40.1%	665	58.3%	18	1.6%
Block Group 6, Census Tract 653	1,978	609	30.8%	1,144	57.8%	225	11.4%
Block Group 1, Census Tract 654	952	124	13.0%	636	66.8%	192	20.2%
Block Group 2, Census Tract 654	161	50	31.1%	87	54.0%	24	14.9%
Block Group 1, Census Tract 655.01	2,323	663	28.5%	1,402	60.4%	245	10.5%
Block Group 2, Census Tract 655.01	2,635	733	27.8%	1,756	66.6%	129	4.9%
Block Group 1, Census Tract 655.02	2,266	651	28.7%	1,352	59.7%	263	11.6%
Block Group 2, Census Tract 655.02	2,092	786	37.6%	1,194	57.1%	112	5.4%
Block Group 1, Census Tract 658	750	169	22.5%	417	55.6%	164	21.9%
Block Group 2, Census Tract 658	1,255	284	22.6%	758	60.4%	213	17.0%
Block Group 1, Census Tract 659	757	195	25.8%	474	62.6%	88	11.6%
Block Group 2, Census Tract 659	706	154	21.8%	400	56.7%	152	21.5%
Block Group 1, Census Tract 668	1,034	346	33.5%	573	55.4%	115	11.1%
Block Group 9, Census Tract 668	3,307	1,178	35.6%	2,015	60.9%	114	3.4%

Census divisions that intersect the study area

Source: U.S. Bureau of the Census, Census 2000, Summary File 3

Table 4.4
Population by Disability

Census Boundary	Total population	Population with One or more disabilities	Percent of Total
United States	281,421,906	38,305,189	13.6%
Kentucky	4,041,769	532,759	13.2%
Kenton County	151,464	18,451	12.2%
City of Covington	43,348	6,274	14.5%
City of Erlanger	16,764	2,217	13.2%
City of Independence	14,941	1,352	9.0%
City of Latonia Lakes	335	73	21.8%
City of Taylor Mill	7,144	690	9.7%
Census Tract 636.03	6,674	813	12.2%
Census Tract 636.04	5,457	603	11.1%
Census Tract 636.05	5,694	425	7.5%
Census Tract 636.06	2,877	281	9.8%
Census Tract 637.02	4,424	448	10.1%
Census Tract 653	9,651	860	8.9%
Census Tract 654	1,113	135	12.1%
Census Tract 655.01	4,958	547	11.0%
Census Tract 655.02	4,358	477	10.9%
Census Tract 658	2,005	240	12.0%
Census Tract 659	1,463	240	16.4%
Census Tract 668	4,341	387	8.9%
Block Group 1, Census Tract 636.03	1,105	103	9.3%
Block Group 2, Census Tract 636.03	1,118	188	16.8%
Block Group 3, Census Tract 636.03	1,596	86	5.4%
Block Group 4, Census Tract 636.03	996	113	11.3%
Block Group 5, Census Tract 636.03	1,859	323	17.4%
Block Group 1, Census Tract 636.04	1,335	101	7.6%
Block Group 2, Census Tract 636.04	1,824	256	14.0%
Block Group 3, Census Tract 636.04	2,298	246	10.7%
Block Group 1, Census Tract 636.05	1,301	115	8.8%
Block Group 2, Census Tract 636.05	1,926	98	5.1%
Block Group 3, Census Tract 636.05	949	99	10.4%
Block Group 4, Census Tract 636.05	1,518	113	7.4%
Block Group 1, Census Tract 636.06	1,229	108	8.8%
Block Group 2, Census Tract 636.06	1,648	173	10.5%
Block Group 1, Census Tract 637.02	1,050	69	6.6%
Block Group 2, Census Tract 637.02	1,505	188	12.5%
Block Group 3, Census Tract 637.02	1,869	191	10.2%
Block Group 1, Census Tract 653	807	59	7.3%
Block Group 2, Census Tract 653	2,213	139	6.3%
Block Group 3, Census Tract 653	915	136	14.9%
Block Group 4, Census Tract 653	2,597	281	10.8%
Block Group 5, Census Tract 653	1,141	91	8.0%
Block Group 6, Census Tract 653	1,978	154	7.8%
Block Group 1, Census Tract 654	952	85	8.9%
Block Group 2, Census Tract 654	161	50	31.1%
Block Group 1, Census Tract 655.01	2,323	362	15.6%
Block Group 2, Census Tract 655.01	2,635	185	7.0%
Block Group 1, Census Tract 655.02	2,266	244	10.8%
Block Group 2, Census Tract 655.02	2,092	233	11.1%
Block Group 1, Census Tract 658	750	128	17.1%
Block Group 2, Census Tract 658	1,255	112	8.9%
Block Group 1, Census Tract 659	757	141	18.6%
Block Group 2, Census Tract 659	706	99	14.0%
Block Group 1, Census Tract 668	1,034	101	9.8%
Block Group 9, Census Tract 668	3,307	286	8.6%

Census divisions that intersect the study area

Source: U.S. Bureau of the Census, Census 2000, Summary File 3