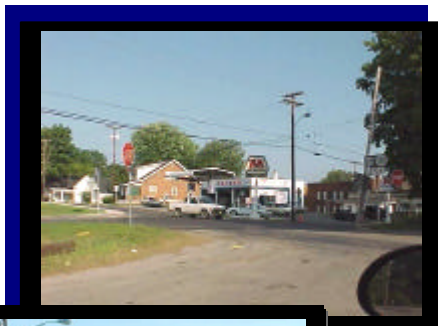


US 62 Intermediate Planning Study

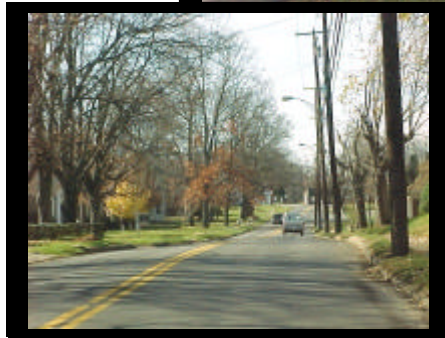
FROM KY 189 TO KY 181 IN MUHLENBERG COUNTY



*Kentucky Transportation Cabinet
Six-Year Highway Plan
Item No. 2-138.00*



*Prepared for:
Kentucky Transportation Cabinet
Division of Planning
Frankfort, Kentucky*



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US 62 Intermediate Planning Study
From KY 189 to KY 181, Muhlenberg County, Item No. 2-138.00

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EXECUTIVE SUMMARY

The Kentucky Transportation Cabinet (KYTC) Division of Planning sponsored US 62 Intermediate Planning Study was agreed upon to observe different solutions to the current and future needs of the facility from KY 189 to KY 181. The state highway is a two-lane major collector that carries traffic to and from Greenville in Muhlenberg County, as well as through-traffic travelling from other areas. The segment of US 62 being studied is an integral part of the Greenville Community, it provides access to downtown Greenville, the Muhlenberg Community Hospital, and numerous other businesses and residences.

Establishment of the goals for the project included an active public involvement process. This involved inclusion of a variety of project stakeholders, such as local public officials, area residents, Transportation Cabinet staff from the Central Office, District 2, and planning personnel from the Pennyriple Area Development District. Collectively these groups agreed upon the following Project Goals:

- ♦ **Reduce the number of crashes along the route.**
- ♦ **Provide improved capacity where practical along the route to support Design Year 2025 traffic volumes.**
- ♦ **Provide improved connectivity from KY 189 to KY 181.**
- ♦ **Provide pedestrian facilities along the route.**
- ♦ **Improve access to the hospital.**
- ♦ **Provide improved drainage along the route.**

Based upon these project goals, the following three alternate actions were considered:

- **Do Nothing**
- **Widening of US 62 to a 3-lane facility**
- **Spot Improvements at the US 62/KY 181 intersection, the US 62/KY 171 intersection, and the rural section near the west end of the project**

Each of the alternatives provides adequate capacity for Design Year 2025 traffic. The Do Nothing alternative does not meet any of the other project goals. Widening of US 62 carries a cost of \$8,100,000, as well as having potential impacts to cultural historical sites, particularly the Cherry Street Historic District. The Spot Improvements meet some of the project goals, while having fewer potential impacts to cultural-historic properties than the widening alternative. The public did not overwhelmingly support any alternative, although the US 62/KY 181 intersection spot improvement did receive modest support. The recommendation for the study was to proceed with spot improvements at three locations along the corridor. No major issues and concerns that would impact the implementation of the recommendation were discovered and no commitments were made regarding future phases of this project.

The KYTC 2003 – 2008 Six-Year Highway Plan (SYP) has identified funding for the design, right of way and utilities phases of this project. No construction funds have been identified. Anticipated funding and costs, by phase, for implementation of the recommended alternative are shown in **Table 1**. These estimates of probable costs indicate the adequate funding is available in the SYP for design, right-of-way and utilities.



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TABLE 1: IDENTIFIED FUNDING AND IMPLEMENTATION COSTS

| | Identified Funding And Year of Funding | Implementation Costs for Spot Improvements Alternative |
|--------------|---|---|
| Design | \$500,000 (2003) | \$279,000 |
| Right of Way | \$800,000 (2005) | \$750,000 |
| Utilities | \$500,000 (2005) | \$422,000 |
| Construction | Not Funded | \$3,105,000 |
| TOTAL | \$1,800,000 | \$4,556,000 |



1.0 INTRODUCTION

The US 62 Intermediate Planning Study, sponsored by the Kentucky Transportation Cabinet (KYTC) Division of Planning, was undertaken to determine improvement strategies to address both the current and future needs of the facility. Located in the southwestern part of the state, the study portion of US 62 travels through the community of Greenville in Muhlenberg County. The project limits are from KY 189 to KY 181, as shown in **Figure 1**.

US 62 is functionally classified as a Rural Major Collector and is a State Secondary Road in the State Maintained Highway System. It provides a connection between KY 189 and KY 181, as well as providing access to the central part of the City of Greenville, the Muhlenberg Community Hospital, and KY 171. Speed limits vary from 25 miles per hour (MPH) to 45 MPH, and there are numerous commercial establishments and residences in the corridor.

KYTC recommended that an Intermediate Planning Study be conducted for this project based on a FY 2003 design start in the KYTC *Approved 2000-2002 Biennial Highway Construction Program and Identified Preconstruction Program Plan for Fiscal Year 2003 Through 2006*, also known as the 2000 Six-Year Highway Plan. Funding was identified for design (\$500,000 for Fiscal Year 2003), right-of-way acquisition (\$800,000 for Fiscal Year 2005), and utility relocation (\$500,000 for Fiscal Year 2005). The 2002 Six-Year Highway Plan maintained this same funding schedule. In late 2001, the study was initiated with an assessment of existing conditions. This included a review of existing reports and plans, an analysis of the existing and future year 2025 traffic conditions, and an analysis of the accident history of the road. An environmental review/footprint was developed highlighting known environmental resources in the area. Due to the nature of the potential impacts to historic properties, a detailed historic property research was subsequently completed.

1.1 PURPOSE OF THE STUDY

The purpose of this Intermediate Planning Study is to identify and gather critical information about the project corridor prior to the initiation of the design phase, and to help define the scope and location of possible roadway improvements that might better serve the residents of Muhlenberg County. It will also aid the Kentucky Transportation Cabinet in consideration of environmental issues, as defined in the National Environmental Policy Act (NEPA). The ultimate objectives of this study include the following:

- ♦ Defining project issues and goals
- ♦ Identifying the beginning and ending points of the project, as well as potential improvements and concepts
- ♦ Discussing project issues and goals with public officials, government agencies, concerned citizens, and other groups with interest in the project
- ♦ Identifying known environmental concerns
- ♦ Exchanging information with the public

The successful completion of these objectives should assist the Cabinet in developing final recommendations for this project.



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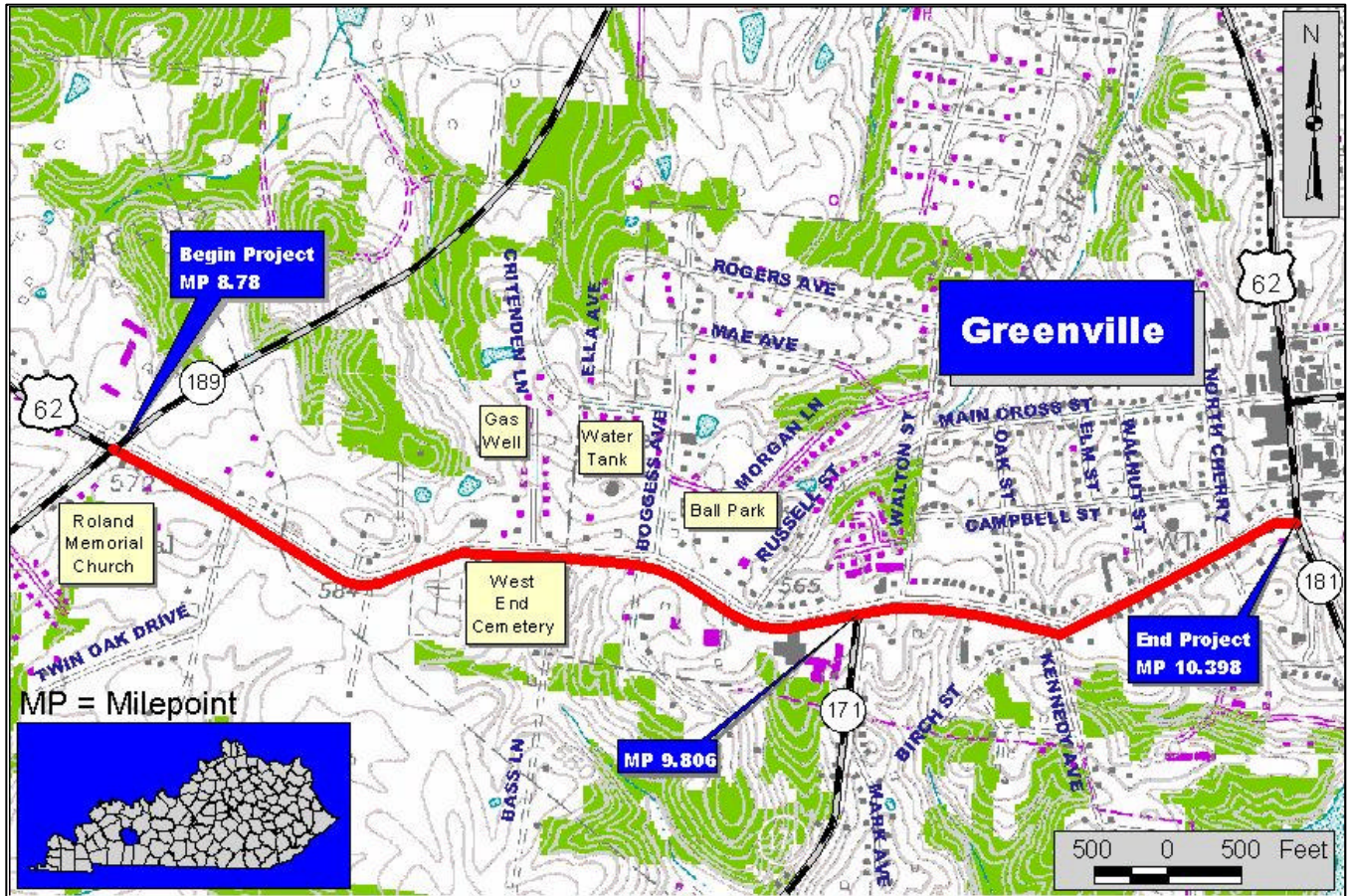


FIGURE 1: PROJECT LIMITS

1.2 FIRST PROJECT TEAM MEETING

The initial corridor issues and a draft Statement of Project Goals were agreed upon at the first Project Team Meeting on September 24, 2001. The Project Team, consisting of the KYTC Division of Planning, KYTC Division of Highway Design, KYTC Division of Operations, Highway District 2 personnel, the Pennyriple Area Development District, and HNTB, also discussed several environmental issues at the meeting. Minutes of the first Project Team Meeting are included in **Appendix A**

The Project Team discussed the issue of logical termini for the study. After reviewing maps of the project area, and recognizing proximity and historic resource issues, it was suggested that, in most locations, improvements would likely be restricted to areas within the existing right-of-way. An alternate corridor or rerouting of US 62 would not solve the congestion and safety problems on the existing route. Utility and right-of-way costs are expected to be quite high, in order to accommodate any improvements to the route. It was also agreed that, due to the urban nature of the study area, an acceptable Level of Service (LOS) for the corridor would be a LOS of D.

The critical issues identified along the US 62 corridor include perceived safety problems and increasing traffic volumes. Some of the most evident safety issues are narrow lanes, lack of turning lanes, and a lack of pedestrian facilities. A significant proportion of the crashes are the result of rear end and angle collisions. Other issues identified along the corridor are as follows:

- ♦ US 62 is a major link between KY 189 and KY 181.
- ♦ Traffic within the corridor is heavy and expected to grow.
- ♦ Turning lanes may be needed at intersections to provide safe storage for drivers wanting to make left turns (to minimize the possibility of rear end and angle collisions as drivers turn onto the side roads and commercial entrances).
- ♦ The section of US 62 near KY 181 is characterized as urban residential with a curb and gutter section, with little existing right of way available for widening.
- ♦ Right of way and utility impacts, particularly on the south side, could be significant.
- ♦ Older homes, churches, gas stations, a cemetery, a hospital, a funeral home, and a former school are located along the corridor.
- ♦ The lanes are relatively narrow and there are sight distance concerns.
- ♦ There are numerous access points along the corridor.
- ♦ Traffic at the intersection of US 62/KY 181 is congested.
- ♦ Vehicles avoid the US 62/KY 189 intersection by using neighborhood streets north of the project area.

1.3 LOCAL OFFICIALS AND STAKEHOLDERS MEETINGS

Upon completing the review of existing conditions along the US 62 corridor, HNTB and KYTC personnel held meetings with local officials, project stakeholders, and media representatives on November 7, 2001. At these meetings, the Project Team presented the draft Corridor Issues and Project Goals. Minutes of the Local Officials Meeting and minutes of the Stakeholders and Media Meeting are included in **Appendix A**

Attendees at the Local Official's Meeting expressed specific concerns and raised additional corridor issues to be considered in the study. They include congestion problems during peak PM hours at the US 62/KY 181 intersection, the use of Crittenden Drive (a residential street) by motorists to bypass the US 62/KY 189 intersection, and the desire to minimize right-of-way impacts. As a result of these concerns, the draft Project Goals were refined to include the following:

Project Goals

- ♦ Reduce the number of crashes along the route.
- ♦ Provide improved capacity where practical along the route to support Design Year 2025 traffic volumes.
- ♦ Provide improved connectivity from KY 189 to KY 181.
- ♦ Provide pedestrian facilities along the route.
- ♦ Improve access to the hospital.
- ♦ Provide improved drainage along the route.

Several other items of concern were discussed during the course of those meetings. It was suggested that the Project Team consider a bypass to US 62, as it is the perception that most



traffic along the route is through traffic, with a considerable amount of truck traffic generated by coal and rock quarry companies. It was also suggested that there is a need to widen US 62 at the KY 181 intersection to accommodate three (3) lanes of traffic and to allow for easier turns. As sight distance is a concern on US 62, alignment improvements are necessary along the corridor, especially at the horizontal curve at Philly's Restaurant and west of the cemetery.

Attendees at the joint meeting for the stakeholders and media representatives were informed of the additional issues raised by the local officials. It was suggested that a three-lane section on US 62 would eliminate many of the existing problems. However, there was some concern over the safety of a continuous left-turn lane.

1.4 RESOURCE AGENCY COORDINATION

After the project limits and draft project goals were established, the Division of Planning mailed letters to several agencies asking for input and comments on the US 62 Intermediate Planning Study in order to address their concerns early in the project development process. Twelve agencies responded, and their responses are included in **Appendix B**. The agencies responding to this request, as well as their general comments, are as follows:

UNITED STATES GOVERNMENT

- ♦ **Department of the Interior, Fish and Wildlife Service** – Erosion and sediment control measures should be implemented on all vegetatively denuded areas. Concrete box culverts should be placed in manners that prevent any impediment to low flows or to movement of indigenous aquatic species. Channel excavations required for pier placement should be restricted to the minimum necessary for that purpose. Overflow channel excavations should be confined to one side of the channel, leaving the opposite bank and its riparian vegetation intact. All fill should be stabilized upon placement. Stream banks should be stabilized with riprap or other accepted bioengineering techniques. Existing transportation corridors should be used in lieu of temporary crossings where possible. Good water quality should be maintained during construction.
- ♦ **United States Environmental Protection Agency** – Provided preliminary scoping comments pertaining to the contents of a National Environmental Policy Act (NEPA) document as well as specific information regarding significant and priority ecological areas, environmental justice areas of concern, and general land cover types for the project area.
- ♦ **United States Department of Energy, Office of Environmental Management, Office of Integration and Disposition** – no comment
- ♦ **United States Coast Guard** – no comment
- ♦ **Federal Aviation Administration** – There are no public use airports in the immediate vicinity of the proposed project. As long as construction activities do not exceed 200 feet in height above ground level, there will be no impacts.

COMMONWEALTH OF KENTUCKY

- ♦ **House of Representatives, Brent Yonts – 15th Legislative District** – Representative Yonts believes that a widening project is not possible, because of the intensity of utilities along the roadway and the proximity of houses to the streets. Widening US 62 would destroy the neighborhood. He suggests that a southern by-pass be built around Greenville. However, spot improvements can be made along the existing corridor by adding turning lanes at the intersection of US 62 West, KY 181 South and South Main Street, and by correcting horizontal deficiencies across from Philly's Restaurant. Representative Yonts stated that widening of US 62 is much more possible once out of the city, and that Russell Street, which joins US 62 from West Main Cross Street, could be improved to help alleviate some traffic congestion.
- ♦ **Kentucky Transportation Cabinet, Division of Materials, Geotechnical Engineering** – Non-durable shale or clay shales are present throughout the corridor. There are no indications of strip-mines or underground mines present. Embankment benches will be necessary in sidehill locations and limestone or sandstone should be placed on the benches for drainage. The project is in a classified Seismic Risk Zone 3, which is defined as an area of high damage due to earthquake activity.
- ♦ **Cabinet for Workforce Development** – no comment
- ♦ **Kentucky Transportation Cabinet, Division of Multimodal Programs** – Bicycle and pedestrian facilities are important and should be constructed along the US 62 corridor.
- ♦ **Kentucky Transportation Cabinet, Permits Branch** – The Permits Branch urges the Cabinet to classify the project as a partially controlled access facility. With this classification, new deeds for all adjoining property owners would need to be executed to identify access control, even if no new right-of-way is acquired. The Permits Branch would like the design speed to be the same as the anticipated posted speed, and would also like to see access control fencing installed with the project.
- ♦ **Natural Resources and Environmental Protection Cabinet, Department for Environmental Protection** – This office serves as the State Clearinghouse for review of environmental documents, and solicited and received responses from the following agencies:
 - **Department of Fish and Wildlife Resources** – The Department has determined that potential negative impacts to the aquatic resources can occur in the project area. Construction is recommended in or near streams during low flow periods with proper placement of erosion control structures and replanting of disturbed areas.
 - **Division of Waste Management** – All solid waste generated by this project must be disposed at a permitted facility. Old regulated and non-regulated underground storage tanks must be properly reported and remediation documented or undertaken.
 - **Department of Agriculture** – Careful consideration should be given to the loss of prime farmland along with any economic and other impacts to area farms.



- **Department for Natural Resources, Division of Conservation** – There are no agricultural districts within or adjacent to the project area. The Division of Conservation expressed concern with controlling erosion and sedimentation during and after earth-disturbing activities.
- **Division of Water** – Requires mitigation for stream loss (if more than 250 acres are involved above the construction impact) and for wetland loss (if more than one acre). Consult U.S. Army Corps of Engineers prior to construction to determine if a water quality certification for dredge or fill material will be required.
- **Department of Surface Mining Reclamation & Enforcement** – no comment
- **Department of Parks** – no comment
- **Nature Preserves Commission** – no comment
- **Department for Military Affairs** – no comment

The above information was incorporated into an Environmental Overview of the project area.

1.5 PUBLIC INVOLVEMENT

The Project Team then presented the overview, the corridor issues and the draft Statement of Project Goals to the public on November 26, 2001 at Muhlenberg North High School. The public was encouraged to comment on the corridor issues and/or the project goals. The purpose of the meeting was to accomplish the following:

- ♦ To seek input from the community about the project
- ♦ To identify and address community concerns and issues
- ♦ To identify sensitive areas that should be avoided
- ♦ To explore alternatives and discuss impacts
- ♦ To create a project that benefits the community and gains its support

Local officials and area residents attended the meeting. They participated in the study development process by watching a presentation, discussing options with the Project Team, and submitting written comments on the provided questionnaires. Their efforts included confirmation of existing conditions and participation in the development of potential improvement options.

In general, the comments received from the public supported those of local officials and stakeholders, in that all of these groups expressed a desire to see improvements made to the existing roadway to ensure safer travel on US 62. Minutes of the local officials, stakeholders, and project team meeting are included in **Appendix A**. The Public Information Meeting Summary is included in **Appendix C**.

Once comments were received, the Project Team began the process of development of alternatives, preparation of cost estimates, finalization of project goals, and determination of recommendations. These are described in **Section 2.0** through **5.0**.

1.6 SECOND TEAM MEETING

On December 19, 2001, the second Team Meeting was held to discuss the results of the public meeting, the environmental overview, geotechnical considerations, possible typical sections,



crash analysis, and traffic analysis. It was determined at that time that significant cultural-historic resources were located within the corridor, and a cultural historic reconnaissance survey was undertaken. The minutes of the second Project Team Meeting are also included in **Appendix A**

The results of the cultural historic reconnaissance survey indicated that the corridor did indeed contain homes that are part of a historic district, and it was recommended that the Project Team avoid impacts to those homes.

1.7 FINAL TEAM MEETING

At the final Project Team Meeting, a revised traffic analysis was discussed. (See minutes of the final Project Team Meeting in **Appendix A.**) The Highway Capacity Software methodology for analyzing two-lane roads had changed over the course of the project, requiring an update to the original traffic analysis. The 2025 projected traffic volumes indicated that the corridor traffic was not expected to increase beyond its capacity. Given the existence of the historic district and the result of the new traffic analysis, the Project Team determined that the Preferred Alternative(s) should be recommended based upon its effectiveness at addressing safety issues in the corridor. This is addressed further in **Sections 4.0** and **5.0**.



2.0 EXISTING CONDITIONS

The project is located in Muhlenberg County, Kentucky in the City of Greenville. **Figure 1** shows the general location of the project, which begins at KY 189 and extends east to the intersection with KY 181. Prominent traffic generators along this roadway are the Muhlenberg Community Hospital, Wesley Chapel A.M.E. Church, South Cherry Street Historic District, numerous commercial developments, and private residences. Photographs of portions of the project area appear in **Appendix D**.

2.1 ROADWAY CHARACTERISTICS

Much of the data on existing conditions was taken from the Cabinet's Highway Information System (HIS) database. This data was checked, verified, and/or updated through field surveys, as appropriate. US 62 is a two-lane, undivided State Secondary Rural Major Collector in the State Maintained Highway System, with lane widths varying from 10 feet (west of KY 171) to 12 feet (east of KY 171). The terrain is rolling, and as a result there are several sharp horizontal curves creating sight distance problems in various locations. There are both areas with shoulders and ditches as well as curbed sections, which exist east of Birch Street. There is one traffic signal in the study area, located at the intersection of US 62 and KY 189. HIS does not list any state-maintained bridges within the project limits. **Table 2** details the existing roadway characteristics.

2.2 CRASH ANALYSIS

One of the primary goals of any highway improvement is to provide a safe and efficient roadway. Crash locations from 1996 through June 2001 were retrieved from HIS for the project area, and are shown in **Figure 2**. The data was analyzed to determine if crashes in the project area exceeded the average rate of similar type roadways in Kentucky. Analysis indicated that the majority of the crashes on US 62 were rear-end and angle collisions. Roadway segments, as defined by the HIS route log, were analyzed to determine if the Critical Rate Factor (CRF) exceeded 1.0. The CRF is calculated by dividing the actual crash rate along a particular roadway segment by the critical rate, which is the maximum crash rate for which it can be said that crashes are occurring randomly. A CRF less than 1.0 indicates that crashes occur at random, and greater than 1.0 suggests that conditions may exist that contribute to non-random occurrences. The segments from KY 189 to Boggess Avenue and from Boggess Avenue to KY 171 had a CRF of 0.93 and 0.98 respectively, indicating that crashes are likely random occurrences. Since the CRF in both locations was close to 1.0, further analysis of the accidents was warranted. In both locations it was determined that roadway geometrics are adequate for the area and did not likely contribute to the crash rate. Driver error (driving too fast for the conditions) is a more likely cause of these crashes. Additionally, the segment of roadway from Boggess Avenue to KY 171 has over 20 driveways, and poor access management could add to driver confusion in the area. The segment of US 62 from KY 171 to KY 181 had a CRF of 0.76, indicating that crashes in this location are random occurrences. The results of this analysis, as well as locations of the crashes, are also shown in **Figure 2**.

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**TABLE 2
EXISTING ROADWAY CHARACTERISTICS**

| | | |
|------------------------|--------------------------------------|--|
| Type of Roadway | Functional Classification | Rural Major Collector |
| | State System Class | State Secondary |
| | Type Road * | Divided (MP8.78-MP8.938), Undivided (MP8.938-MP10.398) |
| | Coal Haul (Annual Tons) | 99,536 |
| | Scenic Byway System | No |
| | National Highway System | No |
| | National Truck Network | No |
| | Defense Highway | No |
| | Extended Weight System | No |
| | Truck Weight Class | AA |
| Crashes | Number of Crashes (1996-2001) | 91 |
| | Number of Injury Crashes (1996-2001) | 19 |
| | Number of Injuries (1996-2001) | 27 |
| | Number of Fatal Crashes (1996-2001) | 0 |
| | Number of Fatalities (1996-2001) | 0 |
| Geometrics | Corridor Length (miles) | 1.618 |
| | Average Right-of-Way Width (Feet)* | 60 (MP8.78-MP9.806), 50 (MP9.806- MP10.398) |
| | Lane Width (Feet) | 10 |
| | Driving Lanes | 2 |
| | Shoulder Type* | Paved (MP8.78-MP10.1), Curbed (MP10.1-MP11.3) |
| | Shoulder Width (Feet)* | 6 (MP8.78-MP9), 1 (MP9-MP10.1) |
| | Percent Passing Sight Distance | 80 |
| | Number of Bridges | 0 |
| Type of Terrain | Rolling | |
| Volumes | Current Volume (Vehicles per Day)* | 6000 (MP8.78-MP9.806), 8000 (MP9.806-MP10.398) |
| Speeds | Speed Limit (Miles per Hour)* | 45 (MP8.78-MP9.527), 35 (MP9.527- MP10.324), & 25 (MP10.324- MP10.398) |
| Pavement | Surface Type | High Flexible |
| | Last Year Surfaced | 1999 |



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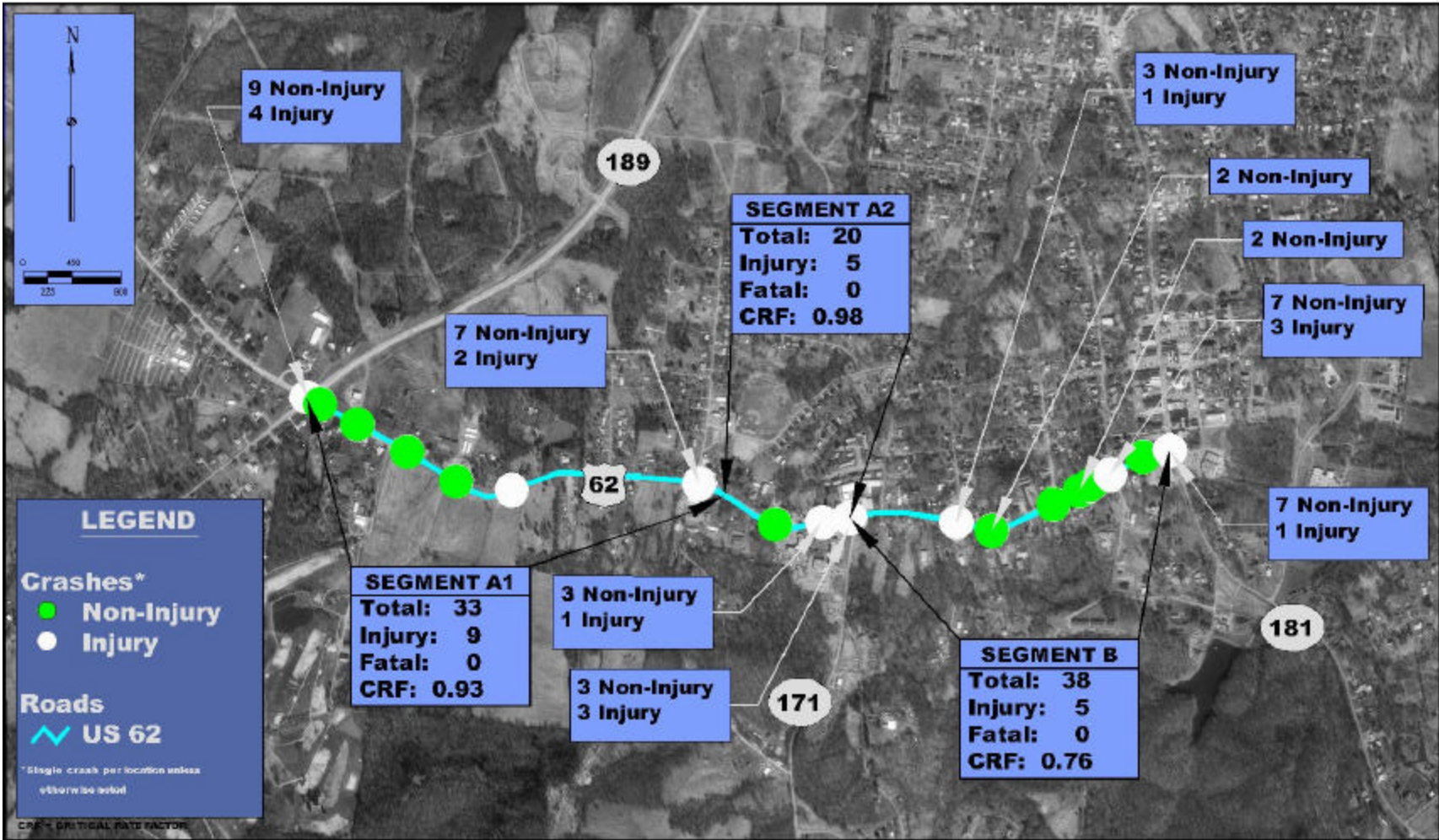


FIGURE 2: CRASH LOCATIONS AND RATES (January 1, 1996 to June 30, 2001)



2.3 TRAFFIC AND LEVEL OF SERVICE

Based on available HIS data, US 62 was divided in two segments (KY 189 to KY 171 and KY 171 to KY 181) for the purpose of evaluating existing and future year (2025) traffic volumes, and for performing a Level of Service (LOS) analysis. The future year traffic methodology involved the use of a 2% per year growth rate factor. This factor was derived from automatic traffic recorder data and from statewide historical portable traffic counter data.

Table 3 shows the results of the travel forecasting process used for the segment of US 62 between KY 189 and KY 181. Existing (Year 2001) traffic volumes were obtained from counts conducted by the Kentucky Transportation Cabinet Division of Planning between October 1 and October 7, 2001.

**TABLE 3
US 62 EXISTING AND DESIGN YEAR (2025) TRAFFIC**

| US 62: 2025 Forecasts | | | |
|-----------------------|-------------------------|----------------------------------|---|
| Segment | 2001 Actual Count | 2025 Forecast HNTB Revised | 2001-2025 Annual Compounded Growth Rate |
| A: KY 189 - KY 171 | 6,000 | 9,660 | 2.00% |
| B: KY 171 - KY 181 | 8,000 | 12,800 | 1.98% |

Methodology: Growth rate percentages obtained from KYTC.
Source: KYTC, HNTB

The functional class growth rate percentages were provided by the Kentucky Transportation Cabinet in a memo dated June 1, 2001. These factors provided were derived from automatic traffic recorder (ATR) data and statewide historical portable count data. The growth rate percentages used in this study were based on the functional class information obtained from the Highway Information System (HIS) database. For both of these segments, the functional class is Rural Major Collector with a corresponding growth rate factor of 2.00%. Given the 24-year time-span (2001 to 2025), a 2.00% annual growth rate yields a 1.61 multiplier. The 2025 forecasts listed in the table are based upon the most recent traffic counts observed for US 62.

Table 4 shows census-derived population and household data for Muhlenberg County for 1990 and 2000. The population of Muhlenberg County grew at a rate of 1.7% between 1990 and 2000, for an annualized, linear growth rate of approximately 0.17%. Historical analysis of traffic counts downloaded from the Transportation Cabinet's traffic count software (CTS) indicates that US 62 has experienced a decline in traffic between 1991 and 2001, with Segment A decreasing by 6% and Segment B by 20% over the ten year period. However, much of that trend can be attributed to the opening of the KY 189 Greenville bypass in 1989. This is evidenced by the fact that traffic on KY 189 increased by over 35% between 1990 (4,260 vpd) and 1997 (5,770 vpd), resulting in an approximate annual growth rate of 4.4% (assuming linear growth over the seven-year period). Computer estimates since the last traffic count in 1997 indicate that the growth

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rate is decreasing to approximately 3.5% (again assuming a linear growth rate) to 6,630 vpd in 2001. Thus, it is assumed that traffic on US 62 will see a rebound in the near future. In addition, should the Wendell H. Ford National Guard training center (north of the Western Kentucky Parkway on KY 181) grow as expected and the proposed Peabody Energy power plant in Muhlenberg County get constructed, traffic along US 62 will increase as the corridor provides a primary connection to downtown Greenville and the majority of the facilities within the county (including the Muhlenberg Community Hospital).

**TABLE 4
MUHLENBERG COUNTY CENSUS DATA**

| Muhlenberg County | | |
|-------------------|--------|--------|
| | 1990 | 2000 |
| Population | 31,493 | 31,839 |
| Households | 11,683 | 12,357 |
| Pop per HH | 2.62 | 2.58 |

Source: University of Louisville Kentucky State Data Center

Thus, it is reasonable to assume that the 2.0% growth factor adequately captures the traffic-related impact of the county's small population increase since 1990. Given the historically negative trend for traffic volumes on US 62 between 1991 and 2001, assuming more than a 2.0% annual increase would likely indicate a higher than expected traffic volume for the 2025 design year.

Level of service analysis was performed using Highway Capacity Software Version 4.1b on both existing traffic conditions and the future year (2025) traffic forecasts. LOS is an indicator of the quality of traffic flow and ranges in alphabetic values from A to F, with A representing free-flow travel conditions and F representing severe congestion. Existing LOS is a C for the entire corridor, indicating that the roadway is currently operating with sufficient capacity, with little delay. The 2025 traffic is predicted to increase, resulting in a LOS of D for the entire corridor. This means that the roadway is experiencing slightly more delays but is operating at a LOS consistent with the urban nature of the corridor. See **Figure 3** for traffic volumes and LOS values each of the two segments for both existing and future traffic.



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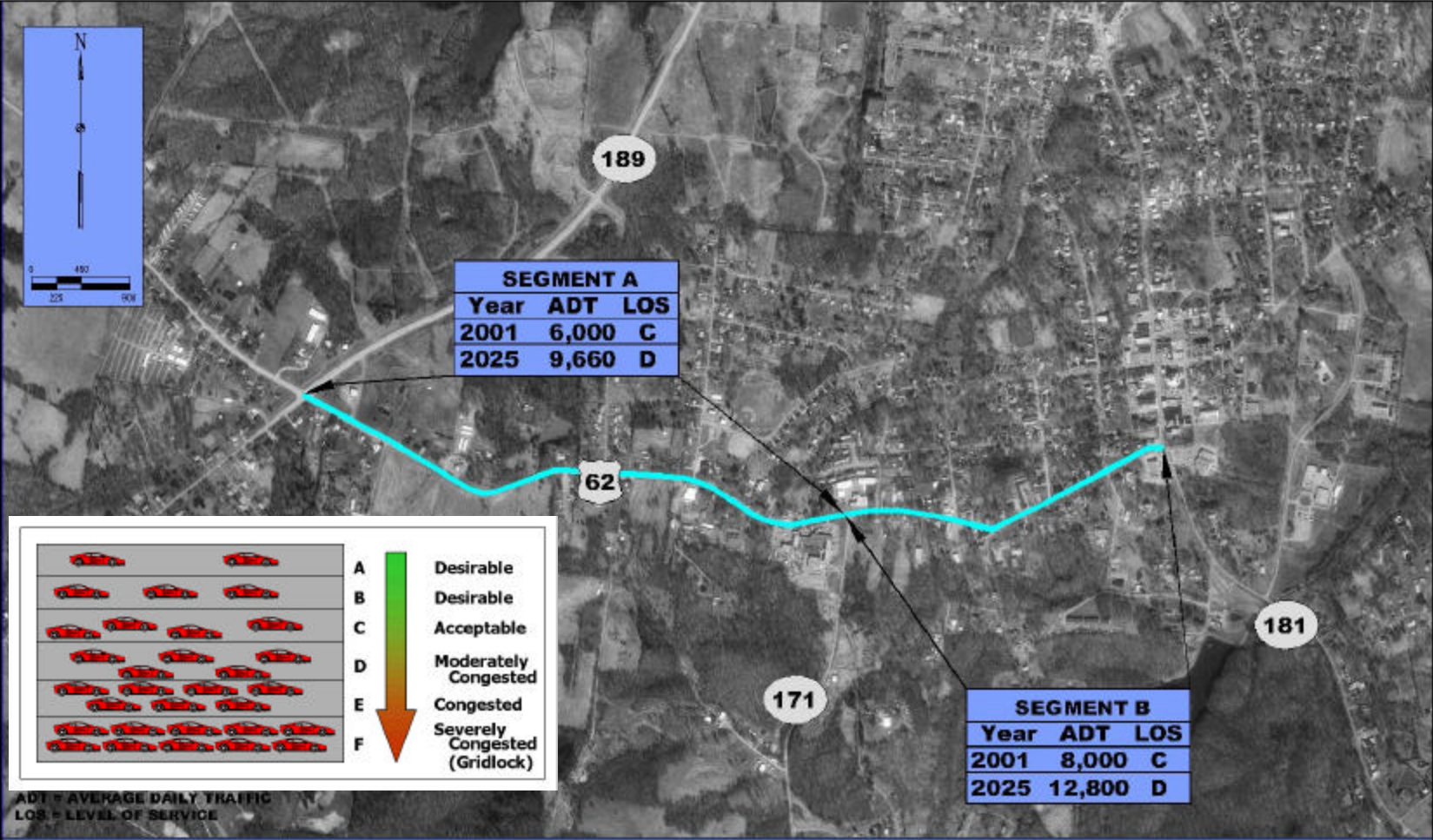


FIGURE 3: TRAFFIC VOLUMES AND LEVEL OF SERVICE



3.0 ENVIRONMENTAL AND GEOTECHNICAL OVERVIEWS

This section of the report presents a general overview of the social, economic, geotechnical and environmental framework of the proposed project area. It identifies key issues that may affect project alternatives within the study corridor. Also, preliminary evaluations of community impact, environmental justice, and other socioeconomic factors have been conducted to determine the need for avoidance considerations. The information presented is based on readily available public records and archival research supplemented with field reconnaissance and “windshield surveys.” The resources identified as part of the environmental overview are shown in **Figure 4**.

3.1 SOCIOECONOMIC

The project area is predominantly residential with small areas of commercial development located along US 62. Community cohesion for the residential units or small clusters along the project area would not likely be adversely affected by relocations, and it is expected that these crossroad clusters would continue to thrive. It is also expected that some residents to be displaced may be able to relocate their homes and structures on the same property and continue to maintain established social groups. It is currently expected that most of the right-of-way required for the project would be frontage strips along US 62 and relocations held to a minimum. However, each of these issues should be examined in more detail through specific studies and public involvement in subsequent project phases.

With respect to Environmental Justice considerations, the corridor encompasses identifiable minority and low-income neighborhoods; however, relocation requirements are expected to be minimal with approximately three residents and one business. An in-depth look at community cohesion and environmental justice will need to be addressed in future phases of the environmental process. An Environmental Justice Study was prepared by the Pennyriple ADD and is included in **Appendix E**.

There are currently no airports or schools that are adversely affected in the proposed project corridor. Muhlenberg Community Hospital is located in the corridor but is expected to benefit from improved accessibility. The Greenville Baptist Church appears in the project corridor and on the National Register Criteria for historical significance, and is not anticipated to be impacted. The Cultural Historic Resource Section 3.6 discusses the criteria for historical significance in further detail.

There are several existing businesses in the project area located along US 62. Since the proposed project is an expansion of US 62, it would not bypass any businesses. The only negative issue with existing business is related to construction activities. Businesses that rely on drive-by traffic may have difficulty during construction activities; however, those impacts are short-term. Residential housing is predominantly the land use within the project area with scattered commercial areas. Even though no farms are affected in the project corridor, coordination with the Natural Resources Conservation Service and development of *Farmland Protection Policy Act of 1981* (FPPA) farmland impact assessment evaluations will be required because federal funds may be used for construction and design.

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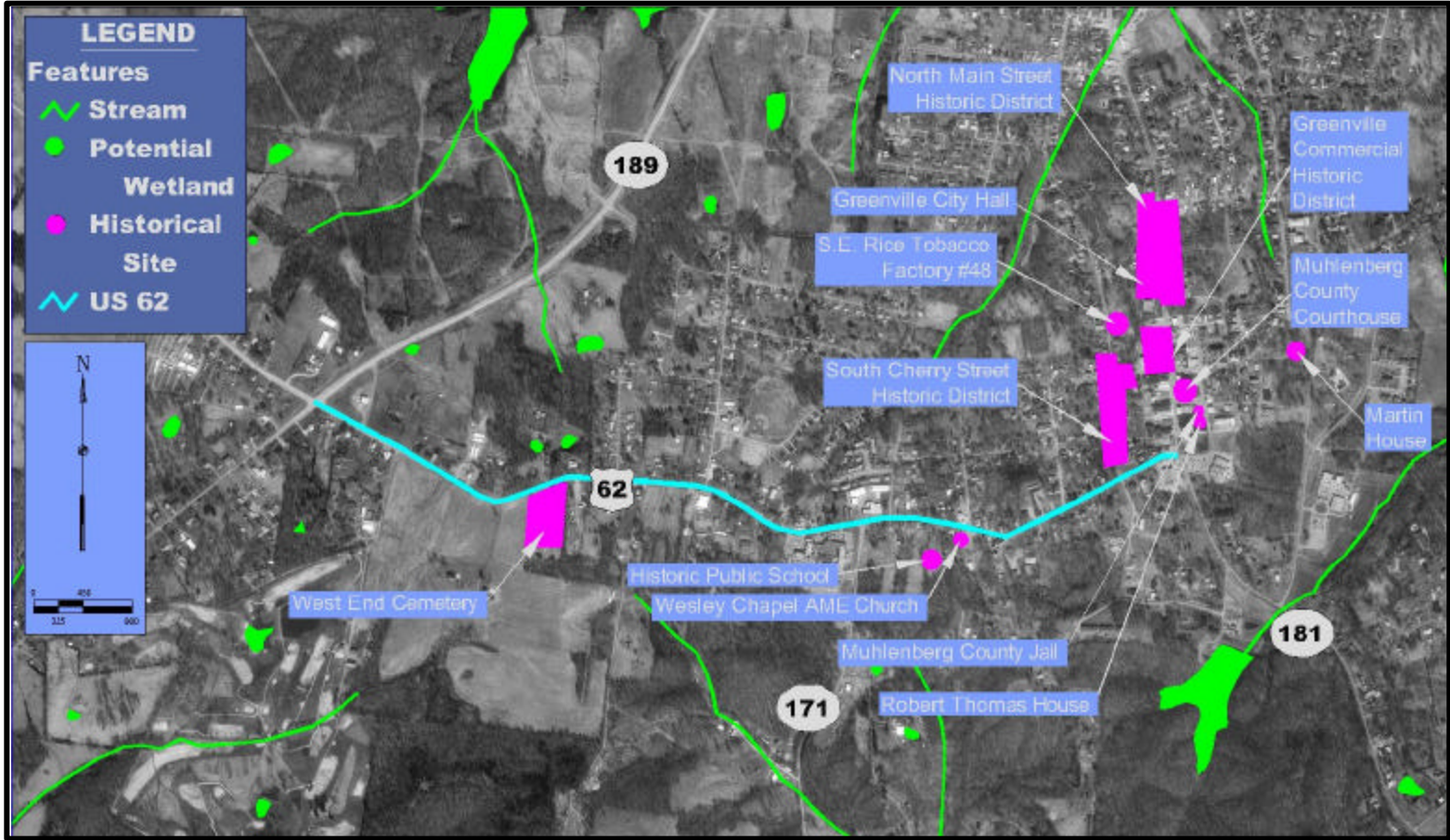


FIGURE 4: ENVIRONMENTAL OVERVIEW



3.2 GEOTECHNICAL OVERVIEW

KYTC's Division of Geotechnical Engineering prepared a preliminary geotechnical overview of the project area. Available mine maps indicated that the US 62 corridor has no strip-mines or underground mines. Embankment benches with lift heights of 1 foot were recommended for any future construction.

The Division of Geotechnical Engineering also noted that the project is in Seismic Risk Zone 3, indicating that this is an area with a propensity for high damage due to earthquake activity. More detailed information about the existing geotechnical conditions along the study corridor, as well as recommendations concerning future construction on US 62, is found in **Appendix F**.

3.3 AIR QUALITY

Pursuant to the 1990 Clean Air Act Amendments, the project area has been designated an attainment area for all transportation-related pollutants (CO, HC, NOX, and particulates). This project is in an area that does not require transportation control measures. Therefore, the Amended Final Conformity Guidelines issued by the U.S. Environmental Protection Agency and the U.S. Department of Transportation will not apply to this project.

In accordance with KYTC/DEA Position Paper 006-2000, a microscale analysis following the guidance specified in *Air Quality Guidance for Project Level Analysis*, revised October 2000, will be required for this project.

3.4 HIGHWAY NOISE

Highway noise levels, at this time, are not expected to be major. However, a project specific noise impact analysis will be required to verify noise impact conditions using the procedure for conducting field monitoring based on FHWA requirements and the KYTC Noise Abatement Policy.

3.5 AQUATIC AND TERRESTRIAL ECOLOGY

No perennial streams exist within the project area. Surface streams near the project area are limited to several unnamed, intermittent, and headwater tributaries of Caney Creek, Halls Creek, Sandlick Creek, and Whiskey Run. These streams are all part of the Green River watershed.

No wild and scenic rivers or Outstanding Water Resources, as reported by the Kentucky State Nature Preserves Commission (KNREPC) are found in the project study area. There are no exemplary natural communities or registered natural areas.

National Wetland Inventory (NWI) mapping was reviewed for the presence of wetlands within the project corridor. A total of four wetlands was indicated by NWI mapping and are POWHh (Palustrine Open Water/Unknown Bottom Permanently Flooded Diked/Impounded) type. A fifth

wetland (or pond) indicated by topographic mapping appeared to be a farm pond and is undermined at present. A field inspection of each of these areas is necessary to determine their jurisdictional status. According to Federal Emergency Management Agency (FEMA) Q3 flood data, no floodplains exist in the project area.

According to Correspondence from the Kentucky Department of Fish & Wildlife Resources (KDFWR), no federally threatened and endangered fish and wildlife are known for the Greenville 7.5 minute USGS quadrangle.

Potential summer roosting habitat for the federally endangered Indiana bat (*Myotis sodalis*) exists in forested areas that contain the appropriate size and species of trees. A thorough examination of the project area during subsequent project phases is needed to determine if this habitat exists.

According to the KSNPC, the running buffalo clover (*Trifolium stoloniferum*) habitat consists of partially shady areas that has moderate, periodic disturbance (e.g., occasional mowed historical sites, lawns, cemeteries, and fencerows). Potential habitat for this species occurs within the project corridor in at least one location.

3.6 CULTURAL HISTORIC RESOURCES EVALUATION

The original Environmental Overview completed for the project identified three historic districts and six individual properties in Greenville that are listed in the National Register. Only one National Register district, the South Cherry Street Historic District, is in the project vicinity. The Environmental Overview located the boundaries for this district north of US 62 (Hopkinsville Street). However, when the boundaries from the National Register file were field checked for accuracy, it was determined that the southern edge of the district crosses US 62. Following the 106 specifications (instructions for completing cultural resource assessment reports issued by the Kentucky Heritage Council), the boundaries of the district were reexamined for potential expansion. It was determined that a section on the north and south sides of US 62 between Main Street and Walnut Street is eligible as an expansion of the existing district.

Thomason and Associates previously documented five other sites located within the project area during the 1984 survey of the City of Greenville: MUG-4, MUG-5, MUG-25, MUG-26, and MUG- 41. (“MUG” reflects the Smithsonian designation the Heritage Council uses for designating site numbers where “MU” represents Muhlenberg County and “G” means the site is in Greenville.) These sites and other undocumented properties that met the 50-year age criteria were documented and examined for eligibility for the National Register. Site MUG-5 would be eligible as part of the proposed expansion to the South Cherry Street Historic District. Sites MUG-4, 25, 26, and 41 meet the National Register Criteria as individual sites.

In addition, three other sites within the project area appeared to meet National Register Criteria as individual sites: the West End Cemetery (Site A), Greenville Baptist Church (Site B), and Colonial Revival House (Site C). These sites are shown in **Figure 5**. The entire project area is shown in **Figure 6**. The entire Cultural Historic Reconnaissance Survey is included in **Appendix G**.



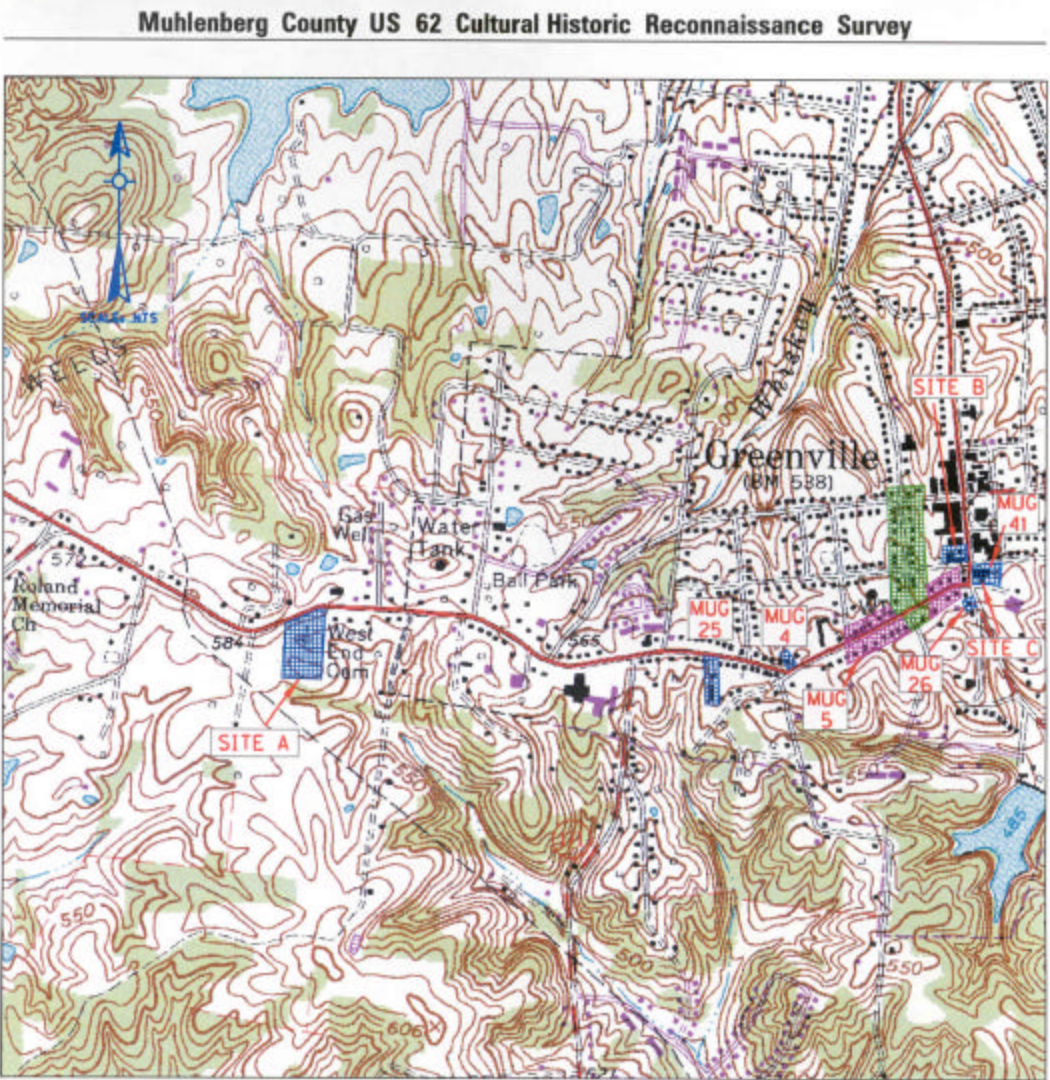


Figure 1. Historic Site Locations

- Sites Potentially Eligible for the National Register
- South Cherry Street Historic District
- Proposed Historic District Expansion

FIGURE 5: CULTURAL HISTORIC SITE LOCATIONS

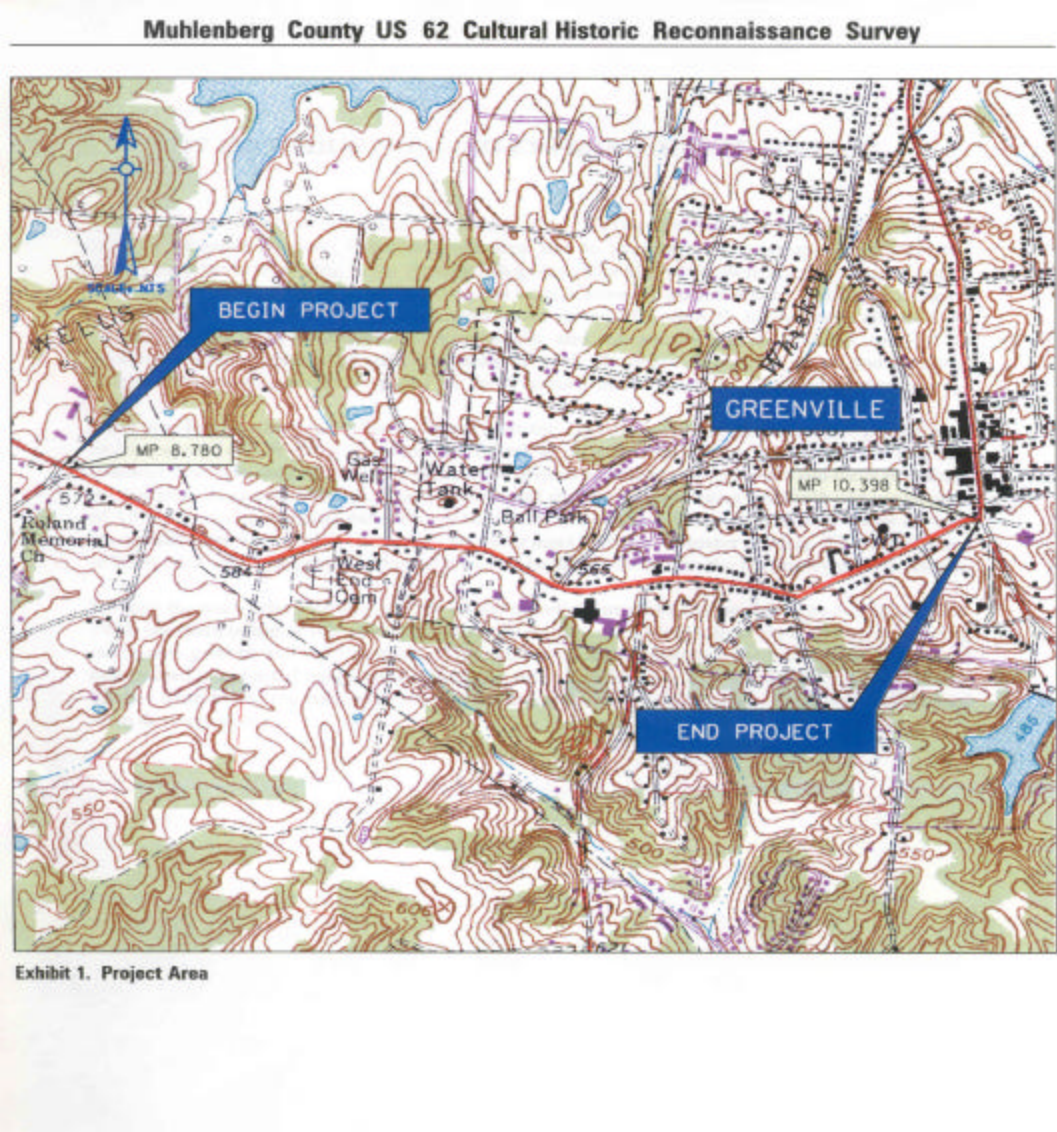


FIGURE 6: CULTURAL HISTORIC OVERVIEW PROJECT AREA

3.7 ARCHAEOLOGICAL RESOURCES EVALUATION

A search of the National Register of Historic Places, the Kentucky Heritage Council (KHC) and the Office of State Archaeology (OSA) records and analysis of historic maps were performed for the overview information. Based on this search, no recorded archaeological sites were located within the study area. Any unrecorded sites would most likely be prehistoric open habitation sites without mounds, historic farms, cemeteries, or residences.

The presence of suspected historic archaeological sites within the area of potential effect (areas where physical, visual, auditory, economic, social, or other effects may occur as a result of any alternative), suggest that unrecorded archaeological sites will be encountered. Additionally, it is likely that intact cultural deposits will exist on sites located during an archaeological survey of the corridor because of the land usage within the study area. Since there is a strong possibility that archaeological sites could be encountered on this undertaking, the Native American Coordination process should be initiated, in accordance with KYTC/FHWA procedures, as soon as practicable. The KYTC Division of Environmental Analysis should be consulted for appropriate action.

3.8 UNDERGROUND STORAGE TANKS/HAZMAT CONSIDERATIONS

Several research and survey methods were utilized to complete the Phase 1 Assessment (records review, site reconnaissance, interviews with owners, occupants, and local officials and evaluation and report) for this project. Record research of State and Federal databases revealed six sites of potential environmental concern in the project corridor. An Environmental Site Assessment of the project area conducted in accordance with ASTM Practice E 1527 and KYTC Guidance should be accomplished during future phases of the project to formally confirm Underground Storage Tanks (UST)/Hazmat findings.

No unregistered or abandoned UST locations, abandoned or illegal waste sites or other suspicious areas that could harbor hazardous materials were observed during the pedestrian survey. No above ground gasoline/diesel storage tanks (AST) were observed. Any AST's encountered during the right-of-way acquisition phase that are not identified in this report should be accounted for during normal right-of-way acquisition procedures and should be decommissioned in accordance with ASTM standard practices.

The removal of propane tanks should be accommodated routinely during the right-of-way acquisition phase. The records review and site reconnaissance did not reveal the existence of any industrial sites, unpermitted dumps or waste sites, refuse, garbage, waste disposal, mine spoil, treatment areas, hazardous materials, or any additional sites of environmental concern.

4.0 STUDY ALTERNATIVES/IMPROVEMENT OPTIONS

The study alternatives/improvement options for the US 62 Intermediate Planning Study evolved throughout the course of the project. Projected traffic volumes and cultural historic concerns affected selection of possible improvements for the corridor.

At Project Team Meeting #1, it was decided that potential impacts on historic properties would most likely dictate that improvements be made, in most locations, within the existing right-of-way. Since the local officials felt that a considerable amount of the US 62 traffic consists of coal and rock quarry trucks, a bypass to US 62 was discussed at the Local Officials Meeting. Attendees at the Stakeholders and Media Meeting also inquired about a bypass to US 62 as a viable option for this study. While a bypass is an option, it does not address the Project Goals defined in **Section 1.2** and is beyond the scope of this study. Furthermore, a bypass to the north is not feasible due to existing development, and a southern bypass route that would be close enough to US 62 to draw substantial traffic would encounter potentially difficult terrain.

A compressed 3-lane section was mentioned to improve capacity and to reduce the right-of-way impacts. It was discussed at the Stakeholders and Media Meeting that a 3-lane section on US 62 would eliminate many of the existing traffic and safety problems. However, some concern was expressed over the safety of a continuous left-turn lane at 45MPH. As a result, the study looked at incorporating traditional turning lanes at specific locations, as well as, using a continuous two-way left-turn lane in some areas.

It was also determined that an acceptable future year Level of Service (LOS) for the corridor would be in the D-E range, and that context-sensitive design criteria would be critical elements in future project development.

Based on discussions from these meetings, the traffic forecasts, and public input through surveys and a Public Meeting, several alternatives were presented to the Project Team at Team Meeting #2. These alternatives included 3-lane, 4-lane, and 5-lane sections (see **Figures 7a & 7b**), with curb and gutter proposed through the urbanized section of roadway. Based on the initial projections for traffic levels of service, a 4-lane section appeared to be required to meet future year LOS goals.

The concept of a new bypass was re-visited by the Project Team at that meeting. It was determined that since a bypass would involve a study in greater detail, further justification would be needed to pursue that or any other alternate route. Also, while a bypass probably would not divert local traffic from the existing route, it would help reduce some truck traffic on US 62.

The Project Team determined that impact on historic properties could potentially play a very important role in the determination of possible improvement options. The decision was made to pursue this issue in greater depth, and it was determined that an historical overview and property research should be conducted before any final decision could be made on preferred alternatives. Based on the results of the overview, the Project Team speculated that spot improvements and/or a new bypass could be possible recommendations. Three locations were

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noted for possible spot improvements at Team Meeting #2. They were the US 62/KY 181 intersection, the US 62/KY 171 intersection, and the section of the roadway just west of the cemetery. Left-turn lanes were recommended for all approaches at the US 62/KY 181 and US 62/KY 171 intersections. A horizontal curvature correction was recommended at the third location. (See **Figure 8.**)

Prior to Team Meeting #3, a cultural historic reconnaissance survey was conducted, and potential impacts to the historic properties for each of the improvement options were examined. Also, the latest version of the Highway Capacity Manual (as well as version HCS-4.1b 2000) was released, and the traffic analysis was updated using the new software.

The results of the historic survey and traffic analysis were discussed at Team Meeting #3. The historic survey determined that options for widening the road would very likely depend on the degree of impact to historic properties. The Project Team discussed possible mitigation for the environmentally sensitive areas, including traffic calming methods to make the corridor more user-friendly, added signage, and possible brick sidewalks and/or pedestrian crossings.

Using the current version of the Highway Capacity Manual, a new analysis determined that the roadway does not require additional capacity to accommodate Design Year 2025 traffic. However, improvements to the corridor are still required in order to address the Project Goals.

A summary of the improvement options considered in the study is included in **Table 5**. For the purpose of comparing alternatives the “No Build” option was labeled Alternative 1. The potential benefits and impacts of providing spot improvements at the three locations discussed above is shown in the Table under Alternative 2. Finally Alternative three depicts the benefits and impacts of widening the existing corridor to a 3-lane section. Estimates of Probable Costs for both of the build alternatives are included in **Appendix H**.



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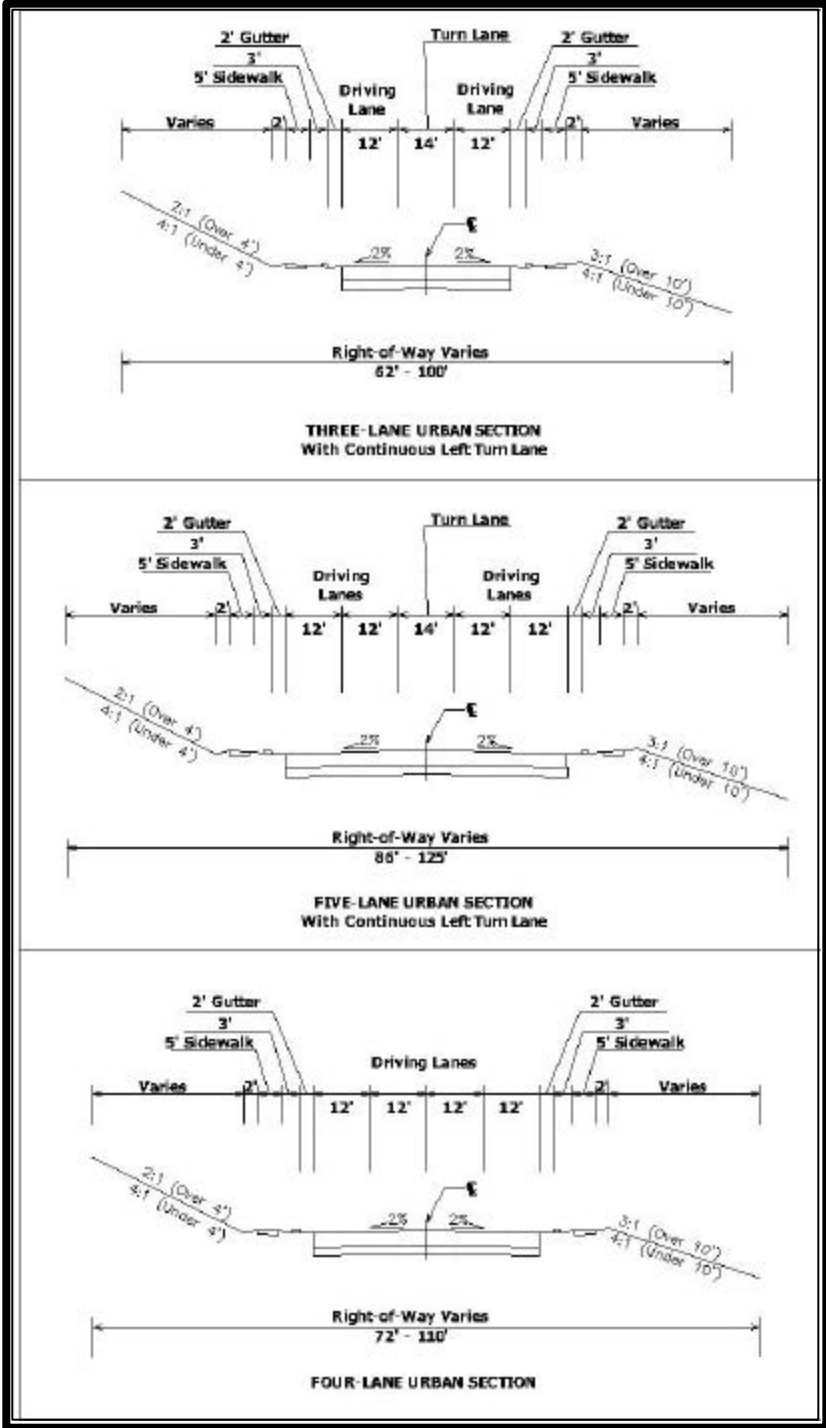


FIGURE 7a: TYPICAL CROSS SECTIONS



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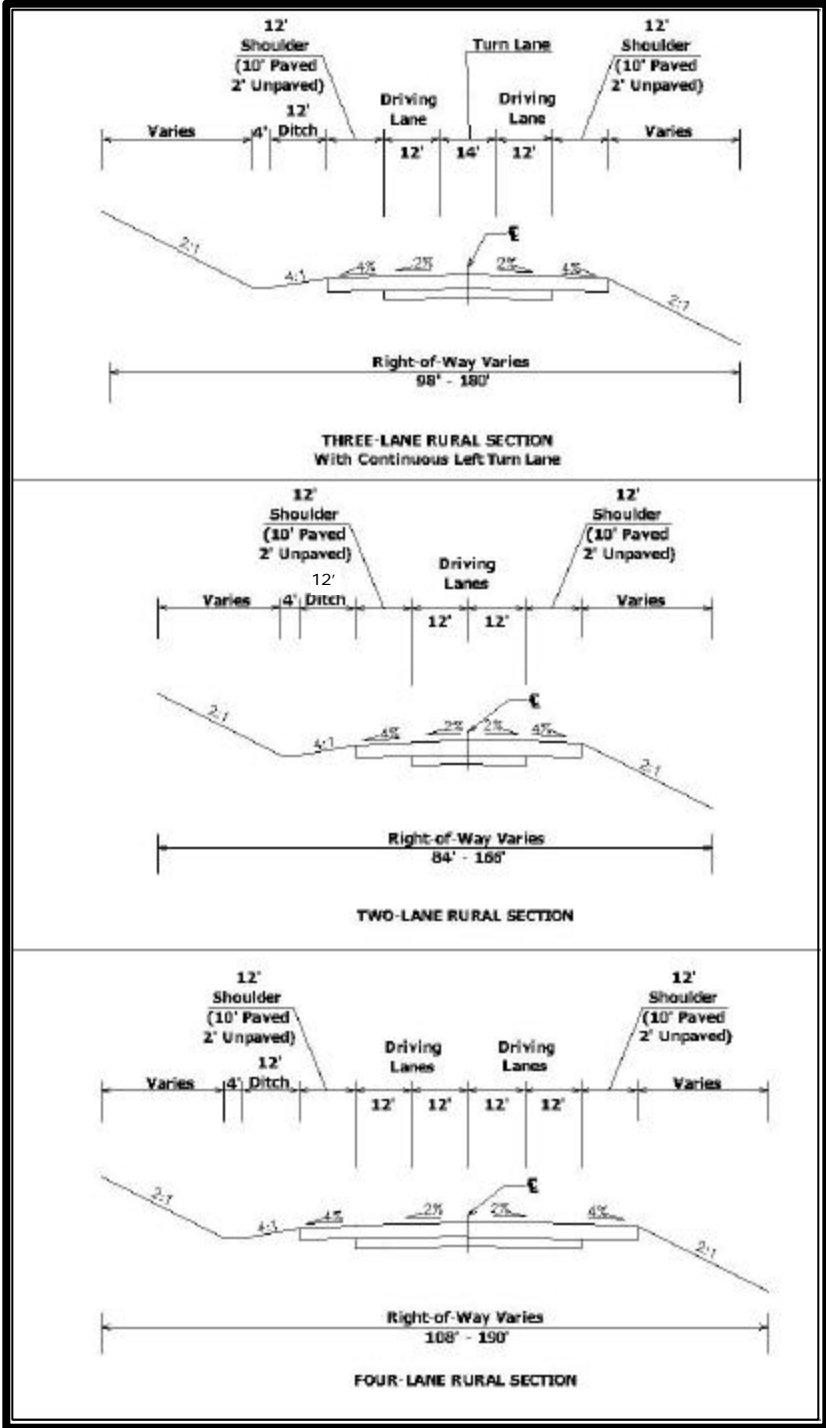


FIGURE 7b: TYPICAL CROSS SECTIONS



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FIGURE 8: SPOT IMPROVEMENT LOCATIONS



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TABLE 5: POTENTIAL IMPACTS AND COST COMPARISON OF ALTERNATIVES

| | Alternatives | | |
|---|---|--|--|
| | 1 | 2 | 3 |
| Length (miles) | 1.6 | 1.6 | 1.6 |
| Description | No Build; Make no changes to the existing 2-lane roadway. | Spot Improvements: US 62/KY 181 intersection, the US 62/KY 171 intersection, and the section of the roadway just west of the cemetery (horizontal curvature correction) | 3-Lane Road with curb and gutter and sidewalks. |
| Potential Relocation Impacts | None | Approximately 3 residences and 1 business | Approximately 3 residences and 1 business |
| Potential Right of Way Acquisition | None | Approximately 2.95 acres | Approximately 4.04 acres |
| Potential Geotechnical Impacts | None | Benching should be anticipated to avoid slides in deep cut areas. | Benching should be anticipated to avoid slides in deep cut areas. |
| Potential Environmental Impacts | Potential impact to air and noise quality. | Potential impact to air and noise quality. Possible impact to potential cultural historic site at US 62/KY 181 intersection. | Possible impact to significant cultural historic district and sites. |
| Future Level of Service | D | D | D* |
| Conceptual Cost Estimate by Phase | | | |
| Design | \$0 | \$279,000 | \$531,000 |
| Right of Way | \$0 | \$750,000 | \$870,000 |
| Utilities | \$0 | \$422,000 | \$888,000 |
| Construction | \$0 | \$3,105,000 | \$5,900,000 |
| Total | \$0 | \$4,556,000 | \$8,189,000 |
| Relation to Project Goals | <ul style="list-style-type: none"> ◆ Likely will not reduce the number of crashes along the route. ◆ Does provide sufficient capacity. ◆ Does not improve connectivity from KY 189 to KY 181. ◆ Does not provide pedestrian facilities along the route. ◆ Does not improve access to the hospital. ◆ Does not improve drainage along the route. | <ul style="list-style-type: none"> ◆ May reduce the number of crashes along the route. ◆ Does provide sufficient capacity. ◆ May improve connectivity from KY 189 to KY 181. ◆ Provides improved pedestrian facilities at various locations along the route. ◆ May improve access to the hospital. ◆ Improves drainage at various locations along the route. | <ul style="list-style-type: none"> ◆ May reduce the number of crashes along the route. ◆ Does provide sufficient capacity. ◆ Does improve connectivity from KY 189 to KY 181. ◆ Provides improved pedestrian facilities at various locations along the route. ◆ Does improve access to the hospital. ◆ Improves drainage at various locations along the route. |

* LOS cannot be calculated for a three-lane section; however, it would be expected to perform equal to or better than a two-lane section.



5.0 RECOMMENDATION

In light of the historical reconnaissance survey and new traffic analysis discussed at Project Team Meeting #3, the Project Team determined that spot improvements, instead of widening throughout the study area, are recommended for the US 62 Intermediate Planning Study. The three projects to be investigated as spot improvements (shown on **Figure 8**) are the addition of left-turn lanes for all approaches at the US 62/KY 181 intersection and the US 62/KY 171 intersection, and the reconstruction of the horizontal curve west of the West End Cemetery. Both intersection improvements should include sidewalks to accommodate pedestrian traffic. A separate traffic study of the US 62/Bogges Avenue intersection area, as well as the Bogges Avenue-Critenden Lane corridor, is recommended to investigate reducing traffic volumes in the corridor and potentially the crash rate at the US 62 intersection. The approximate costs of the Preferred Recommended Alternative, (spot improvements at three locations), are listed in **Table 6** below.

TABLE 6 – PREFERRED ALTERNATIVE COSTS

| Phase | Spot Improvements: US 62/KY 181 intersection, the US 62/KY 171 intersection, and the section of the roadway just west of the cemetery (horizontal curvature correction) |
|--------------|---|
| Design | \$279,000 |
| Right of Way | \$750,000 |
| Utilities | \$422,000 |
| Construction | \$3,105,000 |
| TOTAL | \$4,556,000 |

No major issues and concerns that would impact the implementation of the recommendation were discovered, and no commitments were made regarding future phases of this project. The Project Study Team wishes to acknowledge the following organizations for their contributions to this study:

- Muhlenberg County
- City of Greenville
- Muhlenberg Economic Enterprises
- Pennyryle Area Development District

6.0 CONTACT INFORMATION

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