FINDING OF NO SIGNIFICANT IMPACT

KY 32 Reconstruction from KY 504 in Elliottville to KY 7 in Newfoundland; Rowan and Elliott Counties, Kentucky

KYTC Item Number: 9-192.00

The proposed highway project involves the reconstruction of KY 32 in Rowan and Elliott counties. The project corridor begins at KY 504 near Elliottville and continues east to KY 7 near Newfoundland.

The purpose for the project is to provide a roadway having improved horizontal and vertical geometry compared with existing KY 32. Reconstructed KY 32 will be on new alignment for most of its 12.2-mile length, and will offer a roadway having improved geometrics compared with the existing roadway, which is substandard to contemporary design. The need for the improvement within the corridor is based on the existing road's substandard design, which includes horizontal and vertical geometric deficiencies; limited opportunities to pass (insufficient passing sight distance along 91% of its length); and narrow travel lanes (9 to 11 feet wide) with unpaved shoulders (2 to 3 feet wide) throughout most of the corridor. The predominant posted speed is 55 miles per hour (mph); however, the steep slopes and sharp curves require advisory signage to reduce the speed to 25, 35, or 45 mph at multiple locations.

An Environmental Assessment (EA) for this project was approved by the Kentucky Transportation Cabinet (KYTC) and by the Federal Highway Administration (FHWA) on June 27, 2013. FHWA independently reviewed the EA and, based on the review and analysis, finds that the EA analyzed and considered the relevant potential environmental impacts and issues. The EA was presented at a Public Hearing on October 10, 2013. Following the review of comments received from the Public Hearing, FHWA finds that (1) Alternative 3 is the Selected Alternative for the KY 32 Reconstruction project, (2) Alternative 3 best meets the purpose and the need of the project with the least amount of impacts to the resource areas, and (3) the proposed project would have no significant impacts on the quality of the human or natural environment under NEPA. Accordingly, preparation of an Environmental Impact Statement is not required.

Submitted Pursuant to 42 U.S.C. 4332(2)(c) by the U.S. Department of Transportation, Federal Highway Administration and Kentucky Transportation Cabinet, Division of Environmental Analysis

Division Administrator **Federal Highway Administration**	**Director of Division of Environmental Analysis** **Kentucky Transportation Cabinet**
5-7-14	4/24/14
Date	**Date**

Table of Contents

Table of Contents (*Continued*)

LIST OF FIGURES

LIST OF TABLES

LIST OF EXHIBITS

APPENDICES

(See CD on Inside Back Cover)

1.0 PURPOSE AND NEED

The proposed KY 32 highway project involves providing a roadway having improved geometry compared with existing KY 32. Chapter 1.0 describes the project study area and history, identifies the existing roadway facilities, and defines the project's purpose and need. More detailed discussion of the project is provided in the Environmental Assessment (EA), which is included with this Finding Of No Significant Impact (FONSI), on compact disk (CD) as Appendix A[1].

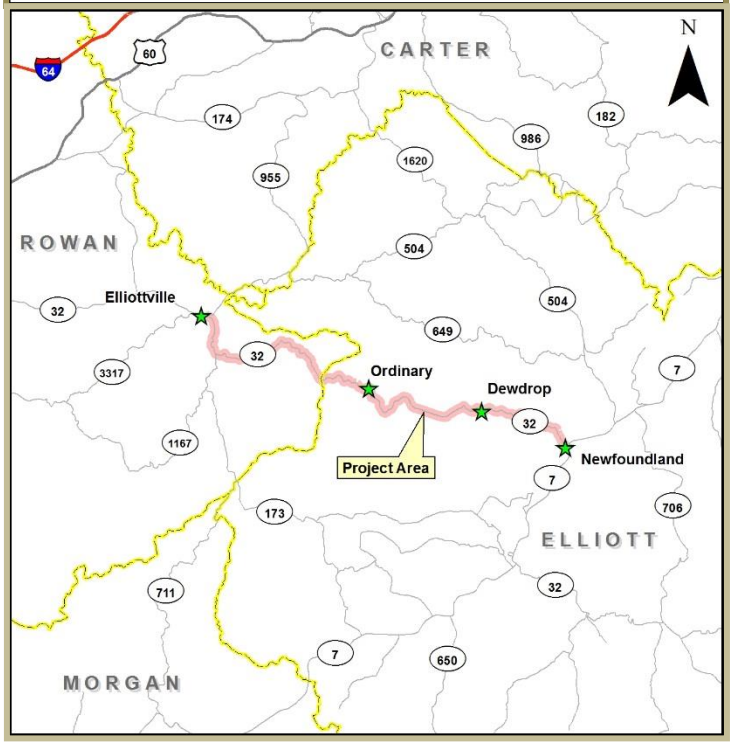

Figure 1 (top): Location Map

Figure 2 (bottom): Project Area

1.1 Project Description and Setting

KY 32 is a primary east-west roadway in Elliott and Rowan counties, in the mountainous region of northeastern Kentucky. The project corridor extends across the county line (see Figures 1 and 2). Both counties are within the Eastern Kentucky Coalfield physiographic region, and both are characterized by major topographical changes and rolling hills.

The project corridor begins at KY 504 in Elliottville in Rowan County and continues eastward to KY 7 in Newfoundland in Elliott County, a distance of approximately 13.7 miles. KY 32 is known locally as Hogtown Hill Road in Rowan County, up to its intersection with KY 173, and then it is known as Brown Ridge Road.

The Kentucky Tourism, Arts and Heritage Cabinet, the Kentucky Department of Travel, and the Kentucky Tourism Council promote the area's tourist and recreational attractions. In the project area, KY 32 provides access to Grayson Lake State Park, the Ed Mabry-Laurel Gorge Wildlife Management Area (WMA), and the Daniel Boone National Forest. Within the Daniel Boone National Forest lie Cave Run Lake and Pioneer Weapons WMA.

[1] References to chapters, tables, sections, figures, and exhibits that appear in the Environmental Assessment are preceded by "EA"; e.g., "EA Chapter...," "EA Table...," "EA Exhibit...." All other references to chapters, sections, tables, etc. are to those in this FONSI.

1.2 Description of Existing Facilities

The primary roadways serving the area are KY 32 and KY 173. KY 32 extends east-west through the project corridor as an undivided, two-lane road. Within the study area, KY 32 is classified in the Kentucky Transportation Cabinet (KYTC) Functional Classification System as a Rural Major Collector. KY 173 in Rowan and Elliott counties is a north-south tending, two-lane, undivided road that connects to KY 32 south of Elliottville, then extends 10.6 miles south and connects with KY 7 south of Sandy Hook. It provides an alternate connection (other than KY 32) to KY 7. KY 173 is classified in KYTC's Functional Classification System as a Rural Major Collector (see EA Section 1.1.3, *Major Roads in the Project Area,* for more detailed information). In addition to these roads, approximately 20 roads intersect with KY 32 in the project corridor to provide access to rural residences and farmland.

KYTC's Fiscal Year (FY) *2014–2016 Biennial Highway Construction Plan* includes reconstruction of KY 7 south of Sandy Hook for 7 miles to Morgan County (KYTC Item No. 9-228). This project is scheduled to be in the design phase in 2014. With the exception of the KY 32 reconstruction project that is the subject of this FONSI, there are no major projects programmed in the 2014 *Highway Plan* near the KY 32 project in Rowan County. In Elliott County, Sections of KY 7 currently under construction or previously reconstructed by KYTC include the following:

- Reconstruct KY 7 from Tobe Rowe Road (MP 10.8) to the Carter County line (MP 18.474). Under construction since Summer 2013. This is the last remaining section of KY 7 from Sandy Hook to the Carter County line to be upgraded. Total estimated cost $61 million. (KYTC Item No. 9-126.5)
- Reconstruct KY 7 from Cemetery Road (MP 8.7) to Tobe Rowe Road (MP 10.8) including bridge and approaches at Little Sandy River near Middle Fork Road. Let to construction in 1997. Total cost approximately $12 million. (KYTC Item Nos.9-117.00 and 9-117.01)
- Reconstruct KY 7 from KY 32 at Newfoundland (MP 10.8) to north of KY 706 (MP 13.3). Let to construction in 2002. Total cost approximately $20.5 million. Project started where Item No. 9-117 project stopped and extended the roadway improvement to the north. (KYTC Item No. 9-126.00)
- Reconstruct KY 7 from 0.2 mile northwest of the KY 32/KY 7 intersection (MP 7.2) in Sandy Hook to 0.8 mile south of KY 557 (MP 8.7). Let to construction in 2007. Total cost approximately $17 million. Project started south of Item No. 9-117 project near the KY 32/KY 7 intersection in Sandy Hook and extended to the beginning of the Item No. 9-117 project. (KYTC Item No. 9-293.01)

1.3 Project History and Current Status

2009 Planning Study. The Kentucky Enacted *Six-Year Highway Plan* Fiscal Year (FY) 2006–2012 included the *KY 32 Alternatives Study* to consider the reconstruction of KY 32 between KY 507 and KY 7. The *KY 32 Alternatives Study*, completed in November 2009, identified a purpose and need, traffic characteristics, environmental issues, cost estimates, construction considerations, and project recommendations. KYTC studied many combinations of alignments, and advanced the No-Build Alternative and the following build alternatives for detailed evaluation in the EA: lower cost, short-term spot improvements to the existing road (Alternative 1A), and an improved route in the vicinity of the existing alignment (Alternatives 1B, 2A, and 3).

2010-2013 Preliminary Engineering and Environmental Analysis. The recommended alternatives from the Planning Study were carried forward in this phase of this project, as presented in detail in EA Chapter 2.0, *Proposed Alternative Concepts.* During this phase the 12.2-mile project was included in the

2012–2018 Six Year Highway Plan (published May 2012) as two item numbers: 9-192.00 and 9-192.01, as follows:

2012-2018 Six Year Highway Plan

County	Item No.	Route		Funding	Phase	Year	Amount
Elliott Rowan	2006 09-192.01 Parent No.: 2006 09-192.00	KY 32	Reconstruct KY-32 from KY-504 near Elliottville to KY-76 Near Newfoundland Mile points: from 0 to: 8.656 Mile points: from 16.619 to: 21.636 Purpose and Need: Reliability / Reconstruction	STP STP STP STP	D R U C	2012 2013 2013 2015 Total	$3.8M $6.0M $3.0M $20.0M $32.8M

To initiate the preliminary engineering and environmental phase, a stakeholders' meeting with state and local officials and other interested parties was held on January 27, 2011. The participants identified problems to be corrected, needs to be addressed, and issues to be considered during the alternatives development and evaluation process. Additional stakeholders' meetings were held on February 25, 2011, and September 7, 2011, and November 1, 2012. Public meetings were held on February 17, 2011, and October 27, 2011, to present the project alternatives to citizens in the area. Attendees were afforded the opportunity to provide their suggestions and comments.

The EA was approved by FHWA and KYTC on June 27, 2013, and the EA and the alternatives examined within it were presented at a Public Hearing on October 10, 2013. A preferred alternative, Alternative 3, was identified in the EA and presented at the Public Hearing. A summary of the comments submitted at or following the Public Hearing are included in Chapter 4.0, *Public Involvement.* The submitted comment forms are in Appendix B. **This FONSI identifies Alternative 3 as the Selected Alternative for reasons discussed in Chapter 2.0, *Selected Alternative.***

Current Status. Following the Public Hearing, the 2012 Six Year Highway Plan expired and the Kentucky General Assembly has enacted a new plan, the *2014-2016 Biennial Highway Construction Plan* (enacted April 15, 2014). The project is included in the new plan as follows:

2014-2015 Biennial Highway Construction Plan

County	Item No.	Route		Funds	Phase	Year	Amount
Elliott	09-192.01	KY 32	Reconstruct KY-32 from 0.408 miles west of Stegall Cold Spring Road to KY-7 near Newfoundland (Priority Section I)	STP STP STP STP	DN RW UT CN	2014 2015 2015 2016 Total	$3.80 M $7.72 M $5.00 M $13.00 M $29.52 M

Though the 9-192.01 section is defined as Priority Section I, encompassing approximately the eastern half of the project, the money programmed for Design in 2014 ($3.8M) will be used to develop construction plans for the entire project length. The Kentucky General Assembly also provided for an additional $30 million of STP funds for Construction of this same section in FY 2017 under Item No. 9-192.07, as shown below. Therefore the total funding for construction through 2017 for Priority Section 1 is $43 million and the overall funding is $59.52 million. There is currently no funding programmed for right-of-way acquisition, utility relocation, or construction of the remainder of the project. Along with other statewide priorities, funding for the remaining section of the project will be considered for inclusion in future highway plans.

2014-2020 Highway Construction Plan

County	Item No.	Route		Funds	Phase	Year	Amount
Elliott	09-192.07	KY 32	Reconstruct KY-32 from 0.408 miles west of Stegall Cold Spring Road to KY-7 near Newfoundland (Priority Section I)	STP	CN	2017	$30.00 M

1.4 Project Purpose and Need

The KY 32 project would result in an improved section of a major east-west highway corridor through Rowan and Elliott counties in a rural section of northeastern Kentucky. The purpose and need for the KY 32 project are summarized as follows:

Purpose. To provide a roadway having improved horizontal and vertical geometry compared with existing KY 32.

Need. Existing KY 32 is a two-lane facility that was constructed in the early 1930s and **has substandard geometry throughout most of its 13.7-mile-long corridor.** The road is a primary east-west roadway in Elliott and Rowan counties, and provides connectivity among residential areas, the county seats, health services, educational institutions, and economic activity centers. The project area's topography is characterized by rolling terrain, with steep hills and valleys. KY 32 is constructed along a ridgetop and has numerous hills and curves. The existing conditions along the roadway corridor include:

- Substandard horizontal and vertical alignments (*i. e.*, steep slopes and sharp curves) throughout the corridor.
- Few opportunities to pass, and insufficient passing sight distance along 91% of its length.
- Narrow, asphalt pavement (9- to 11-foot-wide lane widths) throughout.
- Narrow (2- to 3-foot-wide) unpaved shoulders throughout most of the corridor.
- Predominant posted speed of 55 miles per hour (mph) with advisory signs of 25, 35, or 45 mph at multiple locations.

Based on current design standards, over 90% of the vertical curves (hills) do not meet 55 mph design speed, and approximately 85% of the horizontal curves do not meet 55 mph design speed. Likewise, there are many curves and hills that do not meet 45, 35, or even 25 mph design speeds, and many spots have a substandard curve on a substandard hill. The substandard geometry affects driving safety by reducing sight distances and restricting stopping or avoidance options when an obstruction in the roadway is encountered. Passing opportunities are limited to only one short stretch of the road, which adds to the safety problems.

Goals. In addition to the purpose and need to improve the horizontal and vertical geometry of the road, three goals of the project have been identified: improve safety, improve travel time, and enhance scenic vistas.

Safety—During the 2009 *KY 32 Alternatives Study* and at the January/February 2011 stakeholder/public meetings, safety was listed as the top concern. Some emergency responders have stated that, when possible, they will use an alternate route rather than KY 32 to avoid hazardous conditions (including narrow, curving roadway and poor stopping sight distance) and delays due to lack of passing opportunities. Improved geometry would contribute to a solution to safety problems by reducing the potential for crashes, and would, thereby, address the top public concern.

Travel Time—A second goal of the project, based on input from the stakeholders and the public, is to improve travel efficiency within a corridor. Travel speed is currently below the posted speed limits on KY 32 due to the road's substandard horizontal and vertical alignments, short sight and stopping distances, narrow driving lanes and limited shoulder pavement, and low design speeds in some locations. Benefits to efficient travel within the corridor would include reducing traffic on local roads, particularly KY 173, by attracting traffic to the improved KY 32.

Scenic Vistas—A third goal of the project is to provide scenic vistas. As KY 32 is a ridgetop road, in certain locations the viewsheds from the road extend to the horizon. The preservation and enhancement of viewsheds are of value to the citizens and stakeholders, and a key element in local tourism.

More detailed route data that reveal the extent of the deficiencies indicating the need for improvements to the facility are included in EA Section 1.2, *Purpose and Need, Goals*.

1.4.1 Transportation Demand, Capacity, and Level of Service

Baseline traffic volumes were obtained for the year 2012, and traffic projections were developed for 2035 (design year) to determine how KY 32 would function if no improvements beyond normal maintenance were made during that time period (i.e., the No-Build Alternative). A level of service analysis was conducted for the existing and projected scenarios. EA Table 3 presents the results of the traffic analysis, including average daily traffic volumes (ADT), levels of service (LOS) and percent trucks. EA Exhibit 2 shows the baseline and projected traffic volumes and percent trucks for the build and no-build scenarios.

Traffic, 2012 and 2035—In 2012 the average daily traffic (ADT) on KY 32 through the project corridor ranged from 500 to 2,200 vehicles per day (vpd), with the highest volume (2,200) occurring at the beginning of the project corridor, in Section 1, between KY 504 and KY 173.

With Alternatives 1A, 1B, or 2A or the No-Build Alternative (i.e., no major construction activity on KY 32), traffic volumes are projected to range from 700 to 3,100 vpd—an approximately 41% increase in the Elliottville area and a 44% increase on KY 32 through the majority of the remaining corridor, including the Newfoundland area. With Selected Alternative 3, traffic volumes are projected to range from 900 to 3,100 vpd—also an increase of 41% in the Elliottville area and a 67% increase on KY 32 through the majority of the remaining corridor, including the Newfoundland area. The projected increase in traffic volumes is primarily attributable to traffic being attracted from other area roadways to the improved KY32.

LOS, 2012 and 2035—Level of service is a qualitative measure of expected traffic conflicts, delay, driver discomfort, and congestion. 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). The year 2012 LOS for KY 32 in the study area is an “A,” with the exception of the section near Elliottville, which rates LOS “B.” LOS levels anticipated for the build year (2035) are the same for the no-build and all build alternatives. The 2035 LOS level in the section of KY 32 from Mile Point 19.3 to 5.2 will remain “A.” The LOS levels of all other sections are projected to decrease one letter. The decrease may be attributed to increased traffic volumes in the future as well as a projected 1% increase in truck traffic.

1.4.2 Safety/Crash Analysis

Crash and traffic data provided by KYTC were used to identify roadway sections with abnormally high crash rates, thus indicating a possible need for safety improvements. Crash analysis procedures involve assigning reported crashes to roadway locations by mile point, and classifying them by severity into one of three categories: fatal, injury, or property damage only (PDO). Then, the average crash rates for roadway sections of various lengths are determined. Generally, the entire roadway length under study is analyzed, followed by successively smaller roadway sections, especially those containing higher concentrations of crashes.

For this study, crash data for KY 32 in the project area was analyzed from calendar year 2008 to 2010 (see EA Tables 4a and 4b). The KYTC crash database for the study period listed 0 fatalities, 9 injuries, and 16 PDO crashes. The traffic crash analysis indicates that five "spot" sections of KY 32 along the project corridor are each experiencing a Critical Rate Factor of 1.00 or greater, which indicates a statistically high crash location. EA Table 4b lists these locations, which are illustrated in Figure 3 herein. Poor/restricted visibility, speed differentials between vehicles, combined with a roadway not meeting current design standards, are the likely contributing factors for the high crash rates on KY 32. This assumption is supported by the documented poor visibility on these roadways, few opportunities to pass and insufficient passing sight distance along 91% of its length. Although the posted speed limit on KY 32 is 55 mph, these factors make driving at the posted speed unsafe and, in many locations, not practicable. More detailed crash and traffic data are provided in EA Section 1.4, *Safety/Crash Analysis.*

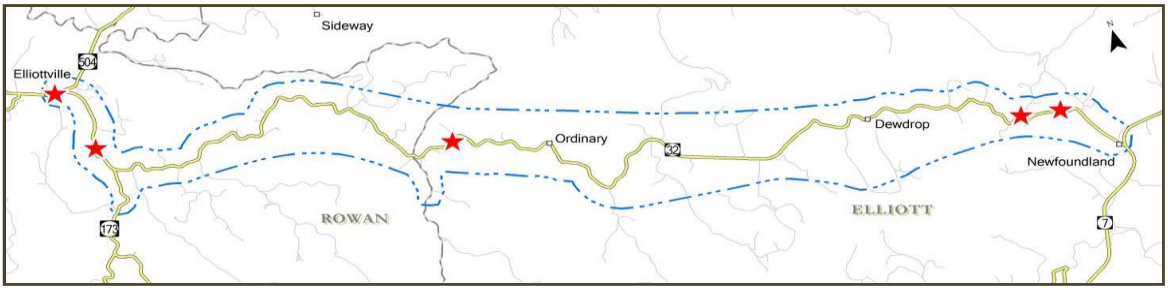

Figure 3: Crash Spot Locations

1.4.3 System Linkage and Logical Termini

As previously noted, the road is a primary east-west roadway in Elliott and Rowan counties, and provides connectivity among residential areas, the county seats, health services, educational institutions, and economic activity centers. The project's northern terminus is the intersection with KY 504 in Elliottville. The project's eastern terminus, KY 7, was selected because it is a state road and shares alignment with KY 32 as it travels south to Sandy Hook. These termini match those identified in the 2009 *KY 32 Alternatives Study*, and have been coordinated with FHWA, KYTC, resource agencies, and stakeholders.

2.0 SELECTED ALTERNATIVE

Throughout the project development, various alternative concepts and alignments have been studied. Alternatives that could meet the purpose and need for the project were identified and given consideration. Starting from a wide range of alternatives, the number of alternatives was reduced as more detailed information was collected and analyzed. Purpose and need, environmental factors, engineering feasibility, public comment, and cost were evaluated during the alternatives screening process. The following alternatives were advanced for detailed evaluation in the EA:

- A No-Build ("Do Nothing") Alternative
- Rebuild the existing road either in total or in selected locations ("spot" improvements) (Alternatives 1A, 1B, and 2A)
- Build a road on new alignment within the same general roadway corridor (Alternative 3)

2.1 Alternatives Not Recommended

No-Build Alternative. The No-Build Alternative was considered and rejected because it would not meet the stated purpose and need of the proposed project; and would be expected to result in progressively deteriorating conditions for safe, efficient, and economical (time and money) vehicular traffic movement that would, in turn, impede improvement of the roadway. Selecting the No-Build Alternative would decrease mobility and fail to provide an adequate road; public safety would continue to be a concern.

Alternative 1A. This alternative was not recommended because it would not meet the purpose and need of the project, primarily by the failure to effectively improve roadway geometry. In addition, its combination of spot improvements would require the second highest number or relocations (15); and it is the only alternative that would have an Adverse Effect to and Section 4(f) use of a historic property (The Black-Caudill Log House). It was advanced to the EA stage due to public support.

Alternative 1B. This alternative would meet the project's purpose and need; however, it was not recommended because it would have the most relocations (22 residences and 1 cemetery), and, at $200 million, would be the most expensive to construct.

Alternative 2A. This alternative would also meet the project's purpose and need; however, it was not recommended because it would have the second highest construction cost, estimated at $175 million, and would acquire12 residences and 1 cemetery. Also, the overall public comments for this alternative were not supportive.

It is important to note that widening a road that is located along a ridge, as is KY 32, requires fill rock and dirt to build up the foundation so it will support the widened road and provide adequate slopes for safety and drainage. Fill can be obtained either onsite, as is often the case where a road is to be constructed on new alignment; or offsite, which is generally the case when a road is to be widened or reconstructed along its existing path. With regard to the KY 32 project, each of the build alternatives would require a substantial amount of fill material. However, the fill material required for Alternatives 1A, 1B, and 2A, would have to be obtained offsite; i.e., from sites other than the state purchased right-of-way. The area of land that would be disturbed to obtain the material would depend on the depth of the material at the site. The potential impacts to offsite borrow location(s) cannot be quantified because the locations are not chosen until a project reaches construction. When offsite areas are required, obtaining and transporting the fill material to the construction site could have substantial environmental impacts. This information is displayed graphically in EA Figure 9.

2.2 Selected Alternative—Build Alternative 3

Alternative 3. Beginning at KY 504 in Elliottville and extending the project corridor to KY 7 in Newfoundland, Alternative 3 is a proposed reconstruction of the corridor to 55-mph design speed, with 12-foot-wide driving lanes and 8-foot-wide paved shoulders. The design speed criteria requires flatter horizontal and vertical curves when compared to the other alternatives. Due to the poor geometry of existing KY 32, using the existing alignment is only minimally feasible. Since the proposed roadway would be on new alignment for most of its length, the existing road would continue to provide local access but would no longer be the area's primary east-west route. Where loss of direct road access to reconstructed KY 32 would occur, access would be restored via road realignment, and/or new connectors. The alternative would be approximately 12.2 miles in length, which is about 1.0 mile less than Alternatives 1B and 2A; and would provide, where practical, scenic vista pullovers, which has been a key request of stakeholders and the public.

With purpose and need met by Alternatives 1B, 2A, and 3; the other criteria—social and environmental impacts, engineering and design feasibility/constraints, Section 106 and Section 4(f) requirements, and project costs—were employed to evaluate the alternatives. **Based on the evaluation of these alternatives described throughout the EA, Alternative 3 is identified as the selected alternative**. Considerations for recommending Alternative 3 as the selected alternative include:

- Best meets purpose and need.
- Received the most public support of the build alternatives that meet purpose and need. In comments returned after the October 2011 public meeting, 58.1% favored advancing Alternative 3 further study vs. 36.4% for Alternative 1B and 25.5% for Alternative 2A.
- The only alternative primarily on new alignment; therefore, fill material to be used in the road's construction could be obtained from within the footprint of the proposed right-of-way, which is in contrast with the other three build alternatives.
- Has the fewest residential relocations, no cemetery relocations, and the best opportunity for scenic pullovers and other enhancements.
- Horizontal and vertical alignments will meet AASHTO and KYTC design standards.
- Best for maintenance of traffic during construction.
- Approximately 1.0 mile shorter than Alternatives 1B and 2A, and, at an estimated $106 million, is the least expensive of the alternatives that extend the full length of the corridor.

With Alternative 3, traffic volumes are projected to range from 900 to 3,100 vpd by the design year 2035—an increase of 41% in the Elliottville area and a 67% increase on KY 32 through most of the remaining corridor. The projected increase in traffic volumes is primarily attributable to traffic being attracted from other area roadways to the improved KY 32. Such traffic would include emergency responders and others who now use longer, alternate routes to avoid hazardous conditions along existing KY 32. Estimated costs associated with Selected Alternative 3 are shown below:

Selected Alternative 3—Estimated Costs (2012 dollars)

Right of Way:	$5,000,000
Utilities:	$1,000,000
Construction:	$100,000,000
Total:	**$106,000,000**

Regarding construction, the project will be implemented in two phases—an eastern section and a western section. Per the recently enacted 2014-2016 *Highway Plan,* the first section will be the eastern portion of the corridor, from Stegall Cold Spring Road (which is near the middle of the project corridor) east to KY 7 at Newfoundland (the eastern terminus). The eastern portion will be constructed first because it will tie into the recently rebuilt KY 7.

Table 1 summarizes selected design information and environmental impacts of Selected Alternative 3. Exhibit 1 shows the selected alternative's proposed location together with existing land uses, and Exhibit 2 shows the environmental constraints along the proposed alignment. (EA Table 5, *KY 32 Potential Build Alternative Impacts*, compares Alternative 3 with the other build alternatives evaluated in the EA.)

Table 1: Selected Alternative 3—Summary of Environmental Impacts

Potential Impacts	Alternative 3 55-mph design speed thru all of corridor; mostly new alignment
Meets Purpose and Need	Yes
Length	12.2 miles
Right-of-Way	600+/- acres
Relocations / Displacements	11 - Residential 0 - Commercial
Environmental Justice	No adverse and disproportionate effects to 5 EJ-status relocations; relocation of 1 EJ household is considered to have a **potentially adverse effect,** but not disproportionately high. All relocations (EJ and non-EJ) will be will receive assistance via the KYTC relocation assistance and *Uniform Relocation Act* process.
Air Quality	No air quality standard exceedance predicted. Project in compliance with SIP for attainment & maintenance of State and National AAQS.
Noise Levels	No sites approach/ exceed NAC; no 3 dBA or greater increase compared to No-Build; no substantial (10 dBA) increase.
Cemetery Relocations	0
Potential HAZMAT Sites	3
Aesthetic Impacts	View of Road: potential negative visual impact. View from Road: scenic & best opportunity for pullover areas.
Streams *(Linear Feet in right-of-way)* Perennial Intermittent Ephemeral Total	 755 lf 21,710 lf 14,450 lf 36,915 lf
Open Water (Ponds) *(Acres in right-of-way)*	2.04 acres
Wetlands *(Acres in right-of-way)*	1.45 acres
Woodland *(Acres in right-of-way)* Mature Woods Young Woods Total	 318 acres 22 acres 340 acres
Historic Sites (6 sites eligible): Section 106 Effect Determination Section 4(f) Use	 "No Effect" at 4 sites; "No Adverse Effect" at 2 sites: EL-26 & EL-38 *de minimis* at sites EL-26 & EL-38
Fill Material *(Cubic yards, estimated)**	7.0 million cubic yards

* *For Alternative 3, the material would come from within the proposed right-of-way, after the land has been acquired by KYTC. Should another build alternative be selected, the contractor would be responsible for obtaining the needed material at an offsite location of his or her selection prior to the initiation of construction.*

3.0 ENVIRONMENTAL IMPACTS

3.1 Land Use

Both Elliott and Rowan counties' land uses are predominantly agricultural and rural residential and the majority of the land along the existing KY 32 roadway is either agricultural, single-family rural residential, or undeveloped hilly and wooded. Isolated commercial developments occupy some parcels along the road, with businesses and community institutions and services located in the Elliott and Rowan county seats of Sandy Hook and Morehead, respectively. These communities are the economic activity centers in each county. Also located along KY 32 in Elliott County are the unincorporated, named communities of Ordinary and Dewdrop, at approximately mile points 1.6 and 4.8, respectively. Table 2 summarizes the land use data by type and approximate acreage within the right-of-way (ROW) of the selected alternative.

Table 2: Selected Alternative 3—Estimated Direct Land Use Impacts

Land Uses	Total Acres in Study Area	Acres in ROW
Agricultural (excludes forestry) **/ Open Fields**	542	238
Developed (includes residential, commercial, roads, utilities, etc.)	81	15
Woodlands (Mature and Young Woods)	599	340
Wetlands	3	2
Open Water (Ponds)	6	2
Streams	4	3
Total Acres (rounded)	**1,235 ac.**	**600 ac.**

Source: Ecological Assessment Report (August 10, 2012).

3.2 Compatibility With Regional and Community Plans

Rowan County falls under the jurisdiction of the Gateway Area Development District (ADD) and Elliott County falls under the five-county FIVCO ADD. There are no current land use plans, or development controls such as zoning ordinances or subdivision regulations (with the exception of the City of Morehead) for the rural areas of Rowan County or Elliott County. It is anticipated that most, if not all, future development resulting from the project would be minor, potentially tourist-related, and located along KY 32 in or around the communities of Elliottville and Newfoundland.

Design funds for the development of construction plans for the entire corridor have been included in the recently enacted *FY 2014–2016 Biennial Highway Construction Plan* under Item Number 9-192.01. The eastern section of the KY 32 project has been identified as Priority Section I and includes funding for right-of-way acquisition and utilities work for FY 2015 and construction for FY 2016. Additional construction funds have also been programmed for Priority Section I in FY 2017 (Item number 9-192.07).

There are no other major projects programmed in the *2014-2016 Highway Plan* near the KY 32 project in Rowan County. In Elliott County, the *Highway Plan* includes reconstruction of KY 7 in two locations: south of Sandy Hook for 7 miles to Morgan County (KYTC Item No. 9-228), and north of KY 706 for 5 miles to Carter County (KYTC Item No. 9-126.51) currently under construction. This southern project is scheduled to be in the design phase in 2014. In 2002-2003, KY 7 from Sandy Hook north, past Newfoundland (the eastern terminus of the KY 32 project), to north of KY 706 was reconstructed by KYTC (Item No. 9-126.00). Combined, these three projects will result in a reconstructed KY 7 through Elliott County, and will improve the connection to I-64 in Carter County.

3.3 Farmland Impacts

The farmland in the project corridor is used for livestock grazing, limited crop cultivation (corn, hay, and tobacco), and forest. No agricultural districts are in or near the project area. The rural nature of the project area would make some farmland impacts unavoidable with any build alternative.

Formal consultation with the USDA's Rowan and Elliott counties' offices of the Natural Resources Conservation Service (NRCS) for compliance with the *Farmland Protection Policy Act of 1981* has been completed (see EA Appendix A). In accordance with state and federal regulations concerning farmland protection, the "Farmland Conversion Impact Rating for Corridor Type Projects, Form CPA-106" was used to evaluate this project's effect on farmland. The returned forms included the NRCS-assigned "Relative Value" of the farmland to be converted (scale of 0–100), per alternative for both Elliott and Rowan counties. Ten corridor assessment criteria listed on Form CPA-106 were then applied to each alternative within each county. The criteria have assigned values ranging from 0-5 to 0-25 points. The relative value and corridor assessment points are combined to provide a total score per alternative. USDA recommends in 7 CFR 658.4(c)(3) that "sites receiving scores totaling 160 or more be given increasingly higher levels of consideration for protection." The evaluation results indicate about 3.0 acres of prime and unique farmland and 20.7 acres of statewide or local important farmland would be converted from agricultural to transportation use as a result of Selected Alternative 3. The CPA-106 Form's "Total Farmland Rating" totaled 78 for Elliott County and 75 for Rowan County. These evaluation results (see EA Table 7, *Potential Agricultural Impacts,* for details) would not be adverse and the protection of this farmland should not override the need for the project.

In the event farm operations are affected by the selected alternative, a relocation assistance specialist would be assigned to deal specifically with those farms affected. Loss of farmland for right-of-way or creation of an uneconomic remnant would be addressed during the right-of-way acquisition phase.

Selected Alternative 3 would require 7.0 million cubic yards of fill that would come entirely from within the future (state-purchased) right-of-way. All other build alternatives would require fill material from offsite: Alternatives 1A, 1B, and 2A were estimated to require 3.0, 6.5, and 5.0 million cubic yards, respectively (see EA Figure 9); and obtaining fill would result in substantial impacts, much of which would be to the open fields/agricultural lands that dominate the project area.

3.4 Community Impacts

The communities served by the project include the cities of Elliottville and Newfoundland at the project termini, and the named communities of Ordinary and Dewdrop. The proposed project would also serve many other residents of rural Rowan and Elliott counties by improving their transportation network and, thereby, providing access to regional centers of employment, health care, shopping, recreation, education, and other services.

EA Section 3.3, *Social and Economic Characteristics and Impacts*, contains a description of the general characteristics of the counties and communities within and surrounding the project corridor. EA Section 3.3.1 identifies socioeconomic and demographic characteristics including populations trends and projections; age distributions; racial characteristics; labor force characteristics and unemployment, employment by industry; income and poverty data, and residents' commuting patterns. Additional socioeconomic and demographic data is provided in EA Appendix B. EA Section 3.3.2 identifies community resources including health care and emergency services, educational facilities, churches and other institutions; parks, recreational areas, and a wildlife management area; shopping and business

areas; pedestrian and bicycle facilities; and public water sources. Since this information is current, not alternative-specific, and is available in the appended EA, it is not repeated herein.

Overall, the proposed project would not split community service boundaries; and it is expected to improve access to services and provide a safer, more efficient roadway for service providers (e.g., school buses and EMS vehicles).

3.5 Economic Impacts—Taxes and Revenues

Considering both positive and negative revenue impacts of the proposed project, the following issues were identified: tax revenue and a short-term construction income surge.

Potential Adverse Impacts. Each of the build alternatives would cause the direct conversion of private taxable property to non-taxable, government-owned right-of-way. The majority of land required is either open undeveloped agricultural land, or rural-residential. Constructing any proposed build alternative would result in the permanent removal of some land and buildings from the tax rolls. The taxable land loss would result in an initial minimal tax revenue loss to Rowan and Elliott counties. Some farmers could experience a loss in income or land value due to the partial taking of farm holdings for right-of-way. The farmers may also realize a reduction in gross agricultural wealth (value of production) and gross farm income due to the removal of land from production for right-of-way. The few small businesses bypassed by the construction of a road on new alignment could also experience revenue losses; however, other economic development could occur to offset such losses.

Potential Benefits. The short-term economic benefit of this proposed project would be expected to stimulate the local economy in terms of jobs, sales, income, government revenue and expenditures, and other variables.

Regarding long-term socioeconomic benefits, the proposed project is also expected to enhance the competitive and locational advantages for Rowan and Elliott counties. An improved roadway would improve freight accessibility, which would also lessen the transportation costs for businesses and industries. The American Community Survey (ACS)[2] five-year estimates (2006 to 2010) indicate that the populations of Elliott County and Rowan County are less wealthy than those in the rest of the state. The median household income of the state is $41,576, which is more than Elliott County and Rowan County ($22,097 and $31,604, respectively). Elliott and Rowan counties had higher percentages of their total populations living below the poverty level than the state (36.5% and 29.8%, respectively, versus the 17.7% state rate).

Although new development is not expected to locate along the proposed roadway solely as a result of implementing the proposed project, the improved transportation network would be expected to complement local efforts to encourage new employment opportunities and attract business to the area, as well as to enhance efforts of the Kentucky Tourism, Arts, and Heritage Cabinet, the Kentucky Department of Travel, and the Kentucky Tourism Council to promote this area's tourist and recreational attractions. An increase in tourism could increase business and employment opportunities in the two counties.

Stakeholders and the public have noted the value of the area's scenic vistas and recommend the following enhancements be included in the project design:

[2] The ACS is an ongoing survey that provides data every year—giving communities the current information needed to plan investments and services. Information from the survey generates data that help determine how federal and state funds are distributed each year.

- Constructing scenic pullovers along the roadway.
- Using the section(s) of existing KY 32 corridor that would remain in place as a multi-use path and tourism attraction. Suggested amenities included signage and facilities to accommodate users.

Selected Alternative 3 would provide the best opportunity for constructing scenic pullover areas and multi-use paths. KYTC commits to considering pullovers, multi-use paths, and associated enhancements and to establishing a stakeholders committee to review Phase II design plans for the potential to include such enhancements.

The overall *beneficial* socioeconomic impacts of implementing the project would be expected to outweigh the *negative* socioeconomic impacts. The project would provide an improved roadway that is constructed to current design and safety standards, thereby providing drivers with an alternative to existing KY 32. The project would provide improved access to the region's tourist industry attractions, increase overall travel speed, reduce travel time, and thereby improve the economy of travel by lowering operating costs. Accessibility, response time, and safety for law enforcement, fire protection, EMS, and school buses would be improved. Long-term economic benefits associated with regional accessibility could offset revenues lost. It is expected that the impacts to Rowan and Elliott counties' tax bases will not be significant in the long term.

3.6 Relocations and Displacements

Information was gathered by field visits and by reviewing planning documents and detailed mapping of the alignment options. Described below are the potential residential, commercial, and institutional relocations/displacements associated with Selected Alternative 3.

Residential Relocations. EA Section 3.4, *Relocations and Displacements,* identified 15 single-family residences that would be acquired for right-of-way for Alternative 3.

Since the publication of the EA, an alignment shift has resulted in the avoidance of one residence that would have been a relocation. That avoidance reduced the number of relocations to 14 with Selected Alternative 3. Additional research associated with a detailed environmental justice (EJ) analysis (see Section 3.7, *Environmental Justice*) revealed that three potentially relocated residences are currently vacant—two mobile homes and one single-family residence. Because one or all of these could be occupied in the future, they are still considered to be relocations, and are counted as such herein in the tally of potential residential relocation. As shown in Table 3 (Section 3.7, p. 21), the research identified owner- and renter-occupied residences within the right-of-way, elderly and disabled relocatees, and relocatees who meet the criteria for being members of EJ populations; .i.e., minorities and/or low income persons. Section 3.7 provides more detailed information regarding EJ issues associated with this project, including discussion of the vacant residences and the one residence that was avoided.

Within or adjacent to the proposed Alternative 3 right-of-way there are no apartment complexes or other multi-family dwellings, and no residence having five or more family members living therein. Ancillary building displacements (*i.e.*, barns, sheds, farm buildings, detached garages, etc.) are likely.

Commercial/Industrial Displacements. There would be no business displacements with selected Alternative 3.

Institutional or Non-profit Organizations Displacements. There would be no displacement of governmental, religious, non-profit, or other institutional establishments with selected Alternative 3.

Cemeteries. No impacts to cemeteries would occur with Selected Alternative 3.

To minimize the unavoidable effects of right-of-way acquisition and displacement of people, KYTC offers a Relocation Assistance Program in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (Public Law 91-646), as amended in 1987. Housing and relocation resources would be available to all residential and business relocatees without regard to race, creed, color, national origin, or economic status, as required by Title VI of the *Civil Rights Act of 1964*. Information about KYTC's Relocation Assistance Program is detailed in EA Section 3.4.

3.7 Environmental Justice

Title VI of the 1964 Civil Rights Act requires each federal agency to ensure that "no person, on the grounds of race, color or national origin, be excluded from participating in, denied the benefits of, or subjected to discrimination" under any program or activity receiving federal aid. Title VI implications on the transportation planning process were further refined on February 11, 1994, in Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The Executive Order requires each federal department and agency to "identify and address **disproportionately high and adverse human health or environmental effects** of their policies, programs and activities on minority populations or low income populations." On April 15, 1997, the U.S. Department of Transportation (USDOT) published DOT Order 5680-1 as a component of the June 29, 1995, Federal Highway Administration's *Environmental Justice Strategy*. The DOT Order, which appeared in the *Federal Register*, *Volume 62*, *Number 72*, describes the process USDOT implemented to incorporate environmental justice (EJ) principles into existing programs, policies, and activities. Most recently (May 2, 2012), FHWA issued DOT Order 5610.2(a), *Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, to provide additional guidance.

An **adverse effect** as a result of this roadway construction project is defined as a relocation that would cause some form of hardship on an EJ household, such as relocation outside the corridor, difficulty with child care, transportation, or other support that may no longer be available or may be difficult to obtain.

In accordance with FHWA environmental justice (EJ) policy and guidance, there are two key criteria for determining whether an action will cause minority populations or low-income populations an **adverse effect that is disproportionately high**: (1) the adverse effect is predominantly borne by a minority or low-income population, or (2) the adverse effect will be suffered by a minority 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 or non-low-income population.

The analysis to determine whether this proposed project would cause a disproportionately high and adverse effect on EJ populations has been conducted in a two-step process, described in the following sections.

3.7.1 Step 1: Initial Analysis

The first step was completed as part of the EA. As disclosed in EA Section 3.5, *Environmental Justice*, that analysis concluded the following:

- Because no known minorities live along the corridor, a disproportionately high impact to minorities is not anticipated**,** but further research will need to be conducted on a case-by-case basis before that determination is final.
- Because the percentages of low-income are high throughout the counties, and based on field observations, it is likely low-income individuals will be relocated.

The commitment was made in the EA to undertake the second step and conduct case-by-case research of residences within the right-of-way of the preferred alternative (now identified as Selected Alternative 3) to determine whether minority or low-income residents would be relocated and, if so, whether that impact would constitute a disproportionate and adverse effect on those residents. Thresholds identified in EA Section 3.5 for determining disproportionate impacts to EJ populations were based on the averages from the two counties for the following:

- Minorities, since the average of the counties of the "white alone" population is 96% (rounded), should 4% or more of the relocations be minorities, it would be determined to be a disproportionate impact. Alternative 3 would result in 15 relocations; therefore, should one of them (6.7%) be minority, adverse effects would be a disproportionate impact.
- Low-income, since the average of the counties of the people living at or below the poverty level is 33% (rounded), should more than 5 of the 15 relocations be low-income, adverse effects would be a disproportionate impact.

(Note: Step 2, conducted after the EA and discussed below, resulted in revisions to the number of relocations and % in each of these EJ categories.)

3.7.2 Step 2: Research and EJ Analysis Since the EA

Efforts to engage and interact with the public throughout the project included 10 on-site meetings/visits made with property owners (5 of them potential relocations) to discuss how the project plans affect their property or in an attempt to gather information about their household EJ evaluation.

Questionnaires. To fulfill the commitment for additional study to determine the EJ status of and potential impacts to residential relocatees identified in the EA, research was initiated with the mailing of questionnaires to 15 owners of residences that would potentially be relocated by Alternative 3. A letter that accompanied the questionnaire explained the need to collect information about the household occupants such as age, disability status, minority status, limited English proficiency, availability to transportation, and taxable income. In addition, the KYTC District Environmental Coordinator made several attempts to call each potential relocatee to ensure that the questionnaires were received and to offer assistance in completing the questionnaire, if needed.

As a result of the follow-up calls, word of mouth within the community, and on-site meetings with some property owners, it was learned that potential relocatees included residents not only of owner-occupied residences, but also of renter-occupied residences and owner-occupied mobile homes on rented lots. Therefore, questionnaires also were prepared for these potential relocatees and were either mailed for completion and resubmittal, or completed during a site visit or telephone call.

Altogether, 17 questionnaires were completed and used in the analysis of the population potentially affected by residential relocation as a result of the KY 32 project. (Eight of the households that had returned completed questionnaires had attended one or more of the public meetings and/or the Public Hearing.) A packet containing a follow-up letter and two KYTC booklets—*Right of Way Acquisition* and *Relocation Assistance Programs*—was mailed to each household that completed and returned a questionnaire. The results of the questionnaires are tallied in Table 3 (p.20).

Measures to Minimize Impacts. Site visits were conducted to gather information from residents and identify design measures that could minimize/avoid relocation impacts. As a result, an alignment shift was made that resulted in avoidance of 1 previously identified residential relocation. This step reduced the number of potential relocations to 14 with Alternative 3.

An on-site visit also revealed that 3 of the residences identified in the EA as potential relocations are vacant. Because there is the possibility that they could be occupied in the future, they are still considered potential relocations; however, as the income and minority status of potential future occupants cannot be predicted, these relocations are not considered in the evaluation of potential impacts to EJ populations. Therefore, only the 11 occupied households were evaluated for potential EJ-related impacts.

Determinations of Effects. Because 1 potential relocation would be avoided and 3 properties are currently vacant, only 11 residences (rather than 15 noted in the EA) were studied to determine the status (EJ/non-EJ) status of their occupants, and whether relocation would cause adverse and disproportionate EJ impacts.

Regarding positive effects to EJ populations, the benefits of improved mobility, access to medical care, decreased emergency response times, reduced travel time and costs, and improved safety would be made available to all resident populations, including EJ populations.

To constitute an impact to EJ populations that would require additional consideration of avoidance alternatives, it must be determined that an impact is both **adverse *and* disproportionately high** when compared to the impact to non-EJ populations. Thresholds identified in the EA for determining the potential for disproportionately high impacts (4% minority and 33% low-income) were applied in Step 2.

Alternative 3 has a total of 11 relocations of occupied residences, seven of which meet EJ criteria (1 minority and 6 low-income). As discussed in the Environmental Justice Analysis below, the project is considered to have **no adverse effect** to all but one of the potential EJ relocations—a low-income household that, at 9% of the total 11 relocations, would be far below the threshold 33% that would indicate a disproportionately high impact.

The following summarizes information obtained as a result of the questionnaires, on-site visits, and other research conducted to identify whether minority or low-income populations would be among the potential residential relocations, and whether the relocations would result in adverse and disproportionately high impacts to the EJ residents. Note that original 15 potential relocations are summarized below, including those that are currently vacant, and the 1 that has been avoided.`

ENVIRONMENTAL JUSTICE RELOCATION ANALYSIS

Relocation 1. Owner-occupant of this single-family residence is elderly, but is not of minority status, disabled, or family dependent.

Occupancy: 47+ years

EJ Status: Does not meet minority criterion. Income data was not provided by the resident; therefore, it is not known whether the EJ low-income criterion would be met.

Relocation Issues: Due to age, resident note relocating a concern due to age; however, resident stated that, if needed, it could be done.

Determination: **No adverse effect.** Concerns were stated but resident expressed no opposition to moving. Assistance to address relocation issues would occur during right-of-way acquisition and the relocation assistance process under the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (Public Law 91-646), as amended in 1987 (referred to hereafter as the *Uniform Act*). Whether or not income data would show that the resident meets the EJ low-income criterion, based on the information that was provided by the resident, there does not appear to be

special needs or the need for special accommodations; and it does not appear that this project will cause an undue burden to the resident.

Relocation 2. Elderly resident owns the single-family residence, is disabled and depends on nearby family members for transportation to healthcare appointments. The resident is not a member of a minority race(s).

Occupancy: 71+ years.

EJ Status: Household meets low-income criterion, based income data provided.

Relocation Issues: Due to age, relocating noted as a concern. However, indicated moving to a new home nearby might be nice.

Determination: **No adverse effect.** Concerns were stated but resident expressed no opposition to moving. Assistance to address relocation issues would occur during right-of-way acquisition and the relocation assistance process under the *Uniform Act*.

Relocation 3. There are 4 residents of owner-occupied mobile home located on a rented lot. One resident (adult) is disabled. None of the residents are members of a minority race(s). They noted no long-standing family ties in the area and no dependence on others for transportation or other assistance.

Occupancy: 5–6 years.

EJ Status: Household meets low-income criterion, based income data provided.

Relocation Issues: Need help finding a place to relocate; also, mobile home is very old and might not be able to be moved.

Determination: **No adverse effect.** Concerns were stated but resident expressed no opposition to moving. Assistance to address relocation issues would occur during right-of-way acquisition and the relocation assistance process under the *Uniform Act*.

Relocation 4. The owner-occupant of a mobile home rents the lot on which the mobile home is located. The KYTC District staff interviewed the owner, and explained the importance of identifying special needs or potential burdens resulting from relocation. The owner is not a minority, or disabled or elderly; and does not own a car so depends on family or neighbors for transportation.

Occupancy: 4 years.

EJ Status: Household meets low-income criterion, based income data provided.

Relocation Issues: Noted that help in finding a place to live would be needed.

Determination: **No adverse effect.** Concerns were stated but resident expressed no opposition to moving. Assistance would occur during the relocation assistance process under the *Uniform Act*.

Relocation 5. The owner-occupant of a mobile home rents the lot on which the residence is located. The owner is young, employed, has transportation, is not a minority, and is not disabled or family dependent.

Occupancy: 2 years.

EJ Status: Household meets low-income criterion, based income data provided.

Relocation Issues: No special needs, accommodations, or burdens were expressed regarding relocation.

Determination: **No adverse effect.** Assistance would occur during the relocation assistance process under the *Uniform Act*.

Relocation 6. Resident is owner-occupant of the single-family residence. There is no one in the household who is of minority status, and none depend upon family for transportation or other needs.

Occupancy: 18–20 years.

EJ Status: There are no minorities in the household; and, based on income data provided, the low-income criterion is not met.

Relocation Issues: No special needs, accommodations, or burdens were expressed regarding relocation.

Determination: **No EJ-related effect.** Assistance would occur during right-of-way acquisition and the relocation assistance process under the *Uniform Act*.

Relocation 7. Resident rents the mobile home and lot on which it is located from the parcel owner, has a car, is employed, is not disabled or elderly, and does not have limited proficient in English. No family members are living nearby on which the resident is dependent for transportation or other needs.

Occupancy: 1 ½ years.

EJ Status: The resident identified self as Hispanic; therefore, would meet the EJ minority criterion. Based on the income data provided, the low-income criterion is not met. A follow up email and a subsequent phone message were sent to clarify minority status and to assess whether any undue burden would be caused by relocating. To date, there has been no response to either the email or phone message.

Relocation Issues: Finding a place to live that would be in the area, have similar rent payment, and be pet friendly.

Determination: **No adverse effect.** Concerns were stated but resident expressed no opposition to moving. Assistance would occur during the relocation assistance process under the *Uniform Act*. Because no response has been received to the request for additional information, it is concluded the burden placed on this individual is no greater than that placed on other relocatees; therefore, there is no adverse effect.

Relocation 8. There are two elderly renter-occupants, neither of whom are disabled or of minority status. They do not have family members living nearby and do not depend on family or non-family for transportation or other needs.

Occupancy: 4 ½ years.

EJ Status: Household does not meet the low-income criterion, based income data provided.

Relocation Issues: Finding a nice, pet-friendly place to rent; receiving no compensation for the improvements they made to the rental property.

Determination: **No EJ-related effect.** Concerns were stated but resident expressed no opposition to moving. Assistance would occur during the relocation assistance process under the *Uniform Act*.

Relocation 9. There are two owner-occupants of a single-family residence: one is disabled, and neither are elderly or of minority status. Neither has long-standing family ties or family living nearby, but the disabled occupant is dependent upon the other for transportation. One occupant is employed. Both

residents attended the Public Hearing and returned a comment sheet indicating they would like the relocation process to get underway as soon as possible.

Occupancy: 17 ½ years.

EJ Status: The residents did not provide income data on their questionnaire; however, based on email correspondence, it appears the household income would not meet the EJ criterion for low income.

Relocation Issues: Needing help with moving due to associated costs and physical inability; and receiving fair compensation for improvements to the property.

Determination: **No EJ-related effect.** Concerns were stated but resident expressed no opposition to moving. Assistance with relocation issues would occur during right-of-way acquisition and the relocation assistance process under the *Uniform Act*.

Relocation 10. Residence occupied by 2 renters who are caretakers of the property owner's farm. They are not disabled, elderly, or of minority status, and are not dependent on family or non-family members for transportation or other needs. They attended the Public Hearing but did not return a comment sheet.

Occupancy: 8–9 years.

EJ Status: Household meets low-income criterion, based income data provided.

Relocation Issues: No special needs, accommodations, or burdens were expressed regarding relocation.

Determination: **No adverse effect.** Assistance would occur during the relocation assistance process under the *Uniform Act*.

Relocation 11. There are 2 elderly owner-occupants of this mobile home and property. Neither is disabled or of minority status. They do not have family members living nearby, long-standing family ties to the area, or dependency on others for transportation or other needs The residents attended the Public Hearing but did not return a comment sheet.

Occupancy: 19 years.

EJ Status: Household meets the low-income criterion, based on the data provided.

Relocation Issues: Expense of getting set up at a new location, such as bulldozer work, septic system, electric, phone, and water hook ups; and the loss of hayfields that have provided supplemental income.

Determination: **Potential adverse effect.** Concerns were stated but resident expressed no opposition to moving. Assistance with relocation issues associated with sanitary systems and other utilities/infrastructure would occur during right-of-way acquisition and the relocation assistance process under the *Uniform Act*.

Before a final determination could be made regarding EJ-related impacts, more information about the hayfields would be required (e.g., property owned/leased, location of fields in relation to residence, loss of revenues, etc.). In particular, issues associated with the potential loss of income could result in an adverse effect determination. Therefore, at this time KYTC considers that there to be a potential adverse effect**,** with further investigation to occur during the right-of-way acquisition and the relocation assistance process. Should a finding of adverse effect then be made, it would not be disproportionately high; i.e., the 1 low-income EJ relocation

would be 9% of the total 11 relocations, well below the threshold 33% discussed in the "Determination of Effects" section, above. It "would not be predominantly borne by" the EJ household or "appreciably more severe or greater in magnitude than the adverse effect" to the non-EJ population to be relocated.

Relocations 12, 13, and 14—Vacant. The residences consist of two mobile homes and a single-family residence. One of the mobile homes is on property that is rented. All of these residences are currently vacant, but could have future owner-occupants or tenants who would require relocation assistance. It cannot be known at present whether future occupants would meet EJ minority or low-income criteria; therefore, no effects determinations can be made. In all cases, assistance with relocations would occur during right-of-way acquisition and the relocation assistance process under the *Uniform Act*.

Relocation 15—Avoidance. The owner-occupant of the single-family residence has resided on the property 14 years. She has long-standing family ties to the area, and family members live nearby. Based on the income information that she provided, it would appear that she meets the EJ low-income criterion. Although she indicated she does not depend on family or non-family members for transportation or other needs, an on-site visit with a family member living adjacent to her (but not to be relocated) revealed that he regularly provides some necessary services to her. He expressed concern about his ability to help were he not nearby. After reviewing the plans, the design consultant was able to provide a minor shift to the alignment to avoid this relocation, without causing other socioeconomic or environmental impacts.

ENVIRONMENTAL JUSTICE SUMMARY

Seven of the households that may require relocation meet the criteria for an EJ population—six based on low-income and one based on potential minority status. The EJ status of an eighth household (Relocation 1) is not certain: the resident is not of minority status, did not reveal income, and no other information provided was sufficient to identify the household's income status; therefore, whether the resident would meet EJ low-income criterion cannot be determined without further research.

While a few of the residents noted some concerns associated with relocation—help finding housing, assistance with moving expenses and logistics, locating near family members/caregivers—none of the potential relocatees expressed opposition to the project or to relocation. When these and other identified issues are considered, there is the potential these issues could be addressed during the right-of-way acquisition and/or the relocation process through the *Uniform Act*. KYTC has minimized effects through avoidance of one household that meets EJ low-income criterion, and KYTC will continue efforts to minimize any burden or hardship that might be experienced by the members of the affected households.

All but one relocation of an EJ household has been determined to have **no adverse effect.** Regarding the need for further research related to the **potential adverse effect** determination at the one household (Relocation 11): if an **adverse effect** determination were to be made, it would not be disproportionately high because the one low-income EJ relocation would be 9% of the total 11 relocations, well below the 33% threshold. The effect "would not be predominantly borne by" the EJ household, or "appreciably more severe or greater in magnitude than the adverse effect" to the non-EJ population to be relocated. Therefore, a finding of **No Disproportionately High and Adverse Effect** is appropriate for the overall project as well as for the individual household relocations.

Table 3: Selected Alternative 3—Results of Survey for Residential Relocation and EJ Analyses

Residential Relocations: Property ID and Effect	Owner/Renter Residential Relocation Status					Relocation: Special Needs		Relocation: EJ Populations	
	Owner-Occupied House	Renter-Occupied House	Owner- Occupied Mobile Home (MH)	Renter-Occupied MH	Owner-Occupied MH, Rents Lot	Disabled	Elderly	Minority	Meets Low Income Criteria
1 – No Adverse Effect	x						x		
2 – No Adverse Effect	x					x	x		x
3 – No Adverse Effect					x	x			x
4 – No Adverse Effect					x				x
5 – No Adverse Effect					x				x
6 – No EJ-related effect	x								
7 – No Adverse Effect				x				x	
8 – No EJ-related effect		x					x		
9 – No EJ-related effect	x					x			
10 – No Adverse Effect		x							x
11 – Potential Adverse Effect			x				x		x
12 – Vacant									
13 – Vacant									
14 – Vacant									
15 – Alignment shifted to avoid residence									
Total Relocations (11)	4	2	1	1	3				
Total Elderly/Disabled (7)						3	4		
Total EJ Populations (7)								1	6

NOTE: Vacant residences are two mobile homes and one single-family house.

3.8 Aquatic and Terrestrial Ecosystems

An *Ecological Assessment Report* (*Ecological Report*) was prepared for this project and is on file with KYTC. The following discussion recounts the results of that assessment, which included field reconnaissance to identify aquatic and terrestrial resources in the study area. EA Sections 3.8.1 through 3.8.5 provide in greater detail the information summarized herein.

3.8.1 Aquatic Resources

Water Quality and Aquatic Habitat Sampling—The KY 32 study corridor is located along a ridgeline and is bordered to the north and south by Big Caney Creek and Laurel Creek, respectively. Both of these streams are perennial and give name to the primary watersheds in the study area. These streams are not crossed by the project due to their locations below the ridgeline. However, they run parallel to the project corridor and most, if not all, streams assessed during this environmental study drain into either Big Caney Creek or Laurel Creek. Both streams have been listed by the Commonwealth of Kentucky as Special Use Waters including designations as Cold Water Aquatic Habitat (CAH), Exceptional Use Waters, Reference Reach Waters, and Outstanding State Resource Waters (OSRW).

In addition to Big Caney and Laurel creeks, waters/wetlands identified in the *Ecological Report* as being within the study area include two perennial streams (Christy Creek and P2 (incorrectly identified in the EA as Big Caney Creek, into which it drains), 71 intermittent streams, 113 ephemeral streams, 27 wetlands, and 36 open water ponds.

The aquatic habitats were surveyed according to guidelines from Kentucky Division of Water's (KDOW) most current publications: *Methods for Assessing Biological Integrity of Surface Water*, the *Kentucky Macroinvertebrate Bioassessment Index* (MBI), and *Development and Application of the Kentucky Index of Biotic Integrity* (KIBI). Sampling was performed at 23 sample stations on perennial or intermittent streams throughout the study area, adjacent watersheds near the study area, Big Caney Creek, and Laurel Creek. The results of the inventory and analyses are addressed in greater detail in EA Section 3.8.1 and in the *Ecological Report,* and are summarized below.

- KIBI was used to assess each of the sampled fish assemblages by means of a water quality rating. The sampled streams within the study area rated "Fair" and "Poor." The CAH stream sampling results rated Big Caney Creek "Good," and Laurel Creek "Fair" and "Excellent."
- Macroinvertebrate community attributes describe water quality conditions or health of the aquatic ecosystem and identify causes of impairment. Macroinvertebrate data were evaluated based on the MBI: streams within or near the study area rated either "Fair" (7 streams) or "Poor" (4 streams) with one exception, which rated "Very Poor." One location rated "Poor" is located at the headwaters of Laurel Creek and is affected by adjacent trash/debris dumping, nearby road crossing, and stream channelization. Sampling along the other CAH streams rated "Fair."
- Mussels: Streams within the study area were visually assessed for the presence of mussel species. No fresh-water (unionid) mussels were observed within the streams. Mussels observed in the streams were limited to individuals of Asian clam (*Corbicula* spp.).

A habitat assessment was completed for each perennial and intermittent stream using the Habitat Assessment Form (Rapid Bioassessment Protocol, RBP) method (see Appendix E of the *Ecological Report*). In all, approximately 70% of all streams rated "average" or "higher" in quality.

Streams—The majority of the streams reported in the *Ecological Report* were considered jurisdictional; however, the U.S. Army Corps of Engineers (USACE) will not make its official jurisdictional determinations until Phase II of the project. Exhibit 2 shows the locations of streams within Selected Alternative 3's disturbance limits. Table 4 identifies the stream types; total linear feet within the disturbance limits, by stream type; and whether the streams are considered to be jurisdictional or isolated).

Table 4: Selected Alternative 3—Streams Within Disturbance Limits

Stream Type and Status: (Jurisdictional / Isolated)	Total Linear Feet (LF)	Total Crossings Jurisdictional & Isolated
Perennial: Jurisdictional / (Isolated)	755 / (0)	2
Intermediate: Jurisdictional / (Isolated)	21,710 / (0)	56
Ephemeral: Jurisdictional / (Isolated)	14,085 / (365)	64
Total LF Jurisdictional / (Isolated)	**36,550 / (365)**	--
Total LF Stream Impacts	**36,915**	**122**
Estimated Mitigation Costs for Direct Impacts (million $)	**$12.5**	

Wetlands and Open Water (Ponds)—This project has been developed in conformity with Executive Order 11990 and USDOT Order 5660.1A. U.S. Department of Agriculture (USDA) soil survey and National Wetlands Inventory (NWI) maps were used to determine potential wetland areas within the project corridor, and field reconnaissance was conducted per the guidelines of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (USACE, 2012). The *Ecological Report* presented the results of the research and field surveys.

Within the study area, 27 wetlands totaling approximately 2.58 acres were identified. Selected Alternative 3 would impact 1.45 acres of emergent wetland (in the *Ecological Report*. 1.42 acres considered jurisdictional and 0.03 acre isolated).

Also within the study area, 36 ponds totaling 5.98 acres were identified. All of the ponds are man-made features created for agricultural or sporting purposes. Selected Alternative 3 would impact approximately 2.04 acres of ponds (in the *Ecological Report,* 0.61 acre considered jurisdictional and 1.43 acres isolated).

USACE has not yet made an official determination of the jurisdictional status of the wetlands and ponds; it will make its official jurisdictional determinations in Phase II of the project. Exact determination of impacts to jurisdictional wetlands and ponds will be made by KYTC after final design.

Floodplains—The Federal Emergency Management Agency (FEMA) Floodplain Maps for Rowan and Elliott counties that were reviewed for the project area showed the floodplains of Big Caney and Laurel creeks to be only ones close to the project. The project is outside the 100-year floodplains of both creeks.

3.8.2 Threatened and Endangered Species

Early coordination with the U.S. Fish and Wildlife Service (USFWS), the Kentucky Department of Fish and Wildlife Resources (KDFWR), and the Kentucky State Nature Preserves Commission (KSNPC) was initiated to determine whether federal and/or state protected species potentially occur in the project area.

The amphibian and reptile survey did not identify any federally listed or state listed endangered or threatened species. Habitat is not present in the study area for the two federally listed mussels and two state listed mussels known to occur in Rowan and Elliott counties; therefore, direct impacts to mussel species are not anticipated as a result of this project. To avoid indirect impacts to these species, KYTC will use appropriate erosion prevention and sediment control measures to avoid downstream sedimentation. The mammalian survey identified three federally protected bat species. The listing designations in the section below are abbreviated as follows: FE (Federal Endangered), SE/ST (State Endangered/State Threatened).

- Virginia big-eared bat *(Corynorhinus townsendii virginianus)*—FE, SE
- Indiana bat (*Myotis sodalis*)—FE, SE
- Gray bat (*Myotis grisescens*)—FE, ST
- Northern long-eared bat (*Myotis septentrionalis*)—F Proposed (since the EA)

Although none of these types of bats were observed during the mammalian survey, the project area represents potential foraging and marginal roosting habitat for the Virginia big-eared bat, potential foraging and summer roosting habitat for the Indiana and northern long-eared bats, and potential foraging habitat for the gray bat. Tree removal from upland woods could have minor impacts to potential foraging habitat for all three species and summer roosting habitat for the Indiana bat. Impacts from habitat tree removal will be highest for Selected Alternative 3 (estimated 318 acres). No caves, rock shelters, or mine portals were observed in the study area; therefore, impacts to winter habitat are not anticipated.

3.8.3 Intergovernmental Coordination

Intergovernmental coordination was initiated early-on in the project development to identify potential impacts to water quality, aquatic and terrestrial habitats, and threatened and endangered species; and to obtain avoidance, minimization, and mitigation options. The results of the coordination, to date, are summarized below.

Recommendations identified by the agencies will be provided to the engineering design team to be considered during the final design. Coordination correspondence received from agencies is provided in EA Appendix A, *Resource Agency Coordination,* unless otherwise noted.

USDA–NRCS—A consultation letter was sent to NRCS District Conservationist in Morehead, Kentucky, on October 27, 2010. On December 7, 2010, NRCS provided a letter and mapping indicating soils, prime farmland, hydric soil, and highly erodible soils in the study area. NRCS does not identify prior converted cropland during their soil survey work.

USFWS—A consultation letter was sent to the USFWS office in Frankfort, Kentucky, on October 27, 2010, requesting information regarding federally listed species. No response was received; however, on its website USFWS lists federally endangered, threatened, and candidate species for both Elliott and Rowan counties.

KSNPC—A consultation letter was sent to the KSNPC on October 27, 2010, requesting a review of the Natural Heritage Program Database. In a letter dated October 29, 2010, KSNPC responded that several listed species are known to occur in the study area. KSNPC noted that Laurel Creek Gorge is "a significant ecological site," and that the Ed Mabry-Laurel Gorge WMA contains a portion of the site and efforts should be made to avoid impacts to the WMA. The agency recommended that "a written erosion control plan be developed that includes stringent erosion control methods." The agency also recommended periodic monitoring of the control measures, listed protected bat species known to occur within 10 miles of the study area, and noted: "To avoid impacts to bats, bottomland forests and riparian corridors, particularly near caves, should not be disturbed."

KDFWR—A consultation letter was sent to the KDFWR office in Frankfort, Kentucky, on October 27, 2010. KDFWR replied in a letter dated July 22, 2011, that no federally listed species are known to occur within the boundaries of the study area. The agency noted Laurel Creek and Big Caney Creek are listed as Special Use Waters by KDOW and highly recommended avoidance of these areas. Also, both Christy Creek and Laurel Creek run through the Ed Mabry-Laurel Gorge WMA, which KDFWR identified as having "great ecological and recreational value." KDFWR recommended avoidance of the WMA and minimization of impacts. The agency also recommended "strict erosion control measures be developed and implemented prior to construction."

KDOW—A consultation letter was sent to KDOW—Water Quality Branch on October 27, 2010. In a letter dated November 4, 2010, KDOW responded that Laurel Creek is a Coldwater Aquatic Habitat (CAH) stream from river mile 0.6 to 7.6 and a CAH, Reference Reach, and Outstanding State Resource Water (OSRW) from river mile 7.6 to 14.7; and Big Caney Creek is a CAH, Reference Reach and OSRW from river mile 1.8 to 15.3. KDOW stated that CAH and OSRW must be protected per regulation in 401 KAR 10:031. KDOW noted that enhanced Best Management Practices and maintenance of the riparian zone are critical to the temperature regime of a CAH, as well as protection from pollutants carried by stormwater runoff.

A consultation letter was sent to KDOW's Ecological Support Section on October 27, 2010. On September 29, 2011, the Ecological Support Section emailed[3] fish, habitat, water chemistry, and macro-invertebrate sampling results for seven sites along Laurel Creek and Big Caney Creek.

[3] The email is not included in EA Appendix A.

Kentucky Division of Forestry (KDOF)—A consultation letter was sent to KDOF office in Frankfort, Kentucky, on October 27, 2010. KDOF stated in a letter received on November 9, 2010, that the agency did not find any issues or concerns regarding the forest resources in this area.

Kentucky Geological Survey (KGS)—A consultation letter was sent to KGS on November 3, 2010. KGS provided websites to assist in the identification of significant geological areas. A review of geological information is in EA Section 3.8.2, *Terrestrial Ecosystems*.

Kentucky Speleological Society—A request for information regarding the location of local caves and karst features was submitted to the society on October 28, 2012. No response was received.

3.8.4 Avoidance, Minimization, and Mitigation

Efforts to avoid and minimize impacts to aquatic and terrestrial ecosystems have been made during the development of the preliminary alternatives. Identified impacts to aquatic and terrestrial resources will be minimized to the maximum extent possible during final design of the selected alternative. Mitigation measures proposed for impacts during construction are addressed in Chapter 6.0, *Project Commitments*. The potential minimization and mitigation options identified by the regulatory agencies will be provided to the engineering design team to consider during the final design.

Mitigation measures for impacts to aquatic habitats, including streams, wetlands, and open water (ponds), will be addressed through the permitting process and through KYTC's Best Management Practices and *Standard Specifications*. Mitigation for unavoidable stream and wetland impacts will be determined through the permitting process under Sections 404 and 401 of the Clean Water Act as administered by the USACE and KDOW, respectively. Mitigation is not typically required for open water (pond) impacts; however, mitigation requirements will be determined by the USACE and KDOW during the permitting process (see Section 3.9, *Permitting*).

Due to the location of the project on a ridgetop, Selected Alternative 3 would not cross either of the two Outstanding State Resource Waters (Laurel and Big Caney creeks). However, because the project corridor runs parallel to these two OSRWs, several streams crossed by the selected alternative drain into one or the other stream. Several agencies noted the importance of erosion control and protecting the resources from pollutants in stormwater runoff.

Water quality impacts from erosion and sedimentation during construction would be controlled in accordance with KYTC's *Standard Specifications* and through the use of Best Management Practices. Mitigation measures proposed for impacts during construction are addressed in Chapter 6.0, *Project Commitments*. In addition to or as a feature of mitigation to be defined in the permitting stage, KYTC commits to implementing enhanced mitigation ("green infrastructure") measures, such as permanent stormwater collection devices/bio-swales within the right-of-way, sized to collect runoff and potential hazmat spill materials from the road.

Mitigation measures for impacts to terrestrial habitats are limited to minimization of impacts to the mature woods habitat. The disturbed, open field/old field habitat will be impacted to a greater extent than other habitats studied. Further mitigation measures are not proposed. KDFWR noted that Laurel Creek Gorge is "a significant ecological site," and that the Ed Mabry-Laurel Gorge WMA contains a portion of the site; therefore, efforts should be made to avoid impacts to the WMA. The WMA is immediately adjacent to the southern right-of-way of existing KY 32. It is outside the right-of-way of Selected Alternative 3 and would not be affected by the project.

Mitigation measures for state and federal threatened or endangered species include minimization of impacts to prime habitat areas, minimization of riparian tree clearing, use of proper equipment staging and fueling areas, and enhanced erosion control measures. Further mitigation requirements for federally protected species will be determined through coordination with USFWS under the Biological Assessment (BA) process that will be completed prior to construction. Measures to mitigate impacts resulting from the project are further discussed in Chapter 6.0, *Project Commitments*.

(*Note*: Impacts to terrestrial and aquatic resources within the right-of-way appear to be greater for Alternative 3 than for Alternatives 1A, 1B, and 2A because the additional impacts of obtaining fill materials from offsite borrow areas are not reflected in the impact calculations for those three alternatives. The additional impacts cannot be quantified at this time because the location of the borrow site(s) would not be known until just prior to construction.)

3.9 Permitting

All necessary permits will be applied for and obtained prior to the construction of this project, and the terms and conditions of these permits will be adhered to during the construction and maintenance of this facility. Contractors will be required to obtain the necessary permits that are related to their construction practices such as for construction of temporary roads or waste and borrow pits, if necessary.

The following permits could be required:

USACE 404 Permit and KDOW 401 Water Quality Certification—The nature of the Section 404 permits (whether Individual or general) requires USACE to make a jurisdictional determination on all streams and wetlands prior to approval of the permit application. The Section 401 Water Quality Certification is a state's review of applications for Section 404 USACE permits for compliance with state water quality standards. Because avoidance of all impacts to jurisdictional streams and wetlands is likely not possible, mitigation for unavoidable impacts will be required through the permitting process under Sections 404 and 401 of the Clean Water Act as administered by USACE and KDOW, respectively. A USACE Individual 404 Permit and KDOW 401 Water Quality Certification would be required with Selected Alternative 3. Mitigation is not typically required for open water (pond) impacts; however, mitigation requirements will be determined by the USACE and KDOW during the permitting process. KYTC, Division of Environmental Analysis will make an exact determination of impacts to jurisdictional wetlands. Detailed permit coordination—which will identify specific mitigation measures—will occur with USACE during the final design phase of the project.

Kentucky Pollutant Discharge Elimination System (KPDES) General Stormwater Permit—A KPDES General Stormwater Permit would be required from KDOW because the construction site disturbed area would be greater than 1.0 acre.

No-rise Certification and Floodplain Construction Permit—Construction activities in floodplains are regulated by FEMA and, potentially, KDOW permits. Appropriate regulatory agencies will be consulted regarding potential floodplain impacts. The study area is out of the floodplains in both Elliott and Rowan counties. It is anticipated that no floodplains will be affected by the project.

(*Note*: Contractors will be required to obtain the permits that are related to their construction practices such as for construction of temporary roads or waste and borrow pits, if necessary.)

3.10 Section 106: Historical Architecture and Archaeological Resources

Cultural resource assessments, including background research and field surveys, and an archaeological survey have been performed to identify cultural historic and archaeological sites and structures that could be affected by the project. Results of the assessments and survey appear in the following documents, which are on file with KYTC:

- *Historic Architectural Eligibility Study* (*Eligibility Study)*, which identified resources located within the area of potential effects (APE), evaluated their historical significance, identified properties that are listed in the National Register of Historic Places (NRHP), and provided an evaluation regarding which other properties within the APE could be determined eligible for listing in the NRHP.
- *Determination of Effects Report* (*DOE Report*), which summarized information about NRHP listed and eligible properties and provided a preliminary evaluation of the proposed alternatives' potential effects (i.e., No Effect, No Adverse Effect, or Adverse Effect) on the identified resources.
- *Phase I Archaeological Survey (Archaeological Survey),* which reported the results of an archaeological investigation to locate and identify archaeological resources within the project APE, and make recommendations regarding avoidance or mitigation of any sites found to be eligible or potentially eligible for listing in the NRHP.

Consultation with the Kentucky State Historic Preservation Office (SHPO) and with consulting parties has been conducted to identify the APE and the eligibility of cultural historic and archaeological resources for listing in the (NRHP). EA Section 3.10, *Section 106: Historical Architecture and Archaeological Resources,* describes Section 106-related activities that occurred prior to the publication of the EA and the Public Hearing. EA Appendix A, *Resource Agency Coordination*, contains the pre-Public Hearing coordination correspondence and related Section 106 documentation.

Exhibits 1 and 2 show the boundary of the APE and location of the NRHP-listed and -eligible cultural historic resources[4] in relation to Selected Alternative 3. Coordination correspondence received since the Public Hearing is in Appendix C. Coordination correspondence and related Section 106 documentation prepared/received prior to the publication of the EA is in EA Appendix C, *Section 106 Consultation*. EA Exhibit 4 shows the APE and historic resources in relation to all build alternatives studied.

Cultural Historic Resources. As reported in EA Section 3.10, the SHPO concurred with the boundary of the historic APE and with FHWA's determinations of eligibility and findings of effects (see correspondence dated January 13, 2012, and October 4, 2012, respectively, in EA Appendix C).

The *Eligibility Study* concluded there is one NRHP-listed site, Hogtown Voting House; and the following five NRHP-eligible sites within the project APE: Elliottville School, Black-Caudill Log House, J.J. Johnson House/Store, Montgomery and Mary Crockett House, and Concord School. Selected Alternative 3 received a finding of No Adverse Effect (*de minimis* rule applies) with regard to acquiring right-of-way from the Site EL-26 (Black-Caudill Log House) (0.5 acre) and EL-38 (Crockett House) (2.2 acres).

Indirect and Cumulative Impacts—It is not anticipated that new development induced by the project would occur. Currently no local/regional land use plans indicate future development in the area. It is anticipated that most, if not all, future development would be located along KY 32 in or around the communities of

[4] To protect the integrity of archaeological sites, information regarding their locations is limited and the sites are not shown on exhibits in the FONSI or EA.

Elliottville and Newfoundland, at the north and south termini of the project corridor. Therefore, no indirect or cumulative effects to NRHP listed or eligible historic sites are anticipated as a result of the project.

Mitigation—Selected Alternative 3 would acquire a minimal (*de minimis*) amount of right-of-way from the Black-Caudill Log House Site (EL-26) and the Montgomery and Mary Crockett House Site (EL-38). The SHPO concurred that there would be no adverse effects to the sites (see EA Appendix C, correspondence dated October 4, 2012[5]). Alternative 3 would not have an adverse effect to any listed or eligible site along its entire length. Therefore, no mitigation will be required.

Archaeological Resources. The boundary of the archaeological APE, per 36 CFR 800.16(d), has been defined through consultation with the SHPO, as the right-of-way for the selected alternative. Section 106 also requires consultation with the SHPO and consulting parties to determine whether archaeological resources listed in or eligible for listing in the NRHP are located within the project's archaeological APE and would be adversely affected. Since the Public Hearing, the Phase I archaeological survey has been completed and submitted to the SHPO for review and comment. In a letter dated August 27, 2013 (see Appendix C, p. 28), the SHPO submitted its concurrence with the survey recommendations, as follows:

> *The survey documented one previously unrecorded archaeological site (15EL75) and four isolated finds. The authors recommend no further archaeological investigation due to low artifact densities, lack of diagnostic artifacts, and the lack of intact subsurface features. I concur with the Author's recommendations."*

Cemeteries. Numerous small cemeteries associated with local families and the settlement of the area are within the cultural historic APE and some are discussed in the *Historic Architectural Eligibility Study*. None of the cemeteries observed within the APE have been determined eligible for listing in the NRHP, and none would be within the right-of-way of Selected Alternative 3. The cemeteries are listed and their locations are shown on Exhibits 1 and 2.

3.11 Section 4(f)

Section 4(f) of the 1966 Department of Transportation Act includes protection of the use of public and private historical sites unless proscribed conditions apply. The KY 32 project corridor includes NRHP-listed and -eligible cultural historic sites. EA Section 3.10.3, *Historic Architectural Resources,* provides details regarding historic resources in relation to the project. The applicability of Section 4(f) evaluations associated with these protected properties is addressed below. The Kentucky SHPO has been consulted on the determinations of eligibility and findings of effects for properties within the project APE. In a letter dated October 4, 2012 (see EA Appendix C), the SHPO concurred with the effects findings presented in the *Determination of Effects* report prepared for this project and on file with KYTC. Selected Alternative 3 received findings of No Adverse Effects to two NRHP-eligible sites from which minor amounts of land would be acquired for right-of-way:

- Site EL-26 (Black-Caudill Log House)—0.5 acre
- Site EL-38 (Crockett House)—2.2 acres.

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[5] The letter inadvertently states that there would be both "No Effect" and "No Adverse Effect" to the sites. The determinations to which the SHPO referred in issuing concurrence are, in both cases, "No Adverse Effect," as stated in the *Determination of Effects* report submitted by FHWA to the Kentucky Heritage Council (SHPO), a copy of which is also on file with KYTC.

Because only minimal amounts of land from both sites would be acquired, and the acquisitions would not affect the elements that make the sites NRHP eligible and, thus protected under Section 4(f), in a letter to the SHPO dated March 26, 2014, FHWA stated that: ...the *Section 4(f) de minimis rule would apply to these sites...[t]his project does not adversely affect the activities, features, and attributes that qualify the Section 4(f) resources ...for protection under Section 4(f).* The SHPO concurred with FHWA's determination in a letter dated March 31, 2014. (Both letters are included in Appendix C). In accordance with Section 774.3(c), **Alternative 3 "causes the least overall harm."** Exhibits 1 and 2 show the locations of the cultural historic resources identified within the cultural historic APE.

3.12 Hazardous Materials

A Phase I ESA was prepared for this project and is on file with KYTC. The Phase I investigation identified five sites that were within or near the project disturbance limits and were reported as potential hazardous materials site locations. The evaluation of build alternative alignments identified these sites as potentially affecting one or more of the build alternatives. Table 5 identifies the sites that could be affected by Selected Alternative 3, the potential contaminants at those sites, and recommendations for investigations on sites where right-of-way or an easement is required. The sites' locations are shown on Exhibits 1 and 2. EA Exhibit 4 shows the locations of the sites in relation to all build alternatives studied.

Coordination with the Kentucky Division of Waste Management Underground Storage Tanks was conducted in September 2012. Site inspections were initially conducted in February 2010, followed by subsequent site visits through 2011 and 2012. The potential environmental concerns include the following:

- Several power pole-mounted electrical transformers that may contain polychlorinated biphenyls (PCBs) are found in the project area. Due to the quantity of PCBs typically found in these types of transformers, any releases or associated contamination would be minimal. Fluorescent light fixtures with ballast that may contain PCBs could be located in subject structures, which were inspected only on the exterior during site investigations.
- The government database search report and field visits indicate the presence of two registered underground storage tank (UST) sites adjacent to the existing KY 32. However, the USTs from both sites have since been removed (see reports to/from the state Division of Waste Management [DWM] in Appendix C). The field inspection confirmed their locations and, though they are currently shown to be outside the right-of-way of the selected alternative, the project could impact either or both of them depending on the final design. No vent/fill pipes or any other evidence of unregistered USTs were observed during the site inspection. Due to the age of some structures, however, heating fuel oil USTs could exist on local residential property or farming operations.
- Aboveground Storage Tanks (ASTs) may be associated with certain residences located in the project area. The investigations for this report did not include an inspection of the interior of subject structures and it is possible that additional ASTs may be located in residential dwellings to store heating fuel oil for boiler systems. A case-by-case survey of those residences to be taken by the selected alignment will determine the prevalence of these tanks.
- No registered solid waste landfills, transfer stations, or recycling facilities are located within the project area. Due to site conditions, some of the undeveloped and forested areas were not fully inspected during field investigations. Residential/farm waste dumps could be present within the

forested areas on private properties. Where such dumps are encountered, the materials should be recycled or otherwise disposed of properly.

- Area farms are likely to use pesticides and herbicides. The inspection of structures was limited to the exterior; there may also be other types of hazardous materials stored on area farms. No obvious evidence of chemical misapplication or improper storage of chemicals was observed, and no large-scale chemical storage operations were observed.
- Contamination due to leakage of petroleum products from stored or abandoned automobiles is a concern at a few residences adjacent to the existing road. Contamination could include heavy metals, volatile and semi-volatile organic compounds, and other constituents of petroleum-based products. The potential contamination is not considered to be extensive.

Throughout the project area, sites having utility transformers, asbestos-containing materials (ACMs), residential USTs/ASTs, demolition debris, agricultural chemicals, and other environmental concerns were observed. Further reconnaissance would be required to identify all sites.

Table 5: Selected Alternative 3—Suspected Contamination Sites and Recommendations

Site ID	Site Name / Description	Potential Issue(s)	Area of Concern	Recommended (if Area of Concern acquired)
2	Trent's Grocery (closed). Former fuel station; USTs removed 2009.	Possible contamination from petroleum, volatile and semi-volatile organics, heavy metals, and other petroleum constituents.	Locations of removed tanks.	Phase II ESA if necessary. Handle and dispose of any contaminated soil according to laws, regulations.
3	McBrayer Grocery & Farm Supply. Former fuel station; USTs removed 2012.	Possible contamination from petroleum, volatile and semi-volatile organics, heavy metals, and other petroleum constituents.	Locations of removed tanks.	Phase II ESA if necessary. Handle and dispose of any contaminated soil according to laws, regulations.
Not mapped	Pole-mounted electrical transformers.	Polychlorinated biphenyls (PCBs)	Location of transformers	Contact electric utility for removal or relocation of transformers, if needed.
Not mapped	Residential and agricultural properties throughout corridor	Potential pesticides, herbicides, asbestos, lead-based paint, fuel oil tanks, ASTs.	Locations of contaminants, ASTs.	Identify, evaluate condition of stored pesticides or herbicides. Inspect residences to be acquired for presence of regulated materials. Handle and dispose according to laws, regulations.

NOTE: Since the publication of the EA it has been learned that the underground gas pipeline listed as Site 1 in EA Table 19 and shown on EA exhibits was abandoned several years ago and the line relocated. The easement across KY 32 is no longer valid and there is no pipeline at that location.

Mitigation. A Phase II hazardous materials investigation will be conducted if the sites identified in Table 5 are affected by the project. Chapter 6.0, *Project Commitments,* addresses the steps that would be taken during Phase II investigations.

3.13 Visual Impacts

"Aesthetics" refer to the visual qualities and scenic nature of an area. Studies show there can be individual and regional preferences over what qualifies as "scenic." The project corridor encompasses a rural environment characterized by steep slopes, rolling terrain, forests, and pastureland. The viewsheds from KY 32 extend many miles to the horizon and present views typical in this region.

Although there are no unique aesthetic features or viewsheds along the project corridor, input received from the stakeholders' meetings and the public meetings has indicated that the scenic views (see EA

Figure 13) are valuable to the local residents and tourists. In March 2000, an application to designate KY 32 as a scenic highway was made to KYTC by the local government in Elliott County. Although the application was not approved, it is indicative of the local's value to the scenic viewsheds from the road.

Stakeholders and the public have recommended enhancements such as pullovers along the new roadway, and multi-use paths with associated user facilities along the remaining section(s) of the existing roadway. This desire has been included as a goal in the purpose and need of the project. KYTC commits to considering enhancements and to establishing a stakeholders committee to review Phase II road design plans for the potential to include enhancements.

Selected Alternative 3 would provide the best opportunity for constructing scenic pullover areas. The other alternatives provide the highest potential for adverse visual impacts due to the need to obtain borrow material offsite but near the construction site. The location and final view of the borrow area(s) for those alternatives would be largely outside the control of KYTC and could result in unsightly areas along the corridor, contrary to the public desire to enhance the viewshed from the road.

3.14 Construction Impacts

The proposed project is expected to produce a beneficial short-term economic impact by stimulating the local economy in terms of construction-related jobs, sales, income, government revenue and expenditures, and other variables. Furthermore, it could produce a beneficial long-term impact by providing the necessary infrastructure for efficient and safe mobility.

Highway construction activities would have temporary air, water quality, noise, and traffic flow and associated impacts within the project area. Steps that would be taken to minimize or avoid these temporary impacts are described in Chapter 6.0.

4.0 PUBLIC INVOLVEMENT

An ongoing public involvement process has been used to provide ample opportunities for the public and interested parties to express their views to KYTC regarding the project. Communications have included advance notification to local, state, and federal agencies, officials and interested parties; and discussions with potentially affected residents. Public involvement activities are described in detail in EA Section 5.1. In summary, they included four stakeholders' meetings (three in 2011 and one in 2012) one or more of which were attended by officials representing local, state, federal governments; civic leaders from Elliott and Rowan counties; and local residents. Public meetings were held in February and October 2011, at which the project was presented to area citizens who were given the opportunity to provide their suggestions and comments. A consulting parties meeting in May 2012 was attended by the consulting parties, local elected officials, representatives of the Kentucky Heritage Council (SHPO), KYTC, and the project consultants. An overview of the Section 106 process was presented as well as the project APE and sites that are listed in or were believed to be eligible for listing in NRHP. The minutes for this meeting are included in EA Appendix C. In addition, in January 2013, KYTC sent a letter to property owners within the project corridor that provided an update on the project's status, and a newsletter that identified the preliminary preferred alternative (Alternative 3) and the primary reasons for its recommendation.

Public Hearing. A Public Hearing was held on October 10, 2013, to present to the public the approved EA—including the alternatives considered but rejected and the recommended Preferred Alternative 3, as identified in the EA. All parcels within the Alternative 3 corridor (~80-90 in total) were mailed a notification and invitation to the Public Hearing, which was also advertised in the local media. Approximately 100

individuals signed in. The hearing was conducted in an open-house format: aerial photographs showing the recommended preferred alternative were displayed for review, and project staff members were on hand to help identify properties, discuss the recommendation of Alternative 3 as preferred, and answer questions from the public. Comment forms were made available as was a tape recorder to record verbal comments. The comment period ended October 25, 2013, and all comments on the EA received during that period were entered into the record of Public Hearing.

Public Comments and KYTC Responses. In all, one commenter submitted a letter, and 22 comment forms were submitted representing 26 commenters (in several cases more than one person signed a form). In this section of the FONSI, all substantive comments are summarized and addressed in responses by KYTC and FHWA. Appendix B contains copies of the submittals. Because most comments typically addressed similar issues, they could be organized into ten categories, each of which has been assigned an identification letter, as follows:

Category A: General Support of Project / Supports Alternative 3

Category B: Keep Public Informed

Category C: Retain Access to Existing KY 32

Category D: Oppose Preferred Alternative and/or Support Other Alternative

Category E: Aesthetics/Scenic Roadway

Category F: Purpose and Need

Category G: Cost Issues

Category H: Open Burning

Category I: Personal Property/ Right-of-way and Relocation

Category J: Miscellaneous

Comments falling within each category, together with KYTC/FHWA responses, are identified by the category ID (e.g., A, B, C...) in the following subsection and on the applicable comment forms in Appendix B. Where multiple commenters on a general topic required responses tailored to specific issues raised by each, the letter ID is followed by a number.

SUMMARY OF COMMENTS AND RESPONSES

A. General Support of the Project / Supports Alternative 3

Six commenters noted support for the overall project and/or Alternative 3 specifically. Comments are summarized as follows:

- Planning bases were covered; project should have been done 25 years ago.
- Looks like a thorough job. This is a much needed road that will benefit Sandy Hook, Grayson County, and Morehead.
- Hasten the project; existing road dangerous on hills and curves especially in winter.
- Prefers Alternative 3. Drives road 4/5 times weekly. Proud to see project started.
- Travels KY 173 to Morehead; delighted when Alternative 3 available, especially in winter.
- Supports Alternative 3.

Response *Comments noted. Regarding recommendation of Alternative 3 as preferred, EA Section 2.3.3, "Preferred Alternative—Build Alternative 3," provides the rationale for the recommendation. Regarding the timing of the project, EA Section 1.6, Schedule and Funding Sources, notes design work was funded for FY 2012, right-of-way acquisition and utilities work for FY 2013, and construction for FY 2015.*

B. Keep Public Informed

Two comments asked that people be kept advised about meetings and progress.

Response *As the project moves forward, additional public outreach will be conducted, which may include a right-of-way informational meeting, notices to affected property owners, and meeting notices in local media.*

C. Retain Access to Existing KY 32

Six comments requested that the existing KY 32 roadway be kept open, as follows:

- No sections of old KY 32 should be closed; that would disrupt access to farms and neighbors.
- Keep access to old road.
- Do not remove blacktop on KY 32.
- Leave existing KY 32 open for use in visiting neighbors.
- Leave KY 32 as a highway; do not remove pavement. That would require friends and family to drive a long way to visit, affect school buses and mail.

Response *The maintenance cost of keeping both roads open would be problematic. However, as final design proceeds, KYTC will investigate opportunities to keep neighbors' and community access open, and options for uses of the abandoned portions of the existing roadway.*

D. Oppose Preferred Alternative and/or Support Other Alternative

D.1 A commenter questioned the dismissal of Alternative 1A and the environmental disruption of Alternative 3. Worried whether this is a "retreaded" version of the KY 645 corridor. There has been a greased process to favor a heavy construction alternative.

Response *Regarding Alternative 1A, please see EA Section 2.3, "Preferred Alternative—Build Alternative 3," which notes Alternative 1A was eliminated because it would not meet the project's purpose and need. Included in that section is the note that, while impacts associated with Alternative 3 appear to be greater than for alternatives 1A, 1B, and 2A, those other alternatives would require fill material (3.0, 6.5, and 5.0 million cubic yards, respectively) from an offsite borrow location(s), and additional impacts at those locations are not reflected in the impact calculations. (Please see Response to Comment D.2.)*

Regarding KY 645, EA Section 3.1.2, "Compatibility With Regional and Community Plans," summarizes the history of the "2006 KY 645 Study" and notes:

> *...the KY 645 corridor project is illustrative, only—it has no defined corridor, no funding, no plans for advancement, and therefore, its implementation is not*

reasonably foreseeable. Should it be advanced at some point in the future, the 2006 cost estimates of about $400 million would require federal funding, and therefore require a separate NEPA analysis and document for that project.

Regarding "greased process," the process by which the preferred build alternative was recommended has been both lengthy—having initiated with the "KY 32 Alternatives Study" that was included in the State's Six Year Highway Plan (FY 2006-2012) and completed in 2009; and transparent—providing four stakeholders' meetings, two public meetings, a Public Hearing for review and comment on the EA, which documented in detail, the project's history, purpose and need, alternatives development and evaluation, potential socioeconomic and environmental impacts and mitigation, and public involvement activities. As described in EA Section 5.0, "Comments and Coordination," at all meetings, attendees were given updates of the project's progress; and their opinions/recommendations were sought regarding local needs and resources, and alternatives for roadway improvements and alignments. In addition, consultation and coordination with several state and federal agencies has been ongoing throughout the project, as dictated by the NEPA process and other state and federal regulations to ensure full disclosure of and requisite attention to environmental, socioeconomic, and other adverse and beneficial impacts of the proposed project.

D.2 Alternative 1A would be the least expensive, and would have saved taxpayers money. However, the Department of Transportation will build a new road no matter what the public wants.

Response *Alternative 1A would cost less than the Preferred Alternative; however, it would not have met the project's purpose and need, primarily as a result of its failure to effectively improve roadway geometry. (Purpose and need are discussed in detail in EA Chapter 1.0, and alternatives evaluation in EA Chapter 2.0.) Alternative 1A was advanced to the EA for detailed analysis due to some public support. This combination of spot improvements would require 15 residential relocations and one commercial displacement. It is the only alternative considered that would have an Adverse Effect to a Section 4(f) use of a historic property. (Please see EA Sections 3.10 and 3.11 for discussions of historic resources and Section 4(f) use, respectively.) A high number of utilities would also be affected, and offsite fill material (estimated 3.0 million cubic yards) would be required, the impacts of which are not known.*

Regarding what the public wants, throughout the public involvement process: Alternative 3 has received public support during public meetings, and, as explained in EA Chapter 1.0, it meets the project's purpose, i.e., "To provide a roadway having improved horizontal and vertical geometry compared with existing KY 32." The geometric deficiencies are listed therein to show the need for a roadway that meets design standards along the entire length of the corridor, not just in selected locations.

D.3 The enormity of the change for those living along the road has not been addressed. It should be clear who wants this road to be so sweeping.

Response *The entire EA was dedicated to disclosing the results of the detailed analyses of the project's potential socioeconomic/ environmental impacts, measures to avoid/minimize*

impacts, and measures to mitigate impacts that cannot be avoided. The rationale for recommending Alternative 3 as preferred is described in EA Section 2.3. Considerations for the recommendation include the determination that the alternative would best meet purpose and need; received more public support than Alternatives 1B and 2A; would have the second fewest residential relocations and no cemetery relocations; would provide the best opportunity for scenic pullovers and other enhancements; would best facilitate maintenance of traffic during construction, would meet current design standards; and would be the least expensive of the three viable (i.e., meet purpose and need) alternatives. (Please see Response to Comment D.2 for a discussion of why Alternative 1A, which also had public support, was eliminated.)

D.4 Three comments expressed opposition to the project, two noting that the funds could be used for other things.

Response *The No-Build (do nothing) Alternative does not meet the project's purpose and need. It should be noted that money appropriated for highway-related projects/uses cannot be spent on other types of projects or services, as stipulated in the Kentucky Constitution, Section 230:*

> *"No money derived from excise or license taxation relating to gasoline and other motor fuels, and no moneys derived from fees, excise or license taxation relating to registration, operation, or use of vehicles on public highways shall be expended for other than the cost of administration, statutory refunds and adjustments, payment of highway obligations, costs for construction, reconstruction, rights-of-way, maintenance and repair of public highways and bridges, and expense of enforcing state traffic and motor vehicle laws.*

D.5 Believed the public wants improvements to the existing KY 32 rather than a new road as currently proposed; and called for documentation of the public's "vote" regarding alternatives.

Response *EA Section 5.2, Interagency Coordination and Consultation, documents, in summary form, the results of questionnaires/comment cards from the October 27, 2011, public meeting at which alternative alignments that had been developed since the first public meeting (February 12) were presented for comment. As summarized in EA Section 5.1, "Public Involvement Activities," 65% of the returned comments indicated support for Alternative 1A (the alternative that would improve "spots" along existing KY 32); while 58% favored advancing Alternative 3 vs. 25.5% for Alternative 2A, and 36.4% for 1B. EA Section 2.2, "Build Alternatives Considered," also notes that Alternative 1A would not meet purpose and need; however, because it was recommended in the 2009 Alternatives Study and because of public support expressed at and following the October public meeting, the alternative was advanced for comparison with the other Build Alternatives. As explained in EA Section 2.3, Alternative 1A was eliminated during the evaluation of alternatives primarily for not meeting purpose and need, but also for reasons that included being the only alternative that would have an Adverse Effect to and Section 4(f) use of a historic property.*

E. Aesthetics/Scenic Roadway

E.1 Impressed with attention to environmental impact, to preserving area's scenic beauty.

Response *Comment noted.*

E.2 Three comments concerned the project's effect on the scenic nature of the project area:

- Alternative 3 would destroy the potential for KY 32 to be a scenic byway and source of tourist dollars.
- What happened to the "scenic road" designation?
- The beauty of Elliott County is not just a pass-through experience. The environment always gets shortchanged.

Response *In March 2000, an application to designate KY 32 as a scenic highway was made to KYTC by government officials in Elliott County. The application was not approved.*

Throughout the EA, KYTC addresses the public's interest in preserving the scenic and aesthetic characteristics of the project area. One of the goals of the project is to provide scenic vistas. "The preservation and enhancement of viewsheds are seen as a value to the citizens and stakeholders, and a key element in local tourism" (EA Section 1.2, "Purpose and Need, Goals"). As explained in EA Section 2.3.2, "Rationale for Recommending the Preferred Alternative," Alternative 3 has the "best opportunity for scenic pullovers and other enhancements." As features of potential economic benefits of the project, EA Section 3.3.3 "Economic Impacts," identifies the following:

- *"Constructing scenic pullovers along the improved / relocated (depending on the build alternative selected) roadway.*
- *"Using the section(s) of existing KY 32 corridor that would remain in place as a multi-use path and tourism attraction. Suggested amenities include signage and facilities to accommodate users.*

"KYTC commits to considering pullovers, multi-use paths, and associated enhancements and to establishing a stakeholders committee to review Phase II design plans for the potential to include such enhancements. Recommended Alternative 3 would provide the best opportunity for constructing scenic pullover areas and multi-use paths."

EA Section 3.13, "Visual Impacts," addresses the scenic vistas viewed <u>from</u> the new road as well as impacts of the view <u>of</u> the road. Again the commitment to considering enhancements is noted together with a commitment to "establishing a stakeholders committee to review Phase II design plans for the potential to include enhancements" identified above and in EA Section 3.3.3. These commitments head the list in EA Chapter 4.0, Mitigation Measures.

F. Purpose and Need

F.1 Is this a priority road? Low volume with alternative routes available.

Response *The project is a priority for the local governments and the Commonwealth. The reconstruction of KY 32 (KYTC Item No. 9-192) stems from the 2009 "KY 32 Alternatives*

Study" recommendation that the KY 32 corridor be advanced to the Preliminary Engineering and Environmental Documentation stage. Design for the entire corridor and construction of the eastern section is included in the State's FY 2014–2016 Biennial Highway Construction Plan, enacted April 15, 2014. In June 2013, FHWA and KYTC signed the EA in which the purpose and need for the project are described in detail (please see EA Section 1.2 "Purpose and Need, Goals"). The purpose of the project is: ***To provide a roadway having improved horizontal and vertical geometry compared with existing KY 32.*** *Although the current and projected traffic volumes are modest, the existing road's geometric deficiencies listed in EA Section 1.2 show the need for a roadway that meets design standards along the entire length of the corridor for reasons of travel safety and efficiency. Regarding "alternative routes available": KY 32 is a primary east-west road in Elliott and Rowan counties, and other east-west roads in the region are not near enough to the KY 32 corridor to provide travelers with readily accessible alternative routes.*

F.2 $100 million of state and federal money will be spent to reduce travel time by 6 minutes. Alternative 3 would have a 55 mph speed limit, which would result in speeding vehicles and more accidents, when currently there are few.

Response *Alternative 3 would meet the purpose and need for the project, providing an improved roadway constructed to current design and safety standards, which would increase overall travel speed, reduce travel time, and improve the economy of travel by lowering operating costs. Accessibility, response time, and safety for law enforcement, fire protection, EMS, and school buses would be improved. The public identified reduced travel time as sufficiently important to result in its inclusion as one of the goals of the project (please see EA Section 1.2). Six minutes' savings in time multiplied by the number of vehicles per day using the roadway results in hundreds of hours of savings every day in motorists' time and vehicle operating costs.*

During the 2009 Planning Study and at the January/February 2011 stakeholder/public meetings, safety was listed as the top concern. Improved safety is a goal of the project. Overall, improved geometry would contribute to a solution to safety problems by reducing the potential for crashes, and would, thereby, address the top public concern.

The traffic crash analysis for the project area indicates that five spot sections of KY 32 along the project corridor are each experiencing high crash rates. (See EA Table 4b for statistically high crash locations, which are illustrated in EA Figure 5.) Poor/restricted visibility, speed differentials between vehicles, combined with a roadway not meeting current design standards, are the likely contributing factors for the high crash rates on KY 32. This assumption is supported by the documented poor visibility on these roadways, and 10% passing sight distances. Although the posted speed limit on KY 32 is 55 mph, these factors make driving at the posted speed unsafe and, in many locations, not practicable along most sections of the roadway in the project area.

G. Cost Issues

The old and new roads pose future cost issues, particularly for local government. Perplexed about the lack of cost data presented.

Response *Issues (such as maintenance costs) related to the potential use of and the commitment to consider enhancements to the portions of existing KY 32 that would remain after the new road is open to traffic will be addressed during final design. Appropriate county and local government agencies will be involved in the decisions regarding the future costs of maintaining the existing roadway.*

Regarding the presentation of cost data, preliminary estimates for the cost of right-of-way acquisition, utilities relocation, and construction were prepared for comparison of alternatives in the environmental documentation (see EA Table 5, "KY 32 Potential Build Alternative Impacts"). More detailed costs will be prepared after FHWA approves a Selected Build Alternative and final design is underway.

H. Open Burning

Four commenters in opposition to open burning of trees and brush removed for construction cited allergic reaction to smoke and/or noted they can't go outside or open windows due to the smoke.

Response *Burning of construction related debris would be conducted in accordance with all local, state, and federal regulations. All burning will be conducted a reasonable distance from homes and care will be taken to alleviate any potential atmospheric conditions that may be a hazard to the public. All burning will be monitored.*

I. Personal Property / Right-of-Way and Relocation

I.1 The boundary line of a farm shown is incorrectly drawn. A corrected PVA map [a copy of which was provided with the comment] shows the corrected boundary.

Response *The boundary has been corrected on the project's property mapping in order to ensure accuracy in the final design phase. As the project advances, detailed property information through deed research will be obtained.*

I.2 Removal of pavement of existing KY 32 would require the relocation of personal and customers' existing access to a retail agricultural business. The commenter recommended terminating existing KY 32 at another location nearby as a means of avoiding the problem.

Response *Details regarding local access, removal of existing pavement, property acquisition, and other issues will be addressed during the final design phase. As the project moves forward, additional public outreach will be conducted, which may include a right-of-way informational meeting, notices to affected property owners, and meeting notices in local media.*

I.3 Alternative 3 would acquire the commenters' residence, and they asked that the project progress quickly to the relocation stage.

Response *Regarding the timing of the project, EA Section 1.6, Schedule and Funding Sources, notes design work was funded for FY 2012, right-of-way acquisition and utilities work for FY 2013, and construction for FY 2015. Please see the Response to Comment I.2 for*

information regarding notification of property owners. It should be noted that construction will be in two or three phases and this schedule applies only to the first phase. Subsequent phases will proceed accordingly.

I.4 If the project acquires a home's wastewater disposal system, there could be too little space on the property to install a new system.

Response *If a sewer/septic/other wastewater disposal system, in whole or part, cannot be replaced (for reasons of space, topography, or other constraints including local regulations) on property remaining after right-of-way acquisition for this project, it is the policy of KYTC to make an offer to acquire the entire parcel. As noted above, right-of-way acquisition issues will be addressed as the project advances toward construction.*

I.5 Noting potential risk to children due to the proximity of the new road to their residence, acquire the entire property, including the residence, and relocate the family.

Response *Details regarding property acquisition, residential relocation, and other issues will be addressed during the final design phase. As the project moves forward, additional public outreach will be conducted, which may include a right-of-way informational meeting, notices to affected property owners, and meeting notices in local media.*

I.6 As currently configured, Alternative 3 would acquire an occupied residence to avoid impacting an unoccupied log structure deemed eligible for the National Register. The commenter requested the alignment of Alternative 3 be modified to avoid acquisition of a large section of land and the residence where the family lives.

Response *The State Historic Preservation Officer (SHPO) has concurred in the finding that the structure and surrounding property are historic and eligible for listing in the National Register of Historic Places (NRHP). The preliminary alignment of Alternative 3 received a No Adverse Effects finding, as did Alternatives 2A. The SHPO concurred in the findings.*

Alternative 1A (which would avoid the commenter's residence) would acquire the historic log structure and 7.2 acres of land, impacts that resulted in the Adverse Effects finding with which the SHPO has also concurred. The NRHP-eligible designation, coupled with an Adverse Effects finding, affords the site protection under Section 4(f) of the U.S. Department of Transportation Act. Please see EA Section 3.10, "Section 106: Historical Architecture and Archaeological Resources," and EA Section 3.11.1, "Section 4(f)," for more detailed information.

Right-of-way and relocation issues will be the focus of future outreach to residents who are affected by the project. (Please see Response to Comment I.5.) The Project Team will continue to look at potential ways to minimize impacts to this parcel.

I.7 A commenter asked to be contacted prior to pavement removal near a specified parcel.

Response *The commenter will be contacted during the right-of-way phase.*

I.8 A farmstead would be split by the new highway. Impacts of the proposed project including the inability to maintain the farming operations. Also, the amount of land

remaining would not allow for safe access to their other farm property or provide enough room to install new septic and leach lines for the residence to replace those taken by the project. Health issues were also cited. The commenters asked that they be contacted, and that the State acquire the entire property.

Response *KYTC staff members have contacted the commenters and plan to meet with them as the project advances. (Note: This submittal is not included in Appendix B, "Public Hearing Comment Forms Received," at the request of the commenter due to the personal nature of information therein.)*

J. Miscellaneous

J.1 "No" was the response provided by nine commenters to either or both of the following questions on the comment form: (5) "Now that you have reviewed the information gathered and studied, do you think anything else should have been included in the selection of a preferred alternative?" and (6) "As the selected alternate moves forward, do you have recommendations or information to offer?"

Response *Comments noted.*

J.2 "Yes" was checked on 20 comment forms for Question 3: "Do you believe the public has been kept informed of the project?" "No" was checked on the remaining 2 of the 22 forms.

Response *Comments noted.*

5.0 PROJECT EVENTS

Events that have occurred since the approval of the EA are summarized below.

- A Public Hearing was held on October 10, 2013. (See Section 4.0, *Public Involvement*.)
- Following the Public Hearing, additional research was conducted, per a commitment in the EA, to identify whether any minority or low-income residents (i.e., EJ populations) would be relocated as a result of the acquisition of right-of-way for Selected Alternative 3, and, if so, then to determine whether their relocations would disproportionately and adversely affect them. The results of this effort are documented in Section 3.7, *Environmental Justice*.
- In December 2013, KYTC supplied copies of the EA to stakeholders who submitted an open records request.
- Alternative 3 is the Selected Alternative because it best meets the project's purpose and need, and is the alternative determined to cause the least overall harm. While shifts in alignments are often reviewed during final design to minimize relocation or other impacts, consideration of any such changes would include determining potential changes in impacts to Sections 106/4(f) sites; streams and other sensitive environmental resources; and whether/how neighboring properties would be affected.

Once the FONSI has been approved, a letter informing the citizens of (1) which alternative was selected, and (2) the availability of FONSI will be sent to persons listed in the project database, which is based on sign-in sheets from public meetings, the consulting parties meeting, and/or the Public Hearing.

6.0 PROJECT COMMITMENTS

KYTC and KY-FHWA ensure that all project commitments are communicated through the implementation, operation, and maintenance of each highway project, as appropriate. The approved EA (provided as Appendix A) addresses both the affected environment and environmental impacts of the alternatives that were studied during project development. The EA was made available to the public during and following the Public Hearing. This FONSI was not developed until all public comments on the EA were received and taken into consideration. Based on the information obtained from the EA and the comments received since its approval, the following are commitments KYTC has made to minimize and/or mitigate any potential adverse impacts caused by the Selected Alternative.

Economic Impacts—Taxes and Revenues and **Visual Impacts.** The project would cause the direct conversion of private taxable property to non-taxable, government-owned right-of-way. Some farmers could lose income or land value, and small businesses bypassed by a road on new alignment could lose revenue. However, other economic development could occur to offset such losses. In response to stakeholders' and the public's recommendations regarding tourism-related economic and aesthetic benefits offered by scenic vistas in the project area, KYTC commits to considering pullovers along the new roadway and multi-use paths with associated user facilities along the remaining section(s) of the existing roadway; and establishing a stakeholders committee to review Phase II design plans for the potential to include such enhancements. Selected Alternative 3 would provide the best opportunity for constructing scenic pullover areas and multi-use paths.

Relocations/Displacements and **Environmental Justice.** Selected Alternative 3 would acquire and relocate 14 residences (three of which are vacant, but are considered relocations because could in the future have occupants). KYTC will implement a residential relocation program in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646),* as amended in 1987. Relocation resources will be available to all residential relocatees without discrimination.

The Environmental Justice Analysis performed for this project (see Section 3.7) identified 7 residences meeting the criteria for consideration as members of EJ populations (i.e., 6 low-income and 1 minority). With one exception, the analysis concluded that the relocation of these residents would have no adverse effect and would not be a disproportionately higher impact than the impacts that would be experienced by non-EJ relocatees. The one exception is a household that meets the EJ low-income criterion and whose owner expressed concern about loss of an income-producing hayfield due to relocation. At this time KYTC considers that there to be a potential adverse effect**,** with further investigation to occur during the right-of-way acquisition and the relocation assistance process. However, should a finding of adverse effect then be made, it would not be disproportionately high; i.e., the 1 low-income EJ relocation would be 9% of the total 11 relocations of occupied residences, well below the threshold 33% discussed in the "Determination of Effects" (in Section 3.7). The effects of relocation "would not be predominantly borne by" the EJ household or "appreciably more severe or greater in magnitude than the adverse effect" to the non-EJ population to be relocated. As will all relocatees, assistance with relocation would occur through KYTC's Relocation Assistance Program, which is conducted in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (Public Law 91-646), as amended in 1987.

A review of the local housing market reveals a limited supply of comparable housing available at any one time. It is anticipated that there could be more relocations than available, affordable residences at any given time; consequently, it is unlikely all of the 11 relocations could occur at the same time. However, over the course of a year or more for relocations, it is possible that sufficient comparable housing would

become available when the right-of-way is acquired for this proposed project. Accordingly, it is likely the relocations for this project would be accomplished using normal relocation procedures, and the need for Last Resort Housing should not be anticipated. This program would be used if comparable replacement housing would not be available, or unavailable within the displacee's financial means, and the replacement payment exceeds the state legal limitation.

Construction Noise*.* Noise and vibration impacts would originate from heavy equipment movement, blasting, and construction activities such as pile driving and vibratory compaction of embankments. KYTC requires construction noise abatement on highway construction projects. Contractors must use mufflers and other noise abatement techniques on their equipment and implement procedures to limit work hours and restrict the transmission of noise to sensitive receptors such as churches, schools, parks, and residences. Noise control measures would include those contained in KYTC's *Standard Specifications*, as directed by the KYTC project manager.

Streams. Selected Alternative 3, primarily on new alignment, would have approximately 36,915 linear feet of streams within the construction limits at the alternatives' stream crossings. Alternative 3's impacts include a total of 755 linear feet of two perennial stream—Christy Creek and P2; a total of 21,710 linear feet of intermittent streams (56 crossings); and 14,450 linear feet of ephemeral stream (64 crossings).

In a letter of July 22, 2011, KDFWR recommendations included avoidance of Big Caney Creek, which is listed as Special Use Waters by KDOW; and "strict erosion control measures be developed and implemented prior to construction to minimize siltation into streams." KSNPC also called for an erosion control plan in its letter of October 29, 2010. In a letter dated November 4, 2010, KDOW noted that a section of Big Caney Creek is a Cold Water Aquatic Habitat (CAH), Reference Reach and Outstanding State Resource Water (OSRW) and, therefore, must be protected per regulation in 401 KAR 10:031. KDOW noted that enhanced Best Management Practices and maintenance of the riparian zone are critical to the temperature regime of a CAH, as well as protection from pollutants carried by stormwater runoff. See Section 3.8.3, *Intergovernmental Coordination (*also EA Section 3.8.4*),* for additional information regarding agency coordination; Appendix D and EA Appendix A for copies of the correspondence containing the agencies' comments and recommendations.

Because the project corridor runs parallel to Big Caney Creek and Laurel Creek, and several streams draining into those creeks are crossed by Selected Alternative 3, several agencies noted the importance of erosion control and protecting the resources from pollutants in stormwater runoff. In addition to or as a feature of mitigation to be defined in the permitting stage, KYTC commits to implementing enhanced mitigation ("green infrastructure") measures, such as permanent stormwater collection devices/bio-swales within the right-of-way, sized to collect runoff and potential hazmat spill materials from the road.

Stream impacts will be minimized to the maximum extent possible during final design. Because avoidance of all stream impacts is not possible, mitigation for unavoidable stream impacts will be required through the permitting process under Sections 404 and 401 of the Clean Water Act as administered by the USACE and KDOW, respectively. A USACE Individual 404 Permit and KDOW 401 Water Quality Certification would be required.

Although not anticipated with Selected Alternative 3, should excess fill deposition sites located outside of the project corridor be needed, these areas would be surveyed for potential "waters of the United States." Fill sites (if needed) that would impact a stream deemed by USACE to be jurisdictional will require USACE 404 and KDOW 401 permitting. If this permitting is to be the responsibility of the contractor, the contractor will be made aware of such obligations.

Recommendations identified by the above-referenced regulatory agencies will also be taken into consideration by the engineering team during final design. Water quality impacts from erosion and sedimentation during construction will be controlled in accordance with KYTC's *Standard Specifications* and through the use of Best Management Practices.

Wetlands and Open Water (Ponds). Based on the *Ecological Report,* Selected Alternative 3's impacts to jurisdictional wetlands and ponds would be approximately 1.42 acres and 0.61 acre, respectively. USACE will make jurisdictional determinations at the final design stage of a project.

Wetland impacts will be minimized to the maximum extent possible during final design. Because avoidance of all impacts to jurisdictional wetlands is likely not possible, mitigation for unavoidable impacts will be required through the permitting process under Sections 404 and 401 of the Clean Water Act as administered by USACE and KDOW, respectively. A USACE Individual 404 Permit and KDOW 401 Water Quality Certification would be required. Mitigation is not typically required for open water (pond) impacts; however, mitigation requirements will be determined by the USACE and KDOW during the permitting process.

Prior to construction (i.e., after final design) KYTC, Division of Environmental Analysis will make an exact determination of impacts to jurisdictional wetlands. Detailed permit coordination—which will identify specific mitigation measures—will occur with USACE during the final design phase of the project. All wetlands in the project corridor were identified as emergent. For the loss of emergent wetlands and ponds, mitigation could include creation of small, shallow, seasonally flooded ponds to minimize the loss of these habitats. Ideally, the mitigation would take place on-site if locations with available right-of-way are suitable. If suitable locations are not found onsite, off-site mitigation would be required.

See "Streams," above, for the commitment regarding erosion control and stormwater runoff.

Threatened and Endangered Species. Three federally protected (endangered) bat species and one federal proposed bat species are known to occur in Rowan and Elliott counties, Kentucky—Virginia big-eared bat, Indiana bat, gray bat, and northern long-eared bat. Although no individuals of these species were observed during the field assessment, foraging and/or roosting habitat is present in the project area. A Biological Assessment (BA) will be performed prior to construction to determine potential impacts to the federally protected bat species. The BA, which would be prepared in consultation with USFWS, will identify potential direct, indirect, and cumulative impacts to these species, as well as mitigation measures, should they be required. Mitigation include minimizing impact to prime habitat areas, minimizing riparian tree clearing, using proper equipment staging and fueling areas, and using enhanced erosion control measures.

Historic Architectural and Archaeological Resources. Selected Alternative 3 would acquire minimal amounts of land for right-of-way from two NRHP eligible historic properties: Black-Caudill Log House Site (EL-26) and the Montgomery and Mary Crockett House Site (EL-38). The SHPO has concurred that there would be no adverse effects to these sites (see EA Appendix C, correspondence dated October 4, 2012[6]). Alternative 3 would not have an adverse effect to any listed or eligible sites along its entire length. Therefore, no mitigation will be required. The SHPO has concurred with FHWA's determination that,

[6] The letter inadvertently states that there would be both "No Effect" and "No Adverse Effect" to the sites. The determinations to which the SHPO referred in issuing its concurrence are, in both cases, "No Adverse Effect," as stated in the *Determination of Effects* report submitted by FHWA to the Kentucky Heritage Council (SHPO), a copy of which is also on file with KYTC.

based on a finding of No Adverse Effect, there would be no Section 4(f) use of historic sites, and the *de minimis* rule applies (see correspondence dated March 26 and March 31, 2014, in Appendix C).

Regarding archaeological resources, a Phase I investigation has been completed and the SHPO has concurred with the resulting recommendation that no further investigation be conducted (see correspondence in Appendix C).

Hazardous Materials. Selected Alternative 3 would potentially impact three sites. In addition, there is further potential to impact sites scattered throughout the project area but not mapped during this study. These sites include pole-mounted electrical transformers; and area residential/ agricultural properties containing ASTs/USTs, pesticides, herbicides, and other pollutants. Mitigation measures would include the following:

- A Phase II hazardous materials investigation will be conducted and be completed prior to right-of-way acquisition of sites identified as potentially having hazardous materials or contamination, unless KYTC is unable to obtain site access. In those cases, the work would be completed as early as possible following the securing of the legal right to enter the property. The project would not be advertised for construction until all clearances are obtained.
- During right-of-way acquisition and/or construction, if a site suspected of containing hazardous materials is discovered, then activities at that site will cease and further investigations will be performed before construction can proceed. Such materials/conditions could include hazardous building materials, soil discoloration, odors, or oily sheen on water.
- Structures identified for acquisition will be inspected for ASTs and/or USTs. Confirmed tanks will be removed prior to demolition, and handled and disposed of consistent with existing local, state, and federal regulations. If the propane tanks serving residential properties require relocation, vendors of tanks that are affected will be notified prior to construction or demolition activities.
- Structures identified for acquisition will be inspected for ACMs by an accredited inspector. Confirmed ACMs will be removed prior to demolition, and handled and disposed of consistent with existing local, state, and federal regulations.
- PCB-containing pole-mounted transformers that require relocation will be handled consistent with applicable regulations. Relocation of these transformers is normally undertaken by the local electric utility. All fluorescent light fixtures with ballast found to contain PCBs will be handled and disposed of in accordance with applicable regulations.

Construction Impacts. Highway construction activities would also have temporary air, water quality, noise, and traffic flow and associated impacts within the project area. Steps that will be taken to minimize or avoid these temporary impacts are included below.

- The air quality impact would be temporary, and primarily in the form of diesel-powered construction equipment emissions and dust from exposed earth. Air pollution associated with airborne particle creation will be effectively controlled through the use of watering or the application of calcium chloride in accordance with KYTC's *Standard Specifications,* as directed by the KYTC project manager.

  Burning of land-clearing debris will be conducted in accordance with all local, state, and federal regulations. All burning will be conducted a reasonable distance from homes and care will be taken to alleviate any potential atmospheric conditions that may be a hazard to the public. All burning will be monitored.

- Water quality impacts from erosion and sedimentation, and noise and vibration impacts originating from heavy equipment movement and other construction activities would be temporary and controlled in accordance with KYTC's *Standard Specifications,* as directed by the KYTC project manager, and by using Best Management Practices. Structure and debris removal will be performed in accordance with local, state, and federal regulating agencies' permitting. Contractors will be required to obtain the necessary permits that are related to their construction practices such as for construction of temporary roads or waste and borrow pits, if necessary.
- Selected Alternative 3 is primarily on new alignment and would, therefore, manage Maintenance of Traffic issues better than the alternatives that would have been constructed within the existing KY 32 right-of-way. Construction activities, including traffic maintenance and construction sequence, will be planned and scheduled to minimize traffic delays. Signs will be used as appropriate to provide notice of road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities that could excessively inconvenience the local residents, allowing motorists to plan travel routes in advance. Property access will be maintained through controlled construction scheduling. Traffic delays will be controlled to the maximum extent possible where many construction operations are in progress simultaneously. The contractor will be required to maintain one lane of traffic in each direction at all times, and to comply with Best Management Practices.
- Temporary erosion control features, as specified in KYTC's *Standard Specifications*, would consist of measures that could include the temporary placement of sod, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.
- Contractors will be required to obtain the necessary permits that are related to their construction practices such as for construction of temporary roads or waste and borrow pits, if necessary.