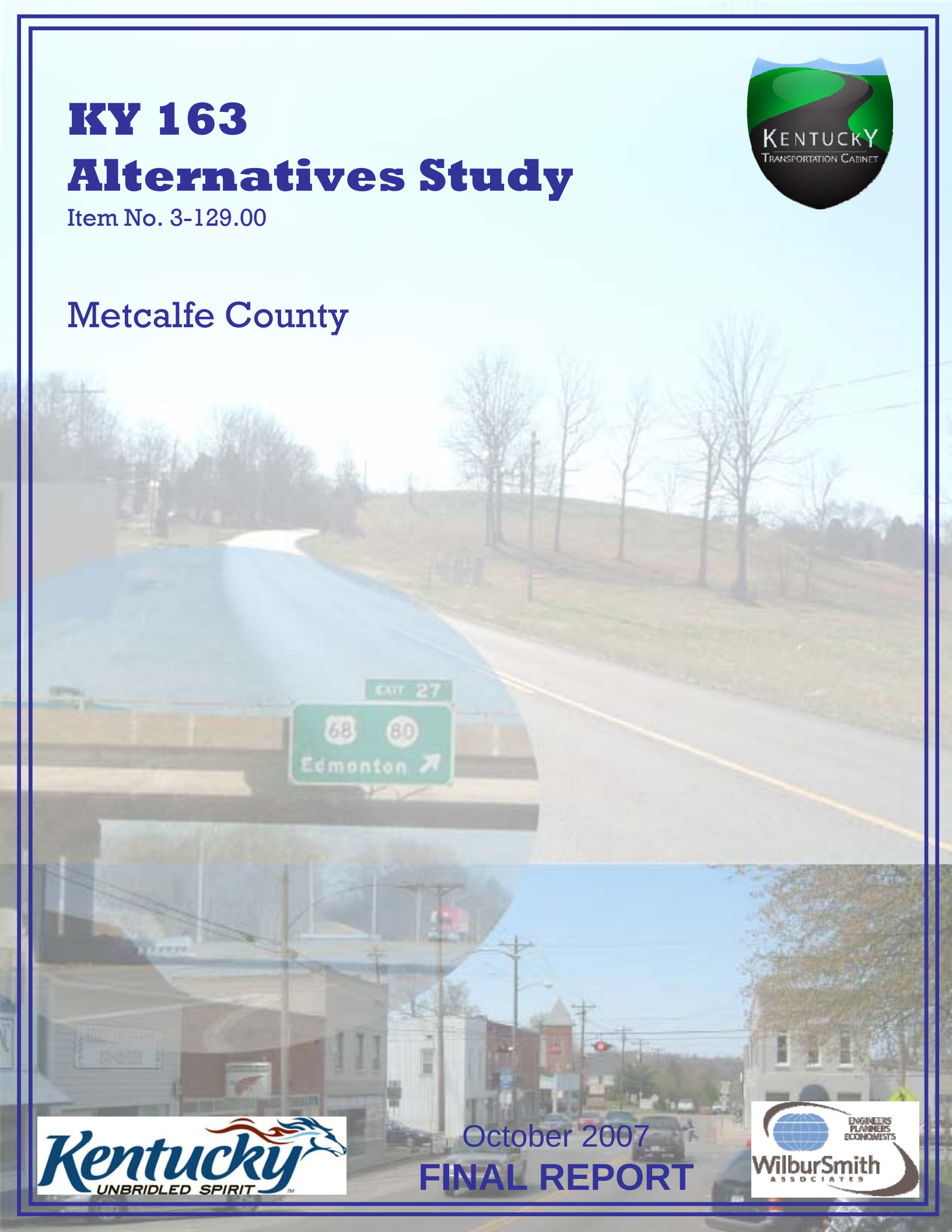
KY 163
Alternatives Study

Item No. 3-129.00

Metcalfe County



October 2007

FINAL REPORT

TABLE OF CONTENTS

I. Introduction I-1
A. Background I-1
B. Project Location I-1
C. Programming and Schedule I-3
II. Existing Conditions II-1
A. Highway Systems II-1
B. Geometric Characteristics II-2
C. Bridges II-3
D. Traffic and Operational Measures II-5
E. Crash Analysis II-9
F. Adequacy Ratings II-12
G. Programmed Highway Improvements II-14
III. Environmental Overview III-1
A. Natural Environment III-1
B. Cultural Environment III-2
C. Noise Environment III-3
IV. Geotechnical Overview IV-1
V. Environmental Justice V-1
A. Population by Race V-1
B. Population by Poverty Level V-1
C. Population by Age Group V-1
VI. Initial Cabinet, Public, and Agency Input VI-1
A. Project Team Meeting VI-1
B. Local Officials and Stakeholders Meetings VI-1
C. Public Information Meeting – Round 1 ..... VI-2
D. Resource Agency Coordination – Round 1 ..... VI-5
VII. Project Purpose and Need VII-1
A. Improve Safety VII-1
B. Improve Mobility VII-2
C. Other Desirable Goals VII-3
VIII. Alternatives Development Process VIII-1
A. Corridor Alternatives Definition VIII-1
B. Traffic Analysis VIII-1
C. Level 1 Screening VIII-4
D. Second Project Team Meeting VIII-4
E. Spot Improvements VIII-8
IX. Final Alternatives Evaluation Process IX-1

A. Environmental/Community Issues *IX-1*
B. Geotechnical Concerns *IX-3*
C. Cultural Resources *IX-3*
D. Environmental Justice Impacts *IX-3*
E. Traffic Analysis *IX-4*
F. Level 2 Screening *IX-5*
X. Additional Cabinet, Public, and Agency Input X-1
A. Project Team Meeting *X-1*
B. Local Officials and Stakeholders Meetings *X-1*
C. Public Information Meeting – Round 2 ..... *X-1*
D. Resource Agency Coordination – Round 2 ..... *X-5*
XI. Recommendations XI-1
A. Project Purpose and Need *XI-1*
B. Final Project Team Meeting *XI-1*
C. Phase Costs *XI-4*
D. Potential Design Criteria and Considerations *XI-8*
E. Summary of Environmental Issues for Future Phases *XI-9*
F. Construction Considerations *XI-9*

LIST OF APPENDICES

Appendix A – Study Area Photos
Appendix B – Existing Conditions Tables
Appendix C – Environmental Overview Report
Appendix D – Cultural Resources Overview Report
Appendix E – Noise Impacts Report
Appendix F – Geotechnical Overview Report
Appendix G – Environmental Justice Overview Report
Appendix H – Initial Involvement Meetings
Appendix I – Resource Agency Coordination Responses, Round 1
Appendix J – Additional Meeting Minutes
Appendix K – Resource Agency Coordination Responses, Round 2

LIST OF FIGURES

Figure 1.1 – Study Area Map I-2
Figure 2.1 – Existing Geometric Deficiencies along KY163 ..... II-4
Figure 2.2 – 2006 Average Daily Traffic and Level of Service II-7
Figure 2.3 – 2030 Average Daily Traffic and Level of Service II-8
Figure 2.4 – Crash Information for Roadway Sections II-10
Figure 2.5 – High Crash Spots and Segments II-13
Figure 3.1 – Environmental Map III-4
Figure 8.1 – Level 1 Corridor Alternatives VIII-2
Figure 8.2 – Level 1 Traffic Projections VIII-3
Figure 8.3 – Spot Improvements VIII-10
Figure 9.1 – Level 2 Corridor Alternatives IX-2
Figure 9.2 – 2006 Level 2 Traffic Projections IX-6
Figure 9.3 – 2030 Level 2 Traffic Projections IX-7
Figure 9.4 – Level 2 Evaluation Matrices IX-8
Figure 11.1 – Priority Construction Sections and Spot Improvements XI-5
Figure 11.2 – Cross Section for Edmonton Connector XI-8
Figure 11.3 – Cross Section for Rural Spot Improvements XI-8

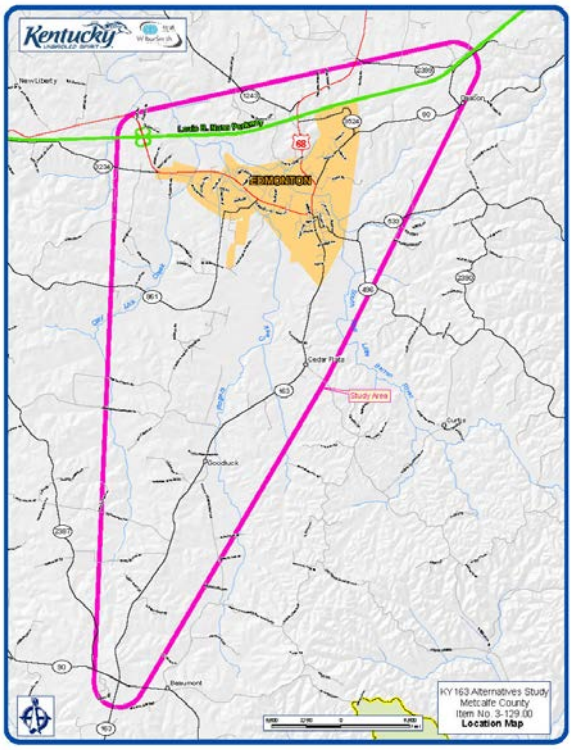
LIST OF TABLES

Table 2.1 – Major Study Area Routes II-1
Table 2.2 – Information for Bridge along Key Routes II-5
Table 2.3 – Intersection LOS for AM/PM Peak Hour II-9
Table 2.4 – High Vehicle Crash Segments Analysis in Study Area II-11
Table 2.5 – High Vehicle Crash Spots Analysis in Study Area II-11
Table 8.1 – Level 1 Evaluation Matrix VIII-5
Table 8.2 – Spot Improvement Information VIII-9
Table 11.1 – Cost Estimates for Build Corridor Segments along KY163 and New Alignments XI-6
Table 11.2 – Cost Estimates for Spot Improvements XI-7

KENTUCKY TRANSPORTATION CABINET
KY 163 ALTERNATIVES STUDY, METCALFE COUNTY
Reconstruction/Relocation of KY 163 from KY 90 to the Nunn Parkway
October 2007

The Kentucky Transportation Cabinet (KYTC) has undertaken this planning study to gather information necessary to develop and evaluate alternatives for the possible reconstruction of a portion of KY 163 in Metcalfe County. The southern terminus for the proposed project is KY 90 and the northern terminus is a potential interchange along the Louie B. Nunn (Cumberland) Parkway at or near the city of Edmonton.

A number of other highway projects are occurring along both KY 90 and KY 163 in adjacent counties. This study provides an opportunity to incorporate Edmonton and Metcalfe County into larger, regional improvements to the transportation network.



Study Area

The existing KY 163 corridor is a two lane roadway through rolling terrain with travel lanes ranging between nine feet and 11 feet and two-foot wide shoulders. The posted speed limit ranges from 25 mph in downtown Edmonton to 55 mph in the rural section to the south. There are few other routes providing north-south connections in the vicinity.

Project Purpose and Need

The primary purpose and need of the project is to improve highway safety and highway systems mobility. As these needs are addressed, a number of secondary goals should provide additional benefits:

- Improve connectivity between KY 90 and the Nunn Parkway;
- Address geometric deficiencies along the existing route;
- Improve accessibility to activity centers within Edmonton;
- Reduce congestion in Edmonton, especially at the KY 163 intersection with US 68-KY 80;
- Improve facilities for truck traffic; and
- Enhance potential for economic development.

Typical Corridor View along KY 163

A number of freight trucks use KY 163 northbound to westbound KY 90 as a connection between I-40 and I-65, avoiding increased traffic volumes around Nashville. Also, KY 163 serves to connect the small industrial bases in Edmonton and Tompkinsville to Tennessee. The potential future designation of the Nunn Parkway as I-66 is likely to increase the number of trucks using KY 163.

From a local perspective, the intersection of KY 163 with US 68-KY 80 is one of the primary problems in the area. With no parallel routes,

all north-south and east-west traffic meets at this four-way stop-controlled intersection. Restrictive turning radii and on-street parking facilities make it difficult for trucks to maneuver through this intersection, creating a bottleneck with sizeable queues at peak times.

Intersection of KY 163 and US 68-KY 80

Traffic Characteristics

The existing traffic volumes along KY 163 in the study area range between 2,100 and 4,100 vehicles per day (vpd). Existing truck percentages are approximately 9-12% of the total traffic along the route.

KY 163 currently operates at LOS B or C, with increased delay at key intersections in Edmonton. Typically, a minimum of LOS D is considered acceptable in urban areas and LOS C is considered acceptable in rural areas.

Assuming no transportation improvements, Year 2030 traffic was estimated based on historic traffic growth. Traffic along KY 163 was forecasted with a compounded annual growth rate of 1.9% through Year 2030, resulting in an average daily traffic (ADT) range from 3,300 to 6,500 vpd. The study portion of KY 163 is expected to continue operating at LOS B and C, with a segment just south of downtown Edmonton operating at LOS D. Operations at key intersections deteriorate as traffic volumes increase.

An investigation of the crash history for 2002-2006 showed a number of vehicle crashes along the study corridor. The Critical Rate Factor (CRF) is a measure comparing the frequency of crashes along a route to average crash rates throughout the state; a CRF greater than 1.00 indicates crashes are occurring more often and are not attributable to random circumstances.

In the study area, KY 163 for half a mile south of downtown showed up as a high crash segment (CRF > 1.00). US 68-KY 80 west of downtown also showed a large number of crashes and multiple spots with a CRF > 1.00. Most high CRF spots appeared at key intersections within Edmonton.

Environmental Issues

A number of environmental factors and sensitive land uses were identified through the course of this study, including:

- Harvey Cave and other karst features;
- Prime farmland and an established Agricultural District along the existing KY 163 alignment;
- Potential endangered or threatened species habitat;
- Potential water quality issues and impacts to wetlands associated with the large number of streams in the project area;
- Cemeteries and unmarked graves;
- Parks and other community resources;
- Environmental justice issues related to low-income populations; and
- Existing/potential historic structures and archaeological sites.

Public Involvement

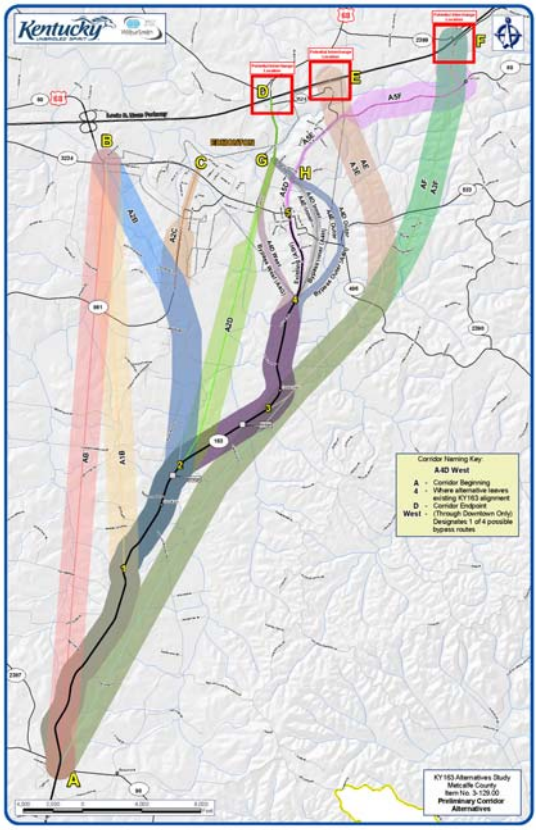
Throughout the study, local citizens, public officials, and interest groups were given the opportunity to provide input. In addition, input was solicited from many local, state, and federal agencies. Survey responses from the second public meeting indicated that approximately 92% of respondents were in support of improving KY 163. Preserving homes and farmlands was the primary concern expressed throughout the study.

First Public Meeting

Alternatives Evaluation Process

A tiered evaluation process was undertaken to evaluate the proposed alternatives. Initially, 25 alternative corridors were developed, and these were evaluated as part of a Level 1 Screening process. Findings were presented to the project team, and a number of these alternatives were not recommended for further

study because they did not adequately meet the Level 1 criteria.



Level 1 Alternatives

As part of the Level 2 Screening process, environmental and geotechnical assessments were conducted for the remaining seven Alternative Corridors, a Spot Improvements Alternative, and the No Build Alternative. Local citizens, public officials, and representatives of government resource agencies were then given the opportunity to react to the proposed improvement alternatives through a second round of public involvement activities. Results of the Level 2 Screening were summarized and presented to the project team for discussion. The result of this meeting was the recommendation of a preferred build alternative. This alternative was divided into individual construction segments, which were then prioritized.

Recommendations

The top priority recommendation is a new connecting route within Edmonton, west of the existing alignment (segment 4G above). This link would provide route redundancy within Edmonton, increase access to the southern Industrial Park, and allow large trucks an alternative route to the parkway without having to negotiate restrictive geometry at the KY 163/US 68-KY 80 intersection. Currently, there is minimal development within the footprint of this alternative. This project should be divided into Priority Segment 1a (north of US 68-KY 80) and Priority Segment 1b (south of US 68-KY 80).

As a second priority, a new interchange on the parkway at US 68 north of Edmonton is recommended. Karst topography and the proximity of both KY 1243 and the northern Industrial Park entrance increase costs for this alternative. Because the Nunn Parkway is designated to become a portion of the future I-66 corridor, an interchange justification study may be required for Federal Highway Administration (FHWA) approval.

Concurrent with the Priorities 1a, 1b, and 2, a number of lower cost, short term spot improvements are also recommended. In priority order, these include:

- Widening the bridges over Rogers Creek and Black Rock Creek, respectively;
- Creating a 3-lane section on US 68 from milepoints 6.120 to 7.000;
- Improving the intersection of US 68 with KY 80;
- Adjusting vertical and horizontal alignments at both Cedar Flats and Missionary Mound Baptist Church;
- Constructing turn lanes into the northern Industrial Park on both US 68 and KY 80; and
- Adding a truck climbing lane on KY 163 north of KY 90.

Typical Sections

The typical section for new alignments consists of three 12-foot wide lanes with 8-foot wide shoulders and ditches. A partially controlled access facility is recommended. Consideration should be given during design phases to adding sidewalks and/or a multi-use bicycle/pedestrian path.

For spot improvements to the existing route, a two lane cross-section with 11-foot wide lanes and six-foot wide shoulders is recommended.

Cost Estimates

As shown in the following table, the total combined cost estimate for Priority Segments 1a and 1b is $11.3 million. The total cost for all the recommended spot improvements is $15.5 million. No funds are scheduled at this time in the Six-Year Plan for the design or construction of this project.

Cost by Phase for Segments 1a & 1b	Anticipated Project Cost
Design	$619,000
Right-of-Way	$1,020,000
Utility Relocation	$820,000
Construction	$8,840,000
Total	**$11,299,000**

Construction Considerations

A number of issues were identified through the course of this study that should be considered as part of future design and construction phases, as follows:

- Farmland Impacts: Care should be taken to preserve harvested croplands. One Agricultural District lies in the study area but should not be impacted by the recommended alternatives.
- Erosion and Sedimentation Control: Measures should be utilized to control erosion and sedimentation during and after earth-disturbing activities. The construction of this project may initially increase the amount of erosion. There may also be an increase in non-point source pollution after the construction of this project. Careful consideration should be given to erosion control methods and to decreasing the amount of non-point source pollution that reaches surface and ground water.
- Threatened/Endangered Species: Two endangered species of bats potentially occur within the area. Further investigation may be necessary to identify roosting sites; tree cutting activities should be limited to mid October through late March.
- Air Quality Impacts during Construction: Construction period air quality impacts will need to be evaluated to (1) expose the potential short-term effects of site preparation, demolition, materials storage and construction and (2) determine if any appropriate mitigation commitments are to be incorporated into the project plans.
- Water Quality and Aquatic Habitats: Care should be taken to preserve aquatic habitats. Any impacted wetlands should be delineated. Permits from the KY Division of Water may be necessary.
- Geotechnical Conditions: If deemed necessary, a more detailed study of karst topography within the study area should be undertaken as the project develops.
- Waste Management: Solid wastes should be disposed of at a permitted facility. Underground Storage Tanks (UST) and other contaminants should be properly addressed as they are encountered.
- Traffic Operations: Maintenance of traffic and residential access should be preserved throughout the construction phases.

Additional Information

Additional information regarding the KY 163 Alternatives Study can be obtained from the following KYTC Division of Planning staff members:

- Daryl Greer, P.E., Director
- Steve Ross, P.E., Branch Manager
- Jimmy Wilson, P.E., Team Leader
- Boday Borres, P.E., Project Manager

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I. INTRODUCTION

The Kentucky Transportation Cabinet (KYTC) has undertaken this Alternatives Study to consider the improvement and/or potential realignment of KY 163 from KY 90 to the Louie B. Nunn (Cumberland) Parkway near Edmonton, Kentucky in Metcalfe County.

The purpose of this study is to:

- Identify known issues, concerns, and constraints, including safety, traffic, social, environmental, and geotechnical considerations;
- Develop preliminary "purpose and need" and goals for the proposed project;
- Listen to and share information with local officials, government agencies, other interested parties, and the public;
- Establish logical termini for the proposed project;
- Develop and evaluate project alternatives based on project purpose and need, including a potential new intechange north of Edmonton and spot improvements along the existing route; and
- Make project recommendations.

Through this Alternatives Study, the KYTC ensures that any future project improvements to KY 163 effectively address identified transportation needs, and that project development decisions meet federal requirements as defined in the National Environmental Policy Act (NEPA).

A. Background

The KY 163 Alternatives Study was identified in the *Kentucky Enacted Six-Year Highway Plan FY 2007-2012* (generally referred to as the Six-Year Plan) as Item No. 3-129.00. This project was described in the latest Six-Year Plan as a "scoping study to determine appropriate corridor for improvements to KY 163 from KY 90 north to the Cumberland Parkway at Edmonton."

B. Project Location

The study area, shown in **Figure 1.1**, lies within Metcalfe County, Kentucky.

Metcalfe County is a predominantly rural county with a population of about 10,000. Edmonton is the county seat, located just south of the Louie B. Nunn (Cumberland) Parkway, with a population of approximately 1,600.

Minority populations for both city and county are below 3% while the population of persons over age 65 is above the state average for both city (25%) and county (15%). Income levels are below state and national averages, not uncommon for this portion of the state.

Manufacturing makes up the largest sector of the local economy, employing about 1,300 to 1,400 persons. Nearly half the residents of the county commute beyond its borders to work, primarily in nearby Glasgow, Somerset, or Bowling Green.

Figure 1.1– Study Area Map

Metcalfe County is largely agricultural, but also has some timber. Most of the farmland lies to the west of the existing KY 163 corridor south of Edmonton, while the aggressive terrain to the east better serves the timber industry. A stockyard is located north of downtown Edmonton, just south of the US 68-KY 80 intersection, and generates a significant amount of truck traffic at peak times during the year.

Within Edmonton, in addition to city and county government offices, there are a number of businesses, churches, and parks, similar to other rural towns in southern Kentucky. There are three schools, all located on US 68-KY 80 west of downtown.

Within the study area, there are two industrial parks. One industrial park, located on US 68 north of downtown Edmonton, is an established location with three major industries that are the largest employers in the county. This industrial park is a major traffic generator for trucks and for commuters from both within and outside of Metcalfe County. A new industrial park at the southern city limits of Edmonton is still in development and does not yet have a tenant.

C. Programming and Schedule

This study was funded in the FY 2007 (2007-2012) Six-Year Highway Plan, with committed planning funds of $250,000.

Subsequent phases of project development, including Design, Right-of-Way Acquisition, Utility Relocation, and Construction, are not scheduled in the most recent legislatively approved Six-Year Highway Plan.

II. EXISTING CONDITIONS

Since KY 163 ends at US 68-KY 80 in downtown Edmonton, access from KY 163 to the Louie B. Nunn Parkway must continue via US 68-KY 80 to the west. Also, a potential new interchange could be located at or along several other routes. Therefore, existing conditions information was gathered not only for KY 163, but also for US 68, KY 80, and other highways in the study area.

Characteristics of KY 163 and the other state highways in the study area are identified in the following sections. Information is included about highway systems, geometric characteristics, bridges, traffic conditions, crash history, adequacy ratings, and planned highway improvements. Roadway information is summarized from the KYTC Highway Information System (HIS) database 2006.

Project area roadways considered as part of this analysis are presented in **Table 2.1**. These roadways were selected because they were deemed most important to the overall transportation system in the study area. Specifically, they are primary traffic carriers within the project area and serve the inflow and outflow of goods for the area. In addition, portions of these roadways could become part of a route, including KY 163, designed to improve connectivity between the Nunn Parkway and the transportation network to the south. Therefore, in selected cases, maps and tables may include roadway segments that fall outside the segments defined in **Table 2.1**.

Photographs taken throughout the study area can be found in **Appendix A**. Additional information on the existing conditions is presented in **Appendix B**, as discussed below.

Table 2.1 – Major Study Area Routes

Route	Begin MP	End MP
US 68	3.855	13.013
KY 80	0.000	3.205
KY 90	1.623	6.468
KY 163	0.000	11.489
Nunn Parkway	24.092	34.402

A. Highway Systems

Major highway systems information is shown in **Table B.1** in **Appendix B**, including the State Primary Road System, Functional Classification System, National Highway System (NHS), National Truck Network (NN), and Designated Truck Weight Class. Major highway systems summarized for the study area are as follows:

- State-maintained roads in Kentucky are categorized under the State System, ranging from the highest order classification to the lowest as follows: State Primary roads, State Secondary roads, Rural Secondary roads, and Supplemental roads. State Primary routes are those routes which are considered to be long-distance, high-volume intrastate routes that are of statewide significance. Mobility is the prime function of the routes which can be distinguished by high traffic-

carrying capacity. These routes link major urban centers within the state and/or serve as major regional corridors.

KY 163 is classified as a State Secondary Route on the State System. KY 90 and the Nunn Parkway qualify as State Primary Routes. KY 80 and US 68 are also State Secondary Roadways.

- One of 13 functional classification categories is assigned to each state-maintained road in Kentucky, based on the function the road provides and whether the road is an urban or rural road. These are classified from highest to lowest and by geographic designation as: Rural Interstate, Urban Interstate, Other Rural Freeways and Expressways (Principal Arterial), Other Urban Freeways and Expressways (Principal Arterial), Other Rural Principal Arterial, Other Urban Principal Arterial, Rural Minor Arterial, Urban Minor Arterial, Rural Major Collector, Urban Collector, Rural Minor Collector, Rural Local, and Urban Local.

  In the study area, KY 163 is classified as a Rural Major Collector. According to Federal criteria, Rural Major Collectors provide service to county seats not located on arterials, forming intra-county travel corridors. These facilities are characterized by shorter trip lengths and lower speeds and compose 20% to 25% of the roadway mileage in rural areas.

- The NHS, first established in 1991 by the Intermodal Surface Transportation Efficiency Act (ISTEA), includes Interstate Highways and other significant Principal Arterials important to the nation's economy, defense, and mobility. The Louie B. Nunn Parkway is the only roadway in the area that is part of the NHS.

- The NN includes roads designated for use by commercial trucks with increased dimensions (102 inches wide; 13 feet, 6 inches high; semi-trailers up to 53 feet long; and trailers up to 28 feet long – not to exceed two trailers per truck). In the study area, the Nunn Parkway is the only route included on the NN. The so-called 102-inch wide trucks may also travel within 5 miles of a NN highway to pick up or deliver goods or commodities or to access essential services, such as fuel, lodging, or food.

- Kentucky Revised Statutes impose weight limits on the state-maintained highway system. There are three weight classification limits: (1) AAA – 80,000 lbs. maximum gross vehicle weight; (2) AA – 62,000 lbs. maximum gross vehicle weight; and (3) A – 44,000 lbs. maximum gross vehicle weight. For special circumstances, occasional exceptions are granted for over-dimensional or overweight vehicles by permits issued by the KYTC, Division of Motor Carriers. In the study area, KY 163 has a weight classification limit of AAA.

B. Geometric Characteristics

Geometric characteristics for major routes in the study area are listed in **Table B.2** in **Appendix B**, including the number of lanes, lane widths, shoulder widths, roadway type, local terrain, route speed limits, percent

passing sight distance requirements, and pavement type. In the study area, KY 163 lies on rolling terrain with an undivided cross-section, two driving lanes ranging from 9 to 11 feet in width, and two-foot shoulders. An average of 28% of the entire route length meets passing sight distance requirements, with 35% in the section south of Edmonton. Posted speed limits are 55 mph south of Edmonton, 45 mph entering the southern city limits, and 25 mph in the downtown area.

Typical view along KY 163

Within Edmonton, a sidewalk network is provided in the downtown area and along portions of US 68-KY 80 west of the intersection with KY 163. There are no multimodal/intermodal facilities or services within the study area.

Due to the substandard geometrics of the general roadway, available "as-built" plans were reviewed for key routes in the study area. The documented alignment was compared to the guidelines presented in the 2006 KYTC Highway Design Manual. Based on this analysis, many horizontal and vertical curves on the rural portion of KY 163 did not meet requirements, as follows:

- Of the total 26 horizontal curves, 8 do not meet the minimum radius requirement of 1,205 feet;
- Of the total 86 vertical curves, 64 do not meet the minimum stopping sight distance or headlight sight distance requirements of 570 feet; and
- Of the total 87 grade segments, 14 exceed the maximum grade requirement.

Figure 2.1 portrays the deficiencies along the existing alignment. Additional information for each deficiency is presented in **Table B.3** in **Appendix B**.

C. Bridges

Bridge data for the routes considered in this study are listed in **Table 2.2**. A bridge with a sufficiency rating less than 50 is considered to be eligible for replacement with federal funds under the Federal-Aid Highway Bridge Replacement and Rehabilitation Program. Bridges can be rated either structurally deficient or functionally obsolete. Within the project area, all ten bridges along the key study routes have sufficiency rating greater than the 50 threshold; six have been deemed functionally obsolete, but none are currently considered as structurally deficient.

Narrow bridge over Rogers Creek

Figure 2.1 – Existing Geometric Deficiencies along KY 163

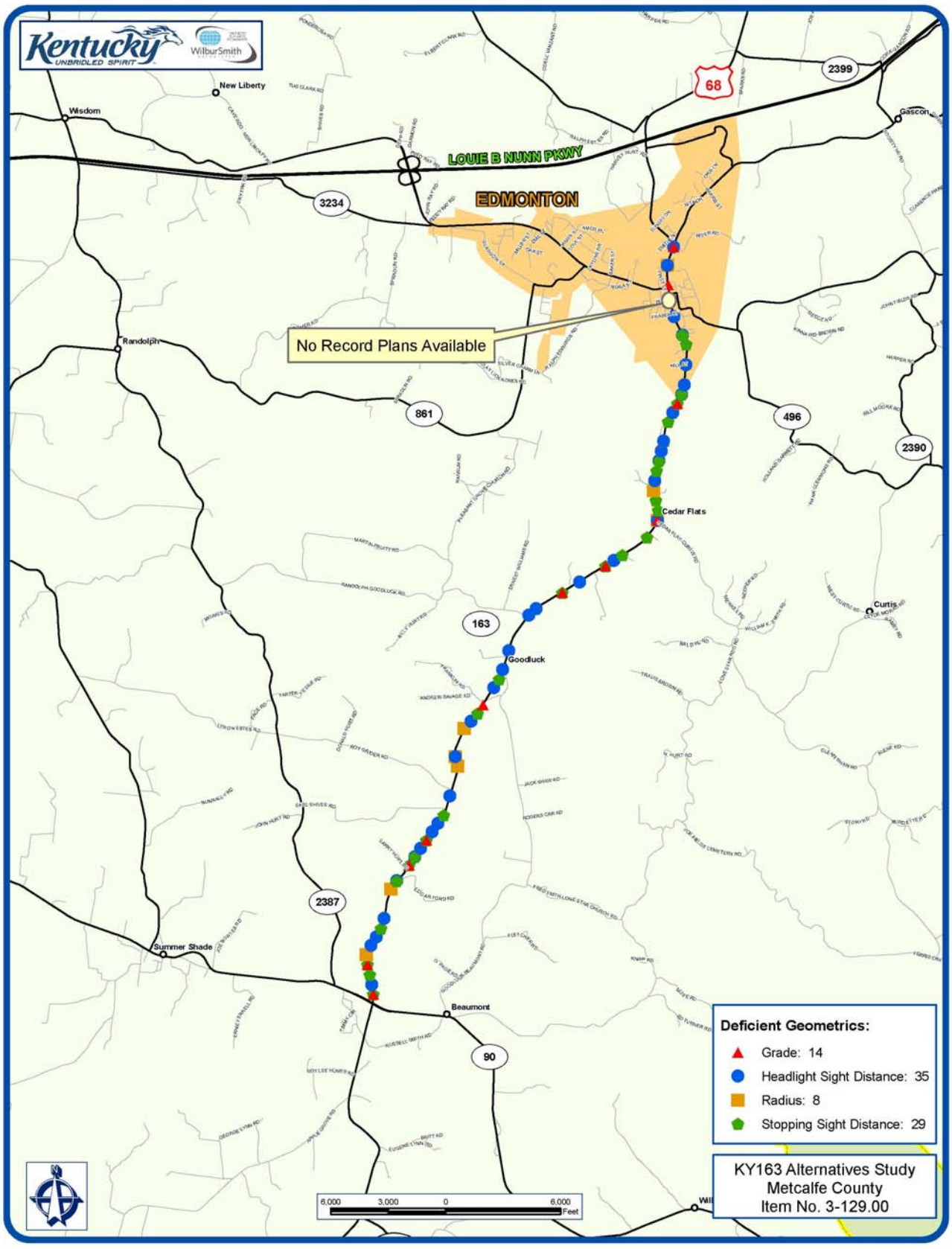


Table 2.2 – Information for Bridges along Key Routes

Route	Milepoint	Bridge	Feature	Length (ft)	Width (ft)	Horiz Clearance	Sufficiency Rating	Functionally Obsolete?	Structurally Defficient?
KY 163	7.280	B00010	Rogers Creek	240	22.0	19.4	76.7	Yes	No
KY 163	8.452	B00009	Black Rock Creek	42	22.0	19.4	70.5	Yes	No
US 68	4.912	B00046	Dry Fork Creek	27	Culvert	46.0	97.0	No	No
US 68	5.421	B00039	Louie B. Nunn Parkway	266	65.6	24.0	96.2	No	No
US 68	6.591	B00016	Clay Lick Creek	159	29.9	26.0	62.9	Yes	No
US 68	7.156	B00015	Rogers Creek	144	30.5	28.0	65.6	Yes	No
US 68	8.822	B00008	Little Barren River, South Fork	192	30.5	26.0	62.9	Yes	No
US 68	9.414	B00001	Douglas Creek	33	22.0	19.0	67.4	Yes	No
US 68	10.107	B00038	Louie B. Nunn Parkway	252	31.8	30.1	81.4	No	No
US 68	12.914	B00002	Sulphur Creek	22	Culvert	18.5	63.0	No	No

D. Traffic and Operational Measures

Existing (Year 2006) and estimated future (Year 2030) traffic and operational conditions for each major route in the study area are discussed in the following subsections.

1. Existing Traffic Volumes (Year 2006)

Existing traffic volumes for segments of the study area routes were summarized based on information provided in the HIS database. Year 2006 traffic characteristics for all major state routes in the study area are shown in **Figure 2.2** and in **Table B.4** in **Appendix B**.

The existing traffic volume along KY 163 in the study area ranges from 2,090 vehicles per day (vpd) in the southern portion of the study area to 4,130 vpd within Edmonton. Existing truck percentages are approximately 12% just north of the intersection with KY 90, decreasing to around 9% of the total traffic in town. For comparison, existing traffic volumes along the Nunn Parkway range between 4,250 vpd and 6,250 vpd,with 27% truck traffic. US 68-KY 80 serves larger traffic volumes, ranging from 3,600 to 10,300 vpd in town, and provides access to the majority of homes, businesses, and activity centers within Edmonton.

2. Level of Service (Year 2006)

The Level of Service (LOS) is a qualitative measure of highway traffic conditions, as defined in the *2000 Highway Capacity Manual* (HCM), published by the Transportation Research Board (TRB). Individual levels of service characterize these conditions in terms of speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined and given letter designations from A to F, with LOS A as the best condition, representing free flow conditions, and ranging to LOS F, the worst condition, representing severe congestion and/or time delays. Typically, a minimum of LOS D is considered acceptable in urban areas and LOS C is considered acceptable in rural areas.

Capacity analysis was performed on the following key intersections within Edmonton: KY 163 with US 68-KY 80, US 68 with KY 80, and US 68 with the existing Nunn interchange ramps. For unsignalized intersections, LOS is measured on each approach road, controlled by the delay time. Using existing turning movement counts and lane configurations,

summary intersection results are presented for the AM and PM peak hours in **Table 2.3**. Intersection LOS does not show capactiy problems at present; however, local input indicates significant traffic queuing and delay at the US 68-KY 80 intersection with KY 163. With no parallel routes through Edmonton, all north-south and east-west traffic meets at this four-way-stop-controlled intersection. The stockyard and industrial park to the north contribute a significant volume of truck traffic passing through this intersection, and the tight turning radius at this location compounds delays as turning trucks often infringe into adjacent lanes.

Based on HCM procedures, LOS was also determined for the design hour volume traffic flow on segments of roadways in the study area. Results for this analysis are presented in **Table B.4** and **Figure 2.2**. For rural two-lane segments, limited passing opportunities tend to control the LOS, but capacity for all highway sections is within acceptable levels in 2006.

3. Estimated No-Build Future Traffic (Year 2030)

No-Build future traffic was estimated using historic growth rates and assuming no future improvements along study area roadways. The growth rates were based on KYTC's historic traffic counts for each study area route. The future growth rate used for KY 163 traffic was 1.9 percent, resulting in a 2030 traffic volume ranging from 3,280 north of the junction with KY 90 to 6,490 at the four-way stop in Edmonton. Projected future year traffic volumes are shown in **Figure 2.3** and **Table B.4**.

4. Estimated No-Build Future Level of Service (Year 2030)

Future no-build LOS at the three analyzed intersections indicates a degradation in service, focused on the PM peak hour. Northbound and eastbound movements at the KY 163 intersection with US 68-KY 80 decline to LOS D and F, respectively. The increased traffic volumes in the future, combined with the constrained truck movements, are likely to degrade service more than anticipated by standard traffic analysis; therefore, the intersection may even fall below LOS D or F during high volume periods.

The existing off ramp for the eastbound Nunn Parkway also functions at LOS D during the afternoon peak by 2030. These results are presented in **Table 2.3**.

Despite increases in traffic volumes, most highway segments are still providing adequate capacity for anticipated traffic volumes in 2030. A portion of US 68-KY 80 south of the Nunn interchange and KY 163 within Edmonton would reach LOS D as increased daily traffic volumes further reduce passing opportunities. LOS for projected volumes are presented in **Table B.4** and **Figure 2.3**.

Figure 2.2 – 2006 Average Daily Traffic and Level of Service

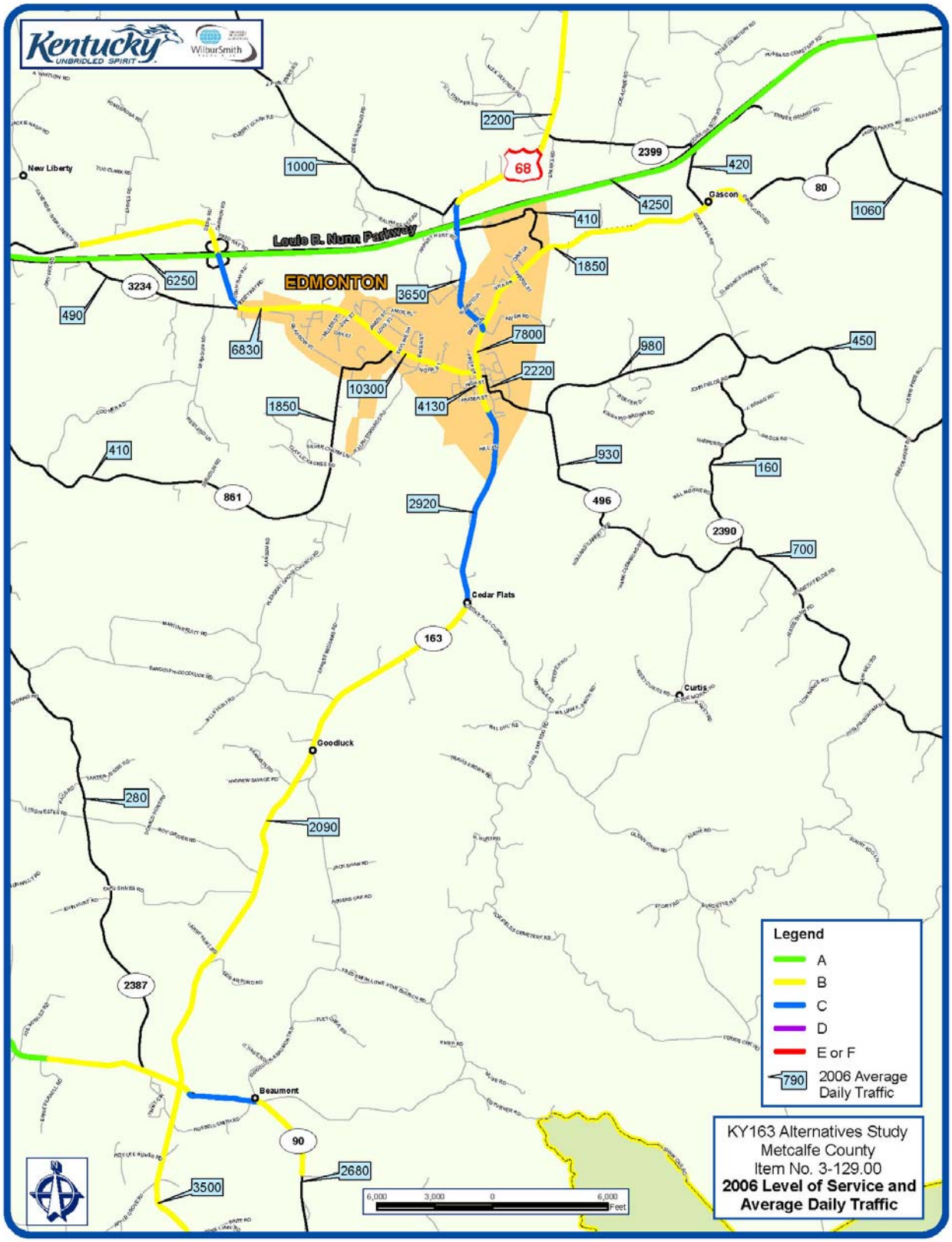


Figure 2.3 – 2030 Average Daily Traffic and Level of Service

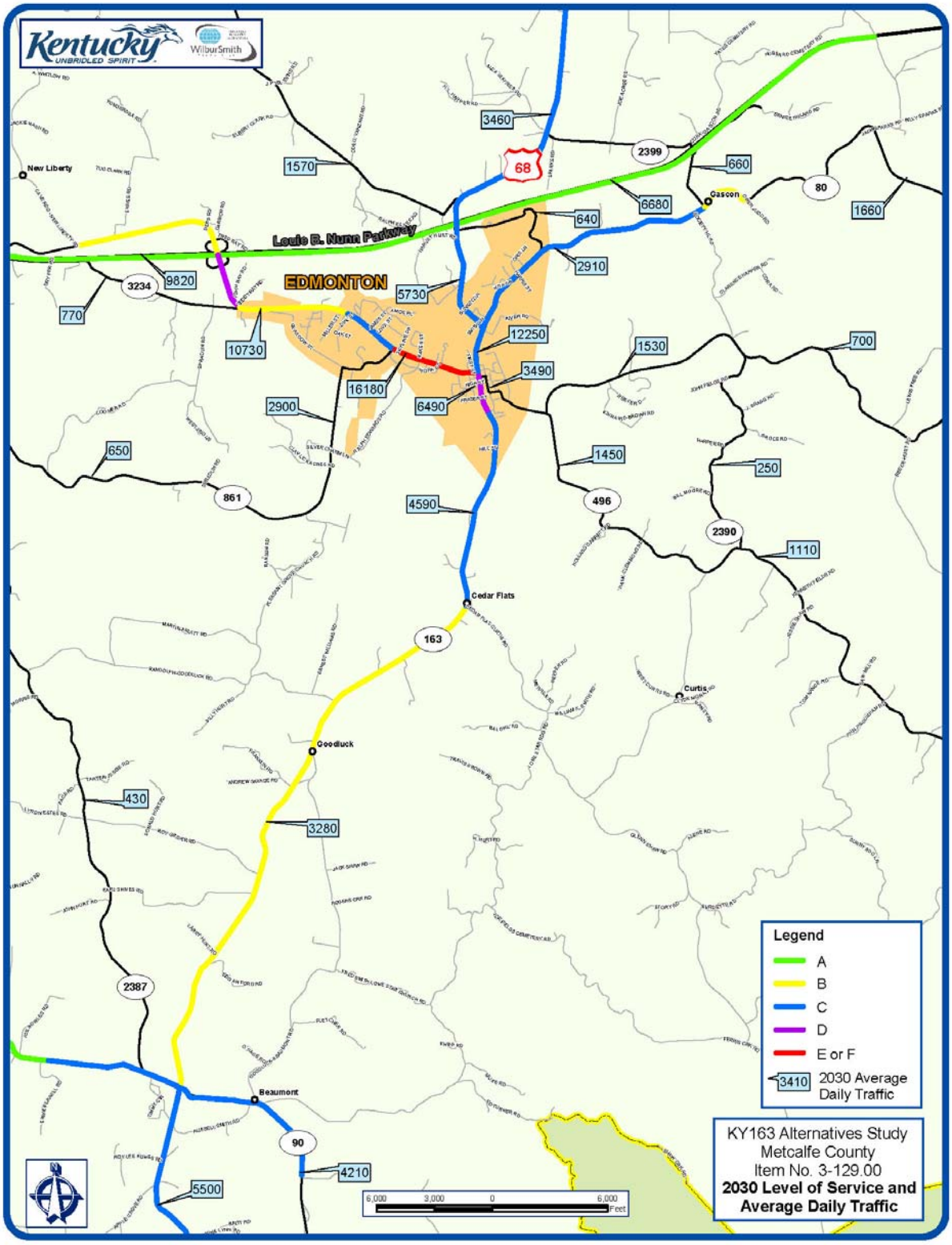


Table 2.3 – Intersection LOS for AM / PM Peak Hour

Intersection	**2006**		**2030**	
Approach	Delay	LOS	Delay	LOS
KY 163 with US 68-KY 80				
Northbound KY 163	12 / 14	B / B	21 / 32	C / D
Southbound US 68-KY 80	11 / 12	B / B	16 / 21	C / C
Eastbound US 68-KY 80	12 / 18	B / C	26 / 111	D / F
Westbound East Stockton St.	10 / 11	B / B	17 / 19	C / C
US 68 with KY 80				
Southbound US 68	10 / 11	B / B	12 / 15	B / B
US 68 at Eastbound Nunn				
Eastbound Nunn Off Ramp	13 / 14	B / B	21 / 27	C / D
US 68 at Westbound Nunn				
Westbound Nunn Off Ramp	9 / 9	A / A	10 / 9	B / A

Note: Delay is measured in Seconds

E. Crash Analysis

Crash records were collected from KYTC for major state routes in the project area over a four-year period (January 1, 2003 to December 31, 2006). The location of reported crashes with valid milepoint designations were geospatially referenced to help identify incident clusters. Each roadway with a significant crash history was broken into sections, as shown in **Figure 2.4**, based upon its characteristics. The rural portion of KY 163 (Milepoints 3.6 through 10.5) shows 36 total crashes, including 12 injury incidents. There are 14 reported object collision events and five crashes in which a vehicle has run off the road. Along US 68-KY 80 west of downtown Edmonton, there is a marked concentration of crashes between KY 3234 and Shirley Street, corresponding to a commercial area with many driveway entrances plus the transition between a 2-lane and 4-lane facility.

After identifying these incident locations, Wilbur Smith Associates (WSA) used a methodology developed by the Kentucky Transportation Center (KTC) to locate roadway "segments" based upon traffic volumes and geometric characteristics which correspond to high crash concentrations. The procedure was also used to identify the location of 0.1-mile "spots" which demonstrate high crash frequencies. Each segment or spot is assigned a Critical Rate Factor (CRF) based on formulas published by the KTC. The CRF is one measure of the safety of a road, expressed as a ratio of the crash rate at the study location to the average crash rate for roadways of the same functional classification throughout the state.

If the Critical Rate Factor is 1.00 or greater, it is assumed that crashes are happening due to circumstances that cannot be attributed to random occurance. Therefore, it should be studied in more detail to ascertain if there are remedial actions that could be taken to improve the overall safety of the facility. Calculations for the segments and spots along the area state routes are summarized in **Tables 2.4** and **2.5**, showing each spot/segment with a CRF greater than 0.50. Spots/segments with a CRF greater than 1.00 are highlighted in red; sites nearing this value (0.90 or greater) are highlighted in gold as potential high crash spots/segments.

Figure 2.4 – Crash Information for Roadway Sections

Vehicle Crash Statistics

By Roadway Sections

US 68 (MP 4.1 – 6.2)
11 Total Crashes
0 Fatalities; 1 Injury

By Type:	
5 Object Collisions	2 Rear-Ends
2 Turning-related	2 Other

US 68 (MP 6.2 – 8.56)
132 Total Crashes
2 Fatalities; 21 Injuries

By Type:	
13 Object Collisions	2 Run Off Road
23 Turning-related	46 Rear-Ends
	48 Other

KY 861 (MP 3.2 – 6.2)
10 Total Crashes
0 Fatalities; 2 Injuries

By Type:	
4 Object Collisions	1 Run Off Road
2 Turning-related	1 Rear-Ends
	2 Other

KY 163 (MP 10.5 – 11.5)
16 Total Crashes
0 Fatalities; 5 Injuries

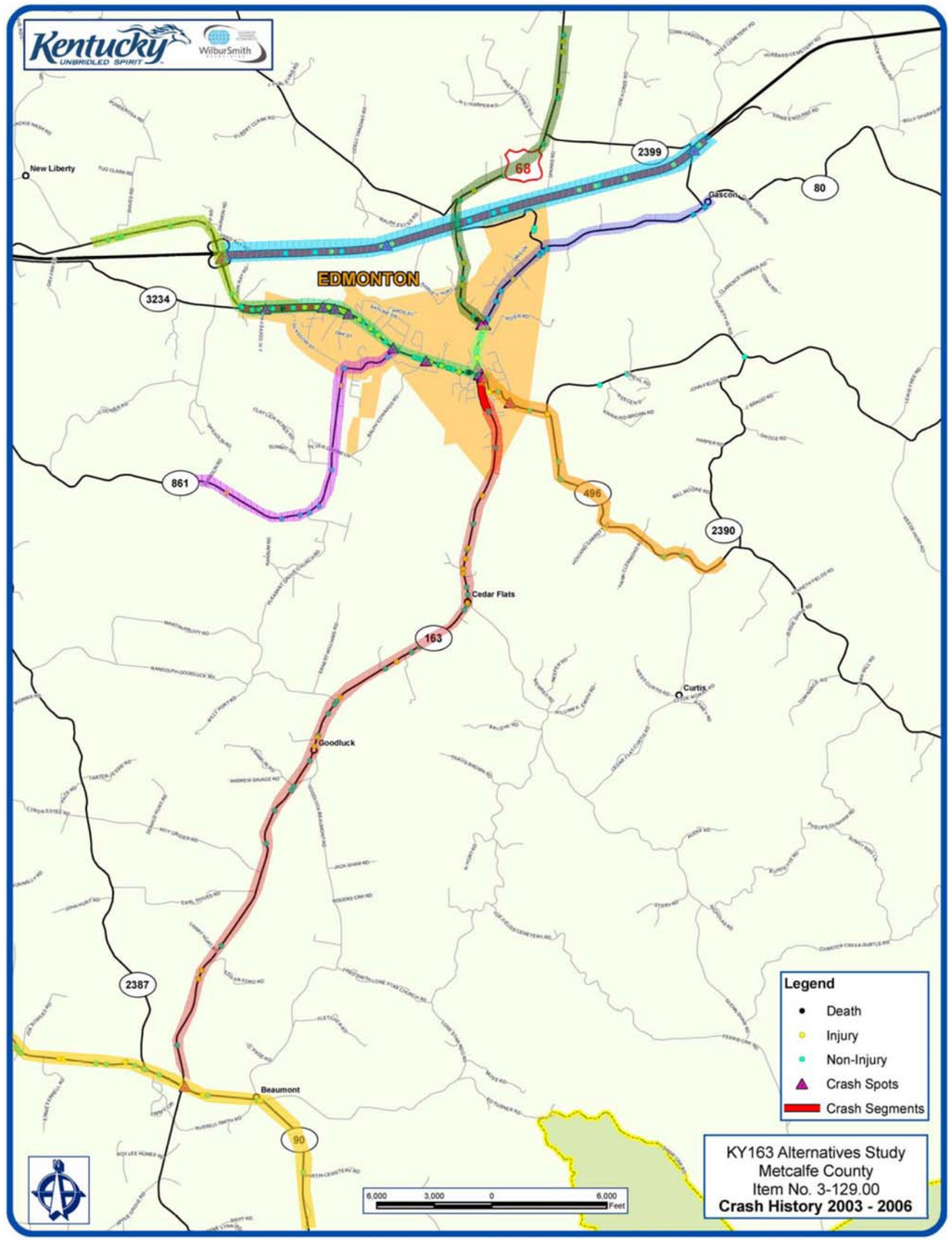
By Type:	
4 Parking-related	1 Run Off Road
7 Turning-related	2 Rear-Ends
	2 Other

KY 163 (MP 3.6 – 10.5)
36 Total Crashes
0 Fatalities; 12 Injuries

By Type:	
14 Object Collisions	5 Run Off Road
4 Turning-related	4 Rear-Ends
	9 Other

KY 90 (MP 1.6 – 6.5)
62 Total Crashes
1 Fatality; 20 Injuries

By Type:	
19 Object Collisions	11 Run Off Road
8 Turning-related	10 Rear-Ends
	14 Other



US 68 (MP 9.0 – 12.9)
24 Total Crashes
1 Fatality; 8 Injuries

By Type:	
9 Object Collisions	2 Run Off Road
5 Turning-related	3 Rear-Ends
	5 Other

Nunn Parkway (MP 27.4 – 32.4)
33 Total Crashes
0 Fatalities; 14 Injuries

By Type:	
21 Object Collisions	3 Run Off Road
5 Overturned Vehicles	3 Rear-Ends
	1 Other

KY 80 (MP 0.0 – 2.7)
15 Total Crashes
0 Fatalities; 4 Injuries

By Type:	
8 Object Collisions	1 Rear-Ends
1 Turning-related	5 Other

US 68 (MP 8.56 – 9.0)
19 Total Crashes
0 Fatalities; 3 Injuries

By Type:	
4 Object Collisions	5 Rear-Ends
6 Turning-related	4 Other

KY 496 (MP 9.4 – 12.6)
19 Total Crashes
0 Fatalities; 4 Injuries

By Type:	
5 Object Collisions	1 Run Off Road
2 Turning-related	3 Rear-Ends
	8 Other

The crash history for each roadway (or roadway section) is categorized by crash severity and incident type, including…

- Collision with objects (excluding other vehicles)
- Turning crashes
- One vehicle running off roadway edge
- One vehicle hitting another from the rear
- Parking-Related crashes (select facilities only)
- Overturned vehicle (Parkway only)
- Other

Table 2.4 – High Vehicle Crash Segments Analysis in Study Area

Route	Begin MP	End MP	Length (Miles)	Vehicle Crashes				Critical Rate Factor
				Fatal	Injury	PDO	Total	
KY 80	0.000	2.700	2.700	0	4	11	15	0.51
KY 90	1.600	4.721	3.121	1	17	34	52	0.71
KY 163	11.090	11.489	0.399	0	2	10	12	0.95
KY 496	11.700	12.600	0.900	0	3	10	13	0.90
KY 861	3.200	4.171	0.971	0	1	3	4	0.80
US 68	6.240	7.186	0.946	1	10	36	47	1.20
US 68	7.186	8.562	1.376	1	11	67	79	0.66
US 68	8.562	9.002	0.440	0	3	17	20	0.84
LN 9008	27.400	32.400	5.000	0	14	19	33	1.02

Note: A Critical Rate Factor greater than 1.00 indicates a high crash location, and a Critical Rate Factor greater than 0.90 indicates a potential high crash location. Only segments with CRF > 0.50 are shown in table.

Table 2.5 – High Vehicle Crash Spots Analysis in Study Area

Route	Begin MP	End MP	Vehicle Crashes				Critical Rate Factor
			Fatal	Injury	PDO	Total	
KY 80	0.000	0.100	0	2	2	4	1.24
KY 90	1.875	1.975	0	1	3	4	0.72
KY 90	2.200	2.300	0	0	7	7	1.25
KY 90	2.300	2.400	0	2	2	4	0.72
KY 90	2.505	2.605	0	1	4	5	0.90
KY 90	2.950	3.050	0	0	4	4	0.72
KY 90	4.700	4.800	0	5	8	13	2.93
KY 163	11.400	11.500	0	4	10	14	2.64
KY 496	12.050	12.150	0	0	4	4	1.13
KY 496	12.500	12.600	0	0	4	4	1.13
LN 9008	27.400	27.500	0	1	4	5	1.90
LN 9008	29.000	29.100	0	4	0	4	1.52
LN 9008	32.200	32.300	0	3	4	7	2.66
US 68	5.420	5.520	0	1	5	6	0.96
US 68	6.200	6.300	0	0	5	5	0.75
US 68	6.400	6.500	0	2	7	9	1.24
US 68	6.500	6.600	1	0	4	5	0.69
US 68	6.691	6.791	0	1	4	5	0.69
US 68	6.898	6.998	0	3	5	8	1.10
US 68	7.002	7.102	0	2	5	7	0.97
US 68	7.130	7.230	0	2	6	8	0.97
US 68	7.400	7.500	0	2	6	8	0.58
US 68	7.620	7.720	0	3	10	13	0.95
US 68	7.970	8.070	0	3	12	15	1.09
US 68	8.150	8.250	0	1	7	8	0.58
US 68	8.440	8.540	1	0	9	10	0.73
US 68	8.550	8.650	0	1	8	9	1.14
US 68	8.900	9.000	0	0	5	5	0.63
US 68	9.000	9.100	0	1	8	9	1.83

Note: a CRF greater than 1.00 indicates a high crash location, and a CRF greater than 0.90 indicates a potential high crash location. Only spots with a CRF > 0.50 are shown in table.

This procedure was used to identify multiple high crash spots and segments. As shown in **Figure 2.5**, data for these locations were further analyzed, detailing severity and crash type for each. Findings are as follows:

A segment with a CRF of 0.95 appears in the urban portion of KY 163 (Milepoints 11.090 through 11.489). Incidents at this location relate to the on-street parking facilities and turning movements at cross streets.

Several high crash spots occur at the intersection of US 68-KY 80 with KY 163, indicating crash concentrations occur at three of the four approaches.

The high crash segment appearing on US 68-KY 80 west of downtown should be partially addressed by a reconstruction project already scheduled for implementation.

There are two spots near the existing Nunn interchange, which currently has a toll booth style ramp configuration.

F. Adequacy Ratings

The KYTC HIS database provides an adequacy rating percentile for state-maintained arterials and most major collectors. The composite rating is based on the condition, safety, and service component scores of the route, as described below:

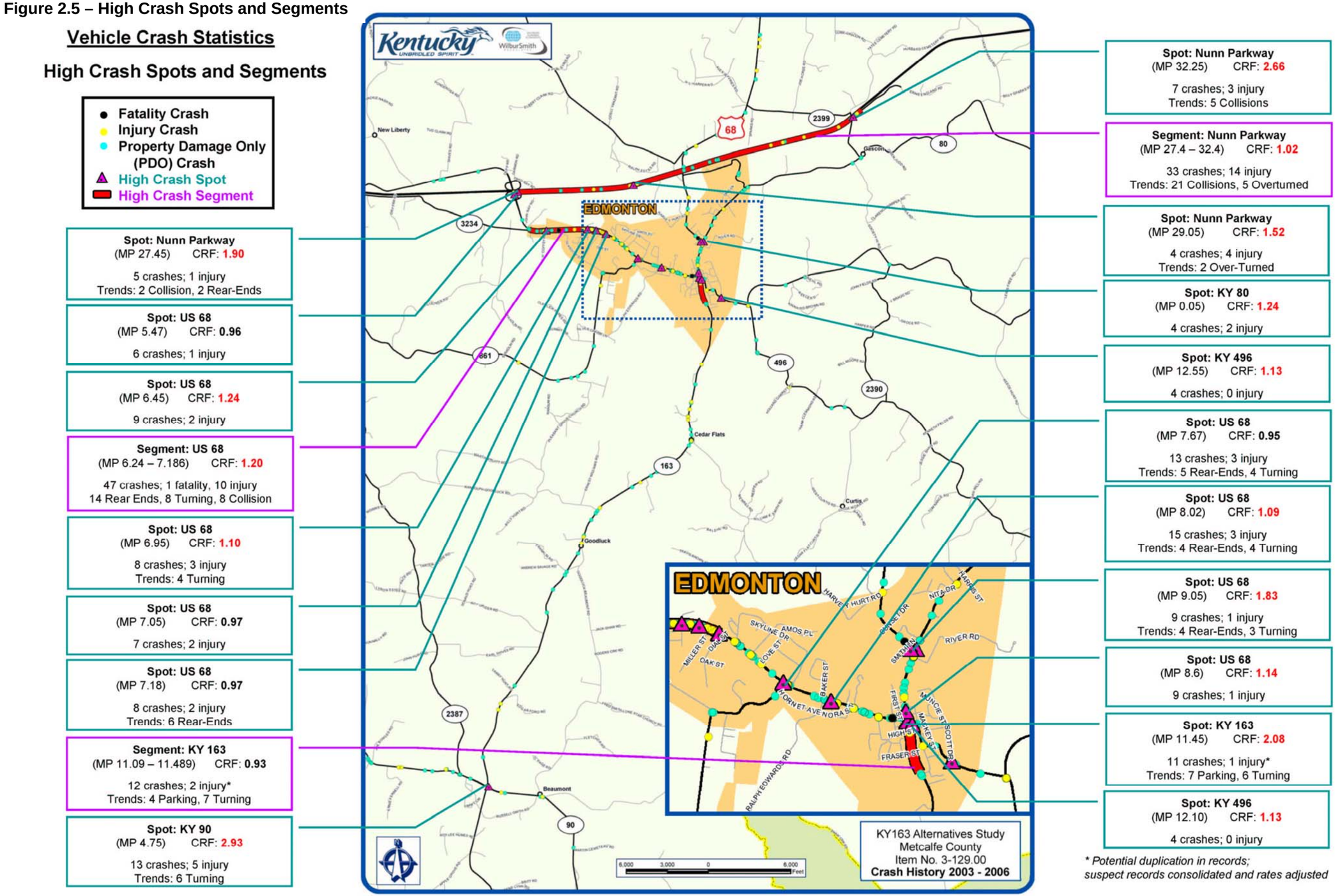
- The Condition Index considers only the condition of the road's pavement.
- The Safety Index is evaluated based on lane width, shoulder width, median widths, alignment, and critical Crash Rate Factors.
- The Service Index considers the route's Volume-to-Capacity (V/C) ratio and access control.

Table B.5 depicts the adequacy ratings assigned to various study area routes.

Portions of US 68 and KY 90 fall into the lowest quartile for composite rankings, primarily due to safety issues. KY 163 generally is in the highest quartile, with a degradation approaching Edmonton from the south.

Safety is the primary category affecting ratings, followed by the pavement condition.

Figure 2.5 – High Crash Spots and Segments



G. Programmed Highway Improvements

In addition to the KY 163 Alternatives Study in Metcalfe County, several other projects are planned and programmed for project area routes in the KYTC's *FY 2007-FY 2012 Enacted Six-Year Highway Plan*. A summary of these projects is provided below.

- Right-of-way, utility, and construction activities for a project on US 68, Milepoints 7.0 – 7.7, including installation of a two-way left turn lane and raised pavement markers (Item No. 3-900.00);
- Design and construction activities for spot improvements along KY 90 from the Barren/Metcalfe County line to Burkesville (Item Nos. 8-136.00, 8-136.01, and 8-136.02);
- Construction activities in Monroe County along KY 163 from Tompkinsville to KY 90 in Metcalfe County (Item Nos. 3-276.10, 3-276.11, 3-276.17, 3-276.50, and 3-276.57); and
- Another Alternative Study for the section of KY 163 in Monroe County from Tompkinsville to the Tennessee state line (Item No. 3-8310.00).

III. ENVIRONMENTAL OVERVIEW

This chapter provides a summary of environmental issues located in the KY 163 study area. Throughout November and December of 2006, teams of specialists performed data analysis and field surveys of the project area to identify key natural, cultural, and noise-related environmental features associated with the KY 163 study. The following sections present the findings of these investigations. **Figure 3.1**, a map detailing the discussed features, is presented at the end of this chapter.

Environmental Components
Natural Environment
Cultural Resources
Noise Impacts

A. Natural Environment

This section presents the summary findings of the field review completed by Third Rock Consultants, LLC. Air Quality, Aquatic and Terrestrial Resources, Threatened and Endangered Species, Socioeconomic Data, and Underground Storage Tank/Hazardous Materials components were reviewed and documented in an Environmental Overview technical report, presented in its entirety in **Appendix C**.

Metcalfe County is located in the South Central Kentucky Air Quality Control Region. Due to its rural nature, the county is within attainment levels for all transportation-related air pollutants and is anticipated to remain within the National Ambient Air Quality Standards (NAAQS) through the design year. Emissions arising from any potential alternative of this study are not expected to have a negative impact on air quality.

Four perennial bedrock streams lie within the project area. Three of these bodies demonstrate evidence of excessive nutrients, with South Fork Little Barren River being the most degraded and a likely candidate for remediation. Construction on or near streams may create temporary impacts and require additional permits. Other ephemeral and intermittent streams traverse the study area. There are also a multitude of springs and wells.

Little Barren River near stockyard

There are few natural jurisdictional wetlands in Metcalfe County. Farm ponds are common but typically do not connect to flowing streams. If any wetlands are impacted by the proposed project, they should be delineated.

The study area lies within a significant karst region, as seen in the undulating terrain, and a known cave is located near the southern terminus. Harvey Cave is located in the study area and is reported to contain petroglyphs. There are several documented sinkholes within the project boundaries and a high likelihood to encounter additional karst features at both the northern and southern ends of the study area. A policy paper, published by the KYTC Division of Environmental Analysis, provides best management practices for

karst areas to improve long term water quality and protect endangered species. This document is included in the full text of the Environmental Report in **Appendix C**.

Two endangered species potentially occur in the region: the gray bat and the Indiana bat. Their habitats include mature hardwood forests and dry caves or sinkholes, both of which occur in the study area.

There are three parks within Edmonton which are protected under Section 4(f) regulations. Details for other land uses are depicted in the full text of the Environmental Overview Report.

Agriculture is a significant component of the economy and lifestyle of Metcalfe County. A 473 acre Agricultural District exists on either side of the existing KY 163 alignment, just south of Black Rock Creek. Impacts to prime soils and farmlands should be taken into consideration as this project develops.

Nineteen documented underground storage tanks (UST) and hazardous materials generators exist in the project area, primarily along existing major collector routes. Three inactive landfills are recorded near Edmonton and will require additional site investigations if any future alignment lies nearby. Many oil and gas wells also occur within the project area.

B. Cultural Environment

This section presents an overview of key cultural resources within the project area. A copy of the Cultural Resources Overview technical report is presented in **Appendix D**. Previously identified sites and structures are shown on the map included as part of the appendix.

Based on a review of the Kentucky Heritage Council and the Kentucky Office of State Archaeologist files, there are three structures within the project area listed on the National Register of Historic Places (NRHP). These are the Metcalfe County Court House and Metcalfe County Jail, located near the northern terminus of KY 163, and the Stockton-Ray House, located southeast of the existing US 68-KY 80 interchange with the Nunn Parkway.

Historic Metcalfe County Court House

There are 11 previously surveyed archaeological sites in the study area. Additional archaeological sites are likely to be identified, especially concentrated near waterways and along ridge tops. Harvey Cave is reported to contain petroglyphs, making it a potential cultural resource as well.

Research efforts also identified 59 cultural historic sites which have been previously surveyed. Field review identified numerous other structures older

than 50 years. NRHP eligibility for these sites is undetermined. Should any of these locations fall within the boundary of any future corridor alternative, additional investigation will be necessary.

C. Noise Environment

Potential noise-sensitive receptor sites were identified during a field visit to the project area. The intersection of KY 163 with KY 90 and the City of Edmonton were classified as potential receptor sites, due to the presence of historic structures, churches, cemeteries, schools, parks, and/or residential clusters. No significant noise-related impacts are anticipated to result from this project. A Noise Overview technical report documents this review and can be found in **Appendix E**.

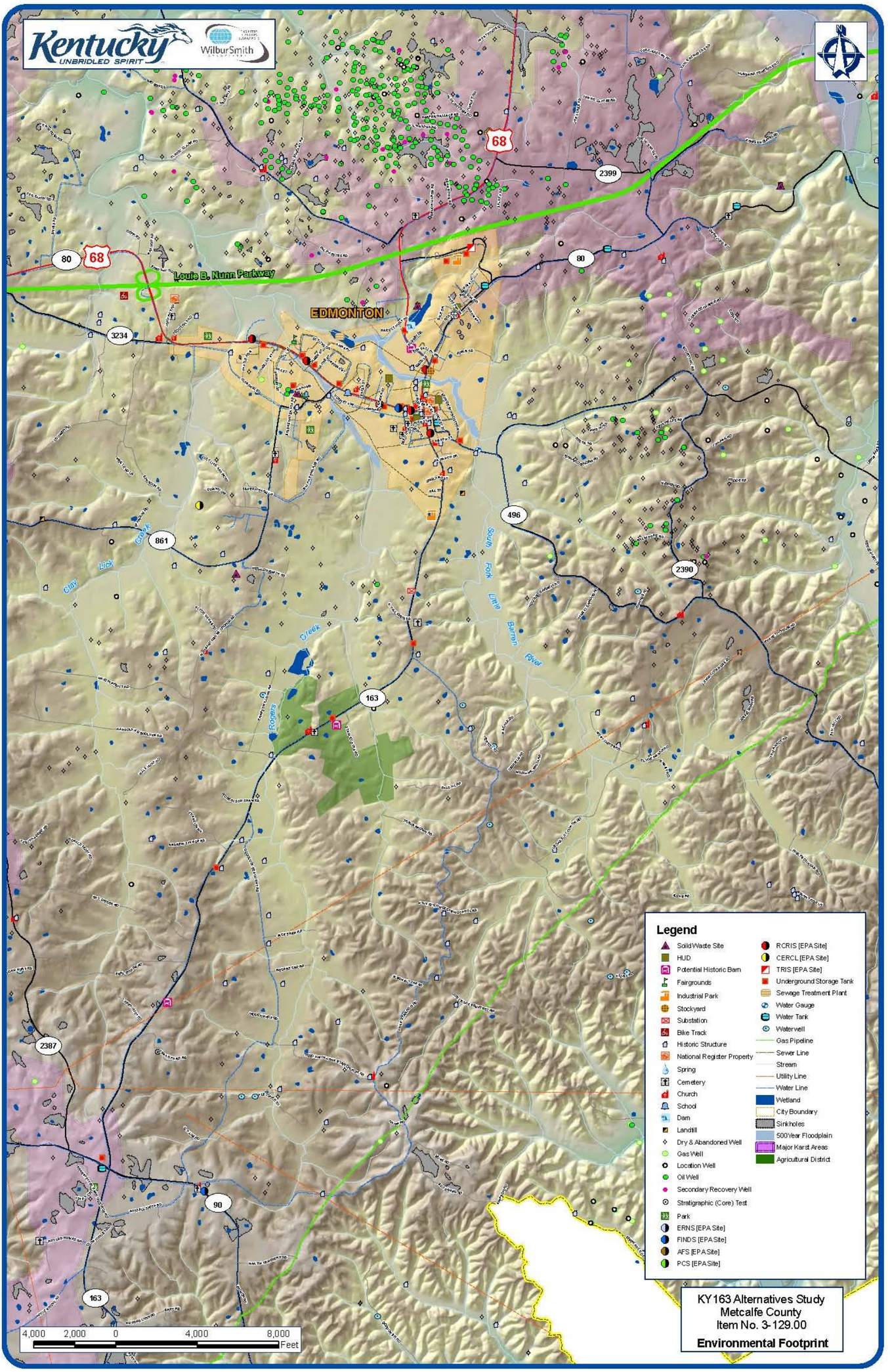


Figure 3.1 – Environmental Map

IV. GEOTECHNICAL OVERVIEW

This chapter presents a summary of the findings of the geotechnical data analyis and the field review completed December 2006. A copy of the full Geotechnical Overview technical report is included in **Appendix F**.

The project area lies on gently rolling terrain common to this portion of Kentucky, predominated by farmlands and numerous farm ponds. According to the United States Geological Survey (USGS), KY 163 is located on the Mississippian Plateau province, dominated by thick deposits of horizontal limestone bedrock. The maximum difference in elevation between any two points in the project area is 350 feet.

Karst topographic features will be a concern due to the underlying limestones: sinkholes, sinking streams, streamless valleys, springs, and caverns. The area near the KY 2399 crossing of the Nunn Parkway and a large sinkhole at the sharp bend in KY 861 south of US 68-KY 80 are identified as sensitive areas due to their karst potential. It is also recommended that any potential new alignments limit east-west shifting at the southern project area, keeping near the existing KY 90 intersection with KY 163.

Observations of several shale and limestone outcroppings demonstrated a shallow depth of bedrock, estimated at two feet. This depth could adversely affect cut/fill quantities, increase excavation costs, and result in additional engineering design and inspection regulations.

There is no evidence of mining activity in the project area.

Numerous oil and gas wells appear within the study limits. There are fewer than 10 active oil wells reported south of the Nunn Parkway, but there are many abandoned wells.

V. ENVIRONMENTAL JUSTICE OVERVIEW

This chapter presents a summary of the findings of an Environmental Justice Overview technical report, prepared by the Barren River Area Development District (BRADD). The Environmental Justice Overview was prepared to provide the community characteristics compiled from a number of sources. A copy of the full report is included in **Appendix G**.

There are two census Tracts and seven Block Groups within the study area. Statistics were compiled for key environmental justice issues – Race, Poverty Level, and Age Group – and are summarized in the following sections.

A. Population by Race

All Tracts and Block Groups demonstrate minority concentrations below national (24.9%) and state (10.0%) averages. Metcalfe County has a black population of 1.12%; Block Group 2 in Tract 9602 has a black concentration of 2.27% and Block Group 2 in Tract 9603 has a concentration of 1.95%.

It is anticipated that the implementation of this project will not have a disproportionate effect on minorities residing in the study area.

B. Population by Poverty Level

The county average percentage of persons below poverty level (23.26%) is significantly above both state (15.37%) and national (12.05%) levels. Each Block Group in the project area exceeds both state and national poverty levels, with poverty rates ranging from 18.51% to 26.39%.

The poverty percentages within Metcalfe County are comparable with other counties nearby. These counties are identified as economically distressed due to high unemployment rates and the unavailability of quality employment opportunities. It is very likely that the KY 163 project will impact a portion of this population group. However, because low-income populations are common throughout Metcalfe County, it is anticipated that the proposed project will not have a disproportionate effect on any populations of persons below the poverty level residing in the study area.

In fact, discussions with local officials and community members indicate that the KY 163 Alternatives Study is viewed by many as a potential means to enhance economic growth and development in the area, which could improve income levels and reduce poverty for Metcalfe County.

C. Population by Age Group

The percentage of the population 65 years and older within Tract 9602 is consistent with state (12.1%) and national (12.4%) levels. Tract 9603 has a higher level at 17.02%, compared to a county average of 14.98%. Block Groups 3 and 4 in Tract 9603 have slightly lower concentrations, both around 13%.

No significant concentrations of specific age groups were identified within the study area; therefore, there are no anticipated disproportionate effects on the aging populace.

VI. INITIAL CABINET, PUBLIC, AND AGENCY INPUT

Public and Agency Involvement

- Project Team Meetings
- Local Elected Officials Meetings
- Stakeholder Meetings
- Public Information Meetings
- Public Comment Surveys
- Resource Agency Coordination

Throughout the course of the KY 163 Alternatives Study, the local citizens, public officials and representatives of government resource agencies were given the opportunity to provide input for the study. This chapter describes the first KYTC project team meeting and the first round of public and agency involvement. It also presents the comments and input received as a result of those efforts. Other KYTC Project Team meetings and activities during the second round of local, public, and agency involvement are summarized in **Chapter X** as they relate to the development and evaluation of alternatives. Meeting minutes are presented in **Appendix H** for each meeting discussed in this chapter. Materials related to public meetings are included in Public Meeting Notebooks on file with KYTC.

A. Project Team Meeting (November 30, 2006)

The first Project Team Meeting was held on November 30, 2006, at the KYTC District 3 Office building in Bowling Green, Kentucky. The project team convened to discuss the purpose, goals and objectives of the proposed project; review preliminary existing conditions data for the study corridor; and identify study needs. The meeting minutes are included in **Appendix H**.

The project was originally recommended by the Barren River ADD, conceptually calling for an investigation of possible alternatives which would improve travel time and safety along KY 163 between the KY 90 intersection and the southern border of Edmonton. The study area was since expanded to continue north to an interchange with the Nunn Parkway. Consideration of a potential bypass around Edmonton was also discussed.

B. Local Officials and Stakeholders Meetings

As part of the initial public involvement, a meeting was held with local officials and another with stakeholders in November 2006. The purpose of these meetings was to inform these groups about the project, discuss potential project issues and concerns, and solicit input. The meeting minutes are included in **Appendix H**.

1. Local Officials Meeting

On November 30, 2006, the project team invited local elected officials from Metcalfe and surrounding counties to attend a meeting to discuss the KY 163 planning study. The discussion focused largely on regional improvements along KY 163 that could improve connectivity between I-40 in Tennessee and the future I-66 Corridor, currently anticipated to follow the Nunn Parkway.

2. Stakeholders Meeting

Later that same day, members of the project team met with local stakeholders to review project information and discuss issues relating to the corridor. Improved accessibility for the existing and developing

industrial parks, route redundancy for emergency services, congestion relief during the afternoon peak hour, and safety improvements were identified as local concerns to address. Attendees strongly supported a second interchange with the Nunn Parkway near Edmonton and believed a bypass around Edmonton would be seen as a positive development.

C. Public Information Meeting - Round I

A public meeting was held during the first round of public involvement for this project. The meeting was held at Metcalfe County High School on December 14, 2006. The meeting was designed to inform the public and solicit questions and comments regarding local issues and potential locations for the possible reconstruction of KY 163. In addition to the information presented in this chapter, material related to the first round of public involvement meetings is included in a separate Public Meeting Notebook on file with the KYTC Division of Highway Design and Division of Planning.

Minutes of this public meeting may be found in **Appendix H**.

General project information displays, such as project location, traffic volumes, crash information and preliminary environmental maps, were presented for review and comment. Potential corridor alternatives for KY 163 had not yet been identified, and therefore were not included in the meeting materials.

Members of the project team gave a short slide presentation explaining the overall project development process, a proposed typical timeline, the current status of the project, next steps, and the preliminary project goals and issues, which ran on a continuous loop for the duration of the meeting for those who were not present for the presentation.

Attendees were given the opportunity to identify areas to avoid and potential corridors for an improved KY 163 alignment. In this forum, attendees were also able to ask questions and provide comments one-on-one with KYTC, ADD, and consultant staff.

1. General Comments

Attendees were invited to discuss any questions or concerns with KYTC and consultant staff. General comments included the following:

- Several attendees mentioned a congestion problem at the four-way stop (intersection of KY 163 and US 68-KY 80) downtown during the afternoon peak hour.
- Various safety problems were repeatedly identified and discussed (these were noted for future investigation).
- Truck traffic is a problem, especially at the four-way stop. The geometry of this intersection makes it difficult for trucks to make turns.
- Multiple participants expressed concern that farmlands and homes would be taken if a new route were chosen.

2. Map Exercise

Two tables were set up with study area maps of both county and city for attendees to draw on. Participants were asked to identify specific impact areas, existing problems with KY 163, and potential alignments for a new route. The points identified included the following.

- Impact Areas:
  - Homes and farmlands along KY 163, US 68-KY 80, and KY 861
  - Various cemeteries near principal routes
  - Gas wells south of the existing Nunn interchange with US 68
  - The industrial park along KY 3524 and a proposed industrial park off KY 163 at the south city limits of Edmonton
- Existing problems:
  - Various sharp curves and steep hills
  - Narrow bridges over Rogers Creek and Black Rock Creek
  - A high crash location at Cedar Flats
  - High volumes of pull-out traffic along KY 80 north of the junction with US 68
- Potential Alignments:
  - A link between the KY 90/KY 163 intersection and a new interchange with the Nunn Parkway at KY 2399
  - A connection from KY 163 at Hill Street north to a new interchange east of the Industrial Park
  - A bypass to the east around Edmonton from Hill Street to the junction between KY 80 and US 68
  - A bypass to the west from Hill Street to US 68-KY 80 near Baker Street
  - A connection from south of the city limits that travels north through town, west of KY 163 and US 68 to tie into a new interchange at US 68

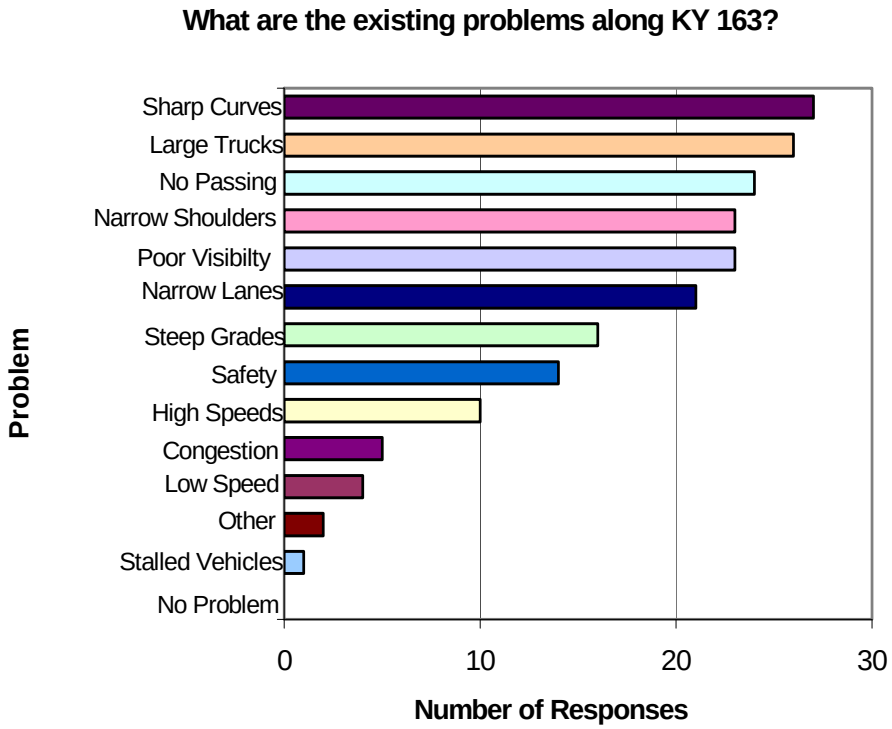
- o A connection from the existing KY 163 alignment somewhere north of Goodluck which travels up a county road north to tie into KY 861

3. Public Comment Survey Responses

As part of the public meeting handout, the KYTC supplied a survey form so that citizens of the area could provide input on the project. The results from all surveys received as part of the initial public involvement process are summarized in the following paragraphs.

Of the 37 surveys received, 28 respondents live in the city of Edmonton, with 6 respondents from Summershade and 2 from Tompkinsville. One survey did not list an address.

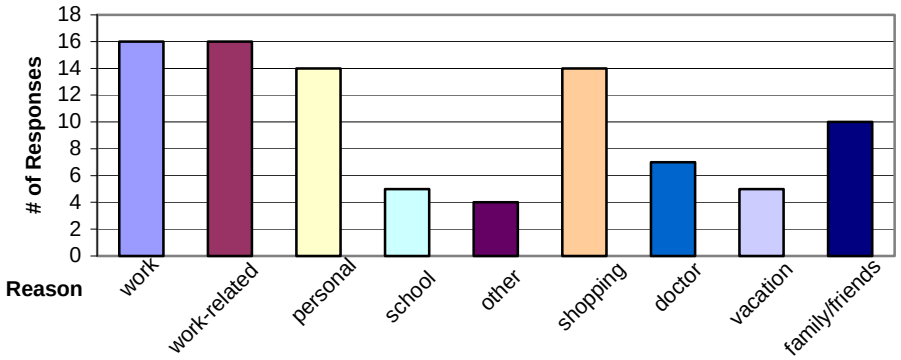
The first question asked what transportation problems exist on KY 163 that the proposed project should address. Respondents were invited to check all that apply from a list of options, with results shown below.



Question two addressed how often attendees traveled along KY 163. Sixty-one percent (61%) reported traveling the corridor on a daily basis. Twenty-one percent (21%) use the corridor 3 to 4 times per week; nine percent (9%) each use the corridor once or twice per week or use the corridor 3 to 4 times per month.

The next question investigated primary trip purpose. As shown in the following chart, there is a wide variety of purposes for trips on KY 163.

Why do you primarily use KY 163?



The final question asked survey respondents to identify sensitive areas that should be considered. Homes and farmlands were the most frequently identified sensitive areas to avoid, with 17 and 13 responses, respectively. Natural/wildlife habitats and historic sites were identified second-most with 8 and 6 responses, while each other category – businesses, recreational areas, hazardous waste sites, and scenic areas – were identified twice as areas to be considered. Specific locations are identified below, based upon received responses.

- Spradlin Road
- Franklin Road
- Springs and waters
- Howard Coffey's woods, with hills, bluffs, and hollows
- Missionary Mound Church and Cemetery

D. Resource Agency Coordination - Round I (January 2007)

Resource Agencies
- Local Agencies
- Local Interest Groups
- KYTC Division Offices
- Other State Agencies
- Federal Agencies

Many local, state and federal resource agencies, with diverse areas of public responsibility, were included in this planning process. Input was solicited through written requests by letter on two occasions. For the first round of resource agency coordination, each agency was sent a copy of the study area map, maps showing traffic and volume/service flow data for 2006 and 2030, a crash information map highlighting critical rate factors, and an environmental footprint map. This section describes the input received from these organizations during the first round. The remainder of recipients did not provide a response. Copies of the response letters from the various resource agencies are located in **Appendix I** and are summarized below.

The following 15 agencies responded by offering comments or concerns regarding the project:

- Kentucky Airport Zoning Commission – The project will have no adverse effects on air navigation, but any construction equipment standing above 200 feet tall will require a permit.
- Kentucky Commerce Cabinet, Department of Parks – The Department of Parks does not own facilities in the project area; no adverse impacts are anticipated for this project.
- Kentucky Economic Development Cabinet – There are two industrial parks in Edmonton. Improving KY 163 will improve the entrance to the southern park and will positively affect transportation within the community.
- Kentucky Department of Agriculture – The proposed project creates no issues for this department.
- Kentucky Department of Education – Metcalfe County School System does not anticipate any impacts as a result of this project.
- Kentucky Department for Environmental Protection – This agency serves as a clearinghouse the review of environmental documents, forwarding them to other state agencies. Through this department, responses were received from the Divisions of Air Quality, Conservation, and Waste Management. Specific concerns raised by these agencies are presented in the following points.
- Kentucky Division for Air Quality – Precautions should be taken to prevent particulate matter from becoming airborne, including covering open bodied trucks and avoiding depositing earth onto paved roadways. Open burning is prohibited for all but the express purposes detailed in the Open Burning Fact Sheet. The project must meet the conformity requirements of the Clean Air Act and the transportation planning provisions of Titles 23 and 49 of the US Code. The division suggests investigating local government requirements as well.
- Kentucky Division of Conservation – There is one agricultural district (085-01) in the project area; state agencies are required to mitigate any impact their programs may have on this district. Additionally, prime farmlands and farmlands of statewide importance could be impacted by the project. Best management practices are also recommended to control erosion and sedimentation.
- Kentucky Division of Waste Management – Solid wastes generated should be disposed of at a permitted facility. If underground storage tanks, asbestos, lead paint, or other contaminants are encountered, they should be properly addressed.
- Kentucky State Police – Shoulders on a new facility should be wider to allow traffic to be diverted around vehicle crash sites. The narrowness of the bridge between Randolph-Goodluck Road and Beaumont-Goodluck Road is also a concern.
- Kentucky Transportation Cabinet, Division of Construction – Maintenance of traffic and sustaining residential access create

difficulties for reconstruction along the existing alignment. An alignment west of the existing route would be easier to construct, following the ridge system north to Pleasant Grove Church and connecting to US 68-KY 80 near KY 3234.

- Kentucky Transportation Cabinet, Permits Branch – The facility should be classified as a partially controlled access facility with access control fencing installed and potential access points marked on plans according to 603 KAR 5:120. The design speed for the route should be set to match the anticipated posted speed limit. If this route is incorporated into the National Highway System, further coordination with this office is necessary.

- United States Coast Guard – A Coast Guard bridge permit is not required for this project, as it does not cross waterways over which the Coast Guard exercises jurisdiction for bridge administration purposes.

- United States Department of Agriculture, Natural Resources Conservation Service – This agency is concerned with potential impacts that the proposed highway project may have on prime farmland soils and other farmlands of statewide importance. Form NRCS-CPA-106 must be submitted to NRCS if federal dollars are to be used to convert important farmlands from agricultural uses to non-agricultural uses.

- University of Kentucky, Kentucky Geological Survey – The project area is in the Mississippian Plateau, underlain by limestone. There is a probability to encounter karst features such as sinkholes and caves as well as unconsolidated sediments like clay, silt, sand, gravel, and chert rubble. Landslide hazards are unlikely based on landscape features. There are two limestone types in the area: the St Louis stone may contain layers unsuitable for construction stone while the Salem and Warsaw stone has been quarried for construction previously. There are no faults in the area and a minimal potential for slope failure in unconsolidated sediments due to any earthquake movement of the bedrock.

VII. PROJECT PURPOSE AND NEED

The general scope of the KY 163 Alternatives Study is to consider the improvement and/or potential realignment/relocation of KY 163 from KY 90 to the Louie B. Nunn (Cumberland) Parkway at or near Edmonton in Metcalfe County, Kentucky.

The purpose of the proposed project is to improve highway safety and highway systems mobility in the KY 163 corridor.

Project Purpose and Need

- Improve Safety and Mobility
- Improve Connectivity
- Address geometry
- Improve accessibility
- Reduce congestion
- Facilitate truck traffic
- Enhance economic development opportunities

Improving highway safety and mobility in this corridor will also provide the following benefits:

- Improve highway systems linkage/connectivity between KY 90 and the Louie B. Nunn (Cumberland) Parkway;
- Address geometric deficiencies.
- Improve highway accessibility to the major activity centers in Edmonton;
- Reduce congestion within Edmonton, especially at the intersection of KY 163 and US 68-KY 80 in downtown Edmonton;
- Facilitate the movement of truck traffic; and
- Enhance potential economic development by improving freight truck movements and highway accessibility.

Following is further discussion on the purpose and need for this project.

A. Improve Safety

The existing KY 163 corridor is a two-lane, undivided highway with narrow lanes and minimal shoulders. There are multiple horizontal and vertical curves which restrict sight distances and create potential safety problems.

To access the Nunn Parkway from KY 163, autos and trucks must now travel along US 68-KY 80 west of downtown Edmonton to the interchange with the parkway. An approximately one-mile section of US 68-KY 80 from KY 3234 to Miller Street has been identified as having a Critical Rate Factor (CRF) greater than 1.00, which indicates that vehicle crashes are occurring at a higher frequency than on similar roadways throughout Kentucky. A Hazard Elimination/Safety (HES) project is now programmed for part of this section to help remedy this problem. Some of the problems in this section may be due to the mixture of local traffic and through vehicles, exacerbated by numerous access points which provide many opportunities for turning movements, and vehicular conflicts, at local streets and businesses in this commercial strip area. Where this route intersects KY 163 in downtown Edmonton, more crash concentrations appear; both the US 68-KY 80 and KY 163 approaches have been identified as high crash spot locations with Critical Rate Factors of 1.14 and 2.65 respectively. Over half the crashes reported on the KY 163 approach at this location are directly tied to the angle parking facilities on the

street. The junction of US 68 and KY 80 north of the downtown area is another high crash location, according to available crash data.

This proposed project will provide an opportunity to address these issues, thereby reducing the potential for vehicle crashes along the corridor.

B. Improve Mobility

At present, KY 163 is the only north-south route which provides continuous access from southern Metcalfe County and points south of KY 90, as well as east and west along KY 90, to and through the City of Edmonton.

Due to geometric deficiencies on the rural portion of KY 163, drivers must travel at relatively low speeds which, in turn, results in increased travel times. There is also a reported congestion problem in downtown Edmonton.

Of special importance, KY 163 provides limited mobility since it does not provide direct access to the Nunn Parkway, an east-west route that is the only Principal Arterial passing through Metcalfe County and, thus, the main highway connection with other parts of the state and the nation. Instead, access from KY 163 to the Parkway can only be reached via US 68-KY 80 west of downtown Edmonton. US 68-KY 80 is the only major east-west route providing direct connections and access to streets and properties in Edmonton, and all north-south traffic must ultimately mingle with east-west traffic in downtown Edmonton.

The heart of downtown Edmonton is centered around the intersection of KY 163 with US 68-KY 80, an intersection with tight turning radii that also has on-street parking on two legs of the intersection, which further limits maneuvering space. As indicated previously, there are no other major parallel east-west or north-south routes through the city. With no route redundancy, the US 68-KY 80/KY 163 intersection becomes the primary intersection point for practically all north-south and east-west travel within the city and all traffic – passenger cars and freight trucks – is routed through this point. During the afternoon peak period, anecdotal input from the public indicates that traffic backs up at this four-way-stop-controlled intersection, leading to congestion and delays.

Intersection of KY 163 with US 68-KY 80

These mobility problems limit access opportunities for services and economic growth to Edmonton and Metcalfe County. Therefore, this proposed highway improvement project should address the problems of travel delays along the route and congestion in downtown Edmonton.

C. Other Desirable Goals

1. Improve Highway System Linkage/Connectivity

From the intersection with KY 90, travel along the existing alignment of KY 163 requires approximately 16 minutes to reach the Nunn Parkway at the US 68 interchange west of Edmonton, due to low travel speeds. Rerouting the KY 163 corridor has the potential to reduce travel times from KY 90 to the US 68 interchange at Edmonton by as much as 45%, thus, reducing required travel time to as little as 9 minutes.

2. Address Geometric Deficiencies

Existing KY 163 has many geometric deficiencies. As indicated previously, KY 163 is a two-lane, undivided highway with lane widths ranging from 9 to 11 feet and two foot wide shoulders. Multiple curves on the existing alignment slow traffic and cause less than ideal safety conditions. Eight of the 27 horizontal curves do not meet minimum radius requirements; 64 of 86 vertical curves do not meet sight distance requirements and 24 of the 86 vertical curves exceed the 7% maximum grade limitation. Design speeds vary from 21 to over 80 mph along the route based upon the existing alignment. In addition, improvements are needed to narrow bridges along the route, as well as to a few intersections with limited sight distance for traffic exiting and/or entering the intersecting roadways.

3. Facilitate the Movement of Truck Traffic

Based on anecdotal input from the public, it is thought that a relatively large volume of freight trucks travel from I-40 and other locations east of Nashville along KY 163 through Monroe County, Kentucky, then north to KY 90 in Metcalfe County, Kentucky, and then west to access I-65 at Glasgow in Barren County, Kentucky. Traffic volumes along KY 163 decrease by forty percent north of the intersection with KY 90. By improving the KY 163 corridor in Metcalfe County (coupled with simultaneous improvements in Monroe County), a more direct connection would be established from Tompkinsville, Kentucky, and from I-40 in Tennessee to the future I-66 corridor in Kentucky.

In addition, two major attractors/generators of truck traffic are located on the northeast side of Edmonton: the stockyard at the US 68/KY 80 split and the Metcalfe County Industrial Park on US 68 just south of the Nunn Parkway. Also, a significant number of trucks hauling logs and lumber travel through Edmonton to and from lumber yards located on KY 496 and KY 533 east of Edmonton. To reach these locations from the Nunn Parkway, trucks must exit at the US 68-KY 80/Nunn Parkway interchange west of Edmonton and travel through downtown Edmonton through the US 68-KY 80 intersection with KY 163. Geometric deficiencies, coupled with traffic queues, at this intersection in downtown Edmonton complicate truck turning movements. On at least two legs of the intersection, large trucks must swing out of the driving lane into the path of oncoming vehicles to make the turn. When this occurs, other vehicles must stop well short of the intersection to avoid collisions and allow the trucks to complete their turns.

Low-cost improvements to the US 68-KY 80/KY 163 intersection are difficult to implement due to the narrowness of the streets and the restricted right-of-way, caused by close proximity of structures to the edge of the street, on the western and northern legs of this four-way intersection. Therefore, improvement alternatives should be developed and evaluated to address this problem.

4. Improve Highway Accessibility within Edmonton

As discussed previously, there is a public perception that traffic congestion often occurs at the US 68-KY 80/KY 163 intersection in downtown Edmonton. Truck turning movements at this intersection further inhibit operations, increasing delay times and queue lengths as trucks attempt to navigate through downtown. Bottlenecks at this location also inhibit emergency response operations; in the event of an incident, emergency response personnel are sometimes delayed several critical minutes before being able to provide necessary care.

Based on HCS analysis for the 2006 peak hour traffic operations, this intersection functions at a level of service (LOS) B for the a.m. and p.m. peak hours; turn movements from the eastbound approach on US 68-KY 80 function at LOS C during the afternoon. Without improvements at this intersection, movements from the eastbound approach are projected to degrade to LOS D by 2015, assuming a modest 1.9% annual growth rate based on historic traffic data and development patterns. The entire intersection can be expected to reach LOS D by 2020.

As the level of service deteriorates in the future, more significant delays to trucks and autos would occur at that location and restrict access to locations from one side of town to the other.

Of special importance, improvements to the US 68-KY 80/KY 163 intersection and to existing KY 163 would improve access to city and county government offices in downtown Edmonton, downtown businesses, the existing industrial park, the stockyard, and a new industrial park that is being developed on KY 163 at the southern city limits of Edmonton.

5. Enhance Economic Development Opportunities

According to U.S. Bureau of Census Journey-to-Work data, almost 46% of the Metcalfe County workforce commutes outside the county for jobs; however, approximately 850 persons commute into Metcalfe County for work.

Edmonton is home to a developed industrial park, located in the northeastern quadrant of the city, currently employing around 750 people. A second 38-acre industrial park is being developed at the southern edge of town, with access directly from KY 163. Any improvements to KY 163 and/or other parts of the city's highway

Entrance to northern Industrial Park

network would provide better access to these locations for both commuters and trucks, which would help to improve Edmonton's competitiveness and help to draw industrial tenants to these two industrial parks.

In addition, improvements to KY 163 from KY 90 to the Nunn Parkway would provide the opportunity for an improved connection to and from Monroe County, Kentucky and locations in Tennessee, including I-40 and Dale Hollow Lake, a major tourist attraction southeast of Metcalfe County. Since the Nunn Parkway has been designated as the Future I-66 corridor, it is anticipated that additional economic opportunities will occur along the Parkway. The KY 163 corridor improvement could be an important factor in providing future economic development opportunities for Edmonton and Metcalfe County by providing better access to the area for trucks, commuters, and other business interests.

VIII. ALTERNATIVES DEVELOPMENT PROCESS

Following the existing conditions review and first round of public involvement, preliminary improvement alternatives were developed on and off the existing KY 163 alignment. This chapter presents the development and refinement of the preliminary improvement alternatives, a detailed Level 1 Screening, and input from the project team.

A. Corridor Alternatives Definition

The existing conditions analysis and the first round of public, local official, and agency input were used to identify 25 potential "build" corridors for KY 163. These initial corridors are presented in **Figure 8.1**. Each alternative is identified by an alphanumeric identification "name" that indicates the beginning point, ending point, and, in some cases, intermediate points along the corridor.

Each corridor alternative "name" begins with the letter A, which represents the beginning point. Location A corresponds to the reconstructed intersection of KY 90 and KY 163; all corridor alternatives begin at this point.

A number in the corridor "name" description represents an intermediate point along the existing route where the alternative diverts from the existing KY 163 alignment. Lower numbers are farther south; a corridor without a number in its name does not lie along the existing alignment at all.

The final letter in each name represents where the corridor terminates. There are eight distinct endpoints which have been given letter designations, ranging alphabetically from A to H.

For options passing through downtown Edmonton, an additional descriptor specifies the location of the path: west, inner, or outer.

Four of the 25 alternatives included an additional interchange added at one of three locations north and east of Edmonton, with each alternative "name" represented only by a single letter (end points D, E, and F). These alternatives did not include any additional roadway improvements: only the new interchange and connecting links tie it into the existing network.

These 25 alternatives were coupled with a No-Build Alternative and a Spot Improvements Alternative to form all of the alternatives subjected to an initial (Level 1) screening.

B. Traffic Analysis

Traffic volumes for representative "build" alternatives were predicted using the Kentucky Statewide Travel Demand Model and the Manual Gravity Model. A model run was completed for a far western route (AB), a western route near Edmonton with a second interchange (A2D), an eastern route with an additional interchange (AF), an additional interchange only (D), and for both an eastern and western bypass within Edmonton. It was assumed that other alternatives in close proximity to each would have similar traffic impacts. The results of this analysis are presented in **Figure 8.2**.

Findings showed that the alternatives located nearer the existing alignment would divert more trips from existing KY 163. Western alternatives provided the most relief at the intersection of KY 163 and US 68-KY 80.

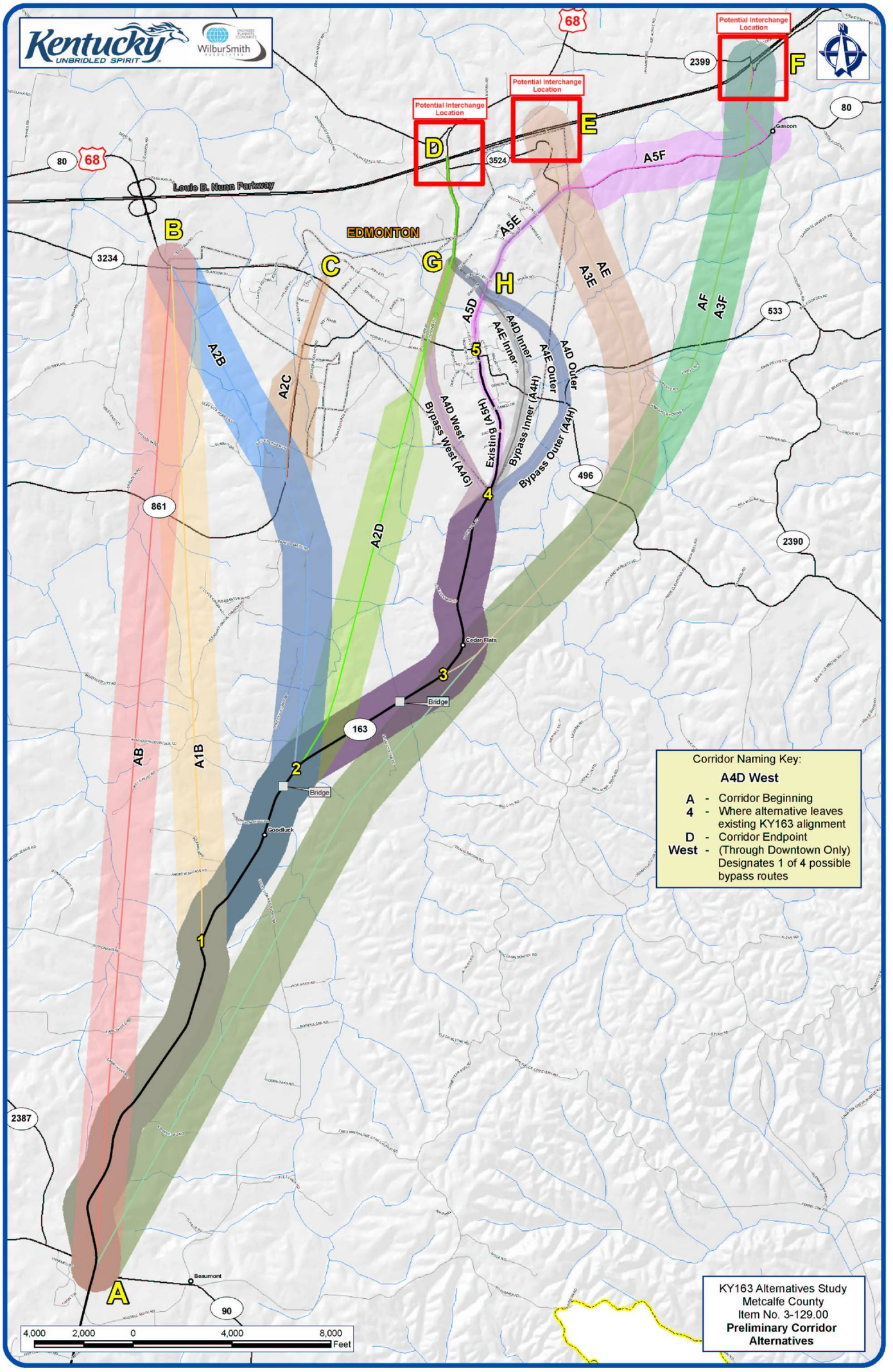


Figure 8.1 – Level 1 Corridor Alternatives

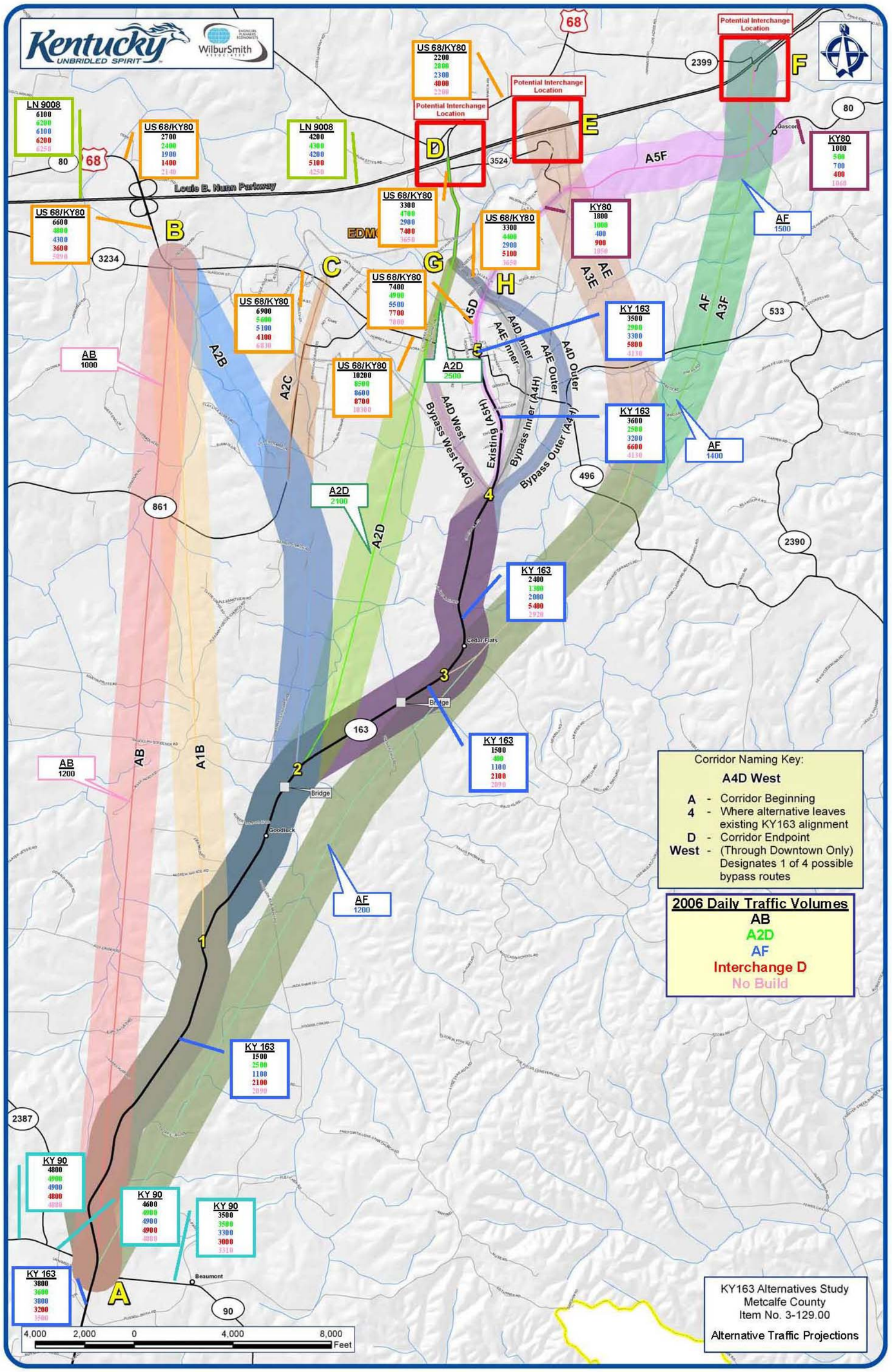


Figure 8.2 – Level 1 Traffic Projections

C. Level 1 Screening

The goal of the Level 1 Screening process was to eliminate alternatives that did not warrant further consideration, leaving a reduced number of worthier alternatives for a more detailed analysis.

For the Level 1 Screening of these 27 corridors, criteria were developed based on how well each alternative:

- Satisfied the project purpose and need and/or additional project goals;
- Appeared to have fewer potential environmental and community impacts; and
- Compared with regard to constructability and planning level cost estimates.

The alternatives were given a comparative review using quantitative and qualitiative evaluations. Based on these comparisons, each alternative was assigned a High, Medium, or Low rank for each category, as shown in **Table 8.1**.

The results of the Level 1 Screening were presented to the project team on March 15, 2007, as discussed below.

D. Second Project Team Meeting (March 15, 2007)

The Second Project Team Meeting was conducted on March 15, 2007, at the KYTC District 3 Office in Bowling Green, Kentucky. At this meeting, the KY 163 preliminary alternatives were further discussed primarily using the results of the Level 1 Screening. A copy of the meeting minutes is included in **Appendix J**.

The project team agreed to the following recommendations for each alternative corridor:

- An interchange at location D (US 68 north of Edmonton) was recommended to be carried forward in the screening process because it addresses the project purpose and need with minor environmental and community impacts. Of the alternatives including additional interchanges, location D provides the most direct access for the majority of traffic.
- Neither configuration of interchange at location E (north of KY 3524) was recommended for further study due to a potential to find karst features, more circuitous routing than site D that increases state mileage for maintenance while reducing traffic volumes using the interchange, and right-of-way impacts for portions of the Industrial Park.
- An interchange at location F (KY 2399) was not recommended for further study because it has a high potential to encounter karst topography, less direct access than either other interchange option, and would require several small roads parallel to the parkway to be relocated.

Table 8.1 – Level 1 Evaluation Matrix

			Addressing Purpose and Need				Other Project Goals			
	Distance	Travel Time	Safety		Movement		Existing	Truck	Economic	Construction Cost
Corridor	(mi)	(min)	Local	Regional	Local	Regional	Geometry	Movement	Development	($ millions)
No Build	11.41	15.3	Low	Low	Low	Low	Low	Low	Low	None
Spot Improvements	11.41	14.3	High	Medium	High	Low	Medium	Medium	Low	Undetermined
AB	7.71	8.6	Low	High	Low	High	Low	Medium	Low	$23.8
A1B	7.94	9.1	Low	High	Low	High	Low	Medium	Low	$24.5
A2B	8.43	9.9	Low	High	Low	High	Medium	Medium	Low	$26.9
A2C	8.13	10.5	Low	Medium	Low	Medium	Medium	Medium	Low	$27.0
A2D	9.20	11.5	Medium	Medium	Low	Medium	Medium	High	High	$44.0
A4D west	9.80	13.1	High	Medium	Medium	Medium	High	High	High	$45.4
A5D	9.86	13.2	High	Medium	Medium	Medium	High	High	Medium	$45.6
A5E	10.20	13.4	High	Medium	Medium	Medium	High	High	Medium	$45.7
A5F	12.01	15.6	High	Low	Medium	Medium	High	High	Medium	$56.4
A4D inner	9.94	13.2	High	Medium	High	Medium	High	High	High	$48.6
A4E inner	10.28	13.4	High	Medium	High	Medium	High	High	High	$48.7
A4D outer	10.33	13.5	High	Medium	High	Medium	High	High	High	$47.0
A4E outer	10.67	13.7	High	Medium	High	Medium	High	High	High	$47.1
Bypass West (A4G)	9.03	12.0	Medium	Medium	High	Medium	High	Low	Medium	$30.6
Existing (A5H)	8.71	11.6	Medium	Low	Low	Low	High	Low	Low	$29.4
Bypass Inner (A4H)	8.79	11.5	Low	Low	Low	Low	High	Low	Low	$32.4
Bypass Outer (A4H)	9.18	11.8	Low	Low	Low	Low	High	Low	Low	$30.8
A3E	10.53	12.4	Low	Medium	Low	High	Medium	High	Medium	$47.9
AE	10.16	11.3	Low	High	Low	High	Low	High	Medium	$46.7
A3F	11.09	13.1	Low	Medium	Low	High	Medium	Medium	Medium	$57.4
AF	10.73	11.9	Low	High	Low	High	Low	Medium	Medium	$56.3
Interchange D*	1.10	1.7	Medium	Medium	High	Low	Low	Medium	Medium	$13.0
Interchange E Flyover*	1.49	1.9	Medium	Medium	High	Low	Low	Medium	Medium	$12.7
Interchange E Typical*	1.49	1.9	Medium	Medium	High	Low	Low	Medium	Medium	$12.5
Interchange F*	3.32	4.0	Medium	Low	Medium	Low	Low	Medium	Low	$15.6

* Travel Times/Distances measured from interchange to US 68-KY 80 split

For comparison, times and distances from corresponding point on parkway to US 68-KY 80 split: D (6.0 miles / 7.6 minutes); E (6.8 miles / 8.4 minutes); F (8.4 miles / 9.8 minutes)

Table 8.1 – Level 1 Evaluation Matrix (continued)

Corridor	Community Impacts						Environmental Impacts				
	ROW Impacts		Schools	Parks	Churches	Cemetery	Affected Farmlands	Historic Property	Archaeology Sites	UST Sites	Karst
	Homes	Businesses									
No Build	As is	As is	As is	As is	As is	As is	As is	As is	As is	As is	As is
Spot Improvements	Some	Some	Few/None	Few/None	Few/None	Few/None	Some	Few/None	Low Likelihood	Few/None	Low Likelihood
AB	Few/None	Few/None	Few/None	Few/None	Some	Some	Many	Few/None	Medium Likelihood	Few/None	Medium Likelihood
A1B	Few/None	Few/None	Few/None	Few/None	Some	Many	Many	Some	Low Likelihood	Few/None	Medium Likelihood
A2B	Some	Few/None	Few/None	Few/None	Some	Few/None	Many	Some	Low Likelihood	Few/None	High Likelihood
A2C	Some	Some	Many	Few/None	Few/None	Some	Many	Some	Low Likelihood	Few/None	High Likelihood
A2D	Some	Many	Some	Few/None	Few/None	Few/None	Many	Some	Medium Likelihood	Some	Low Likelihood
A4D west	Some	Many	Few/None	Few/None	Few/None	Few/None	Some	Some	Low Likelihood	Many	Low Likelihood
A5D	Many	Many	Few/None	Some	Some	Some	Some	Few/None	Low Likelihood	Many	Medium Likelihood
A5E	Many	Many	Few/None	Some	Some	Some	Some	Few/None	Low Likelihood	Many	Medium Likelihood
A5F	Many	Many	Few/None	Some	Some	Some	Some	Few/None	Low Likelihood	Many	High Likelihood
A4D inner	Many	Some	Few/None	Few/None	Some	Some	Some	Some	High Likelihood	Many	Low Likelihood
A4E inner	Many	Some	Few/None	Few/None	Some	Some	Some	Some	High Likelihood	Many	Medium Likelihood
A4D outer	Few/None	Some	Few/None	Few/None	Some	Some	Some	Few/None	Medium Likelihood	Some	Low Likelihood
A4E outer	Few/None	Some	Few/None	Few/None	Some	Some	Some	Few/None	Medium Likelihood	Many	Medium Likelihood
Bypass West (A4G)	Some	Many	Few/None	Few/None	Some	Some	Some	Some	Low Likelihood	Many	Low Likelihood
Existing (A5H)	Many	Many	Few/None	Few/None	Some	Some	Some	Few/None	Low Likelihood	Many	Low Likelihood
Bypass Inner (A4H)	Many	Some	Few/None	Few/None	Some	Some	Some	Some	High Likelihood	Many	Low Likelihood
Bypass Outer (A4H)	Few/None	Some	Few/None	Few/None	Some	Some	Some	Few/None	Medium Likelihood	Some	Low Likelihood
A3E	Some	Few/None	Few/None	Few/None	Few/None	Some	Some	Some	Low Likelihood	Some	Medium Likelihood
AE	Some	Few/None	Few/None	Few/None	Few/None	Few/None	Many	Many	Low Likelihood	Few/None	Medium Likelihood
A3F	Some	Few/None	Few/None	Few/None	Some	Few/None	Some	Some	Low Likelihood	Some	High Likelihood
AF	Some	Few/None	Few/None	Few/None	Some	Few/None	Many	Many	Low Likelihood	Few/None	High Likelihood
Interchange D	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Low Likelihood	Few/None	Low Likelihood
Interchange E Flyover	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Low Likelihood	Few/None	Medium Likelihood
Interchange E Typical	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Low Likelihood	Few/None	Medium Likelihood
Interchange F	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Few/None	Low Likelihood	Few/None	High Likelihood

- Alternative corridors passing east of Edmonton and terminating at E or F were not recommended for further analysis due to the same reasons as discussed above. They do not adequately address the project purpose because they have only minor impacts on local traffic and would consume significant portions of farmlands. This includes Alternatives AE, AF, A3E, and A3F.

- Corridors AB and A1B were not recommended for further evaluation because they do not impact the project purpose locally and they are associated with major impacts to area farmlands, a sensitive area frequently identified as a concern at the first public meeting.

- Corridor A2B was selected for the Level 2 Screening because it addresses the project purpose, providing access to the existing interchange for trips to and from the south without traveling through Edmonton. Because it lies mostly on existing roadbeds, right-of-way impacts to homes and farmlands would be lesser than other western alternatives.

- Corridor A2C addresses the purpose and need, but travels near Metcalfe County High School, making it a less favorable alternative than Corridor A2B. It is not recommended for further evaluation.

- Corridors bypassing downtown Edmonton to the immediate east (A4D inner, A4E inner, Bypass Inner, A4D Outer, A4E Outer, and Bypass Outer) were not recommended for additional evaluation. The footprint of these alternatives lies near multiple historic properties and archaeological sites, creating potential 4(f) concerns. These alternatives also terminate near the stockyards, which creates additional right-of-way, environmental, and stream issues.

- Corridor A2D was selected for the Level 2 Screening because it addressed the project purpose and additional goals. A relatively high volume of traffic is anticiapted to use this route, thereby removing a significant portion from the existing KY 163 intersection with US 68-KY 80 and addressing congestion concerns within Edmonton. This alternative will be considered both with and without an interchange at D.

- Corridor A4D west was selected for additional evaluation because it addresses the project purpose and need. With this alternative, truck access to the industrial parks and stockyard is improved, congestion is addressed, and route redundancy within Edmonton is provided. This alternative will be considered both with and without an interchange at D.

- Alternatives along the existing alignment would create significant right-of-way impacts to homes and businesses within Edmonton. It is recommended that one of the three alternatives along the existing alignment – A5D – be further evaluated in the Level 2 Screening process. Because A5E and A5F provide less direct access with increased environmental and community impacts, they are not recommended for additional analysis.

In summary, the Project Team decided that Corridors AB, A1B, A2C, A5E, A5F, all inner or outer bypass options, A3E, AE, A3F, AF, and interchanges at E and F would not move forward.

The Project team also agreed that Corridors A2B, A2G, A2D, A4G, A4D, A5D, interchange at D, No Build, and the Spot Improvements scenario would be advanced for further consideration in the study process.

E. Spot Improvements

Ten locations along the existing routes were identified for potential spot improvements. These were identified based on existing deficiencies, safety concerns, and community attractions. The Project Team concurred that these 10 spot improvement locations should be considered further.

Table 8.2 provides summary information for each of the potential spot improvements, and **Figure 8.3** depicts the locations on a map.

Table 8.2 - Spot Improvement Information

Spot	Roadway	Milepoint	Length (ft)	Description	Problem	Crashes*	Existing Geometry	Improvement	Construction Cost
1	KY 163	3.223	1,600	Add truck climbing lane for northbound traffic.	Slow moving trucks and no passing lanes	None reported	7.8% grade	Add a truck climbing lane	$410,000
2	KY 163	7.900	1,450	Adjust vertical alignment at Missionary Mound Baptist Church	Stopping sight distance	1 injury, 1 PDO	The church is on a 700' vertical curve that has 184' of stopping sight distance and a 7.0% grade.	495' stopping sight distance	$660,000
3	KY 163	9.084	1,075	Adjust vertical alignment at Cedar Flats	Stopping sight distance	1 injury, 3 PDO	The intersection is on a 300' vertical curve that has 300' of stopping sight distance and a 8% grade.	495' stopping sight distance	$380,000
4	KY 163	7.310	1,500	Replace Bridge over Roger's Creek	Bridge width	1 injury, 3 PDO	19.4' horizontal clearance	30' wide bridge	$2,600,000
5	KY 163	8.470	1,000	Replace Bridge over Black Rock Creek	Bridge width	2 PDO	19.4' horizontal clearance	34' wide bridge	$1,100,000
6	US 68	9.002	2,500	US 68/KY 80 Intersection	Rear end collisions	1 fatal, 1 injury, 18 PDO	Traffic on KY 80 has the through movement. Traffic on US 68 has to yield or stop.	Center turn lanes	$260,000
7	US 68	10.000	553	Add right turn lane on US 68 at Industrial Park	Truck turning movements	None reported	Two 12' lanes	553' right turn lane	$53,000
8	KY 80	0.967	585	Add left turn lane on KY 80 at Industrial Park	Truck turning movements	1 PDO	Two 9' lanes	585' left turn lane	$51,000
9	US 68	5.930	4,500	Add a turn lane and construct a 3 lane roadway section along US 68 at Bowling Park	Rear end collisions	1 fatal, 3 injury, 23 PDO	Two 11' lanes	3 lane roadway section	$3,000,000
10	US 68 / PKWY	5.540	N/A	Reconstruct Existing Interchange at Exit 27	Deficient ramps	2 injury, 9 PDO	Toll booth interchange	Conventional diamond (Keep existing bridge)	$9,000,000[1]

** Crash statistics reported for 2003 - 2006*

[1] Estimate from BG Pkwy & US 27 interchange actual construction cost.

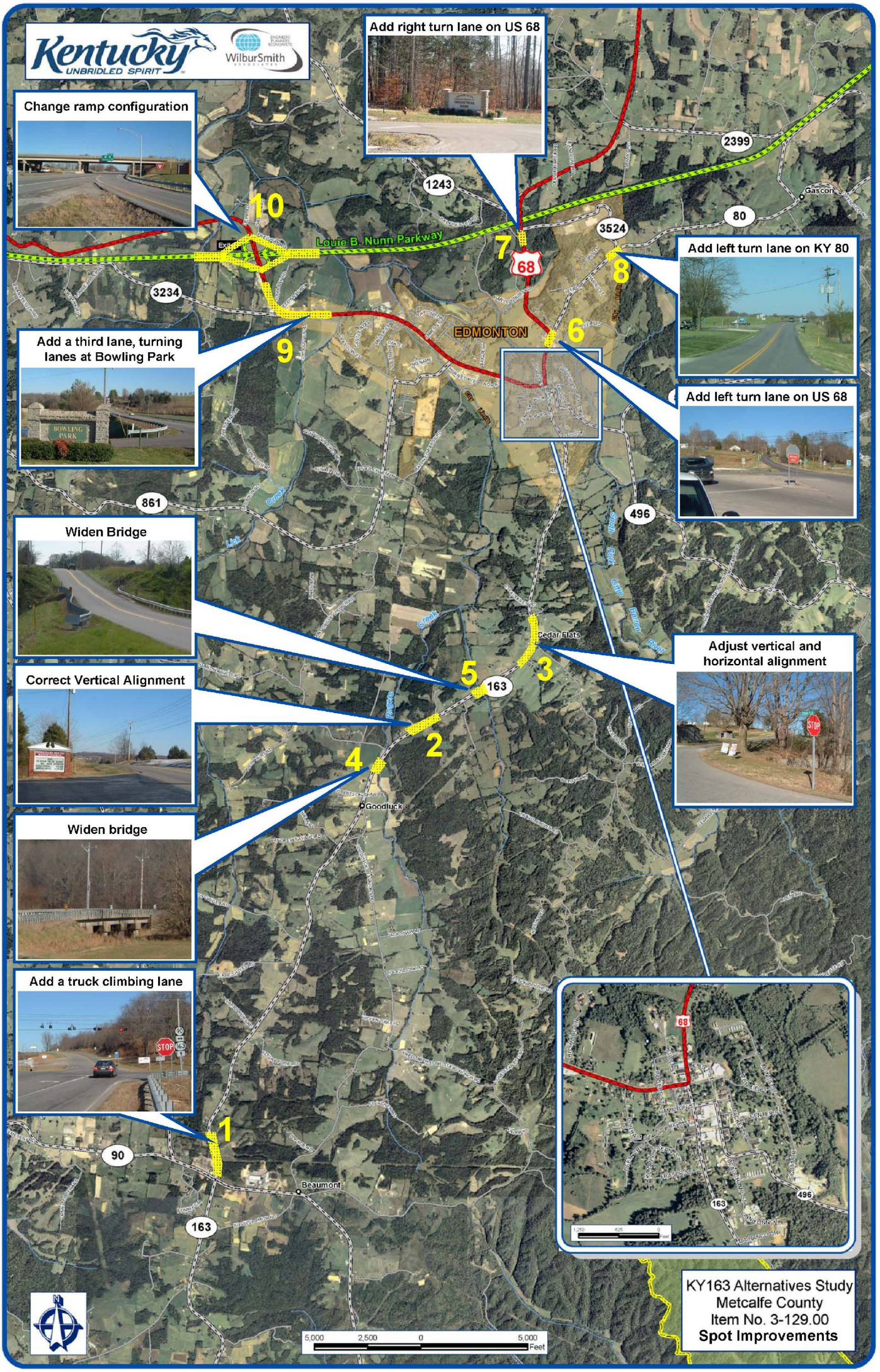


Figure 8.3 – Spot Improvements

IX. FINAL ALTERNATIVES EVALUATION PROCESS

This chapter presents an overview of the alternatives screening process for the final corridor alternatives selected by the project team for a more detailed (Level 2) evaluation These corridors are shown in **Figure 9.1**, including Alternatives A2B, A2D, A2G, A4G, A4D, A5D, and Interchange D. The No-Build and Spot Improvements Scenarios were also included in the Level 2 evaluation.

For evaluating impacts, the following corridor widths were established:

- Existing KY 163 in rural areas: 2,000 feet
- New routes in rural areas: 2,000 feet
- Existing KY 163 in urban areas: 150 feet
- New routes in urban areas: 500 feet

Secondary field and data reviews were conducted for each of the final corridor alternatives, focusing on environmental issues, geotechnical concerns, cultural resources, and environmental justice impacts. The results of these studies are presented in the following sections. Reported impacts are recorded for the total corridor width; actual impacts will be less severe.

A. Environmental/Community Issues

Each of the final alternatives would have an impact on farmlands. Alternative A2B has the greatest area impact on farmlands: the corridor footprint covers 2,000 acres of farmlands and 76 acres of the Agricultural District. Alternatives A2D and A2G have the greatest impact on the Agricultural District, covering 135 acres each, and 1,800 acres of additional farmlands. The No Build, Spot Improvements, and Interchange D Alternatives have the least impact on farmlands.

Each alternative is associated with residential relocations, ranging from minor (0-5) to major (135-170). Business impacts range from one relocation to as many as 15 relocations. Alternatives passing nearer Edmonton (A4D, A4G, A5D) have higher impacts than others.

Alternatives A4D and A4G are associated with community resource implications. Three churches and at least seven cemeteries lie within the corridors. There is also a Section 8 housing development on Bushong Lane, creating a potential environmental justice concern for these two alternatives.

Alternative A5D contains 17 historic properties within the corridor, far more than any other alternative. Pedigo Park also lies near the existing alignment and has the potential to be impacted by a reconstruction along this route.

Corridors off the existing alignment (A2B, A2G, and A2D) would have greater impacts on streams and wetlands resources.

Oil and gas wells are common throughout the project area, but have a greater concentration near Edmonton. Alternatives A4D, A4G, and A5D are associated with greater impacts to wells, underground storage tanks, and utilities.

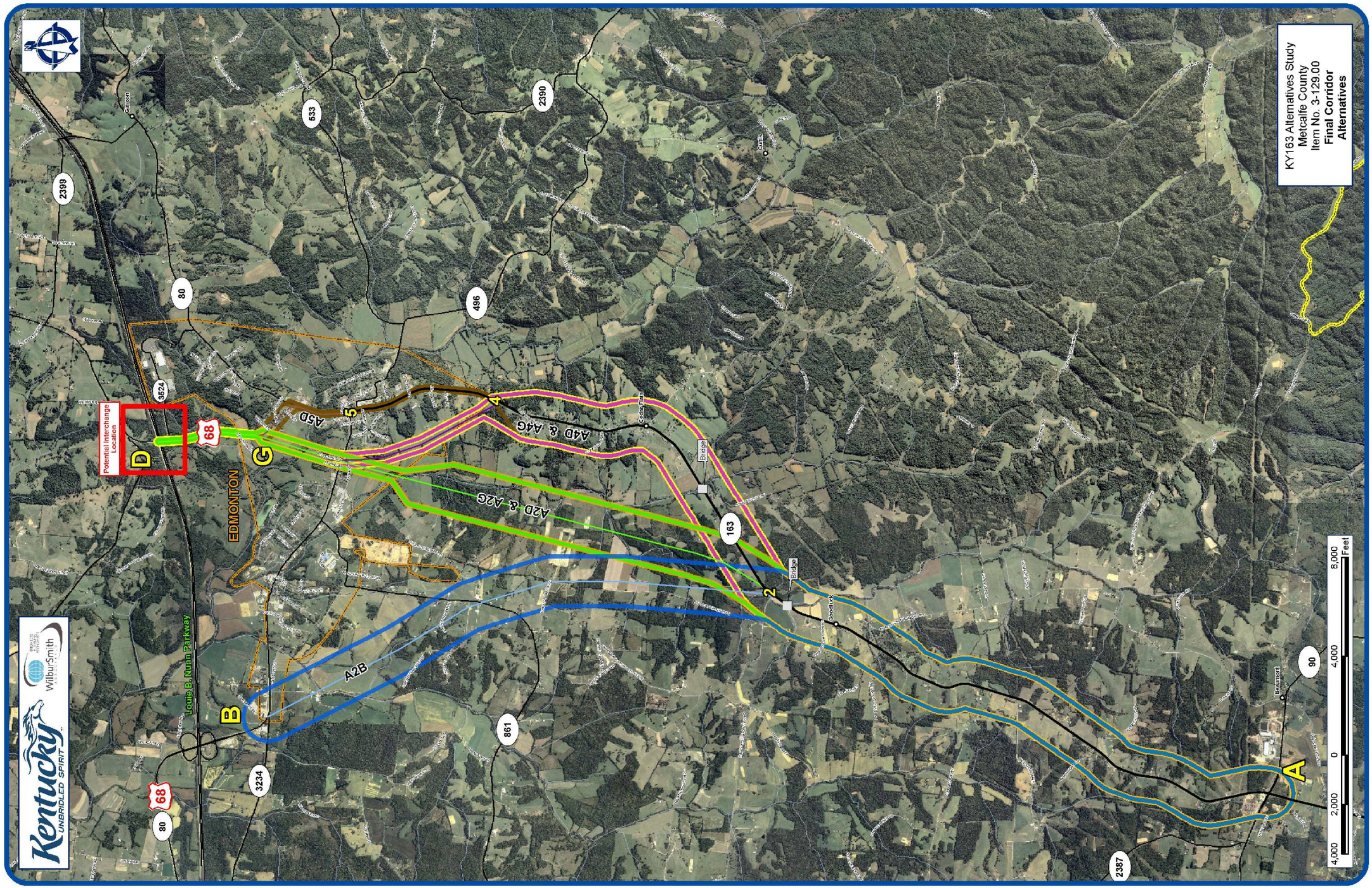


Figure 9.1 – Level 2 Corridor Alternatives

B. Geotechnical Concerns

Karst terrain is the primary geotechnical issue within the study area. Each of the six build corridors passes near 2 to 3 sinkholes. The potential interchange location at D and the KY 90-KY 163 intersection to the south are both noted karst areas.

Each build corridor is also associated with alluvial deposits from Rogers Creek, Clay Lick Creek, and/or Little Barren River.

Wetlands impacts from multiple farmlands are also likely. Alternatives lying on the existing alignment will require fewer alluvial and wetlands mitigations.

From a geotechnical perspective, Alternatives A4G, A4D, and A2B are preferred.

C. Cultural Resources

Along the existing KY 163 alignment, there are more than 100 potential historic structures that are 50 years of age or older which would require review and documentation. Therefore, highway improvements along the existing alignment are likely to affect more structures

Within Edmonton, there are three historic properties of concern. The Metcalfe County Courthouse and Metcalfe County Jail are both listed on the National Register of Historic Places. The Beauchamp House has been determined eligible for listing. None of these sites are likely to be impacted by any of the Level 2 Build Alternatives.

Based on an official preliminary assessment of historic significance, three barns lying along the existing alignment of KY 163 are considered as likely historic structures for listing. These rack-sided barns exhibit inward-sloping sides and are unique to Western Kentucky and areas around Sevierville, Tennessee.

No known archaeological sites occur within the final corridors. It is more likely to discover sites on new alignments (A2B, A2G, and A2D) where the ground has not yet been disturbed.

D. Environmental Justice Impacts

Census data was collected and analyzed by the Barren River ADD to identify environmental justice (EJ) populations within each of the alternative corridors. Analysis groups included minority, elderly, and low income populations. The minority population data showed several of the block groups as having an identified concentration of one or more EJ populations. Some were significant, some were only minor.

The conclusion was made that no concentration of minority groups will be disproportionately affected by these alternatives.

There appear to be few small concentrations of populations by age within the KY 163 proposed alternatives. Age analysis indicates that the distribution of elderly residents in Block Group 2 of Census Tract 9603 has a significant concentration of elderly persons. The remaining Block Groups that may be impacted by the proposed alternatives closely resemble the national, state and county averages.

Block Group 2 of Census Tract 9603 has a percentage of persons below the poverty level of 26.23%, which is slightly higher than the county average of 23.26%. Proposed factors have been identified, it was noted that a minor concentration is present in Block Group 2. The high percentage of the population below poverty level is not uncommon for this type of rural distressed county in Kentucky.

The conclusion was made that concentrations of individuals below the poverty level in Block Group 2 may be disproportionately affected by this project.

However, improved access into the county may have a positive impact on economic development, which could bring more jobs and/or higher incomes, thus, helping to reduce the poverty level in the county.

After reviewing environmental justice data, Interchange D and Alternative A2B appear to be the best options based on this analysis.

E. Traffic Analysis

For each of the final "build" corridor alternatives, traffic volumes were projected using the Kentucky Statewide Travel Demand Model. The results of this analysis are presented in **Figure 9.2**. Major findings are as follows:

- Corridor A2B carries the least traffic on the newly aligned segment;
- A2G and A4G carry approximately the same traffic volumes, ranging from 1,800 to 2,700 vehicles per day.
- Alternatives combining the connection with an interchange (A2D and A4D) carry higher traffic volumes on the connection link north of Stockton Street (US 68-KY 80), serving approximately 3,600 daily trips.
- Each alternative off the existing alignment diverts traffic from the intersection of KY 163 with US 68-KY 80.
- The addition of an interchange at D is expected to improve traffic flow at this intersection by removing the need for large trucks to make tight turns to reach a parkway interchange.

These volumes were projected to 2030 using a 1.9% annual growth factor, as shown in **Figure 9.3**. For comparison, the 2030 no-build volumes were presented in **Figure 2.3** using the same growth rate.

Based on typical cross sections and projected traffic volumes, newly constructed segments for each alternative are anticipated to function at a LOS B. The three primary approaches to the KY 163/US 68-KY 80 intersection also appear to function at a LOS B based on this analysis.

Alternatives providing an interchange at D (A2D, A4D, and A5D) eliminate the necessity for large trucks to negotiate tight turns at the KY 163/US 68-KY 80 intersection.

Alternatives including a connecting route from US 68 north of Edmonton to US 68-KY 80 (Stockton Street) west of downtown

Edmonton (A2G, A2D, A4G, and A4D) would provide an alternate route with less restrictive geometry for large trucks trying to reach the industrial park, the stockyard, or other points north or east of Edmonton. These features would make a notable improvement to operations at the primary intersection in downtown Edmonton.

F. Level 2 Screening

Based on more detailed data analysis, the project purpose and need, and further reviews of environmental and community impacts, an evaluation matrix was developed that summarizes the potential impacts for each of the Final Corridor Alternatives, as shown in **Figure 9.4**.

Impacts shown in this matrix are estimated for each alternative, indicating the total potential impacts in the corridor based on the widths discussed previously. However, actual impacts associated with a final alignment will ultimately be less severe since the improvement right-of-way footprint will not require the full corridor width.

Findings from the Level 2 Screening were used in further discussions with the Project Team and were then presented at meetings with local officials, stakeholders, and the public to get input on the proposed alternatives, as discussed in **Chapter X**.

These findings, along with project team and public input, were then used to help formulate the final recommendations discussed in **Chapter XI**.

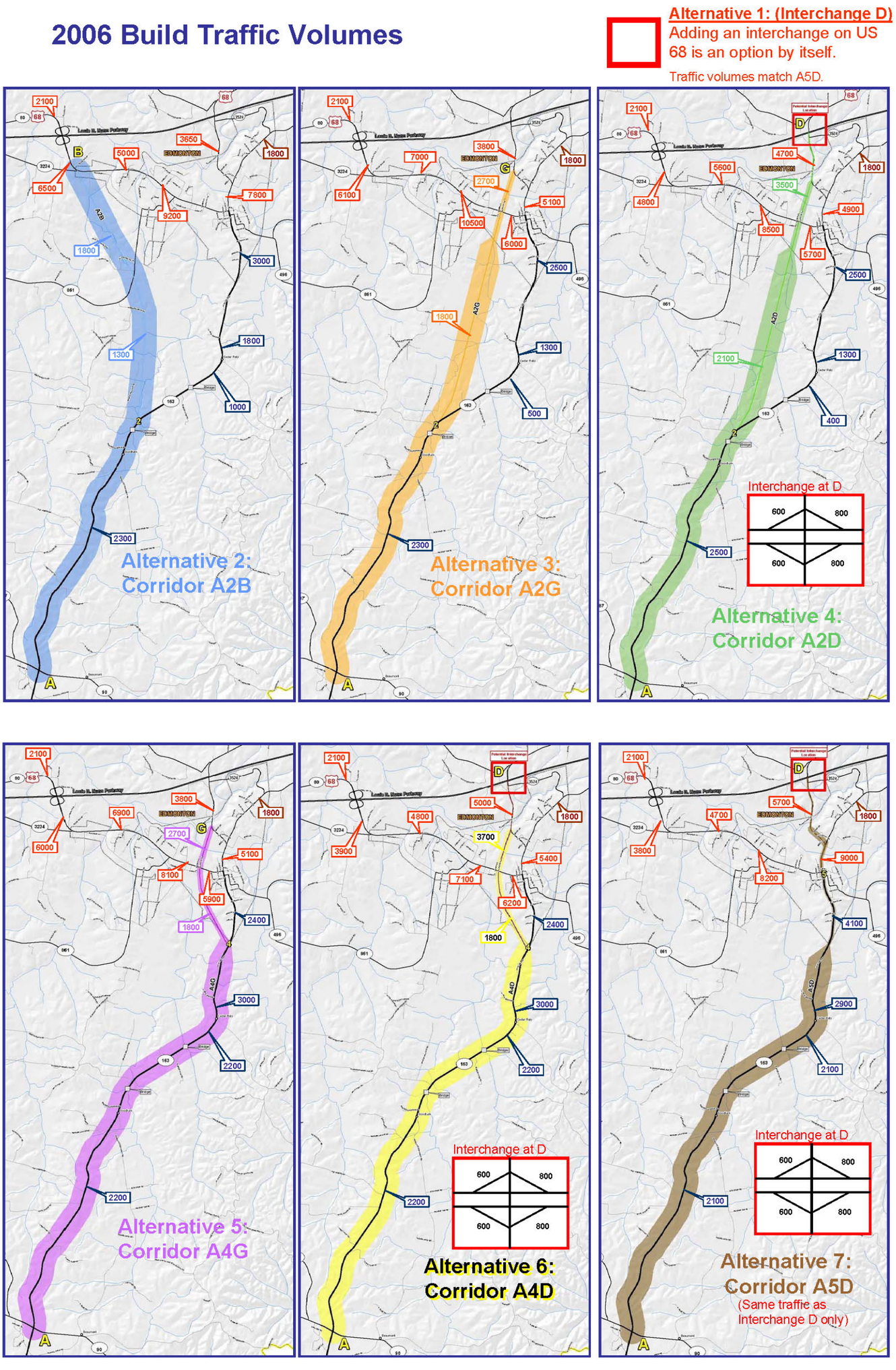


Figure 9.2 – 2006 Level 2 Traffic Projections

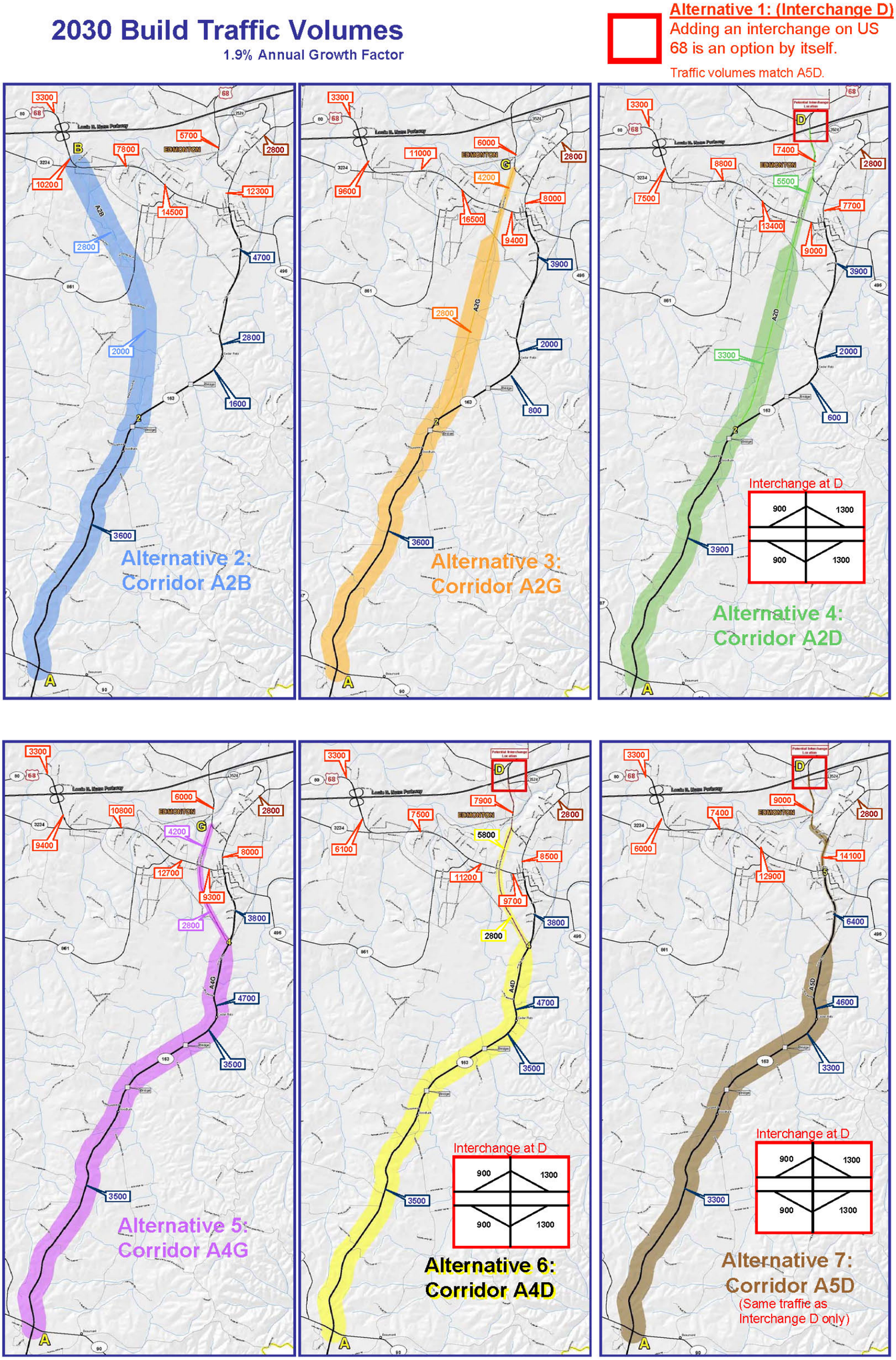


Figure 9.3 – 2030 Level 2 Traffic Projections

Figure 9.4 – Level 2 Evaluation Matrices

Level 2 Summary

Alternative	Evaluation for Project Goals	Evaluation for Environmental	Construction Cost ($ millions)
No Build	Lowest	Highest	None
Interchange D	Medium	High	$13.0
A2B	Medium Low	Medium	$26.9
A2D	Medium High	Medium	$44.0
A2G	Medium Low	Medium	$28.5
A4D	Highest	Low	$45.4
A4G	Medium	Low	$30.6
A5D	Medium	Lowest	$45.6
Spot Improvements	Medium	High	Undetermined

Project Goals

Alternative	Build Distance (mi)	Addressing Purpose and Need				Other Project Goals			Travel Time (min)			Overall Evaluation for Project Goals
		Safety		Movement		Address Existing Geometry	Truck Movement	Economic Development	North Ind Park to Nunn	South Ind Park to Nunn	KY 90 to Nunn	
		Local	Regional	Local	Regional							
No Build	11.41	Low	Low	Low	Low	Low	Low	Low	7.2	6.3	15.1	Lowest
Interchange D	1.10	Medium	Medium	High	Low	Low	Medium	Medium	0.2	4.5	13.3	Medium
A2B	8.43	Low	High	Low	High	Medium	Medium	Low	7.2	6.3	10.8	Medium Low
A2D	9.20	Medium	Medium	Medium	Medium	Medium	High	High	0.2	4.5	11.5	Medium High
A2G	8.43	Medium	Medium	Medium	Medium	Medium	Medium	Medium	6.2	6.3	12.9	Medium Low
A4D	9.80	High	Medium	High	Medium	High	High	High	0.2	4.4	13.1	Highest
A4G	9.03	Medium	Medium	High	Medium	High	Low	Medium	6.2	5.7	14.6	Medium
A5D	9.86	High	Medium	Medium	Medium	High	High	Medium	7.2	6.3	14.9	Medium
Spot Improvements	2.2	High	Medium	High	Low	Medium	Medium	Low	7.0	6.1	14.9	Medium

Environmental Impacts*

Alternative	Farmlands		Relocation Impacts			Community Resources				Natural Resources		Engineering Concerns							Overall Evaluation for Environmental
	Agricultural District	Corridor Area through Farmlands	Homes	Env Justice Concerns	Business	Parks	Churches	Historic Properties	Cemeteries	Stream Crossings	Wetlands	Mapped Sinkholes	Karst Likelihood	Excavation Required	Geotech Preference	Abandoned Wells	Utilities	UST Sites	
No Build	None	None	None	None	None	None	None	None	None	None	None	None	None	None	High	None	None	None	Highest
Interchange D	None	None	0-5	None	1	None	None	None	None	1	None	None	High	Minor	Medium	2	Few	None	High
A2B	76 acres	2,000 acres	45-60	None	3	None	1	5	3	10	30	3	Minor	High	Medium	18	Minor	2	Medium
A2D	135 acres	1,800 acres	80-110	Moderate	5	None	1	5	3	12	15	3	High	Minor	Low	18	Moderate	5	Medium
A2G	135 acres	1,800 acres	80-105	Moderate	4	None	1	5	3	10	15	3	Moderate	Minor	Low	18	Moderate	5	Medium
A4D	9 acres	1,810 acres	120-160	High	8	None	3	6	7	9	14	2	High	Moderate	Medium	23	High	7	Low
A4G	9 acres	1,810 acres	120-155	High	7	None	3	6	7	7	14	2	Moderate	Moderate	High	23	High	7	Low
A5D	9 acres	1,650 acres	135-170	Moderate	>15	1	2	17**	5	7	10	2	Major	Moderate	Low	21	High	9	Lowest
Spot Improvements	Minor	Few/None	0-5	None	1	None	None	None	None	2	Few	None	Minor	Minor	Medium	None	Minor	None	High

** All features falling within corridor footprint are listed though final alignment will not necessarily impact all resources shown here*

*** Includes one structure listed on National Register of Historic Places*

Most desirable alternative for this measure
Least desirable alternative for this measure

X. ADDITIONAL CABINET, PUBLIC, AND AGENCY INPUT

As part of the public involvement portion of this study, meetings were held in April and May of 2007 with the project team, local officials, stakeholders, the public, and resource agencies. The purpose of these meetings was to update participants about what took place after the first round of community involvement activities. Summary information was provided on the existing conditions, all technical analyses, the alternatives development process, and the corridor evaluation process. Copies of the meeting minutes are included in **Appendix J**.

Public and Agency Involvement

- Project Team Meetings
- Local Elected Officials Meetings
- Stakeholder Meetings
- Public Involvement Meetings
- Public Comment Surveys
- Resource Agency Coordination

A. Project Team Meeting (April 17, 2007)

The third Project Team Meeting was held on April 17, 2007, at the KYTC District 3 Office building in Bowling Green, Kentucky. The project team convened to preview the Level 2 Screening results on the remaining corridors and prepare for the upcoming local officials, stakeholders, and public meetings. The Project Team concurred with the final corridor alternatives, the findings of the Level 2 Screening, and the proposed spot improvements and approved the presentation of this information to the public.

B. Local Officials and Stakeholders Meetings

Meetings with local elected officials and stakeholders were conducted April 26, 2007, at the Metcalfe County Justice Center to present study information to interested attendees. Existing conditions data, public input from the initial involvement meetings and surveys, and corridor alternatives screening data were presented.

1. Local Officials Meeting

After the project team presented the assembled exhibits, discussion among local officials focused on the proposed alternatives. General consensus affirmed that a second interchange on US 68 would provide multiple benefits to the community including increased access to the Industrial Park, congestion relief at the KY 163/US 68-KY 80 intersection, and additional benefits for truck traffic. Alternative A2B is anticipated to meet with the strongest public opposition due to the impacts to farmlands.

2. Stakeholders Meeting

Based on the presented data, stakeholders discussed the role of public input in the corridor selection process. Interchange D was again supported as a top priority for the area.

C. Public Information Meeting - Round 2

A second public meeting was held at the Metcalfe County High School on May 17, 2007. The meeting was designed to communicate the study process and findings to the public and solicit input on the developed build alternatives.

The meeting was set up to facilitate one-on-one discussions between staff and attendees, with areas for viewing a slideshow presentation, examining exhibit boards, completing a survey, and providing feedback on alternative maps. The details of the meeting are included in a second Public Meeting Summary Notebook on file with KYTC's Division of Highway Design and Division of Planning.

1. General Comments

Attendees were invited to ask questions or discuss concerns with KYTC and consultant staff. General comments and concerns received during the feedback process included:

- Several people expressed concerns about losing homes and farmlands if a road is constructed;
- A safety problems does exist on KY 163;
- Improving the existing route is better for the community members than constructing a new alignment; and
- Trucks are causing most of the roadway issues:
  - The large volume of trucks using the road,
  - High speeds,
  - Limited passing opportunities,
  - Turning movements downtown.

2. Map Exercise

Three tables were set up with study area maps showing the six build corridors. Participants were asked to write and/or draw on the maps to identify specific impact areas and any additional problems with KY 163 that should be addressed. Points identified included the following.

- Additional environmentally sensitive areas were identified:
  - A cemetery along KY 163 south of Robert Shaw Road
  - Several new wells south of the intersection of US 68 with KY 3234
- Modifications to the recommended spot improvements were suggested, including:
  - Clearing trees and brush at Rogers Creek to improve sight distance
  - Improving the grade near Missionary Mound Baptist Church
  - Extending the spot improvement near Cedar Flats to include Faulkner Road

- Realigning the US 68/KY 80 intersection to make traffic on KY 80 stop

3. Public Comment Survey Responses

As part of the public meeting handout, the KYTC supplied a survey form so that citizens of the area could provide input on the project. The results from all surveys received as part of the second phase of the public involvement process are summarized in the following paragraphs.

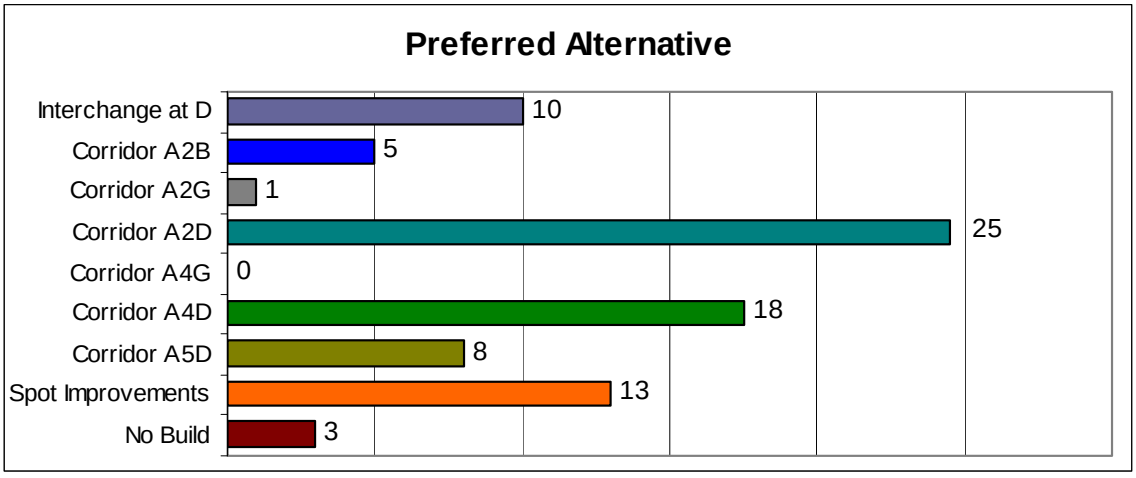
Surveys were distributed at the public meeting, as well as during the local officials and stakeholders meetings held the previous month. Surveys were also distributed from the courthouse following the public meeting to provide an opportunity for other residents of Metcalfe County to provide feedback. From the distributed surveys, 30 were returned. Results are summarized below.

Meeting participants completing surveys

When asked whether KY 163 should be improved, 23 respondents indicated that it should; 2 respondents were opposed to improvements; and 5 respondents did not answer the question.

The second question asked citizens to rank their top two preferred alternatives. Each build corridor was included with a brief description, plus the Spot Improvements and No Build scenarios. Maps depicting the alternatives were provided with the surveys.

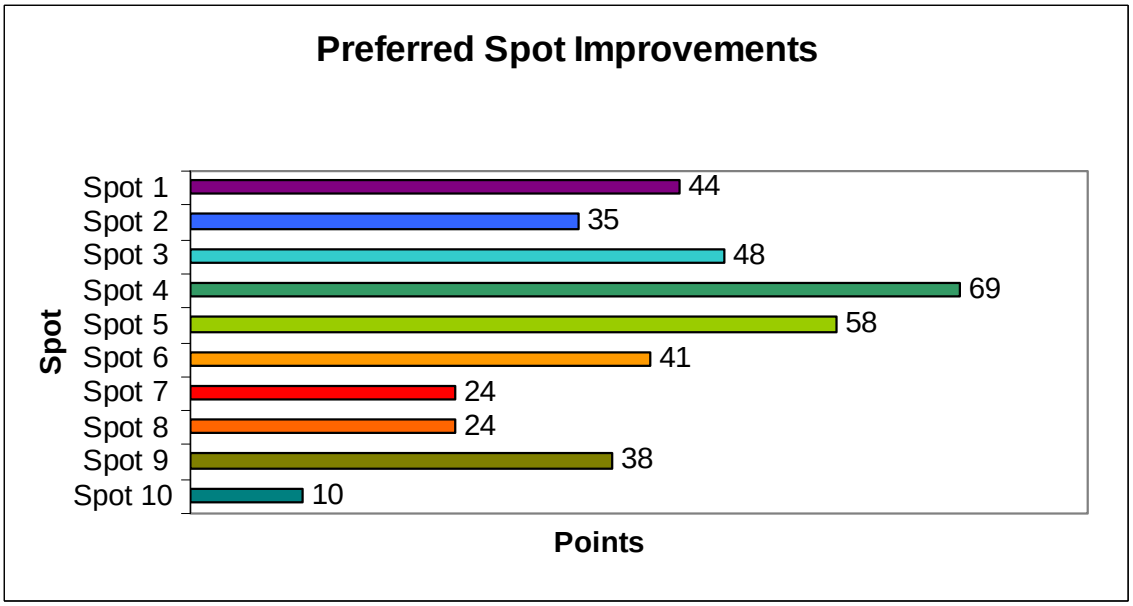
To accurately reflect the results, points were assigned for each response: two points for a first choice preference and one point for a second choice. In cases where the order of preference was not indicated, each selected alternative received 1.5 points. The following graph illustrates the tallied points from the received survey.



Note: Chart shows points received based on order of preference

As demonstrated in the previous graph, Corridor A2D was favored above others, followed by Corridor A4D. Based on the favored alternatives, 73% (61 points of 83 total points for preferred alternatives, as described above) were in favor of a second interchange on US 68 north of Edmonton. 53% (44 points of 83 total points) were in favor of a connection within Edmonton between US 68 north of Edmonton and Stockton Street (US 68-KY 80) west of downtown Edmonton.

Meeting participants were also asked to select and rank the 5 most needed spot improvements. Points were awarded in a similar fashion – 5 points for a first choice spot, 4 points for a second choice, etc. – to the preceding question. The results for this question are presented in the following graph.



Note: Chart shows points received based on order of preference

Spot 4 (Widening the bridge over Rogers Creek) and Spot 5 (Widening the bridge over Black Rock Creek) received the most votes. Other suggested spot improvements included the following:

- Keep the right-of-way cleaned and trimmed;
- Include Faulkner Road in the Cedar Flats realignment;
- At the US 68-KY 80 intersection, make KY 80 stop. Clarify boundaries, turning areas, and off-street parking;
- Fix the curve south of Roger's Creek and various S-curves nearby; and
- Widen Stockton Street in town and/or add lanes. Consider a caution light at McDonald's and the CB Food Store.

D. Resource Agency Coordination - Round 2 (April 2007)

Resource Agencies
- Local Agencies
- Local Interest Groups
- KYTC Division Offices
- Other State Agencies
- Federal Agencies

Many local, state and federal resource agencies, with diverse areas of public responsibility, were included in this planning process. Input was solicited through written requests on two occasions. For this second round of coordination, agencies received a map depicting the seven build alternatives and were requested to comment on this set of alternatives. A copy of the informational letter distributed by the KYTC and response letters from the various resource agencies are located in **Appendix K** and are summarized below.

The following 12 agencies responded by offering comments or concerns regarding the project:

- Kentucky Department of Agriculture – The agency has no specific concerns or issues with the project.
- Kentucky Department for Natural Resources – The Department found no mining impacts for the area: current, historic, or pending permits; they have no preference between alternatives. Several oil and gas wells are in the area; a map is provided showing the locations of these wells.
- Kentucky Department of Parks – The Department has no preference between alternative corridors.
- Kentucky Division for Air Quality – The Division has no additional comments for this project.
- Kentucky Division of Conservation – The division prefers Alternatives A4D and A4G because these follow the existing alignment of KY 163 through the Agricultural District, minimizing impacts to this area which was developed to protect farmland. The other alternatives require new construction which would result in the loss of farmlands.
- Kentucky Department for Environmental Protection – This organization has no additional comments or preference between the alternatives.
- Kentucky Geological Survey – The study area is in the Mississippian Plateau, underlain by limestone, some argillaceous. There is a potential for karst features like sinkholes and caves but not for landslide hazards. There is also a potential to encounter unconsolidated sediments like clay, silt, sand, gravel, and chert rubble in streams.
- Kentucky Transportation Cabinet, Construction Division – The Division has no additional comments for this project.
- Kentucky Transportation Cabinet, Geotechnical Branch – All corridors are acceptable, but A2B is least preferred. Other alternatives better

avoid seepage from groundwater flow because they run relatively parallel to the dip of the bedrock.

- Kentucky Transportation Cabinet, Permits Branch – The Division has no additional comments for this project.
- Kentucky Vehicle Enforcement – This department feels alternatives A2G or A2D would be best for emergency personnel since they would not have to travel through the city limits of Edmonton.
- United States Coast Guard – The Coast Guard does not exercise jurisdiction over waterways in the project area; no bridge permits are required.

XI. RECOMMENDATIONS

This chapter provides recommendations for improvements to KY 163 from KY 90 to the Louie B. Nunn (Cumberland) Parkway in Metcalfe County, Kentucky. The recommendations made in this chapter are the result of the Alternatives Study process for the KY 163 corridor.

A. Project Purpose and Need

To summarize before presenting a discussion of the study recommendations, the project purpose and need was defined as improving safety and mobility in Metcalfe County. Additional project goals included the following items:

- Improving highway systems connectivity;
- Addressing geometric deficiencies;
- Improving accessibility to activity centers in Edmonton;
- Reducing congestion within Edmonton;
- Facilitating truck traffic; and
- Enhancing potential economic development.

A more detailed discussion of the Project Purpose and Need can be found in **Chapter VII**.

B. Final Project Team Meeting (July 13, 2007)

1. Project Team Discussion

A final project team meeting was held on July 13, 2007, at the KYTC District 3 Conference Room in Bowling Green, Kentucky. Attendees at the meeting included staff from KYTC District 3, KYTC Division of Planning, the Barren River ADD, and the project consultant. The purpose of the meeting was to discuss the project information identified through the course of the KY 163 Alternatives Study and to finalize the recommendations for improvements along the route. The meeting minutes are included in **Appendix J**.

A concise review of the study process provided a framework to discuss build recommendations. The consultant team reviewed the project purpose and need, traffic conditions, crash history information, the Level 1 Alternatives, environmental highlights, and the Final (Level 2) Alternatives. Public input surveys from the second round of meetings and resource agency responses were reviewed.

As discussed in **Chapter IX**, the final proposed alternates presented for consideration by the project team include:

- Alternative 1, Interchange at D, with no reconstruction to KY 163;
- Alternative 2, Corridor A2B, reconstructing KY 163 from Goodluck to the existing interchange west of the existing alignment;
- Alternative 3, Corridor A2G, reconstructing KY 163 from Goodluck to US 68 north of Edmonton;

- Alternative 4, Corridor A2D, reconstructing KY 163 from Goodluck to US 68 with an interchange at D;
- Alternative 5, Corridor A4G, constructing a western connection from south Edmonton to US 68 north of town;
- Alternative 6, Corridor A4D, constructing a western connection from south Edmonton to a new interchange on US 68 north of town;
- Alternative 7, Corridor A5D, improving KY 163 along the existing alignment and adding a second interchange north of Edmonton;
- Alternative 8, a combination of the proposed Spot Improvements; and
- Alternative 9, No Build, no improvements made to the corridor.

A review of the public input from the second round of survey questionnaires indicated that Corridor A2D was preferred, followed by Corridor A4D. The majority of respondents (73%) preferred an alternative including a new interchange at Location D; over half (53%) preferred an alternative including the western connection within Edmonton (point 4 to point G).

2. Project Team Recommendations

Based upon consideration of project purpose and need, transportation issues, access needs, potential environmental and community impacts, and public/agency input, the project team agreed on the following:

- Corridors A2B, A2G, and A2D should be eliminated from future consideration because of potential major impacts on prime farmland, streams, and wetlands;
- Corridor A5D should not be selected as the preferred alternative because of potential major impacts on homes, businesses, and other cultural community resources within the Edmonton city limits;
- Corridor A4D and A4G would be the preferred alternatives if a full corridor improvement were made; however, major reconstruction/ relocation improvements to the rural section of the study corridor from KY 90 (Point A) to the city limits of Edmonton (Point 4) are not warranted at this time, based on the traffic/LOS analysis, crash analysis, and potential negative impacts on homes, farmland, historic structures, and other community resources. Spot improvements are needed on KY 163 to help alleviate problems at a few specific locations. This is consistent with public input received at public meetings and through public surveys.
- Although a full corridor improvement is not needed, an improvement is needed in Edmonton to alleviate traffic problems in the downtown area. This improvement would provide:
    - A new connector, from the southern city limits to US 68-KY 80 west of downtown Edmonton;

- A continuation of this connector to US 68 north of Edmonton near the industrial park (Point G);
- A new US 68 interchange with the Nunn Parkway (Point D), including relocation of KY 1243 north of the Parkway and the industrial access road south of the Parkway; and
- Improvement of US 68 to a new parkway interchange.

Preferred Alternative

The proposed connector in Edmonton (Corridor Segment 4GD) was broken into construction sections/projects, which were prioritized by the Project Team as follows:

Priorities 1a and 1b are the northern and southern connectors (Corridor Segment 4G) within Edmonton, respectively, divided at the intersection with US 68-KY 80 (Stockton Street). These would be partial access control facilities. Once constructed, consideration should be given to re-routing US 68 along the northern connector, with existing US 68 re-designated as US 68 Business. Also, the southern connector should be re-designated as KY 163 and the existing route re-designated as another route or as KY 163 Business.

This new connector (Corridor Segment 4G) will provide route redundancy within Edmonton, increase access to the southern Industrial Park, and allow trucks an alternative route to the Parkway without having to negotiate the tight turns at the KY 163/US 68-KY 80 intersection. Development patterns along US 68-KY 80 appear to have preserved a gap for the connection to be placed in town with minimal relocation impacts; this gap may not remain undeveloped, so priority should be given while it is available.

Priority 2 is a new interchange on US 68 north of Edmonton (Point D), which would include improvements to US 68 from Point G to D. However, the proximity of KY 1243 and the northern Industrial Park entrance require route relocations which increase costs beyond a standard diamond interchange. An interchange justification study may be required for FHWA approval, since the Nunn Parkway is designated as part of I-66, so it may be advisable to defer this improvement for consideration as part of an I-66 improvement study.

The rural sections of KY 163 south of Edmonton (Corridor Segment A4) are not recommended for reconstruction at this time; however, construction segments were established and cost estimates were prepared for use by KYTC if conditions change in the future.

Spot Improvements

To provide low-cost, short-term improvements while funding is secured for larger projects, spot improvement recommendations were developed to be completed in conjunction with Priorities 1a, 1b, and 2. The purpose of each of these proposed projects is to improve safety and mobility along the existing route.

The two bridge widening projects received the highest preference based on public input surveys, and they are also recommended as the

top priority spot improvements. Bridge replacement funding may be available for these projects.

The spot improvement recommendations are summarized in priority order, below.

- Priority 1: Widening a narrow bridge over Rogers Creek.
- Priority 2: Widening a narrow bridge over Black Rock Creek.
- Priority 3: Creating a 3-lane section to provide turning lanes, where needed, and/or a center turn lane on US 68 from mileposts 6.12 to 7.00. This will include the widening of a bridge over Clay Lick Creek. This spot improvement will extend to the project limits of a similar safety/widening project already scheduled on US 68 from milepoints 7.0 to 7.7.
- Priority 4: Improving the intersection of US 68 with KY 80 north of Edmonton. This improvement should consider adding an extra lane on each approach to accommodate turning bays, striping for a turn lane on US 68-KY 80 eastbound, and better defining adjacent parking area access points.
- Priority 5: Adjusting vertical and horizontal alignment at Cedar Flats. Based on public input, the project team agreed to extend this spot north to milepoint 9.58 to include the intersection with C. Faulkner Road.
- Priority 6: Adjusting alignment at Missionary Mound Baptist Church to improve sight distance and address safety concerns.
- Priority 7: Constructing a right turn lane on US 68 into the northern Industrial Park.
- Priority 8: Constructing a left turn lane on KY 80 into the northern Industrial Park.
- Priority 9: Adding a truck climbing lane on KY 163 coming north from the intersection with KY 90.

The final spot improvement, converting the existing interchange into a diamond-style configuration is not recommended at this time. Current traffic volumes and public reception do not justify this effort. However, further study is recommended as part of any future I-66 study.

C. Phase Costs

As shown in **Figure 11.1**, costs for each spot improvement and corridor segment are broken down for design, right-of-way, utilities, and construction. The connection within Edmonton (Priority 1a and 1b) has a combined total cost estimate of $11.3 million. The new interchange is anticipated to cost approximately $19.4 million. **Tables 11.1** and **11.2** show detailed cost estimates for each corridor length (including rural portions not recommended for construction at this time) and for each spot improvement, respectively.

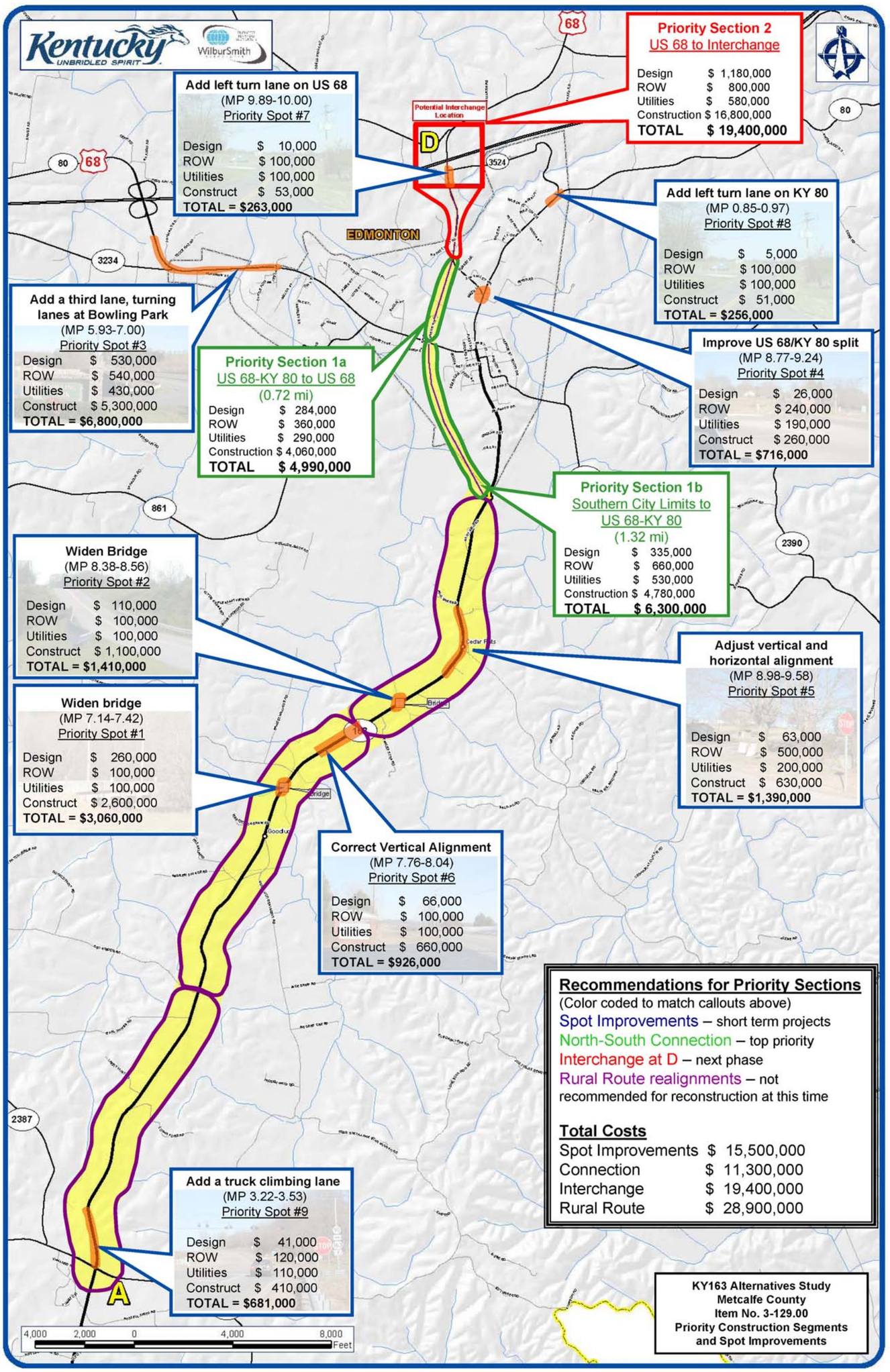


Figure 11.1 – Priority Construction Sections and Spot Improvements

Table 11.1 - Cost Estimates for Build Corridor Segments along KY 163 and New Alignments

Beginning Location on KY 163		Ending Location on KY 163		ROW Cost	Utility Cost	Construction Cost			Design Cost	TOTAL COST
						Roadway	Structures	Total Construction Cost		
Location	KY 163 MP	Location	KY 163 MP	Segment Cost	Segment Cost	Segment Cost	Segment Cost		Segment Cost	
KY 90	3.223	Roy Grider Rd	5.561	$940,000	$820,000	$7,540,000	$0	$7,540,000	$527,800	$9,830,000
Roy Grider Rd	5.561	Radford Martin Rd	7.984	$730,000	$730,000	$7,100,000	$400,000	$7,500,000	$525,000	$9,490,000
Radford Martin Rd	7.984	Proposed Connector Road	10.300	$1,160,000	$930,000	$6,790,000	$160,000	$6,950,000	$486,500	$9,530,000
Proposed Connector Road	10.300	Stockton Street	N/A	$660,000	$530,000	$4,780,000	$0	$4,780,000	$334,600	$6,300,000
Stockton Street	N/A	Existing US 68	9.400	$360,000	$290,000	$2,610,000	$1,460,000	$4,060,000	$284,200	$4,990,000
Existing US 68	9.400	Through Interchange D	N/A	$800,000	$580,000	$16,800,000			$1,176,000	$19,400,000

Notes on Corridor Cost Estimate Assumptions

Costs estimated at $2.93 million per mile for 2-lane roadway & $3.62 million per mile for 3-lane

Structures were estimated at $100 per square foot for all new construction and to replace all existing structures

A 3-lane cross section was applied for the connector within Edmonton and 1 mile north of KY 90; all other lengths are 2-lane facilities

Table 11.2 - Cost Estimates for Spot Improvements

Priority	Roadway	BMP	EMP	Length (ft)	Description	Crashes*	Construction Cost	ROW Costs	Utility Costs	Design Cost	TOTAL Cost
							Dollars	Dollars	Dollars	Dollars	Dollars
9	KY 163	3.22	3.53	1,600	1. Add truck climbing lane for northbound traffic.	None reported	$410,000	$120,000	$110,000	$41,000	$681,000
6	KY 163	7.76	8.04	1,450	2. Adjust vertical alignment at Missionary Mound Baptist Church	1 injury, 1 PDO	$660,000	$100,000	$100,000	$66,000	$926,000
5	KY 163	8.98	9.58	3,150	3. Adjust vertical alignment at Cedar Flats and C. Faulkner	4 injury, 5 PDO	$630,000	$500,000	$200,000	$63,000	$1,393,000
1	KY 163	7.14	7.42	1,500	4. Replace Bridge over Roger's Creek	1 injury, 3 PDO	$2,600,000	$100,000	$100,000	$260,000	$3,060,000
2	KY 163	8.38	8.56	1,000	5. Replace Bridge over Black Rock Creek	2 PDO	$1,100,000	$100,000	$100,000	$110,000	$1,410,000
4	US 68	8.77	9.24	2,500	6. US 68/KY 80 Intersection	1 fatal, 1 injury, 18 PDO	$260,000	$240,000	$190,000	$26,000	$716,000
7	US 68	9.89	10.00	600	7. Add right turn lane on US 68 at Industrial Park	None reported	$53,000	$100,000	$100,000	$10,000	$263,000
8	KY 80	0.85	0.97	600	8. Add left turn lane on KY 80 at Industrial Park	1 PDO	$51,000	$100,000	$100,000	$5,000	$256,000
3	US 68	5.93	7.00	5,650	9. Along US 68 construct a 3 lane section between the existing Interchange and the planned 3-laning project	1 fatal, 6 injury, 30 PDO	$5,300,000	$540,000	$430,000	$530,000	$6,800,000
I-66 [2]	US 68 / PKWY	5.54	5.54	N/A	10. Reconstruct Existing Interchange at Exit 27	2 injury, 9 PDO	$9,000,000 [1]	$800,000	$190,000	$900,000	$10,890,000

[1] Estimate from BG Pkwy & US 27 interchange actual construction cost.
[2] Reconfiguration of existing interchange recommended for further study within future I-66 Study

D. Potential Design Criteria and Considerations

Potential design criteria and considerations for the proposed KY 163 Corridor in Metcalfe County, including typical cross-sections, are included in this section for planning purposes only. These criteria were used in preparing the planning level cost estimates. Therefore, the criteria are general recommendations based upon information gathered through this planning phase of study. Specific geometric parameters should be defined during future design phases of the project, as more detailed information is available.

The recommended cross section for the sections of new alignment consists of three 12-foot wide lanes, 8-foot wide shoulders (with 6-foot paved), and 8-foot wide ditches as shown in **Figure 11.2**. This cross section, applied to the connector between KY 163 at the city limits, through Stockton Street (US 68-KY 80), to US 68 north of Edmonton, allows for any future widening which may be warranted as traffic volumes increase. This portion of the route should be partial access controlled. A rural section is proposed at this time, but consideration should be given in the Preliminary Deign phase to providing sidewalks or a multi-use bicycle/pedestrian path, if warranted.

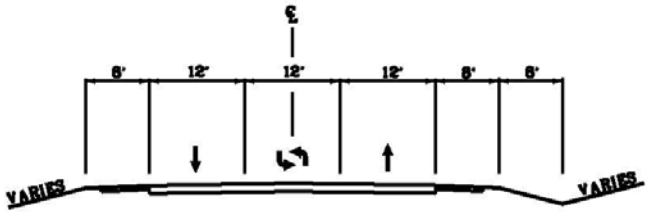


Figure 11.2 - Cross Section for Edmonton Connector

The typical section for reconstruction at spot improvement locations is shown in **Figure 11.3**. To better tie into the existing rural alignment, it features two 11-foot wide lanes, 6-foot wide shoulders (4-foot paved), plus ditches. A third 11-foot wide lane is added as a truck climbing lane north of KY 90. A rural section is proposed for most spot improvements, but sidewalks should be considered in some locations as warranted.

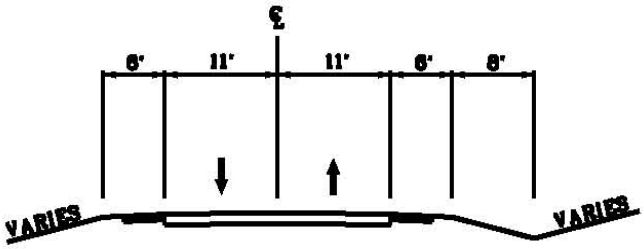


Figure 11.3 - Cross Section for Rural Spot Improvements

E. Summary of Environmental Issues for Future Phases

A number of issues related to environmental factors and sensitive land uses identified through this study should be considered as this project moves into future phases. These issues have been discussed in greater detail in previous chapters. Important issues include:

- *Farmland Impacts* – Preservation of existing farmlands was the predominant concern expressed during the public involvement process. The Agricultural District along KY 163 in Metcalfe County was established in 1996 to conserve, protect, develop and improve agricultural land for the production of food, fiber, and other agricultural products. State agencies must mitigate any impacts to this area. Loss of other farmlands in the project area is also an issue; documents to help identify these are available from the Kentucky Division of Conservation Office. The US Department of Agriculture, Natural Resource Conservation Service expressed concern with potential impacts upon prime farmland soils and additional farmlands of statewide importance. If federal funds are used to convert these lands to non-agricultural uses, Form NRCS-CPA-106 should be completed, and a public hearing may be required.
- *Threatened and Endangered Species* – Two endangered species potentially occur within the study area (the gray bat and the Indiana bat). To address impacts to these species and their habitats, tree cutting should be limited to between mid October and late March. Further investigation may be necessary to identify additional roosting/hibernating sites.
- *Water Quality/Aquatic Habitats* – Consideration should be given to potential water quality issues in the numerous streams, springs, and wetlands within the area. Any affected wetlands should be delineated; impacts may require permits from the US Corps of Engineers and/or the Kentucky Division of Water.
- *Cemeteries and Unmarked Graves* – There are a number of cemeteries documented or observed in the project area. Other cemeteries may be unmarked and are likely to be encountered during construction in this area.
- *Cultural Resources* – Special consideration should be given to the numerous historic structures located within the project area. There is a potential to encounter unrecorded historic structures and archaeological sites eligible for listing on the National Register of Historic Places.
- *Environmental Justice* – Environmental justice issues related to low-income populations should be closely monitored during future phases of this project due to concentrations of this demographic in the region.

F. Construction Considerations

Construction-related issues were also identified throughout this study. Discussed in more detail in previous chapters, potential issues related to construction of the proposed alternative include:

- *Erosion and Sediment Control* – Measures should be utilized to control erosion and sedimentation during and after the commencement of earth-disturbing activities. Careful consideration should be given to erosion control methods; a *Best Management Practices for Construction Activities* guide is available from the Kentucky Division of Conservation.
- *Air Quality* – According to the Kentucky Environmental and Public Protection Cabinet, Division of Air Quality, the following Kentucky Administrative Regulations apply to the proposed project: (1) 401 KAR 63:010 Fugitive Emissions; (2) 401 KAR 63:005 Open Burning; (3) the Clean Air Act; and (4) Title 23 and Title 49 of the United States Code. Applicable regulations in the local government should also be considered.
- *Waste Management* – Solid wastes occurring as part of the construction process should be disposed of at a permitted facility. Underground Storage Tanks and other contaminants should be properly addressed as they are encountered.
- *Traffic Operations* – Maintenance of traffic and residential access should be preserved throughout the construction process.
- *Geotechnical Considerations* – There is a probability to encounter karst topography and unconsolidated sediments in the project area. A more detailed study of karst within the study area should be considered as the project develops. The Salem and Warsaw limestone in the area has been previously quarried as suitable for construction stone.

Appendix A – Study Area Photos

Existing interchange between Nunn Parkway and US 68 west of Edmonton, facing east.

Intersection of KY 90 with KY 163, facing north.

Intersection of KY 163 and Goodluck-Beaumont Road.

View south of bridge over Rogers Creek, seen from Randolph-Goodluck Road.

Curve south of Cedar Flats, around MP 9.0, looking south from intersection of KY 163 with Cedar Flats Road.

Sight distance limitations north of Cedar Flats Road along KY 163.

View of KY 163 sight distance limitations at Missionary Mound Baptist Church (approx. MP 7.9), looking north.

View of KY 163 sight distance limitations at Missionary Mound Baptist Church (approx. MP 7.9), looking south.

KY 163 entering Edmonton from the south. Proposed southern industrial park site is located to left at gravel driveway.

Typical view of rural KY 163 corridor between KY 90 and Edmonton.

View of KY 163 intersection with US 68-KY 80 in downtown Edmonton, facing north.

View of KY 163 to south at intersection with US 68-KY 80.

Intersection of US 68 and KY 80 north of downtown Edmonton, facing north. Stockyard entrance located to right.

View south of US 68 bridge north of Edmonton over Nunn Parkway. Industrial Park is located to left, south of bridge, on KY 3524.

Table B.1 - Highway Systems on Major Roads in Metcalfe County

State Primary System	National Truck Network (NN)	National Highway System (NHS)	Functional Classification	Truck Weight Class	Appalachian Development Highway System	Bike Route	Coal Haul (annual tons)	Extended Weight System	Forest Highway System	Scenic Byway System
US 68: MP 3.855 to MP 13.013 from Cave Ridge to KY 544										
State Secondary	No	No	Rural Major Collector	AAA	No	No	None	No	No	Yes
KY 80: MP 0.000 to MP 3.205 from US 68 to Owen Jack Road										
State Secondary	No	No	Rural Minor Arterial	AAA	No	No	None	No	No	Yes
KY 90: MP 1.623 to MP 6.468 from Hilltop View Road to Martin Cemetery Road										
State Primary	No	No	Rural Minor Arterial	AAA	No	No	None	No	No	No
KY 163: MP 0.000 to MP 11.489 from Monroe County Line to US 68										
State Secondary	No	No	Rural Major Collector	AAA	No	No	None	No	No	Yes
Louie B. Nunn (Cumberland) Parkway (LN 9008): MP 24.092 to MP 34.402 from KY 640 Overpass to Jack Sparks Road Overpass										
State Primary	Yes	Yes	Rural Principal Arterial	AAA	No	No	None	No	No	No

Source: KYTC Highway Information System (HIS) Data, 2006

Table B.2 - Metcalfe County State Road Geometric Characteristics

Begin MP	End MP	Length (miles)	Number of Lanes	Lane Width (feet)	Shoulder Width (feet)	Shoulder Type	% Passing Sight Distance	Speed Limit (mph)	Roadway Type	Terrain Type	Pavement Type
US 68: MP 3.855 to MP 13.013											
3.855	5.428	1.573	2	12	10	Stabilize	62	55	Undivided Highway	Rolling	High Flexible
5.428	6.208	0.780	2	12	10	Stabilize	11	55	Undivided Highway	Rolling	High Flexible
6.208	7.697	1.489	2	11	6	Combination	85	45	Undivided Highway	Rolling	High Flexible
7.697	8.562	0.865	4	9	6	Combination	100	35-45	Undivided Highway	Rolling	High Flexible
8.562	9.002	0.440	2	12	6	Combination	0	25-45	Undivided Highway	Rolling	High Flexible
9.002	9.633	0.631	2	10	6	Combination	0	55	Undivided Highway	Rolling	High Flexible
9.633	9.997	0.364	2	12	6	Combination	0	55	Undivided Highway	Rolling	High Flexible
9.997	10.458	0.461	2	12	6	Combination	40	55	Undivided Highway	Rolling	High Flexible
10.458	13.013	2.555	2	9	6	Combination	44	55	Undivided Highway	Rolling	High Flexible
KY 80: MP 0.000 to MP 3.205											
0.000	3.205	3.205	2	9	2	Combination	15	45-55	Undivided Highway		High Flexible
KY 90: MP 1.623 to MP 6.468											
1.623	2.710	1.087	2	9	2	Combination	100	35-55	Undivided Highway	Rolling	High Flexible
2.710	3.350	0.640	3	9	2	Combination	100	35-55	Undivided Highway	Rolling	High Flexible
3.350	4.450	1.100	2	9	2	Combination	82	55	Undivided Highway	Rolling	High Flexible
4.450	4.850	0.400	2	10	2	Combination	57	55	Divided Highway	Rolling	High Flexible
4.850	6.468	1.618	2	10	2	Combination	35	55	Undivided Highway	Rolling	High Flexible
KY 163: MP 0.000 to MP 11.489											
0.000	2.251	2.251	2	11	2	Combination	9	55	Undivided Highway	Rolling	High Flexible
2.251	3.223	0.972	2	11	2	Combination	51	55	Undivided Highway	Rolling	High Flexible
3.223	9.084	5.861	2	9	2	Combination	43	45	Undivided Highway	Rolling	High Flexible
9.084	11.131	2.047	2	9	2	Combination	0	45	Undivided Highway	Rolling	High Flexible
11.131	11.427	0.296	2	9	2	Combination	0	25-35	Undivided Highway	Rolling	High Flexible
11.427	11.489	0.062	2	10	2	Combination	0	25	Undivided Highway	Rolling	High Flexible
Louie B. Nunn (Cumberland) Parkway (LN 9008): MP 24.092 to MP 34.402											
24.092	34.402	10.310	4	12	10	Paved	100	65	Divided Highway	Rolling	High Flexible

Source: KYTC *Highway Information System (HIS)* Data, 2006

Table B.3 - Geometric Deficiencies along Key Routes

US 68 (MP 8.6 to MP 9.0) - Geometric Deficiencies			
Mile Point	**Criteria**	**Requirement (1)**	**As Built (3)**
8.6	Min Stopping Sight Distance (ft)	570	292
8.6	Max Grade (%)	6.000	-7.100
8.8	Min Radius (ft)	1205	955
8.8	Min Headlight Sight Distance (ft)	570	197
9.0	Min Headlight Sight Distance (ft)	570	468
9.0	Min Headlight Sight Distance (ft)	570	296
9.0	Max Grade (%)	6.000	6.720

KY 163 (MP 3.2 to MP 11.2) - Geometric Deficiencies			
Mile Point	**Criteria**	**Requirement (1)**	**As Built (2)**
3.3	Min Stopping Sight Distance (ft)	570	420
3.3	Max Grade (%)	7.000	-7.800
3.4	Min Headlight Sight Distance (ft)	570	359
3.5	Min Stopping Sight Distance (ft)	570	293
3.6	Min Stopping Sight Distance (ft)	570	294
3.6	Max Grade (%)	6.000	8.000
3.7	Min Radius (ft)	1205	716.78
3.8	Min Headlight Sight Distance (ft)	570	260
3.9	Min Headlight Sight Distance (ft)	570	422
4.0	Min Stopping Sight Distance (ft)	570	356
4.1	Min Headlight Sight Distance (ft)	570	308
4.4	Min Radius (ft)	1205	955.6
4.5	Min Headlight Sight Distance (ft)	570	198
4.5	Min Stopping Sight Distance (ft)	570	292
4.7	Min Stopping Sight Distance (ft)	570	295
4.7	Max Grade (%)	7.000	8.000
4.8	Min Headlight Sight Distance (ft)	570	161
4.8	Min Stopping Sight Distance (ft)	570	308
4.9	Min Headlight Sight Distance (ft)	570	231
5.0	Min Stopping Sight Distance (ft)	570	285
5.0	Max Grade (%)	7.000	7.500
5.1	Min Headlight Sight Distance (ft)	570	239
5.2	Min Headlight Sight Distance (ft)	570	356
5.3	Min Stopping Sight Distance (ft)	570	292
5.5	Min Headlight Sight Distance (ft)	570	326
5.8	Min Stopping Sight Distance (ft)	570	318
5.8	Max Grade (%)	7.000	7.647
5.8	Min Radius (ft)	1205	817.6
5.9	Min Radius (ft)	1205	716.3
5.9	Min Headlight Sight Distance (ft)	570	212
6.2	Min Stopping Sight Distance (ft)	570	301
6.2	Max Grade (%)	7.000	7.857
6.2	Min Radius (ft)	1205	716.3
6.3	Min Headlight Sight Distance (ft)	570	360
6.4	Min Stopping Sight Distance (ft)	570	551
6.5	Max Grade (%)	7.000	7.333
6.7	Min Headlight Sight Distance (ft)	570	247

(continued)

Table B.3 - Geometric Deficiencies along Key Routes (continued)

Mile Point	Criteria	Requirement (1)	As Built (2)
6.7	Min Headlight Sight Distance (ft)	570	438
6.8	Min Stopping Sight Distance (ft)	570	338
6.9	Min Headlight Sight Distance (ft)	570	337
7.1	Min Headlight Sight Distance (ft)	570	327
7.5	Min Headlight Sight Distance (ft)	570	185
7.6	Min Stopping Sight Distance (ft)	570	400
7.6	Min Headlight Sight Distance (ft)	570	211
7.9	Min Stopping Sight Distance (ft)	570	184
7.9	Max Grade (%)	6.000	7.000
8.1	Min Headlight Sight Distance (ft)	570	246
8.4	Min Stopping Sight Distance (ft)	570	329
8.4	Max Grade (%)	7.000	7.740
8.5	Min Headlight Sight Distance (ft)	570	313
8.5	Min Headlight Sight Distance (ft)	570	203
8.9	Min Stopping Sight Distance (ft)	570	427
9.1	Min Radius (ft)	1205	955.4
9.1	Min Headlight Sight Distance (ft)	570	215
9.1	Max Grade (%)	7.000	-8.000
9.2	Min Stopping Sight Distance (ft)	570	300
9.3	Min Stopping Sight Distance (ft)	570	446
9.4	Min Radius (ft)	1205	955.4
9.5	Min Headlight Sight Distance (ft)	570	211
9.6	Min Stopping Sight Distance (ft)	570	297
9.7	Min Headlight Sight Distance (ft)	570	211
9.7	Min Stopping Sight Distance (ft)	570	319
9.8	Min Headlight Sight Distance (ft)	570	107
9.9	Min Stopping Sight Distance (ft)	570	240
9.9	Max Grade (%)	7.000	8.000
9.9	Min Headlight Sight Distance (ft)	570	129
10.1	Min Stopping Sight Distance (ft)	570	392
10.2	Min Stopping Sight Distance (ft)	570	365
10.2	Min Headlight Sight Distance (ft)	570	142
10.3	Min Stopping Sight Distance (ft)	570	245
10.3	Max Grade (%)	7.000	8.000
10.4	Min Headlight Sight Distance (ft)	570	127
10.4	Min Stopping Sight Distance (ft)	570	362
10.5	Min Headlight Sight Distance (ft)	570	259
10.7	Min Headlight Sight Distance (ft)	570	206
10.9	Min Stopping Sight Distance (ft)	570	319
11.0	Min Headlight Sight Distance (ft)	570	215
11.0	Min Stopping Sight Distance (ft)	570	330
11.2	Min Headlight Sight Distance (ft)	570	188

(1) Stopping Sight Distance, Headlight Sight Distance, Radius and Grade Requirements come from the January 2006 KYTC Highway Design Manual - Exhibit 700-02.
Note: Maximum Grade = 6% except where grade segments are less than 500 feet. If grade segments are less than 500 feet the Maximum Grade = 7%.

(2) Existing geometric information came from "As Built" plan sets SP 149 A-G and SP 149 B-G.

(3) Existing geometric information came from the "As Built" plan set SP 85-24.

KY 163 Alternatives Study

Table B.4 - Traffic Characteristics within Study Area

Route	Begin MP	End MP	Length (miles)	No. Lanes	Lane Width (feet)	Shoulder Width (feet)	Speed Limit (mph)	Roadway Type	Functional Class	K-Factor	2006 ADT	Percent Trucks	Free Flow Speed	% No Passing	Access Pts / Mile	2030 ADT	2006 LOS[1]	2030 LOS[1]
KY 163	0.000	0.921	0.921	2	11	2	55	Undivided	Rural Major Collector	12%	2780	15%	60	91	5	4,370	C	C
KY 163	0.921	3.223	2.302	2	11	2	55	Undivided	Rural Major Collector	12%	3500	13%	60	49	5	5,500	B	C
KY 163	3.233	9.084	5.851	2	9	2	55	Undivided	Rural Major Collector	12%	2090	12%	60	57	10	3,280	B	B
KY 163	9.084	11.090	2.006	2	9	2	45	Undivided	Rural Major Collector	12%	2920	10%	50	100	20	4,590	C	C
KY 163	11.090	11.489	0.399	2	9	2	25	Undivided	Rural Major Collector	12%	4130	9%	30	100	20	6,490	B[2]	D[2]
KY 80	0.000	2.683	2.683	2	9	2	45	Undivided	Rural Minor Arterial	14%	1850	4%	50	85	10	2,910	B	C
KY 80	2.683	3.205	0.522	2	9	2	55	Undivided	Rural Minor Arterial	14%	1060	5%	60	85	5	1,670	B	B
KY 90	1.623	2.710	1.087	2	9	2	45	Undivided	Rural Minor Arterial	10%	4880	18%	50	0	15	7,670	B	C
KY 90	2.710	3.350	0.640	3	9	2	45	Undivided	Rural Minor Arterial	10%	4880	18%	50	0	15	7,670	A	A
KY 90	3.350	4.450	1.100	2	9	2	55	Undivided	Rural Minor Arterial	10%	4880	18%	60	18	5	7,670	B	C
KY 90	4.450	4.850	0.400	2	10	2	55	Undivided	Rural Minor Arterial	10%	3310	17%	60	43	5	5,200	B	C
KY 90	4.850	5.554	0.704	2	10	2	55	Undivided	Rural Minor Arterial	10%	3310	17%	60	65	5	5,200	C	C
KY 90	5.554	6.468	0.914	2	10	2	55	Undivided	Rural Minor Arterial	10%	2680	7%	60	65	5	4,210	B	C
Nunn	24.092	27.400	3.308	4	12	10	65	Divided	Rural Principal Arterial	10%	6250	27%	70	0	<1	9,820	A[3]	A[3]
Nunn	27.400	34.402	7.002	4	12	10	65	Divided	Rural Principal Arterial	10%	4250	27%	70	0	<1	6,680	A[3]	A[3]
US 68	3.855	5.421	1.566	2	12	10	55	Undivided	Rural Major Collector	11%	2140	5%	60	38	5	3,360	B	B
US 68	5.421	6.240	0.819	2	12	10	55	Undivided	Rural Major Collector	11%	5890	11%	60	89	5	9,250	C	D
US 68	6.240	7.186	0.946	2	11	6	45	Undivided	Rural Major Collector	11%	6830	10%	50	15	10	10,730	B[4]	B[4]
US 68	7.186	7.697	0.511	2	11	6	45	Undivided	Rural Major Collector	11%	10300	8%	50	15	10	16,180	B[4]	C[4]
US 68	7.697	8.562	0.865	4	9	6	35	Undivided	Rural Major Collector	11%	10300	8%	50	0	40	16,180	B[2]	F[2]
US 68	8.562	9.002	0.440	2	12	6	35	Undivided	Rural Major Collector	11%	7800	9%	40	100	20	12,250	B[4]	C[4]
US 68	9.002	10.350	1.348	2	10	6	55	Undivided	Rural Major Collector	11%	3650	11%	60	100	15	5,730	C	C
US 68	10.350	13.013	2.663	2	9	6	55	Undivided	Rural Major Collector	11%	2200	7%	60	52	5	3,460	B	C

[1] Sections represented as Class II Two Lane Highway with 60/40 directional split unless otherwise noted

[2] Portions controlled by adjacent stop; analyzed as unsignalized intersection

[3] Parkway analyzed as HCS Freeway with 55/45 split

[4] Procedure for two lane developed roadways taken from NCHRP Report 20-7(160)

Table B.5 - Adequacy Ratings for Major Routes in Study Area

Begin MP	End MP	Section Length (miles)	Composite Adequacy Rating	Composite Adequacy Percentile	Safety Component	Maximum Possible Safety Component	Service Component	Maximum Possible Service Component	Condition Component	Maximum Possible Condition Component
US 68: MP 3.855 to MP 13.013										
3.855	5.428	1.573	95.0	94.87	50.0	55.0	15.0	15.0	30.0	30.0
5.428	6.100	0.672	100.0	100.00	55.0	55.0	15.0	15.0	30.0	30.0
6.100	7.310	1.210	80.0	72.99	41.0	55.0	15.0	15.0	24.0	30.0
7.310	7.697	0.387	64.5	40.26	27.0	55.0	15.0	15.0	22.5	30.0
7.697	7.800	0.103	43.0	3.89	10.0	55.0	15.0	15.0	18.0	30.0
7.800	8.562	0.762	46.5	10.39	9.0	55.0	15.0	15.0	22.5	30.0
8.562	8.670	0.108	66.0	42.55	21.0	55.0	15.0	15.0	30.0	30.0
8.670	9.002	0.332	64.5	40.26	27.0	55.0	13.5	15.0	24.0	30.0
9.002	9.997	0.995	53.9	24.56	8.9	55.0	15.0	15.0	30.0	30.0
9.997	10.350	0.353	95.0	94.87	50.0	55.0	15.0	15.0	30.0	30.0
10.350	13.013	2.663	77.0	64.99	38.0	55.0	15.0	15.0	24.0	30.0
KY 80: MP 0.000 to MP 3.205										
0.000	0.967	0.967	78.5	68.04	39.5	55.0	15.0	15.0	24.0	30.0
0.967	2.683	1.716	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
2.683	3.205	0.522	73.5	58.15	34.5	55.0	15.0	15.0	24.0	30.0
KY 90: MP 1.623 to MP 6.468										
1.623	1.800	0.177	81.8	67.45	31.8	45.0	20.0	25.0	30.0	30.0
1.800	2.650	0.850	58.8	22.07	8.8	45.0	20.0	25.0	30.0	30.0
2.650	2.700	0.050	58.8	22.07	8.8	45.0	20.0	25.0	30.0	30.0
2.700	3.350	0.650	62.0	28.65	12.0	45.0	20.0	25.0	30.0	30.0
3.350	4.450	1.100	85.0	74.56	35.0	45.0	20.0	25.0	30.0	30.0
4.450	4.721	0.271	82.8	71.03	32.8	45.0	20.0	25.0	30.0	30.0
4.721	4.850	0.129	82.8	71.03	32.8	45.0	20.0	25.0	30.0	30.0
4.850	5.300	0.450	82.8	71.03	32.8	45.0	20.0	25.0	30.0	30.0
5.300	5.554	0.254	77.3	58.38	27.3	45.0	20.0	25.0	30.0	30.0
5.554	5.600	0.046	72.8	46.00	22.8	45.0	20.0	25.0	30.0	30.0
5.600	6.468	0.868	77.3	58.38	27.3	45.0	20.0	25.0	30.0	30.0
KY 163: MP 0.000 to MP 11.489										
0.000	2.251	2.251	80.5	74.00	41.5	55.0	15.0	15.0	24.0	30.0
2.251	3.223	0.972	90.5	93.07	51.5	55.0	15.0	15.0	24.0	30.0
3.223	4.518	1.295	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
4.518	7.100	2.582	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
7.100	9.084	1.984	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
9.084	9.500	0.416	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
9.500	10.530	1.030	78.5	68.04	39.5	55.0	15.0	15.0	24.0	30.0
10.530	11.090	0.560	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
11.090	11.419	0.329	72.5	54.51	39.5	55.0	15.0	15.0	18.0	30.0
11.419	11.489	0.070	65.9	41.97	41.9	55.0	15.0	15.0	9.0	30.0
Louie B. Nunn (Cumberland) Parkway (LN 9008): MP 24.092 to MP 34.402										
24.092	27.400	5.043	100.0	100.00	35.0	35.0	30.0	30.0	35.0	35.0
27.400	34.402	8.759	83.0	37.63	18.0	35.0	30.0	30.0	35.0	35.0

Source: KYTC Highway Information Systems (HIS) data, May 3, 2006

Environmental Overview

Alternatives Study for KY 163 from KY 90 to the Louie B. Nunn (Cumberland) Parkway
Metcalfe County, KY
Item No. 3-129.00

Prepared for:

Wilbur Smith Associates, Inc.
465 E High Street, Suite 100
Lexington, KY 40507

Prepared by:

Third Rock Consultants, LLC
2514 Regency Road, Suite 104
Lexington, KY 40503

January 17, 2007
Revised February 12, 2007

Environmental Overview

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January 17, 2007
Revised February 12, 2007

Prepared by:

Virginia Goodman

Reviewed by:

Rebecca Colvin

Table of Contents

Page

1.0 PROJECT DESCRIPTION 1

2.0 ENVIRONMENTAL SETTING 7

3.0 EXISTING CONDITIONS REPORT 7

3.1 Air Quality 7
3.2 Aquatic/Terrestrial Resources 8
3.3 Threatened and Endangered Species 12
3.4 Socioeconomic 14
3.4.1 Land Use 14
3.4.2 Agricultural Activity 17
3.4.3 Transportation 18
3.4.4 Population 20
3.4.5 Local Economy 20
3.4.6 Communities and Community Facilities 24
3.5 Underground Storage Tanks/Hazardous Materials 25

4.0 PUBLIC INVOLVEMENT 27

5.0 SUMMARY OF FINDINGS AND RECOMMENDATION 28

5.1 Air Quality 29
5.2 Aquatic and Terrestrial 29
5.3 Threatened and Endangered Species 29
5.4 Socioeconomic 30
5.5 Underground Storage Tanks/Hazardous Materials 31

6.0 REFERENCES 33

TABLES

TABLE 1 – Unemployment Rates (Percent) 21
TABLE 2 – Employment By Major Industry 21
TABLE 3 – Major Business By Industry – Edmonton 23
TABLE 4 – Commuting Patterns 24

FIGURE

FIGURE 1 – Karst Potential 11

EXHIBITS

EXHIBIT 1 – Study Area 2
EXHIBIT 2 – Environmental Conditions (North) 3
EXHIBIT 3 – Environmental Conditions (South) 4
EXHIBIT 4 – Environmental Conditions (North – Topographic) 5
EXHIBIT 5 – Environmental Conditions (South – Topographic) 6

APPENDICES

APPENDIX A – Agency Species Lists
APPENDIX B – KYTC Design Memorandum No. 12-05, July 27, 2005

1.0 PROJECT DESCRIPTION

Wilbur Smith Associates (WSA) was retained by the Kentucky Transportation Cabinet (KYTC) Planning Division to perform an alternatives study for KY 163 from KY 90 north to the Louis B. Nunn (Cumberland) Parkway at Edmonton in Metcalfe County, Kentucky. The alternatives study includes consideration of a connection (including a possible new interchange) to the Parkway. The identification of possible KY 163 corridors is being undertaken to improve safety and connectivity in Metcalfe County. The Study Area is approximately 8.5 miles long and 2,000 feet to either side of existing KY 163 from KY 90 to the southern boundary of Edmonton, and the width of Edmonton from the Nunn Parkway interchange east to the Industrial Park. The Study Area is shown on Exhibit 1, page 2.

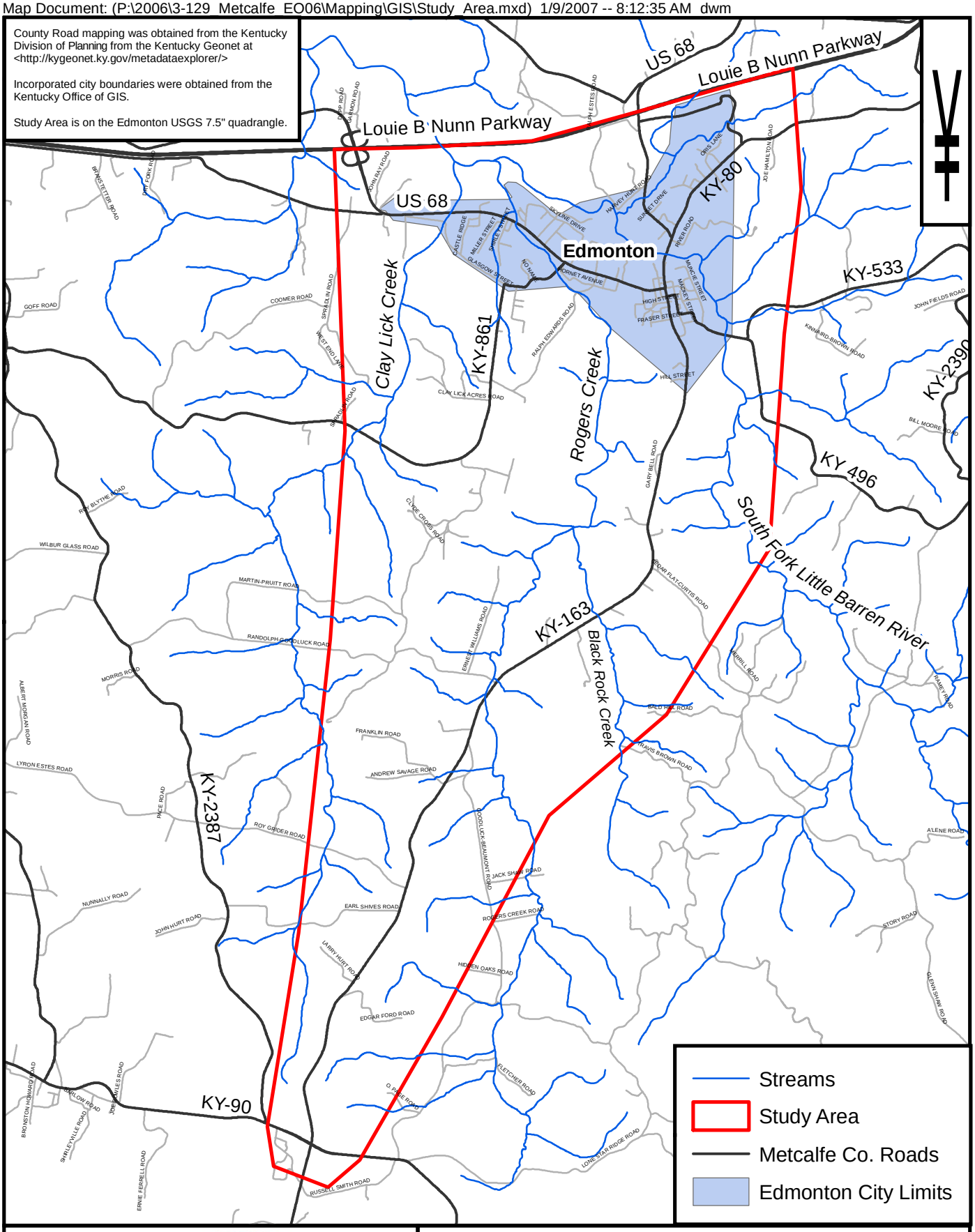
Third Rock Consultants, LLC (Third Rock) was retained by Wilbur Smith Associates to conduct an environmental overview of resources in the Study Area. Analyses were performed for Air Quality, Aquatic and Terrestrial Ecosystems, Socioeconomic (excluding environmental justice), and petroleum Underground Storage Tanks (UST)/Hazardous Materials. In accordance with its scope of work, Third Rock researched available data prior to performing the field reconnaissance. The field reconnaissance both verified existing information and supplemented findings with on-the-ground assessment of resources. Full baseline-level analysis was not performed. This report summarizes the environmental conditions in the Study Area and makes recommendations based upon the studies and findings for possible alternative locations. Areas that contain environmentally sensitive conditions or resources that should be avoided are documented as well. Exhibits of the Study Area documenting environmental conditions are shown on Exhibits 2 through 5, pages 3 through 6.

Map Document: (P:\2006\3-129_Metcalfe_EO06\Mapping\GIS\Study_Area.mxd) 1/9/2007 -- 8:12:35 AM dwm

County Road mapping was obtained from the Kentucky Division of Planning from the Kentucky Geonet at <http://kygeonet.ky.gov/metadataexplorer/>

Incorporated city boundaries were obtained from the Kentucky Office of GIS.

Study Area is on the Edmonton USGS 7.5" quadrangle.



THIRD ROCK CONSULTANTS

Exhibit 1 - Study Area
KY 163 Alternatives Study
Metcalfe County
Item No. 3-129.00

Map Document: (P:\2006\3-129_Metcalfe_EQ06\Mapping\GIS\Socio_Exhibits\EnviroFootprint_North.mxd) 1/9/2007 -- 8:18:31 AM dwm

Daycare
KY-3524
Industrial Park
Louie B Nunn Parkway
LN-9008-131
LN-9008-114
US-68-10
Toll Station
UST Maintanance Garage
Church and Park
Sewage Disposal Pond
Dunham Lake
US 68
KY 80
Fairgrounds
Edmonton
Stockyard
Park
Health Dept.
Park
Clay Lick Creek
KY 861
Rogers Creek
South Fork Little Barren River
KY 533
KY 163
Mobile Home Park
Tree Nursery
KY-496
Tree Nursery
Proposed 38.5 Acre
Industrial Park #2
KY-861

N
W
E
S

- UST Sites
- Solid Waste Site
- Church
- Cemetery
- School
- Water Tank
- Water Well
- Spring
- Landfill
- Oil & Gas Wells
- Water Line
- Sewer Line
- Agricultural District
- Edmonton City Limits
- Industrial Park
- 500 Year Floodplain
- Study Area
- National Wetland Inventory Wetlands
- Stream
- Rural Residential and Agricultural
- Commercial

1 0.5 0 1 Miles

Exhibit 2
Environmental Conditions-North
KY 163 Alternatives Study
Metcalfe County
Item No. 3-129.00

THIRD ROCK CONSULTANTS

Map Document: (P:\2006\3-129_Metcalfe_EO06\Mapping\GIS\Socio_Exhibits\EnviroFootprint_South.mxd) 1/9/2007 -- 8:26:49 AM dwm

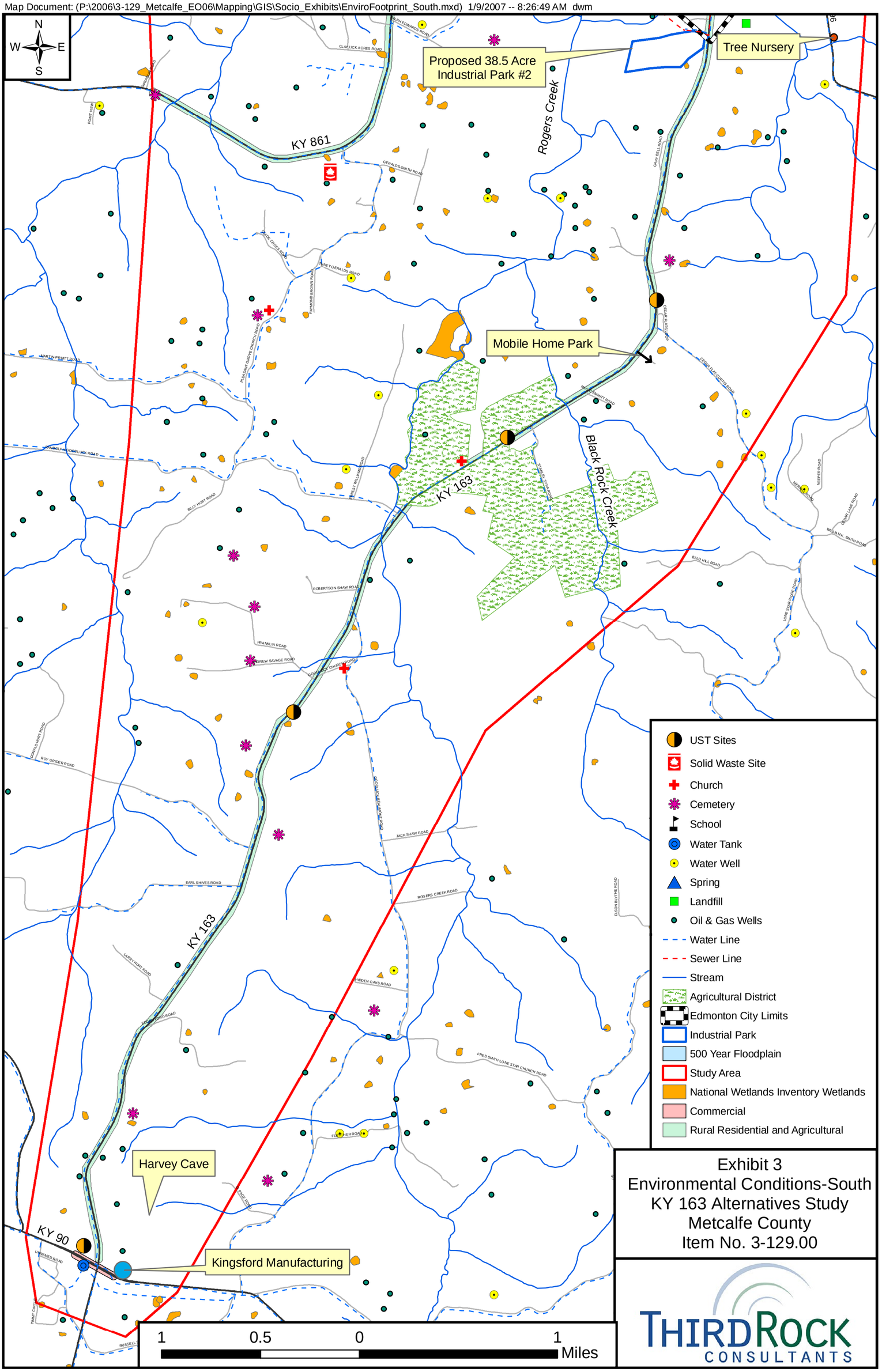


Exhibit 3
Environmental Conditions-South
KY 163 Alternatives Study
Metcalfe County
Item No. 3-129.00

THIRD ROCK CONSULTANTS

Map Document: (P:\2006\3-129_Metcalfe_EQ06\Mapping\GIS\Socio_Exhibits\EnviroFootprint_North(topo).mxd) 1/15/2007 -- 1:54:39 PM dwm

Toll Station

UST Maintanance Garage

Church and Park

Sewage Disposal Pond

Dunham Lake

Daycare

Stockyard

Park

Health Dept.

Park

Mobile Home Park

Tree Nursery

Tree Nursery

Proposed 38.5 Acre Industrial Park #2

- UST Sites
- Solid Waste Site
- Church
- Cemetery
- School
- Water Tank
- Water Well
- Spring
- Landfill
- Oil & Gas Wells
- Water Line
- Sewer Line
- Agricultural District
- Edmonton City Limits
- Industrial Park
- 500 Year Floodplain
- Study Area
- National Wetland Inventory Wetlands
- Stream
- Rural Residential and Agricultural
- Commercial

1 0.5 0 1 Miles

Exhibit 4
Environmental Conditions-North
(Topographic)
KY 163 Alternatives Study
Metcalfe County
Item No. 3-129.00

THIRD ROCK CONSULTANTS

Map Document: (P:\2006\3-129_Metcalfe_EO06\Mapping\GIS\Socio_Exhibits\EnviroFootprint_South(topo).mxd) 1/15/2007 -- 3:54:51 PM dwm

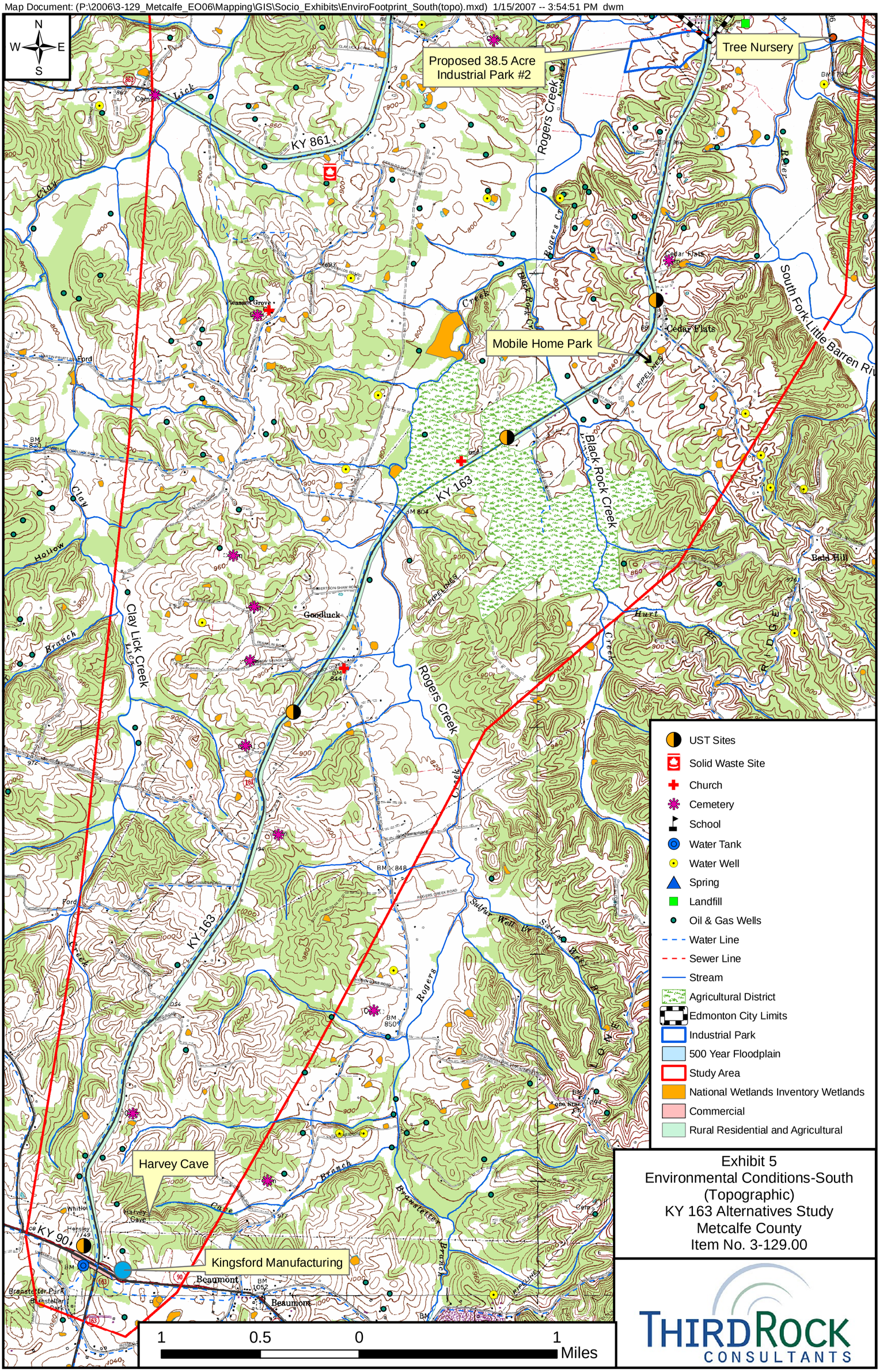


Exhibit 5
Environmental Conditions-South
(Topographic)
KY 163 Alternatives Study
Metcalfe County
Item No. 3-129.00

THIRD ROCK CONSULTANTS

2.0 ENVIRONMENTAL SETTING

Metcalfe County is located in the Pennyrile region of Kentucky, a Mississippian plateau with large areas of karst. The region extends from Land Between the Lakes on the west to the Pottsville Escarpment (running north-south roughly along I-75) to the east. Elevation of the county ranges from 560 feet to 1,120 feet above sea level. The highest point in the county is located along KY 163 just north of KY 90. The county has a land area of 291 square miles and a 2000 census population of 10,037, ranking it 99th of 120 counties. Average population density is 34.5 persons per square mile.

Metcalfe County has cold winters and hot, humid summers. January is typically the coldest month, with average maximum and minimum temperatures of 47.3° F and 26.6° F. July is typically the hottest month, with average maximum and minimum temperatures of 89.9° F and 65.0° F. Average annual precipitation is about 48 inches. The average length of the growing season is 183 days.

Most of the Study Area is in a rural setting. KY 163 traverses ridgetops and crosses the Black Rock Creek and Rogers Creek valleys. The terrain is rolling and mostly open fields. Homes and farmsteads are scattered along the road. East of the Study Area, the terrain becomes steeper and heavily wooded. Timber is harvested from the forests east of Edmonton.

3.0 EXISTING CONDITIONS REPORT

Third Rock performed field reconnaissance for sensitive air quality receptors, aquatic and terrestrial resources, socioeconomic issues, and underground storage tank/hazardous materials concerns.

3.1 Air Quality

A specific air quality study was not performed. A field reconnaissance was conducted on December 20, 2006, to identify sensitive receptors.

Metcalfe County is part of the South Central Kentucky Air Quality Control Region. The county is currently designated in attainment for all transportation-related air pollutants. Alternatives arising from the Planning Study are not anticipated to adversely impact air quality.

The Study Area is located in a predominantly rural area (rolling fields with scattered homes and farmsteads). Sensitive receptors for air pollutants in the Study Area could include outdoor use areas associated with residences, churches and cemeteries, parks, and schools.

Based on the rural nature of the Study Area, it is estimated that current and future concentrations of transportation-related air pollutants will not exceed the National Ambient Air Quality Standards (NAAQS) established by the United States Environmental Protection Agency (US EPA). The emissions of air pollutants arising from any alternative developed from the alternatives study are not expected to have a negative impact on the ambient air quality nor affect the attainment status of Metcalfe County. Because the proposed project is state-funded, it is not listed in the Statewide Transportation Improvement Program, Fiscal Years 2005-2007.

3.2 Aquatic/Terrestrial Resources

A field reconnaissance was performed on December 19, 2006, by a qualified Third Rock biologist.

Four perennial bedrock streams are located in the Study Area: Clay Lick Creek, Black Rock Creek, South Fork Little Barren River, and Rogers Creek (see Exhibits 3 and 5, pages 4 and 6). Although most stretches appear to be channelized, banks are fairly stable with little evident instream erosion. However, all three streams contain substantial evidence of excessive nutrients (*i.e.*, significant amounts of periphyton). South Fork Little Barren River appeared to be the most degraded. Along a 2,000-foot stretch

South Fork Little Barren River Next to Stockyard

within the city limits, this stream receives effluent from the Edmonton wastewater treatment plant and runoff from a medium-sized stockyard. The stream itself has an odor below the stockyard. This section of stream would be a good candidate for remediation of any project-related aquatic resource impacts.

Rogers Creek, North View

Tributary of South Fork Barren River

Numerous ephemeral and intermittent streams are located along the corridor as well. These streams are primarily bedrock, with some having cobble and small boulder substrates.

Springs exist throughout the corridor, however not all appear on the Kentucky Geological Survey (KGS) geographic information system (GIS) data layer. Most hillsides were observed to have seeps or true springs coming out of them, and several springhouses on private property were observed. Springs can be affected by transportation projects, which alter groundwater flow through landscape modification.

Spring Flowing from Harvey Cave

Few natural jurisdictional wetlands were observed. Farm-ponds are abundant throughout the area (shown on National Wetland Inventory [NWI] mapping) but were not commonly jurisdictional (contained no connection to streams). The largest wetland was in the floodplain of Rogers Creek near the crossing of KY 163. However, all that remains of this large wetland are obvious prior converted wetlands. NWI mapping does show natural wetland areas on the west side of Rogers Creek and the west side of Clay Lick Creek just south of US 68-KY 80. Due to the limited scope of the field reconnaissance, these wetlands were not field verified or delineated.

Portions of the Study Area are located in a significant karst region. Karst is evident throughout the landscape surrounding the existing KY 163 corridor as evidenced by the undulating terrain and a known cave near the southern terminus. This cave is known locally as Harvey Cave. The cave was examined approximately 500 feet from the entrance. It was very wet, with a significant spring flowing from the cave and from the adjacent draw. In conversation with local residents, it was reported that there are hieroglyphs somewhere in the cave on the walls. None were observed. However, this suggests that there is potential for archaeological findings elsewhere throughout the Study Area.

Harvey Cave, North Entrance

Flow Stone within Harvey Cave

Kentucky Geological Survey geologic mapping indicates potential for karst features to range from intense to non-karst (see Figure 1 below). Karst potential and documented sinkholes are highest at the northern and southern boundaries of the Study Area. The most karst features occur near Harvey Cave and west of KY 163 near KY 90.

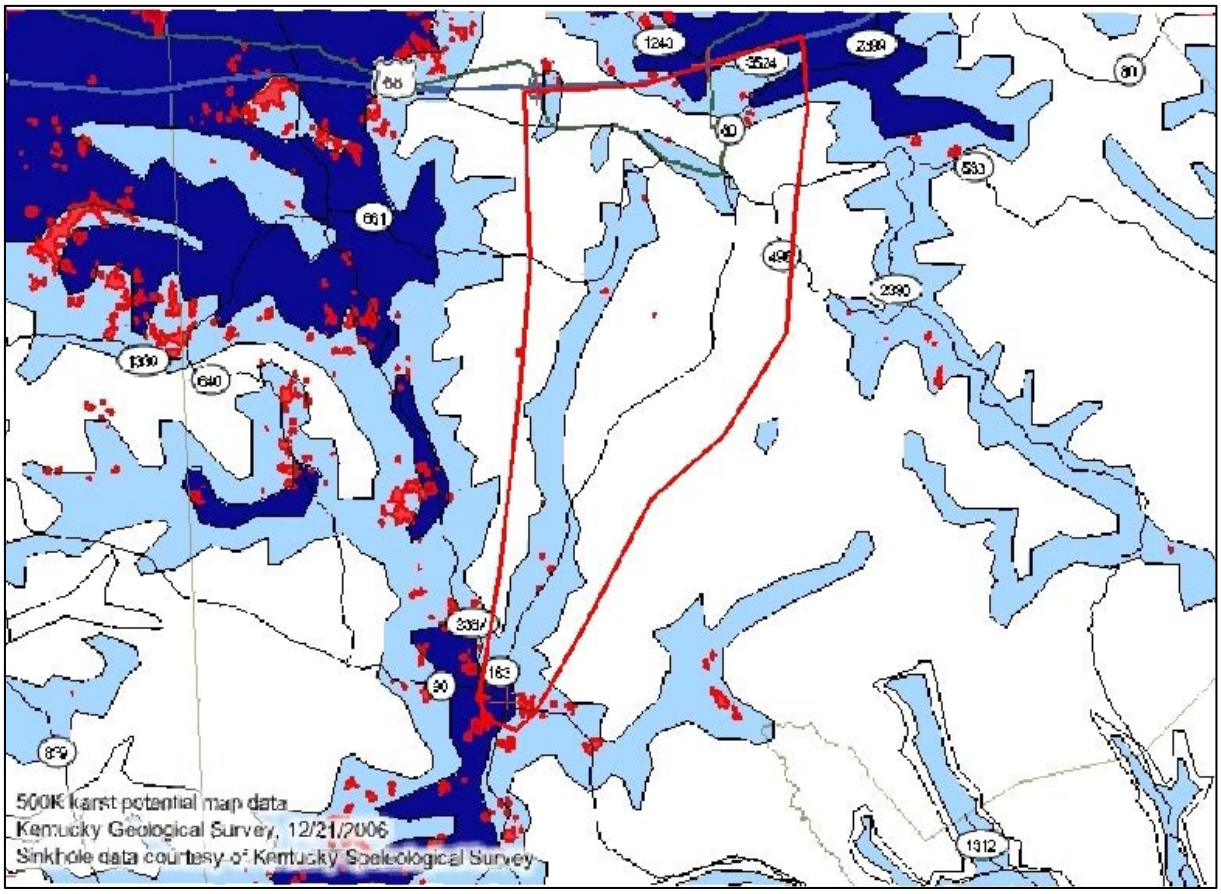


FIGURE 1 – KARST POTENTIAL

In the above figure, dark blue represents intense karst potential, light blue indicates the area is prone to karst features, and white is non-karst. The red line indicates the Study Area and red points indicate sinkholes. Thus, a significant amount of the Study Area contains little or no karst potential.

3.3 Threatened and Endangered Species

The U.S. Fish & Wildlife Service (USFWS) in 2005 listed gray bat (*Myotis grisescens*) as a federally endangered species known to occur in Metcalfe County. Indiana bat (*M. sodalis*) was listed as potentially occurring in the county. The Kentucky State Nature Preserves Commission and Kentucky Department of Fish & Wildlife Resources concurred with the gray bat listing. Eggert's sunflower (*Helianthus eggertii*) was also listed by USFWS; however, this species was delisted effective September 19, 2005. Agency species listings are contained in Appendix A.

The gray bat formally attained endangered species status on April 28, 1976. A recovery plan was approved July 8, 1982. It is the largest species of *Myotis* found in the eastern United States. Its historical North American range includes the cave regions of the central and south central United States. Within Kentucky, the species is most common in the cave region of the south central portion of the state.

Gray bats occupy caves or cave-like habitats throughout the year and tend to use the same caves each year. Beginning in March, females migrate from cold (42 to 52° F) hibernacula and enter warm caves (57 to 77° F) that have deep vertical passages with large rooms and associated stream systems. Such habitats are typically in close proximity to rivers or reservoirs where the bats forage for aquatic insects. Summer maternity colonies contain a few hundred to many thousands of pregnant females. Adult males and juveniles use other caves during the summer that are in close proximity to maternity caves. Mating begins in September as females migrate back to winter hibernacula, followed by males and juveniles. Most gray bats have begun to hibernate by November.

Major reasons for the decline in gray bat populations include channelization of streams, impoundment of waterways and flooding of adjacent hibernacula and/or nursery sites. Deforestation, application of insecticides, destruction or improper gating of caves, commercialization of caves, and vandalism are also contributing factors of the decline in the gray bat populations (Slone and Wethington 2001; USFWS, TESS 2004).

The Indiana bat formally attained endangered species status on March 11, 1967 (USFWS 1999). A recovery plan was approved March 1, 1999. The historic range for this species consisted of the central and southeastern United States. Within Kentucky, two caves, Bat Cave in Carter County and Coach Cave in Edmonson County, have been designated as critical habitat for the species (USFWS 1976).

Indiana bats hibernate during the winter months in large, cool caves (hibernacula) where they form tight clusters containing hundreds of individuals. Each spring, the females emerge from these hibernacula and migrate to summer (maternity) habitat consisting of hardwood forests. Maternity colonies are formed in these areas under the exfoliating bark of dead trees or loose bark of living trees. The migration of males is variable. Some males do not migrate, others migrate only a short distance to smaller, warmer caves, and others migrate to the same habitat as females.

Major reasons for the decline in Indiana bat populations include channelization of streams, impoundment of waterways and associated flooding of bottomland forests, deforestation, application of insecticides, destruction or improper gating of winter habitat (*e.g.*, mines, cisterns, and caves), commercialization of caves, and vandalism of cave habitat (Barbour and Davis 1974; USFWS 1999, 2004; Slone and Wethington 2001).

Summer bat habitat for the Indiana bat is plentiful near the Study Area. The forests contain significant amounts of mature hardwoods with exfoliating bark, especially near the Industrial Park just south of the Louis B. Nunn Parkway. The proximity of streams provides good foraging corridors for both species of bats. Roosting habitat for gray bat and winter hibernating habitat for Indiana bat is potentially present in the Study Area due to karst features. Because of its very wet environment, however, Harvey Cave does not represent suitable roosting or hibernating habitat for gray or Indiana bat.

Indiana Bat Habitat Near KY 90

3.4 Socioeconomic

A field reconnaissance was conducted on December 20, 2006, by a qualified Third Rock socioeconomist.

3.4.1 Land Use

According to the Edmonton city clerk's office, no planning or zoning exists for either the city or the county. However, Metcalfe County has been exploring such options.

The northwestern-most portion of the Study Area begins at the US 68/KY 80 and Louie B. Nunn Parkway interchange (see Exhibits 2 and 4, pages 3 and 5). Less than a mile to the south along the US 68/KY 80 roadway, the project quickly becomes a "strip development" serving the city of Edmonton. US 68/KY 80 from approximately Demumbrum Lane into the city center is dominated by retail shops, gas stations, restaurants, churches, and public facilities (*e.g.*, two schools, health department, park, fairgrounds). Limited residential use exists near the fairgrounds.

Strip Development Along US 68-KY 80

US 68 West of City Center Near Fairground Entrance

In the city center, the expected facilities are found. These include such facilities as the justice center, historic courthouse, city police, water company, a funeral home, churches, and various small shops and businesses along with a limited numbers of restaurants.

US 68 and KY 80 proceed north of the city center and diverge approximately one-half mile from the center of Edmonton. Where the two roads continue to run together, the land use is still consistent with a small town and includes a small park, a stockyard, an auto repair shop and gas station. After the two roadways diverge, KY 80 quickly becomes a rural residential area with some agricultural activity associated with these homes. One apartment complex does exist along Tree Top Drive.

Near the northeastern-most portion of the Study Area, KY 80 provides access to an existing industrial park. KY 3524 serves the park. The industrial park includes such manufacturers as Carhartt Inc., Sumimoto Electric Wiring Systems, and Sumitomo Electric (Wintec America, Inc.). A daycare facility is also located within the industrial park presumably in support of the industrial facility workers and their families. At its western edge, the industrial park has its main entrance, which connects to US 68.

US 68 from the Louie B. Nunn Parkway south is somewhat steep, forested terrain until near Dunham Lake. Dunham is a currently a recreational use lake but was formerly a public water supply for the community (water is now provided by Barren River Lake). The area between Sunset Drive and the KY 80 intersection is residential with commercial facilities being located near the intersection of US 68 and KY 80.

Stockyard

US 68, South View Near Nunn Parkway

KY 496 and KY 533 comprise the main roadways southeast of the city center. From the edge of the city of Edmonton to the crossing of the South Fork Little Barren River, the area is still in

commercial development. A mobile home park is located along Scott Drive. From the South Fork Little Barren River crossing to the eastern edge of the Study Area, KY 496 is open bottomland. Two tree nurseries exist along this stretch of KY 496. Public reports are that several lumberyards exist along KY 496 and KY 533, although the field reconnaissance indicated that none of the facilities are within the Study Area boundary. KY 533 to the eastern border of the Study Area is rural residential with some agricultural activity.

KY 163 is the main roadway serving north/south travel between Edmonton and KY 90. Just beyond KY 90 is the southernmost boundary of the Study Area. KY 163 upon leaving Edmonton is quickly dominated by rural residential and agricultural activity. Agricultural activity is primarily pastureland for cattle. Churches and cemeteries are also found along the roadway. Roads intersecting KY 163 are fairly frequent but for the most part do not connect to other north/south roadways. The topography east and west of KY 163 is generally bounded by north/south ridgelines that often cause the intersecting roadways to stop at these ridgelines. At the KY 90 intersection, commercial and industrial activity resumes. A gas station, a sizable lumberyard, a tack shop, and large manufacturing facility (Kingsford Manufacturing) all exist at or close to this intersection.

KY 163 South of Edmonton

One other roadway in the Study Area runs in a general north/south direction before turning due west to intersect the western boundary of the Study Area. KY 861 runs south out of Edmonton from US 68/KY 80. Metcalfe County High School exists at the intersection of KY 861 and US 68/KY 80. Edmonton Memorial Park and a small residential subdivision, Bridgeview Heights, are just beyond the school. After turning due south, KY 861 becomes rural residential

Edmonton Memorial Park

with more sizable agricultural activity. For example, a very well kept dairy farm exists along the route. Until the western edge of the Study Area, KY 861 is dominated by residential and agricultural activity. At least one church and cemetery exist along the roadway as well.

3.4.2 Agricultural Activity

As noted in the *Land Use* section, considerable portions of the Study Area are comprised of rural residential and agricultural activities. Although farming operations with significant on-site investments are not evident as a result of the field reconnaissance, much of the Study Area, particularly to the south and southwest of Edmonton, indicates that farming is a prevalent activity and source of income for many residents. KY 163 and KY 861 in particular show such evidence of farming activity.

Farming is a prevalent activity in Metcalfe County as a whole. According to the 2002 Census of Agriculture, in Metcalfe County, nearly 132,000 acres are farmed in Metcalfe County with over 55 percent of land being cropland followed by nearly 30 percent woodland, 11 percent pasture, and 4 percent other uses. From 1997 to 2002, the number of farms dropped by 7 percent from 1,018 farms to 950. The average size of farms increased approximately 5 percent from 133 acres in 1997 to 139 acres in 2002. The 2002 average size farm in Metcalfe County was slightly smaller than the state average of 160 acres. The trend toward fewer farms but larger farms is consistent with the state, however.

In terms of the total value of agricultural products sold, Metcalfe County ranks 38th out of Kentucky's 120 counties. The market value of production increased by 18 percent between 1997 and 2002, from just over $25 million to nearly $30 million. In value of sales by commodity group, the County ranks 3rd in the state in milk and other dairy products from cows. By number of livestock inventory items, Metcalfe County ranks 17th in the state in broilers and other meat-type chickens. The County's inventory of broilers and other chickens is 744,000.

Metcalfe County has one agricultural district located in the Study Area. Kentucky's Agricultural District and Conservation Act (KRS 262.850), allows a landowner or a group of landowners

who own at least 250 contiguous acres in active agricultural production to petition their local conservation district to form an agricultural district. Agricultural district standing provides the following benefits to landowners:

- Land enrolled cannot be annexed. If land enrolled in an agricultural district is condemned by a state agency, the agency must mitigate the impact on the conversion of that land to non-farm uses.
- Land enrolled is eligible for differential assessment by the local Property Valuation Administrator.
- Deferment of paying the assessed cost against their land for the extension of water lines across their property, as long as the land remains enrolled in the program.
- Higher ranking when applying for state cost share assistance.
- Higher ranking in the application review process for the Purchase of Agricultural Conservation Easements Program (PACE).

The county's one agricultural district is located on both sides of KY 163 just south of Black Rock Creek. The district is 473 acres total and is shown on Exhibits 3 and 5, pages 4 and 6.

Online data for prime farmland soils and soils of statewide importance are not available. The U.S. Department of Agriculture Soil Survey for Metcalfe County was reviewed to determine soil types in the Study Area. Most of the Study Area except for a small area near Cedar Flat and Black Rock Creek contains soils of the Baxter-Crider-Clarksville association. These soils are typically associated with nearly level to moderately steep, well drained terrain. Small amounts of Huntington and Lindside soils may be found along the stream banks. These soils are highly fertile and deep. Upon development of alternatives, further consultation with the District Conservationist will determine the amount of prime and statewide important farmland of concern related to such alternative(s).

3.4.3 Transportation

Major transportation routes through the Study Area are limited. However, three of these roadways are significant travel corridors for Metcalfe County and areas well beyond. Those

routes include the Louie B. Nunn Parkway, US 68/KY 80, and KY 163. The Louie B. Nunn Parkway is a major east/west route connecting Somerset, to the east, to near Bowling Green, to the west. The Parkway is also part of the route proposed for future use as the I-66 corridor.

US 68 and KY 80 are also significant east/west routes serving Metcalfe County and the city of Edmonton. US 68 and KY 80, which run together across most of the Study Area, serve as the main route through Edmonton. This route is often congested with truck traffic and is a major traffic consideration within the city. KY 80 runs the entire east/west distance of the state. US 68 extends across the entire state as well, but in Edmonton turns to the northeast to span the entire state in a northeasterly direction.

KY 163 is the major north/south route through the county. At its northernmost point, KY 163 begins in Edmonton and extends to the south through Monroe County to its end at the Tennessee border.

South of Edmonton to KY 90, major east/west routes are lacking. As noted previously, ridgelines and general topography considerations have limited such east/west options. Two roads do extend out of Edmonton in a general east/west direction. These include KY 533 and KY 496. These routes are traffic generators for the City of Edmonton due to the prominence of lumberyards located beyond the Study Area boundaries. Lumber hauling trucks use these routes to gain access to markets accessed via the parkway. South of Edmonton, along KY 163, east/west routes consist of county roads until reaching KY 90. KY 90 begins to the west at Cave City and extends in an easterly direction to its end south of Somerset.

Most truck traffic is generated north and east of the city from the industrial park and the lumberyards. Because there is no alternative route around Edmonton, these trucks are all funneled through the US 68/KY 163 intersection in Edmonton to reach the parkway or KY 90. The large multi-axle trucks create significant congestion throughout the day within the community.

3.4.4 Population

The Study Area falls within portions of two of the three 2000 census tract boundaries for Metcalfe County: Census Tract 9602 and Census Tract 9603. Total population for the county is 10,037; population for the city is 1,586. Because the county's census tract populations are fairly evenly distributed accounting for the fact that the City of Edmonton is within one of the census tract boundaries, data provided below is for the county, and state as appropriate, rather than by census tract. No comparative data presented below was available for the city.

Metcalfe County grew at a rate slightly above that of Kentucky. Total population increased from 1990 to 2000 by 12.0 percent. Kentucky during that same time grew by 9.7 percent. The County, however, is projected to grow at a lesser rate than the state between 2000 and 2030. Metcalfe County's population is projected to increase 16.7 percent while the state's population is projected to increase 21.5 percent.

Median age of Metcalfe County's population in 2000 was slightly higher than that of the state. For the county, median age was 37.7 years compared to 35.9 years for the state. Educational attainment was somewhat lower for the county as compared to the state. For the county, 58.0 percent of persons 25 years of age and over had a high school diploma or higher; for the state, the percent of persons was 74.1 percent. Similarly, 6.6 percent of the county's residents ages 25 and over had a bachelor's degree or higher, while that percent for the state was 17.1 percent.

3.4.5 Local Economy

Metcalfe County had a slightly lower rate of unemployment in 2005 compared to the rest of the state. The County's rate was 5.7 percent while the state was at 6.3 percent. The U.S. as a whole was 5.1 percent. The county's rate of unemployment has remained relatively stable since 2001 (within 0.6 percent) while the state's rate has risen by nearly 1 percent. Table 1 below shows unemployment rates for the county, state, and country, between 2001 and 2005.

TABLE 1 – UNEMPLOYMENT RATES (PERCENT)

	Metcalfe County	Kentucky	U.S.
2001	5.2	5.2	4.7
2002	5.1	5.7	5.8
2003	5.4	6.2	6.0
2004	4.6	5.5	5.5
2005	5.7	6.1	5.1

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Employment by major industry in 2004 is shown in Table 2. Manufacturing at nearly 41 percent by far exceeds all other categories.

TABLE 2 – EMPLOYMENT BY MAJOR INDUSTRY

	Metcalfe County	
	Employment	Percent
All Industries	2,243*	100.0
Agriculture, Forestry, Fishing and Hunting	N/A	N/A
Mining	18	0.8
Construction	11	0.5
Manufacturing	908	40.5
Trade, Transportation, and Utilities	352	15.7
Information	20	0.9
Financial Activities	74	3.3
Services	121	5.4
Public Administration	78	3.5
Other	0	0.0

*Includes only those persons living in Metcalfe County.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Agricultural employment listed in Table 2 ("N/A" representing a reported value of zero employees) is based upon the U.S. Department of Labor, Bureau of Labor Statistics (BLS) reporting standards. BLS uses the North American Industry Classification System (NAICS) Code #11 for defining agriculture, forestry and hunting. From the NAICS website:

> The U.S. Census Bureau assigns one NAICS code to each establishment based on its primary activity (the activity that generates the most revenue for the establishment) to collect, tabulate, analyze, and disseminate statistical data describing the economy of the United States. Generally, the U.S. Census Bureau's NAICS classification codes are derived from information that the business establishment provided on administrative, survey, or census reports. (*e.g.* when a company applies for an Employer Identification Number (EIN), information about the type of activity in which that business is engaged is requested in order to assign a NAICS code).

However, U.S. census data is self-reporting. Further, BLS does not clearly identify if zero indicates non-disclosure or truly means zero – which could also account for the lack of numbers coming from any lumber mills. Thus, while it is known that farming and forestry (lumberyard) operations exist in the county, at present no data is available that compiles the exact numbers of those employed in these occupations.

The major industries for Edmonton are shown in Table 3. Three of these industries are located within the Industrial Park (Carhartt Inc., Sumimoto Electric (Wintec America), and Sumimoto Electric Wiring Systems) near the northeastern edge of the Study Area. Metcalfe County and Edmonton are also pursuing additional industrial activities by the development of the Proposed Industrial Park #2 south of Edmonton along KY 163.

TABLE 3 – MAJOR BUSINESS BY INDUSTRY – EDMONTON

Firm	Product(s)/Service(s)	No. of Employees	Year Established
Carhartt, Inc.	Men's work clothing	115	1989
Rondal Phelps Lumber Co., Inc.	Millwork, sawing, rough & hardwood lumber	20	1975
Sumitomo Electric Wintec America, Inc.	Magnet wire products	104	1989
Sumitomo Electric Wiring Systems, Inc.	ECU and fuse boxes	540	1988
Topps Safety Apparel, Inc.	Men's work clothes & uniforms; ladies' blouses & slacks (safety clothing)	72	1953

Source: Kentucky Cabinet for Economic Development

The Edmonton stockyard operates two days a week (Monday and Tuesday) and attracts farmers and livestock dealers from a wide area. The stockyard is an important resource supporting local and area farmers.

Table 4 on the following page shows commuting patterns in 2000 for residents of Metcalfe County and for employees in the county. The number of persons residing in Metcalfe County and working in the county as compared to those commuting outside the county is fairly evenly divided. Of employees in the county, far greater percentages are from within the county as opposed to those commuting into Metcalfe County.

TABLE 4 – COMMUTING PATTERNS

Residents of Metcalfe County	**2000**	**Percent**
Working and Residing In County	2,206	53.9
Commuting Out of County	1,888	46.1
Total Residents	4,094	100.0
Employees in Metcalfe County		
Working and Residing In County	2,206	71.9
Commuting Into County	864	28.1
Total Employees	3,070*	100.0

*Includes those living in Metcalfe County plus those commuting into Metcalfe County.
Source: U.S. Department of Commerce, Bureau of the Census, Journey-To-Work & Migration Statistics Branch.

3.4.6 Communities and Community Facilities

Several community facilities are located within the Study Area. Most facilities are centered around or within the City of Edmonton. These facilities include parks, schools, churches, cemeteries, public and governmental services, and physician offices. Specifically, three schools are located within the Study Area. They include Metcalfe Elementary and Middle Schools along US 68/KY 80 and Metcalfe County High School along KY 1861. Three recreational parks are also located in the Study Area and are centered around Edmonton. The parks include Bowling Park along US 68/KY 80 near the western edge of the Study Area, Edmonton Memorial Park near the High School, and Pedigo Spring Park just north of the city center.

Pedigo Spring Park Sign

Bowling Park

Areas beyond the city have the expected occasional church and/or cemetery mixed in with the rural residential and agricultural uses. No other types of community facilities other than these churches or cemeteries were observed in areas beyond the city.

The field reconnaissance revealed that other than Edmonton, traditional communities are not evident throughout much of the Study Area. Other than homes within or near the city center, only one subdivision area was noted. This small subdivision, Bridgeview Heights, is located along KY 861 near the Edmonton Memorial Park. One mobile home community was noted to the south of the city along KY 163 and another was noted at the eastern edge of the city off KY 496. One apartment complex was located north of the city along Tree Top Drive. The rural residential nature of much of the Study Area indicates that the "communities" located therein likely consist of the homes located along the main roadways in the Study Area.

3.5 Underground Storage Tanks/Hazardous Materials

A site reconnaissance was conducted on December 20, 2006, by a qualified subject matter expert. The site reconnaissance was to identify underground storage tank (UST) and hazardous materials issues along the major roadways in the Study Area.

The UST and hazardous materials concerns for this project are typical, with active and potentially abandoned UST sites along all the major collectors. A database search was completed through Environmental Data Resources, Inc. (EDR) for the northern portion of the project, primarily the developed area around Edmonton and the Cumberland Parkway. A total of 19 records were identified in the database search for the area. These records were part of three federal databases and two Commonwealth of Kentucky databases as summarized below.

(RCRA LQG) Large Quantity Hazardous Waste Generators 1 Site
- Sumitomo Electric - 909 Industrial Dr.

(RCRA SQG) Small Quantity Hazardous Waste Generators 3 Sites
- Wendell Stephens Property - 904 W. Stockton St.
- Danny's Auto Service - 302 Stockton St.
- Sumitomo Electric - 687 Industrial Dr.

(FINDS) Facility Index System — 2 Sites
- Wendell Stephens Property - 904 W Stockton St.
- Metcalfe County High School - 208 Randolph St.

(SB-193) Kentucky Leaking UST — 1 Site
- Edmonton 66 - 501 Stockton St.

(UST) Kentucky UST Registration — 12 Sites
- Quick Shop Market No. 2 - 1010 W. Stockton St.
- Wendell Stephens Property - 904 W. Stockton St.
- Edmonton C B Fuel Center - 1421 W. Stockton St.
- Metcalfe County High School - 208 Randolph St.
- Phillips 66 - 501 Stockton St.
- Jr Food Store No 809 - 423 W. Stockton St.
- K & S Tax Service - 306 W. Stockton St.
- Expressway Food Mart - 400 N. Main St.
- Edmonton Central Office - Hamilton & Rogers Sts.
- Edmonton BP - 200 W. Stockton St.
- Dannys Auto Repair - 302 Stockton St.
- Georges Restaurant - Stockton & East Sts.

Marathon Station Along KY 80

BP Station Along US 68

The sites are shown on Exhibits 2 and 4, pages 3 and 5. As is evident from the listing above, the most concentrated numbers of registered USTs occur along West Stockton Street (US 68).

An additional 20 sites were identified as "orphan" sites that did not have sufficient geographic information to allow them to be plotted. Most of these sites were located along "HWY 163" or

"HWY 68 & 80". A review of the list indicates that most of the 20 orphan sites are located in the Study Area.

The developed area around Edmonton exhibits frequent convenience store gas stations, closed country stores, and automotive repair businesses. Some of these facilities have active and closed or abandoned USTs. The locations of the facilities identified in the field reconnaissance are shown on Exhibits 2 through 5 (pages 3 through 6).

Hazardous material and waste activities associated with industrial activities in the Study Area are generally limited to the industrial park near US 68 and the Nunn Parkway and the Kingsford charcoal manufacturing plant at KY 90. According to oil and gas well records, there are a substantial number of wells in Metcalfe County. A few active wells were observed near the intersection of Glasgow Street and KY 861.

Currently, solid waste from Metcalfe County is trucked to the Glasgow Regional Landfill in Barren County. This landfill accepts waste from the 14 surrounding counties. Most communities have a historic solid waste disposal site or landfill in relatively close proximity to the town. Three such landfills are noted near Edmonton (see Exhibits 2 and 4, pages 3 and 5). If a project is developed that impacts them, Phase I, and possibly Phase II, site assessments should be performed to ensure that the landfills do not contain hazardous materials.

Oil and gas wells should be expected to occur along any new route. Most of the oil and gas wells shown in the Kentucky Geological Survey records are not active or identifiable in the field. As indicated in the records, many of these wells are dry and abandoned and may be hidden below grade. Encountering improperly closed or abandoned wells during construction of a new facility in this area is certainly possible.

4.0 PUBLIC INVOLVEMENT

A public meeting was held at the Metcalfe County High School in Edmonton December 14, 2006, from 4:00 to 6:00 p.m., Central Standard Time. The meeting was announced by an article

dated December 10, 2006, in *The Light*, the Metcalfe County Sunday newspaper, as well as by variable message board on KY 80. Representatives from the Kentucky Transportation Cabinet, District 3, as well as project consultants attended to answer questions. Exhibits of the Study Area and potential environmental areas of concern were presented around the room. The meeting opened with a PowerPoint® presentation from the KYTC District 3 project manager. After the presentation, questions were taken, and attendees were free to view the exhibits and talk with the agency representatives and consultants present.

From comments received, the public favors spot improvements to KY 163 south of Edmonton and relief of truck traffic in downtown Edmonton. There are three locations along KY 163 that are of concern: a south-bound hill down to Rogers Creek and tributary with associated bridges, an S-curve south of Rogers Creek, and a steep downgrade to KY 90 at the Study Area's southern terminus. All the bridges along KY 163 are very narrow, and the consensus was that they all needed to be replaced.

In Edmonton, a single intersection on the courthouse square collects all traffic from KY 163, KY 80, and US 68. Nearly all multi-axle truck traffic comes from the north and east, thus must come through the center of town. Trucks come from lumber operations, the industrial park, a freight contractor, and the stockyard. The residents indicated that some type of bypass might relieve congestion and re-route truck traffic from the community. The residents were not unanimous whether this should be an eastern or a western bypass. It was also suggested that a new interchange could be constructed at US 68 near the industrial park, but another location was also suggested further east.

5.0 SUMMARY OF FINDINGS AND RECOMMENDATION

Overall, environmental concerns for the proposed project are typical for a rural community in karst terrain. No significant environmental concerns were noted.

5.1 Air Quality

Alternatives arising from the Planning Study are not anticipated to have a negative cumulative impact on air quality. The project will have a positive impact on air quality in central Edmonton if a bypass alternative is developed.

5.2 Aquatic and Terrestrial

Impacts to aquatic resources are likely for any proposed alternative. Bypass alternatives will cross South Fork Little Barren River or Rogers Creek. Improvements to bridges across Black Rock Creek, Rogers Creek and its tributary may create temporary stream (and possibly wetland) impacts and may require U.S. Army Corps of Engineers Section 404 and Kentucky Division of Water Section 401 permits. South Fork Little Barren River below the stockyard represents an attractive site for stream restoration and wetland impact mitigation. Springs and wells are plentiful in the corridor and should be identified upon selection of proposed alternatives. If any of the wetlands are impacted by a proposed roadway project, they should be delineated.

The Study Area lies within an active karst area. The Kentucky Transportation Cabinet, Division of Environmental Analysis has issued a Policy Paper (Design Memorandum No. 12-05, July 27, 2005), which states that best management practices (BMPs) for karst and significant resource areas must be followed. A copy of this Policy Paper is attached as Appendix B. These BMPs are intended to improve long-term water quality and to protect endangered species such as Indiana and gray bats.

5.3 Threatened and Endangered Species

Roosting and foraging habitat for the Indiana and gray bat is present along and near the Study Area. To comply with Section 7 of the Endangered Species Act for Indiana bat, potential impacts to Indiana bat or its habitat may be addressed in one of three ways: (i) a biological assessment may be conducted, (ii) tree cutting may be restricted to the period between Oct. 15 and March 31, or (iii) KYTC may pay for the acquisition of any summer maternity habitat (roost trees) under its Programmatic Biological Opinion Agreement with USFWS. Roosting habitat for gray

bat and hibernating habitat for Indiana bat may be present due to the extensive karst features in the county. Upon development of alternatives, closer examination of the area will determine if any caves or sinkholes are present that meet the species' requirement for roosting and/or hibernating.

5.4 Socioeconomic

Edmonton contains three parks: Bowling Park, Edmonton Memorial Park, and Pedigo Spring Park. Impact to any of these parks would invoke Section 4(f) under the Department of Transportation Act of 1966 (re-codified in 1983) (49 USC 1653(f)). A Section 4(f) property may be a publicly owned park, wildlife management area, historic structure, historic district, or archaeological site. Approval of a transportation project that requires use of a Section 4(f) property is contingent upon the conditions that (i) there is no prudent or feasible alternative to using that land and (ii) all possible measures have been taken to minimize harm to that property as a result of the project. "Use" of a Section 4(f) property occurs (i) when land from a Section 4(f) site is permanently incorporated into a transportation facility, (ii) when there is an temporary occupancy of land that is adverse in terms of the statute's preservationist purposes, or (iii) when the proximity impact of the transportation project on the Section 4(f) site, without acquisition of land, substantially impairs the activities, features, or attributes of an adjacent Section 4(f) protected resource (constructive use). (Section 4(f) Policy Paper, FHWA, March 1, 2005).

In 2005, Section 4(f) was amended in Section 138 of Title 23 and Section 303 of Title 49, United States Code. The amendment provides for a simplification of the process and approval of projects that have only *de minimis* impacts on lands impacted by Section 4(f). *De minimis* impacts are defined as those impacts that do not adversely affect the activities, features and attributes that quality the resource for protection under Section 4(f). Agencies with jurisdiction over the property as well as the public will be informed and given the opportunity to review and comment on the effects of the proposed project. A favorable *de minimus* ruling would preclude an alternatives analysis and would complete the Section 4(f) evaluation process in a shorter time

period. For the present project, if minimal acreage is acquired from any of the parks, a *de minimis* ruling may be possible.

An agricultural district of 473 acres is located along KY 163 south of Edmonton at Black Rock Creek. Impacts to the agricultural district should be minimized if possible. Agricultural districts are created because they are intended to preserve Kentucky's farmlands and protect to a certain degree against annexation. If land enrolled in an agricultural district is condemned by a state agency, the agency must mitigate the impact on the conversion of that land to non-farm (*e.g.*, highway right-of-way) uses. The form of mitigation is not specified, and historically has been the same as for any other land acquisition in accordance with the Kentucky Transportation Cabinet's Division of Right-of-Way and Utilities' policies and procedures. Additionally, if an agency wishes to acquire land that is enrolled in an agricultural district, the property owner may request a public hearing by the local soil and water conservation district board of supervisors prior to such acquisition. This right of public hearing does not apply to utilities as defined by KRS 278.080(3) and if they have obtained a certificate of convenience and necessity as required by KRS 278.020(1).

5.5 Underground Storage Tanks/Hazardous Materials

Encountering UST facilities can be expected along any of the existing right-of-ways. An evaluation of each facility's status should be completed if approached or taken by an alternative. Phase I and Phase II site assessments, if appropriate, should be conducted prior to right-of-way acquisition.

Oil and gas wells should be expected to occur along any new route. Encountering improperly closed or abandoned wells during construction of a new facility in this area is possible. Identification of all wells should be undertaken upon selection of possible alternatives.

Upon development of any alignment, the disturbance limits of the three old waste sites should be examined to determine if any historical landfills are within the footprint of any proposed

roadway. If an alternative is developed that impacts them, Phase I and possibly Phase II site assessments should be performed to ensure that they do not contain hazardous materials.

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APPENDICES

APPENDIX A – AGENCY SPECIES LISTS

U.S. Fish & Wildlife Service
Kentucky Ecological Services Field Office

U.S. Fish & Wildlife Service
3761 Georgetown Rd.
Frankfort, KY 40601
Phone: 502-695-0468
Fax: 502-695-1024

Endangered, Threatened, & Candidate Species in _____METCALFE_____ County, KY

Group	Species	Common name	Legal* Status	Known** Potential	Special Comments
Mammals	*Myotis grisescens*	gray bat	E	K	
	Myotis sodalis	Indiana bat	E	P	
Plants	*Helianthus eggertii*	Eggert's sunflower	T	K	delisted 9/19/05

NOTES:

* Key to notations: E = Endangered, T = Threatened, C = Candidate, CH = Critical Habitat

**Key to notations: K = Known occurrence record within the county, P = Potential for the species to occur within the county based upon historic range, proximity to known occurrence records, biological, and physiographic characteristics.

METCALFE COUNTY REPORT
OF
ENDANGERED, THREATENED, AND SPECIAL CONCERN
PLANTS, ANIMALS, AND NATURAL COMMUNITIES
OF
KENTUCKY

KENTUCKY STATE NATURE
PRESERVES COMMISSION
801 SCHENKEL LANE
FRANKFORT, KY 40601
(502) 573-2886 (phone)
(502) 573-2355 (fax)

www.naturepreserves.ky.gov

Data Current as of February 2006

Kentucky State Nature Preserves Commission
Key for County List Report

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

STATUS

KSNPC: Kentucky State Nature Preserves Commission status:
N or blank = none E = endangered T = threatened S = special concern H = historic X = extirpated

USESA: U.S. Fish and Wildlife Service status:
blank = none C = candidate LT = listed as threatened LE = listed as endangered
SOMC = Species of Management Concern

RANKS

GRANK: Estimate of element abundance on a global scale:

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

SRANK: Estimate of element abundance in Kentucky:

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

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

COUNT DATA FIELDS

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

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

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

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

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

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

County	Taxonomic Group	Scientific name	Common name	Statuses	Ranks	# of Occurrences				
Habitat						E	H	F	X	U
Metcalfe	Vascular Plants	*Helianthus eggertii*	Eggert's Sunflower	T /	G3 / S2	1	0	0	0	0
Open oak hickory forest on the highland rim in KY; rocky hills and barrens and roadside remnants of this habitat.										
Metcalfe	Vascular Plants	*Ludwigia hirtella*	Hairy Ludwigia	E /	G5 / S1	0	1	0	0	0
Pine barrens, savannas, and sandy soil or peaty swamps.										
Metcalfe	Vascular Plants	*Potamogeton pulcher*	Spotted Pondweed	T /	G5 / S1S2	2	0	0	0	0
Peaty or muddy acid waters or shores, ponds (especially sinkhole), slow streams, and swamps.										
Metcalfe	Vascular Plants	*Ulmus serotina*	September Elm	S /	G4 / S3	2	0	0	0	0
UPLAND TO BOTTOMLAND LIMESTONE WOODS, ALLUVIAL TERRACES.										
Metcalfe	Freshwater Mussels	*Simpsonaias ambigua*	Salamander Mussel	T / SOMC	G3 / S2S3	1	0	0	0	0
OFTEN FOUND BURIED IN SUBSTRATE SUCH AS SOFT MUD AND/OR GRAVEL, AND/OR UNDER FLAT STONES IN SHALLOW WATER IN SMALL STREAMS WHERE THE CURRENT MAY BE SWIFT (BAKER 1928, BUCHANAN 1980, GOODRICH AND VAN DER SCHALIE 1944).										
Metcalfe	Freshwater Mussels	*Villosa lienosa*	Little Spectaclecase	S /	G5 / S3S4	5	0	0	0	0
INHABITS SMALL TO MEDIUM-SIZED RIVERS, USUALLY IN SHALLOW WATER ON A SAND/MUD/DETRITUS BOTTOM (PARMALEE 1967, GORDON AND LAYZER 1989).										
Metcalfe	Crustaceans	*Barbicambarus cornutus*	Bottlebrush Crayfish	S /	G3G4 / S2	1	0	0	0	0
LIVES UNDER OR NEAR LARGE, FLAT COBBLES OR BOULDERS IN STREAMS.										
Metcalfe	Insects	*Allocapnia cunninghami*	A Capniid Stonefly	T /	G1 / S1S2	1	0	0	0	0
SPRING-FED STREAMS IN KARST HABITATS.										
Metcalfe	Insects	*Erora laeta*	Early Hairstreak	T /	G3G4 / S1	0	0	0	1	0
DECIDUOUS OR MIXED WOODS -- OFTEN ALONG DIRT ROADS OR OPEN RIDGETOPS (OPLER AND MALIKUL 1992).										
Metcalfe	Fishes	*Etheostoma maculatum*	Spotted Darter	T / SOMC	G2 / S2	2	0	0	0	0
INHABITS MEDIUM TO LARGE STREAMS WHERE IT OCCURS AMONG COARSE GRAVEL, COBBLE AND BOULDERS IN SWIFT RIFFLES AND SHOALS (KUEHNE AND BARBOUR 1983, PAGE 1983, ZORACH AND RANEY 1967, STILES 1972, BURR AND WARREN 1986, KESSLER 1992).										
Metcalfe	Fishes	*Phenacobius uranops*	Stargazing Minnow	S /	G4 / S2S3	0	2	0	0	0
INHABITS MEDIUM-SIZE STREAMS TO SMALL RIVERS WITH HIGH GRADIENT, PERMANENT FLOW, CLEAR WATER, AND PEBBLE AND GRAVEL SUBSTRATES (BURR AND WARREN 1986).										
Metcalfe	Fishes	*Thobumia atripinnis*	Blackfin Sucker	S / SOMC	G2 / S2	1	0	0	0	0
SMALL STREAMS WITH CLEAR WATER, ALTERNATING POOLS AND RIFFLES. ASSOCIATED WITH SLAB ROCK AND GRAVEL BOTTOMS, UNDERCUT BANKS, AND MODERATE CURRENT (BAILEY 1959, ETNIER AND STARNES 1993, TIMMONS ET AL. 1983, BURR AND WARREN 1986).										
Metcalfe	Breeding Birds	*Ammodramus henslowii*	Henslow's Sparrow	S / SOMC	G4 / S3B	1	0	0	0	0
OPEN FIELDS & MEADOWS W/ GRASS INTERSPERSED W/ WEEDS OR SHRUBBY VEG., ESPEC. IN DAMP OR LOW-LYING AREAS, ADJACENT TO SALT MARSH IN SOME AREAS. IN MIGRATION & WINTER ALSO IN GRASSY AREAS ADJACENT TO PINE WOODS OR SECOND-GROWTH WOODS.										
Metcalfe	Mammals	*Myotis grisescens*	Gray Myotis	T / LE	G3 / S2	1	0	0	0	0
Gray bats use primarily caves throughout the year, although they move from one cave to another seasonally. Males and young of the year use different caves in summer than females.										
Metcalfe	Communities	*Shrub swamp*		/	GNR / S2S3	3	0	0	0	0

Species Information
KDFWR Maps
WMA Maps
Download GIS Data
KFWIS FTP Site
Links

Species Information

Federal Threatened and Endangered Species observations for selected counties

Linked life history provided courtesy of NatureServe Explorer.
US Status Definitions Kentucky Status Definitions

List Federal Threatened and Endangered Species observations in 1 selected county.
Selected county is: METCALFE.
1 species is listed.

Page 1 of 1

Scientific Name	Common Name	Class	County	US Status	KY Status	Reference
MYOTIS GRISESCENS	GRAY MYOTIS	MAMMALIA	METCALFE	LE	T	Reference

Last Updated - 03/27/03

APPENDIX B – KYTC DESIGN MEMORANDUM NO. 12-05, JULY 27, 2005

DESIGN MEMORANDUM NO. 12-05

TO: Chief District Engineers
Design Engineers
Active Consultants

FROM: David E. Kratt, Acting Director DeK
Division of Highway Design

DATE: July 27, 2005

SUBJECT: Policy on Best Management Practice (BMP)
to be used for Karst and Significant Resource Areas

The following BMP shall be used during the construction and the maintenance/operations of all roads listed on the National Highway System located in Karst areas and on all roadways which may impact a significant resource as determined by the DEA.

1. **Use grass swales for ditches. These swales shall be constructed as shown on the attached detail with a flat bottom cross-section of 2 ft. minimum. The width of the bottom of the swale will be determined by the Design Engineer based on the expected peak flow and the slope so that resulting shear stress will allow as much grass or grass and geo-tech liner as possible.**

2. **Use interceptor ditches to prevent large volumes of off site water from adding to the volume of run-off being carried by the swales.**

3. **Use detention/containment basins to temporarily impound the run-off from the swales before it is discharged from the right-of-way. These basins shall have a minimum volume of 10,000 gallons upstream from each final discharge point. This volume may be attained by constructing basins in series if necessary. The discharge point of each basin shall be constructed as a Silt Trap Type B (see attachment). Detention Basins shall be designed to maximize the flow length between the entrance and exit.**

4. **All swales shall be seeded with the mixture shown on the detail at the rate of 5 lbs. per 1000 sq. ft.**

5. **When and if these swales and/or basins are cleaned out, they shall be restored.**

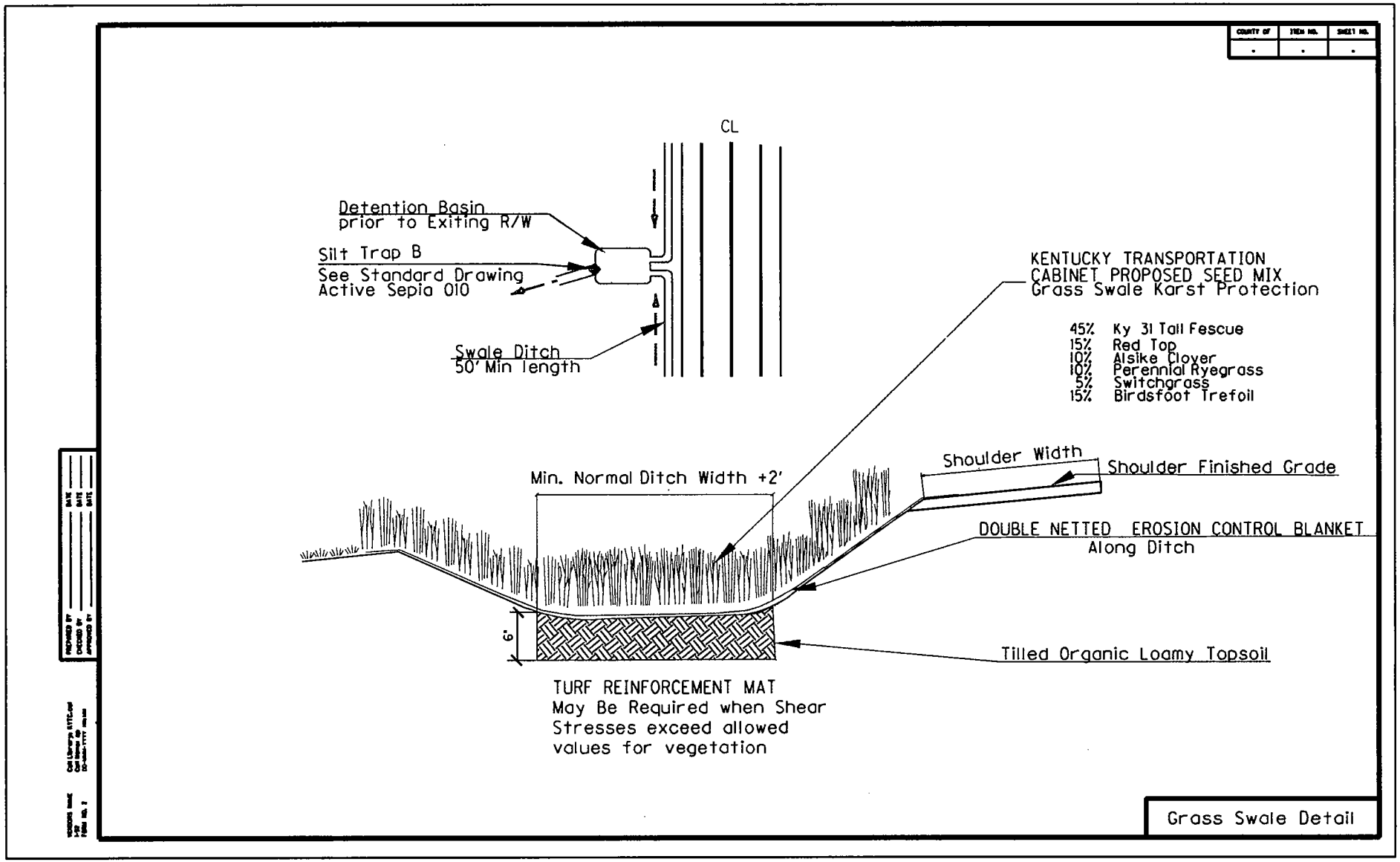
This policy is effective for the Design Projects for I-65 and I-66 which are currently being designed and for all other qualifying projects where Right-of-Way plans have not been completed. The Project Team may decide to implement this policy on projects that do not meet the above criteria.

As this is a new policy, details and techniques will need to be further refined as we gain experience with the procedures enumerated above. Please contact Mr. Danny Jasper of the Division of Highway Design with your comments, suggestions or questions.

Maps of the National Highway System are located on the Division of Planning's website at http://transportation.ky.gov/planning/maps/NHS/nhs_kysz_2005.pdf. The Area of Karst Occurrence in Kentucky is located on the Kentucky Geological Survey's website at http://kgsweb.uky.edu/olops/pub/kgs/mc33_12.pdf. A detail of a Grass Swale is attached.

DEK:RDM:WDM:DJ:JAD

Attachment



...\DetentionDamVegSwaleDetail.dgn 7/8/2005 11:37:51 AM

2514 Regency Road, Suite 104
Lexington, Kentucky 40503

Ph: 859-977-2000
Fax: 859-977-2001

www.thirdrockconsultants.com

Alternatives Study for KY 163 in Metcalfe County from KY 90 to the Louie B. Nunn (Cumberland) Parkway Edmonton, Kentucky

KYTC ITEM NO. 3-129.00

Report of Cultural Resources

Prepared for:

KENUCKY TRANSPORTATION CABINET
DIVISION OF PLANNING

Prepared by:

WILBUR SMITH ASSOCIATES, INC.
LEXINGTON, KY

JANUARY 15, 2007

1.0 SUMMARY OF FINDINGS

1.1 PROJECT DESCRIPTION

Wilbur Smith Associates (WSA) is providing transportation planning services to the Kentucky Transportation Cabinet for an alternatives study for transportation improvements in the vicinity of KY 163 in Metcalfe County from KY 90 to the Louie B. Nunn (Cumberland) Parkway.

1.2 OBJECTIVES

The goal of this study was to provide a cultural resources overview that documents existing data on known archaeological and cultural historic sites within the project study area. This study is not an environmental base study nor is it intended to replace any such study.

1.3 METHODOLOGY

a. Project Study Area

The project study area extends from the Louie B. Nunn Parkway to the north to KY 90 to the south. From east to west, the project area extends from where KY 2399 passes under the Louie B. Nunn Parkway to just past the intersection of the Louie B. Nunn Parkway and KY 80. At this time, no alternative routes have been established, but approximately ten (10) to twelve (12) potential routes will be identified during the initial phase of the project.

b. Archival Research

A literature review of the Kentucky Heritage Council and the Kentucky Office of State Archaeologist files was conducted to identify previously recorded sites and any properties or sites already listed on or determined eligible for the National Register of Historic Places (NRHP). This review resulted in the identification of:

1. Two structures listed on the NRHP that are located within the project study area: the Stockton-Ray House and the Metcalfe County Court House
2. Eleven (11) previously surveyed archaeological sites and 59 previously surveyed cultural historic sites within the study area. The National Register eligibility of these sites have not been determined at this time. Additional investigation of these sites is recommended if they fall within the limits of the alternative routes to be developed later.

3. One known cave is within the study area, locally known as Harvey Cave. It has been reported that local residents claim that there are hieroglyphs somewhere in the cave on its walls.

c. Field Check

Robert Ball, an archaeologist and architectural historian from WSA, made a field visit in early November 2006 to the project area. During his field visit, he photographed the landscape and topographical features of the project area.

The majority of the previously recorded archaeological sites are located near the town of Edmonton. The two historic properties already listed on the NRHP are located in the northern portion of the study area; one in downtown Edmonton and the other just west of town on John Ray Road. The other documented cultural historic properties are mainly concentrated in downtown Edmonton and along Goodluck-Beaumont Road to the south.

1.4. Locational aspects to site data

Each of the previously surveyed archaeological and cultural historic sites and the two properties listed on the National Register of Historic Places have been plotted on the map at the end of this report.

2.0 RECOMMENDATIONS

It is recommended that reasonable attempts be made during the development of the project alternatives to avoid the sites already listed on the NRHP. Specific transportation related impacts on known cultural resources may be determined as potential alternatives are being established. This more detailed analysis could be conducted to determine what, if any, transportation related impacts exist and which particular alternatives will have the greatest impact on those cultural resources.

In addition to the 61 historic structures previously surveyed and documented, numerous undocumented/surveyed structures older than 50 years were observed within the project study area. These undocumented properties are scattered throughout the study area; although there is a concentration of older structures along KY 2399 north of Louie B. Nunn Parkway. If any of the previously documented structures fall within the potential limits of the alternative corridors, additional investigations will have to be conducted to document any changes that may have

occurred since they were originally documented in order to determine their National Register eligibility.

The potential for additional archaeological sites within the project area is high due to the numerous drainages and ridge tops that are found throughout the study area. The areas with the most likelihood to contain archaeological sites, prehistoric and historic, will be near these water-ways and along the ridge tops that run roughly north-south through the project study area. In addition the existence of one known cave, Harvey Cave, within the study area also raises the potential for archaeological sites as it may contain additional cave or rockshelter formations. During the creation of the initial alternates, a predictive model could be developed in relation to archaeological sites to aid in the avoidance of hitting a major site. Once a preferred alternate is selected, then a complete Phase I archaeological survey would have to be completed in the next phase of project development.

Kentucky
UNBRIDLED SPIRIT

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

N

68
2399
80
3234
861
163
496
2390
2387
90

Louie B. Nunn Parkway

EDMONTON

Clay Lick Creek
Rogers Creek
South Fork Little Barren River

Legend

- Cemetery
- Church
- Historical Structures
- National Register Property
- Park

4,000 2,000 0 4,000 8,000 Feet

KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00

Environmental Footprint

Alternatives Study for KY 163 in Metcalfe County from KY 90 to the Louie B. Nunn (Cumberland) Parkway at Edmonton, Kentucky

KYTC ITEM NO. 3-129.00

Report of Noise Considerations

Prepared for:

KENTUCKY TRANSPORTATION CABINET (KYTC)
DIVISION OF PLANNING

Prepared by:

WILBUR SMITH ASSOCIATES, INC.
LEXINGTON, KY OFFICE
465 EAST HIGH STREET, SUITE 100
LEXINGTON, KENTUCKY 40507

JANUARY 19, 2007

1.0 SUMMARY OF FINDINGS

The proposed highway improvement for KY 163 in Metcalf County, from KY 90 to the Louie B. Nunn Parkway, encompasses a rather large study area, with the Louie B. Nunn Parkway forming the northern boundary and KY 90 forming the southern boundary. Along the northern boundary, the project area is bounded by the US 68-KY 80/Nunn Parkway interchange to the west and KY 2399 on the east. At the southern boundary, the east and west boundaries are approximately 2000 feet on either side of KY 163. At this time, alternative routes have not been established, but approximately ten (10) to twelve (12) potential routes will be identified.

Upon evaluating existing geographical spatial data and making field visits to the study area, two (2) potential areas within this study could potentially be affected by the construction of a new route or by reconstructing KY 163 along the existing alignment. Those areas are the City of Edmonton in the north and the intersection of KY 163 and KY 90 to the south. Within both of these locations, certain noise-sensitive receptors might dictate the location of alternatives, based upon the existing activity category associated with that receptor. Noise receptors can be described as specific locations of any property or outdoor activity that is considered to contain noise-sensitive land use. A map showing these noise receptors can be found in **Figure 1**.

The city of Edmonton, Kentucky is located on the northernmost section of the study area along US 68, 0.7 miles south of the Louie B. Nunn Parkway. Driving south through Edmonton, different types of *"Activity Categories"* can be found, such as residential, commercial, or industrial areas as well as schools, churches, parks, historical sites, and cemeteries. A more detailed description of Activity Categories and their decibel (dBA) threshold is found in **Table 1**. This classification system is described in the *FHWA Noise Abatement Criteria (NAC)* policy adopted by the Federal Highway Administration.

The city of Edmonton contains the most transportation-related noise receptors within the study area. Groups of noise-sensitive receptors can be primarily found within three (3) separate areas inside Edmonton. These areas include the intersection of US 68 and KY 163, the intersection of US 68 and KY 681, and the intersection between US 68 and KY 3234. Types of receptors vary between locations, but generally include historical structures, churches, cemeteries, schools, and parks. Residential areas typically have the most potential for noise impacts and can be found in higher numbers throughout the noise-sensitive locations mentioned above. Sub-divisions are prime

examples of residential noise-sensitive clusters, but they are not an immediate concern as very few were found along the major traffic routes within the study area. It should also be noted that many historical structures are identified within the city of Edmonton.

Continuing south along KY 163, the route intersects KY 90 at the southern end of the study area. This intersection is important due to its higher volume of automobile traffic and heavy truck traffic. The source of some of the heavy truck traffic can be attributed to a local lumber company located along KY 163 and Kingsford Charcoal Company, located about 0.25 miles due east of the KY 163/KY 90 intersection. With existing heavy truck traffic already a factor, it can be safely assumed that a new route or reconditioning of the existing route will only increase the current traffic volumes, thus, yielding more noise and noise related impacts to existing residential areas. Residential units are the dominant noises sensitive factor within the southern portion of the study area, even though churches, cemeteries, and a park are located nearby.

TABLE 1.

Noise Abatement Criteria
Hourly A-Weighted Sound Level - decibels (dBA)

Activity Category	$L_{eq}(h)$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those unique qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.
Source:	Title 23 Code of Federal Regulations (CFR) Part 772, U.S. Department of Transportation, Federal Highway Administration.	

Outside of the two noise-sensitive areas previously mentioned, the remaining study area is void of any real transportation-related noise considerations other than some historical structures found along mostly local roads. County roads cross back and forth throughout the study area, with a small number of residential dwellings scattered along both sides of the road. The residential areas that are present are generally not grouped within a cluster, which would not warrant itself to further noise impact consideration.

2.0 RECOMMENDATIONS

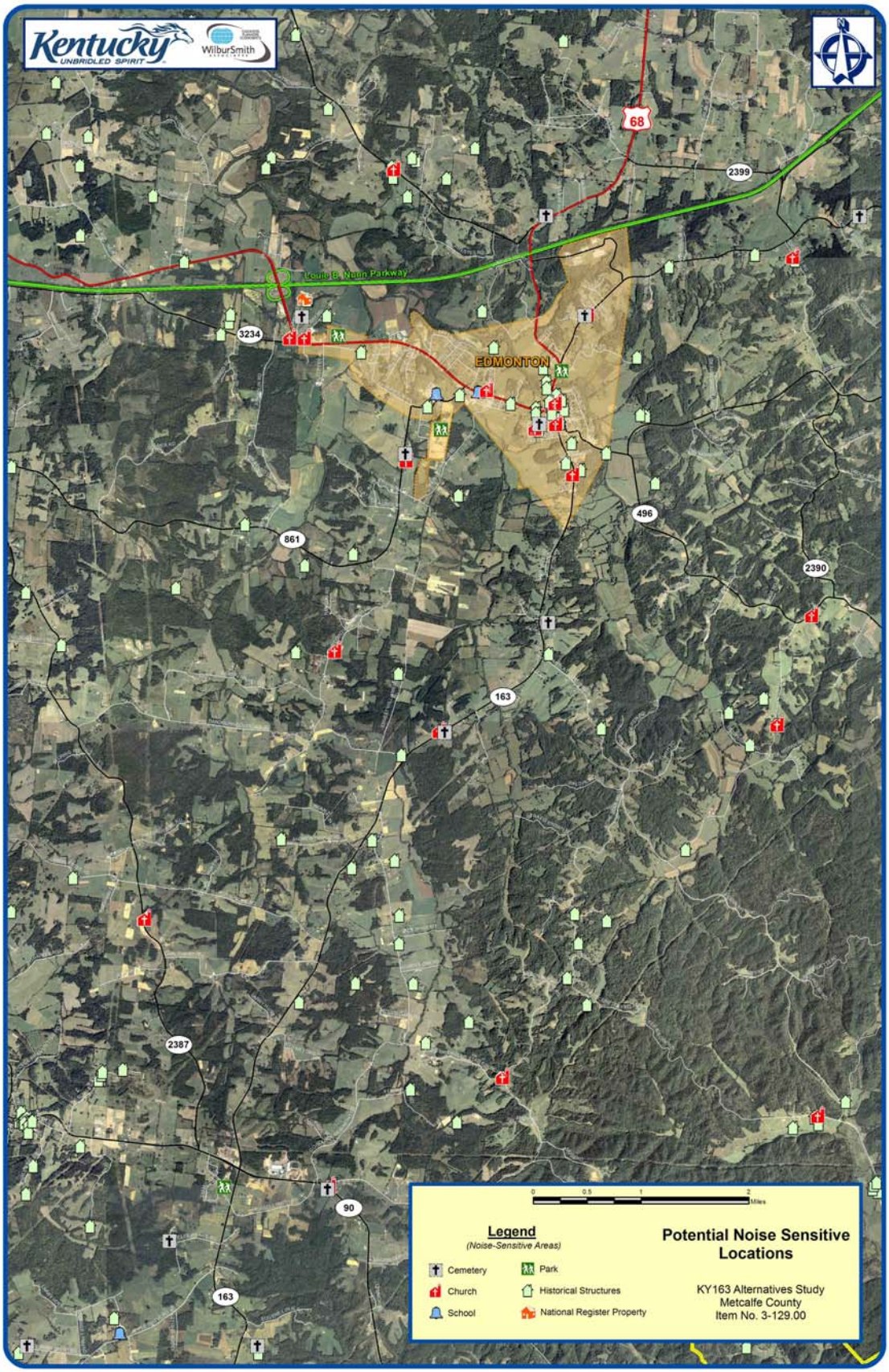
Specific transportation-related noise impacts will not be quantified until potential alternatives have been established. Once established, a more thorough noise analysis may be conducted to determine what impacts exist, if any for each respective alternative within the study area. Based on preliminary investigations, it is unlikely that noise impacts resulting from a potential build alternative will significantly affect either sensitive area. In the next phase of project development, a noise model may be conducted using TNM 2.5, FHWA approved noise software program. This analysis will be performed in accordance with the procedures outlined within the Title 23 Code of Federal Regulations (CFR), Part 772, U.S. Department of Transportation, Federal Highway Administration, Procedures for Noise Abatement of Highway Traffic Noise and Construction Noise and the Kentucky Department of Transportation Noise Abatement Policy (NAC).

A more thorough noise analysis would provide a detailed summary of alternative-dependent noise impacts, but this will be deferred until a future phase of the project. Since each alternative will be geographically unique and will contribute separate noise-related factors, each individual alternative should be studied to determine the impact that each new route would yield. Noise sensitive areas shown in **Figure 1** should be examined closely, as they might have the potential to impact the orientation of a particular alternative. If possible, these areas should be avoided altogether if the project limits of this study allow it. Potential future developed and undeveloped lands for which development is planned or designed should also be taken into account, as noise sensitivity issues might dictate the actual routing of the closest alternative. After each alternative has been studied, a list of future traffic noise impacts should be compiled. This compilation will serve as the final determining factor if noise mitigation efforts would be applicable. A separate noise abatement analysis should be performed only if potential impacted areas exist.

Existing and future traffic volume projections should be established before the noise analysis is scheduled for start-up. These volumes are essential to the noise model and its basis for predicting build and no-build traffic noise levels. Variances with different types of vehicles (autos, medium trucks, heavy trucks, and buses) can alter noise predictions considerably.

After the potential alternatives have been defined, traffic projections compiled, and field readings taken, then an appropriate noise model can be developed.

FIGURE 1.


Kentucky
UNBRIDLED SPIRIT
WilburSmith
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Louie B. Nunn Parkway
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EDMONTON
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2387
90
163
0 0.5 1 2
Miles
Legend
(Noise-Sensitive Areas)
Cemetery
Church
School
Park
Historical Structures
National Register Property
Potential Noise Sensitive Locations
KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00

REPORT OF GEOTECHNICAL OVERVIEW

KY 163 ALTERNATIVES STUDY FROM KY 90 TO THE LOUIE B. NUNN (CUMBERLAND) PARKWAY IN METCALFE COUNTY

KYTC ITEM NO. 3-129.00

ENGINEERS
PLANNERS
ECONOMISTS

WilburSmith
ASSOCIATES

REPORT OF GEOTECHNICAL OVERVIEW

KY 163 ALTERNATIVES STUDY FROM KY 90 TO THE LOUIE B. NUNN (CUMBERLAND) PARKWAY IN METCALFE COUNTY

KYTC ITEM NO. 3-129.00

Prepared for:

KENTUCKY TRANSPORTATION CABINET
DIVISION OF PLANNING

Prepared by:

WILBUR SMITH ASSOCIATES – GEOTECHNICAL DIVISION

February 1, 2007

James L. Vinson, P.E.
Geotechnical Engineer

J. Christopher McMichael, P.G.
Project Geologist

TABLE OF CONTENTS

Section Page

1.0 INTRODUCTION 1-1
2.0 SITE CONDITIONS 2-1
2.1 SITE VISIT OBSERVATIONS 2-1
2.2 TOPOGRAPHY 2-2
3.0 GEOLOGIC CONDITIONS 3-1
3.1 GEOLOGIC OVERVIEW 3-1
3.2 GEOLOGIC FORMATIONS 3-1
3.3 UNDERGROUND OPENINGS 3-2
4.0 MISCELLANEOUS FEATURES 4-1
4.1 SURFACE OR DEEP MINING ACTIVITIES 4-1
4.2 GAS AND OIL WELLS/PIPELINES 4-1
4.3 UNDERGROUND STORAGE TANKS 4-1
5.0 GEOTECHNICAL ISSUES AND RECOMMENDATIONS 5-1
6.0 LIMITATIONS 6-1

APPENDIX: LOCATION MAP
TOPOGRAPHIC OVERVIEW
GEOLOGIC MAP
CORRIDOR FEATURES

1.0 INTRODUCTION

The corridor of Kentucky Route 163 is currently being studied by Wilbur Smith Associates to allow evaluation of alternate alignments from KY 90 to the Louie B. Nunn (Cumberland) Parkway near Edmonton, Kentucky. The study limits for the KY 163 corridor approximately lie within a triangle-shaped area as shown on the Location Map in the Appendix. The southern end of the study area is about 2,000 feet on either side of existing KY 163 and its intersection with KY 90. The study area broadens to the north extending to an approximately 5 mile width along the Louie B. Nunn Parkway. The northwestern limit of the study area is a major interchange at Louie B. Nunn Parkway. The northeastern limit of the corridor is the intersection of KY 2399 and Louie B.Nunn Parkway.

The objectives of the geotechnical study were to review readily available data to identify potential geotechnical and/or geological features that could impact the planning, design, and/or construction of a new or modified roadway along the proposed corridor. Additionally, this report identifies potential geotechnical hazards and provides recommendations of areas that should be avoided if possible during the selection of possible corridor routes.

2.0 SITE CONDITIONS

2.1 SITE VISIT OBSERVATIONS

A site visit was made on December 29, 2006 by Mr. J. Christopher McMichael, a Professional Geologist with WSA. The visit included a visual survey of public and private properties that were observed from KY 163, KY 3234 and several of the crossroads in the corridor study limits. The land use was observed to be predominantly farmland with numerous farm ponds. Much of the land adjacent to KY 163 is gently rolling with occasional wooded areas. Private residences were irregularly spaced along both sides of KY 163 outside of Edmonton, Kentucky.

Both shale and limestone outcroppings were observed along the existing KY 163 alignment (Photograph 1). Shale outcroppings were observed across the area's lower elevations. The limestone outcroppings were observed less frequently; they were only found along road cuts at the higher elevations. The depth to bedrock was observed to be less than 2 feet at one residence near the intersection of KY 163 and Rogers Creek (Photograph 2).

Photograph 1 - Rock outcropping along KY 163

Photograph 2 - Shallow rock at residence near KY 163 and Rogers Creek

Groundwater seepage was observed from an outcropping of shale along KY 163 at approximately 4 miles north of KY 90. Water levels at the observed stream crossings along existing KY 163 were generally less than 2 feet deep.

2.2 TOPOGRAPHY

The project site traverses the rolling hills of Kentucky farmland. The existing KY 163 alignment has its highest elevation at the southernmost end of the study area where KY 163 crosses KY 90 (EL +1,149 feet). As KY 163 heads north from KY 90, grades decrease until Rogers Creek (EL +800 feet), then rise again to EL +900 feet before dropping back down to the Black Rock Creek stream valley (EL 799 feet). From there, grades increase as KY 163 approaches Edmonton, KY (EL +843 feet). The maximum difference in elevation between any two points in the study area is about 350 feet. The general topography of this area is depicted in the Topographic Overview in the Appendix.

3.0 GEOLOGIC CONDITIONS

3.1 GEOLOGIC OVERVIEW

Based on the published USGS Geologic Quadrangle for the existing alignment, KY 163 is located on the Mississippian Plateau physiographic province. The Mississippian Plateau is dominated by thick deposits of horizontal to slightly dipping limestone bedrock. This region exhibits the typical "karst" topography, including: sinkholes, sinking streams, streamless valleys, springs and caverns.

3.2 GEOLOGIC FORMATIONS

Four geologic formations are within the vicinity of the study area, including the St. Louis Formation, the Ft. Payne Limestone, the Salem and Warsaw Limestones, and the associated quaternary alluvium along the valley bottoms. Each of these formations is described below. The approximate locations of these formations are shown in the Geologic Map in the Appendix.

St. Louis Limestone - The St. Louis Limestone is only present at the higher elevations of the project site where it caps the localized ridges. It is within this formation that Kentucky GIS mapping indicates a major risk for potential sinkhole development. The St. Louis Limestone is a medium to dark gray, coarse-grained limestone. The formation contains nodules of gray banded chert and is very fossiliferous. The St. Louis Limestone weathers to a dark-red clay soil with abundant light gray chert fragments.

Salem and Warsaw Limestones - The Salem and Warsaw Limestones are, like the St. Louis Limestone, located along the higher elevations. It is within this formation that Kentucky GIS mapping indicates a slight risk for sinkhole development. The Salem and Warsaw Limestones are medium gray to grayish brown, coarse- to very coarse-grained limestones. Locally, the limestones are argillaceous, shaly, and cherty. There are also some tongues or beds of siltstone. The limestone commonly weathers to a light red soil.

Ft. Payne Formation - The Ft. Payne Formation is the predominant geologic formation underlying the existing project alignment. It is comprised of silty shale, siltstone, and limestone. The shales and siltstones are light gray to brownish gray and have a calcareous or dolomitic matrix. The limestone is light gray to dark brown and contains abundant chert. The Ft. Payne Formation weathers to a reddish yellow or grayish yellow soil.

Alluvium - The Quaternary Alluvium within the study area are comprised of clay, sand, and gravel. These soils are poorly consolidated floodplain deposits and are located along the larger stream terraces.

3.3 UNDERGROUND OPENINGS

Available mapping indicates numerous large sinkholes in the southern and northeastern extents of the study area. Published maps classify the area in the vicinity of the interchange between KY 2399 and Nunn Parkway as a major karst area. Likewise, the KY 90 and KY 163 interchange is located in a major karst area. These major karst areas are denoted on the Corridor Features map in the Appendix. Apart from these two areas, only four other sinkholes were observed on published mapping of the study area.

Although not observed by WSA, Third Rock Consultants noted a large cave in their environmental overview summary (dated January 5, 2007). This cave, Harvey Cave near KY 90 and Kingsford Manufacturing, is located in the southern portion of the study area and reportedly has a free-flowing spring.

4.0 MISCELLANEOUS FEATURES

4.1 SURFACE OR DEEP MINING ACTIVITIES

No surface or deep mining activities were observed in the field or on published maps.

4.2 GAS AND OIL WELLS/PIPELINES

Based on published maps, numerous dry and abandoned wells are located in the study corridor. Less than ten active oil wells are identified to the south of Louie B. Nunn Parkway within the corridor.

4.3 UNDERGROUND STORAGE TANKS

Underground storage tank concerns are addressed by Third Rock Consultants, LLC in their KY 163 "Red Flags" Summary.

5.0 GEOTECHNICAL ISSUES AND RECOMMENDATIONS

The two key geotechnical issues for this corridor are the presence of karst producing bedrock along the southern and northeastern portions of the corridor and the anticipated shallow depth to bedrock along the entire corridor.

From a geotechnical perspective, we recommend that two sensitive areas be avoided, if possible:

- The existing intersection of KY 2399 and Louie B. Nunn Parkway; and
- The significant sinkhole west of existing KY 163 at the bend in KY 861, which lies near the center of the study area.

However, it is recognized that other factors must be considered and geotechnical issues may not be the final determinant in the development of alternatives and final recommendations.

Also, given the karst activity in the southern portion of the study area, it is advisable to limit the east-west shifting of the southern terminus of alternative alignments away from the existing KY 163 and KY 90 intersection.

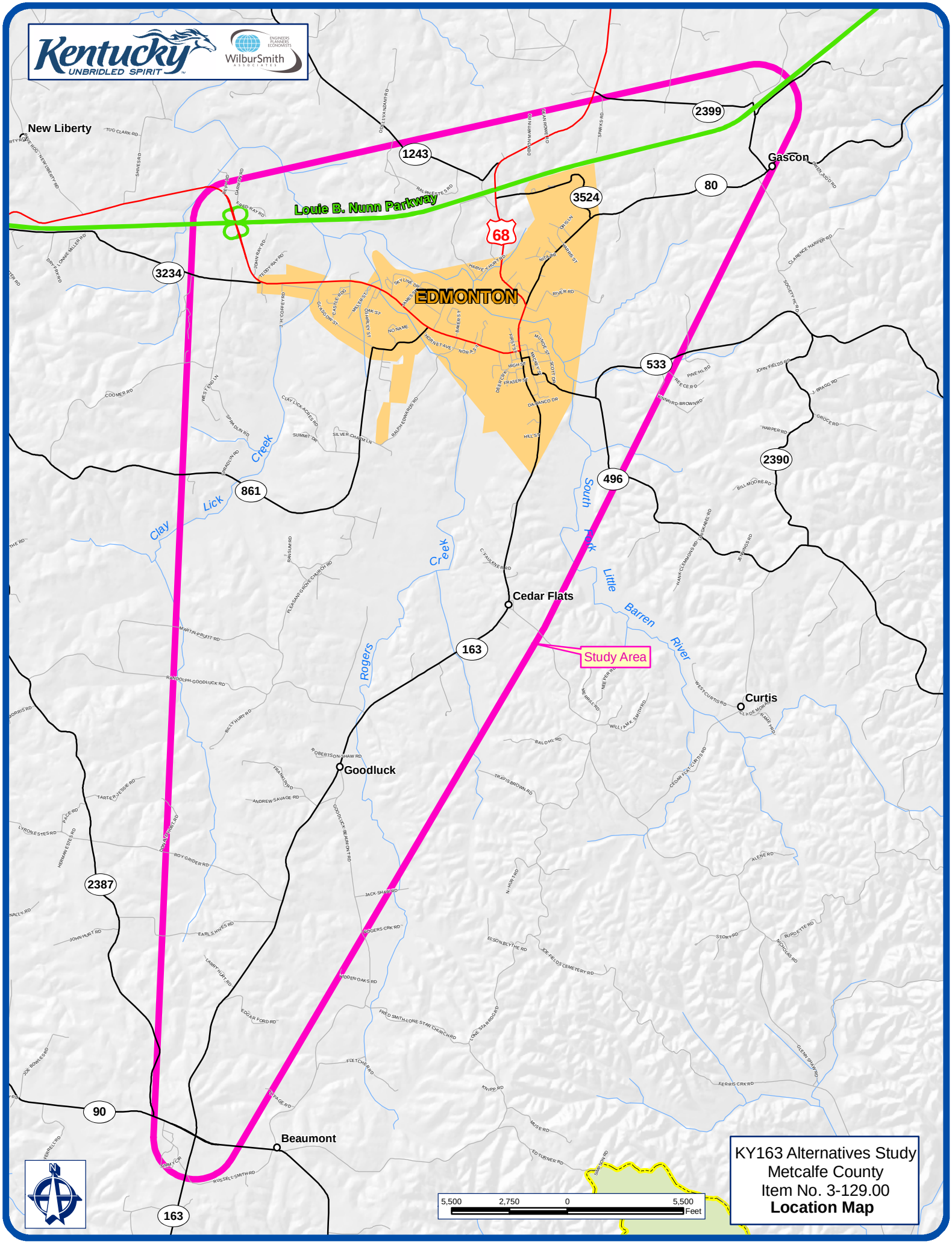
The shallow depth to bedrock can adversely affect cut/fill quantities, increase excavation costs, and result in additional engineering design and inspection requirements. Deeper cuts may also extend into bedrock requiring potential mixed face (i.e., soil/rock) slope designs and/or encounter zones of weathered rock that require special consideration. However, due to the apparently horizontal bedding of the bedrock, stability of permanent rock slopes should be readily engineered and constructed.

6.0 LIMITATIONS

The evaluations within this report are based on review of available published information and limited site reconnaissance over a large study area. As such, the geotechnical recommendations are necessarily broad based and by no means comprehensively cover all potential geotechnical issues that may be associated with this project. Detailed geotechnical exploration should be performed for the final selected alignment in accordance with KYTC guidelines.

APPENDIX

LOCATION MAP
TOPOGRAPHIC OVERVIEW
GEOLOGIC MAP
CORRIDOR FEATURES


Kentucky
UNBRIDLED SPIRIT
WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS
New Liberty
Louie B. Nunn Parkway
EDMONTON
Gascon
Cedar Flats
Goodluck
Beaumont
Curtis
Study Area
1243
2399
80
3524
68
3234
533
2390
496
861
163
2387
90
Clay Lick Creek
Rogers Creek
South Fork Little Barren River
5,500 2,750 0 5,500 Feet
KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Location Map

Kentucky UNBRIDLED SPIRIT

WilburSmith ASSOCIATES ENGINEERS PLANNERS ECONOMISTS

N

68

2399

Louie B. Nunn Parkway

EDMONTON

3234

496

861

Clay Lick Creek

2390

163

Study Area

2387

90

3,500 1,750 0 3,500 7,000 Feet

KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Topographic Overview

Kentucky
UNBRIDLED SPIRIT

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

N

68
2399
Louie B. Nunn Parkway
EDMONTON
3234
861
496
2390
163
Study Area
2387
90

3,500 1,750 0 3,500 7,000 Feet

Legend

- St. Louis Limestone
- Salem and Warsaw Limestones
- Ft. Payne Formation
- Alluvial

KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Geologic Map

Kentucky UNBRIDLED SPIRIT

WilburSmith ASSOCIATES ENGINEERS PLANNERS ECONOMISTS

68

2399

Louie B. Nunn Parkway

EDMONTON

3234

861

496

2390

163

2387

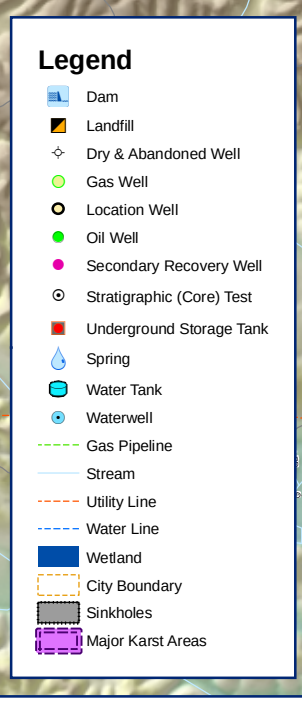
90

Study Area

Clay Lick Creek

South Fork Little Barren River

Rogers Creek



3,500 1,750 0 3,500 7,000 Feet

KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Corridor Features

KY 163 ALTERNATIVES STUDY
METCALFE COUNTY

Environmental Justice Report
Item No. 3-129.00

January 2007

Barren River Area Development District

For
Division of Planning
Kentucky Transportation Cabinet

TABLE OF CONTENTS

1.0 Introduction

2.0 What is Environmental Justice?

3.0 Methodology

4.0 Census Data Analysis

5.0 Study Findings

6.0 Study Findings / **Population by Race**

7.0. Study Findings / **Population by Poverty Level**

8.0 Study Findings / **Population by Age Group**

9.0 Conclusion

APPENDIX 1: Planning Study Contact List

APPENDIX 2: Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies

APPENDIX 3: County Map

APPENDIX 4: Corridor Study Map

APPENDIX 5: Census Data Map

APPENDIX 6: Metcalfe County Census Data

1.0 INTRODUCTION

This document is an assessment of the community characteristics for the proposed improvements outlined in the KY 163 Corridor Study located in Metcalfe County (Appendix 3). The data used in this report has been compiled from a various number of sources including the U.S. Census Bureau *Census 2000,* Kentucky Transportation Cabinet Division of Planning, Kentucky State Data Center, local officials meeting, stakeholder meetings, and field observations of the project area. The information and results are intended to assist the Kentucky Transportation Cabinet in making informed and prudent transportation decisions in the project area, especially with regard to the requirements of Executive Order 12898[1], to ensure equal environmental protection to all groups potentially impacted by this project.

The following document outlines *Census 2000* statistics for the KY 163 Corridor Study in Metcalfe County using data tables and maps.

Census data was also compiled for Census divisions directly in and around the portion of the study area located in Metcalfe County. Statistics are provided for minority, low-income, and elderly populations for the project area, nation, state, region, census tracts, and block groups.

2.0 WHAT IS ENVIRONMENTAL JUSTICE?

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

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

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

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

2.1 Definitions

USDOT Order 5610.2 on EJ, issued in the April 15, 1997 Federal Register defines what constitutes low income and minority populations.

- **Low-Income** is defined as a person whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines.

[1] Executive Order 12898 signed on February 11, 1994 states "…each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…"

- **Minority** is defined as a person who is: (1) Black (a person having origins in any black racial groups of Africa); (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (4) American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).

- **Low-Income Population** is defined as any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant geographically dispersed/transient persons who will be similarly affected by a proposed DOT program, policy or activity.

- **Minority Population** is defined as any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed DOT program, policy or activity.

EO 12898 and USOT Order 5610.2 do not address consideration of the elderly population. However, the U.S. DOT encourages the study of these populations in EJ discussions and in accordance with EJ, Title VI of the Civil Rights Act of 1964 and the Kentucky Transportation Cabinet's advocacy of inclusive public involvement and equal treatment of all persons this study includes statistics for persons age 65+ that are within the project and comparison areas.

3.0 METHODOLOGY

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

The primary sources of data were the U.S. Census Bureau *Census 2000*, Kentucky Transportation Cabinet Division of Planning, Kentucky State Data Center, local officials meeting, stakeholder meetings, and field observations of the project area. Statistics were compiled to present a detailed analysis of the community conditions for the KY 163 Corridor Study.

4.0 CENSUS DATA ANALYSIS

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

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

- **Census Block (CB)** – "An area bounded on all sides by visible and/or invisible features shown on a map prepared by the Census Bureau. A CB is the smallest geographic entity for which the Census Bureau tabulates decennial census data."

The project and comparison area analysis include the percentages for minorities, low-income and elderly population levels for the census tract block group, Metcalfe County, the Commonwealth of Kentucky and the United States.

5.0 STUDY FINDINGS

This Environmental Justice and Community Impact Report are to be used as a component of a Planning Study for the proposed highway transportation improvements to KY 163 in Metcalfe County between the KY 90/KY 163 Intersection and the Louie B. Nunn Parkway. This study is intended to help define the location and purpose of the project and better meet federal requirements regarding consideration of environmental issues as defined in the National Environmental Policy Act (NEPA).

The 2000 Census identifies two Census Tracts in this study area. These tracts are listed below and are illustrated in Appendix 4.

Census Tract 9602
Census Tract 9603

6.0 STUDY FINDINGS / POPULATION BY RACE

6.1 Metcalfe County

The defined study area in Metcalfe County encompasses portions of the following Census Tracts: 9602 and 9603. Following the review of key information, BRADD Staff met with local officials and community members to review maps and Census data related to the study area. The intent of these discussions was to confirm previous conclusions and solicit input into the process of developing this Environmental Justice Report.

The majority of Census Tracts and Block Groups in the study area contain minority populations that are considerably less than the national, state, and county averages; however, there are a few particular Block Groups in the study area that warrant further discussion.

Census Tract 9602 has the highest percentage of black population with 1.08%, which is comparable to the county average of 1.12%, but is considerably less than the national and state average of 12.21% and 7.27% respectively. Block Group 2 in Tract 9602 contains a percentage of black population of 2.27% and Block Group 2 in Tract 9603 contains a percentage of black population of 1.95%, while the other Block Groups in Tract 9602 and 9603 located in the study area have percentages well below the county average.

Meetings with local officials and community members resulted in the conclusion that additional concentrations of minorities are not located in the study area; therefore, it is anticipated that the implementation of this project would not have a disproportionate effect on minorities residing in the proposed study area.

BRADD Staff will continue to monitor racial composition in the study area and report any changes and/or developments that may occur in the future that could alter the findings of this report.

7.0 STUDY FINDINGS / POPULATION BY POVERTY LEVEL

7.1 Metcalfe County

The defined study area within Metcalfe County encompasses portions of the following Census Tracts: 9602 and 9603. Census Tract 9602 has a percentage of persons below poverty level of 19.16%, which is significantly higher than the state average of 15.37% and well above the national average of 12.05%. Census Tract 9603 has a percentage of 24.20%, the highest percentage of the population below the poverty level in Metcalfe County, which is twice that of the national average. This is not totally unexpected considering the entire study area and the percentages of all the Block Groups. An overall review of the data shows that all Block Groups in the study area are at or exceed the state and national averages for the percentage of population below the poverty level, and these percentages range from 18.51% to 26.39%. The State average is 15.37 % and the national average is 12.05 %.

It is evident that a high percentage of population below the poverty level is an issue that occurs throughout the entire county and that the chance of encountering significant concentrations of populations falling under this distinction is very likely. It should also be noted that these percentages are indeed comparable to many surrounding counties in this particular section of southern Kentucky. All of the counties within this study area are often identified as economically distressed due to high unemployment rates that can be attributed to the unavailability of quality employment opportunities. Discussions with local officials and community members resulted in the conclusion that additional concentrations of persons below the poverty level are not located in the study area; therefore, it is anticipated that the implementation of this project would not have a disproportionate effect on the population of persons below poverty level residing in the proposed study area.

The improvement of the KY 163 Corridor route is viewed by many local officials and community members as a project that could potentially be beneficial for further economic growth and development; thereby improving conditions for the population of the county that currently fall below the poverty level.

BRADD Staff will continue to monitor poverty levels in the study area and report any changes and/or developments that may occur in the future that could alter the findings of this report.

8.0 STUDY FINDINGS / POPULATION BY AGE GROUP

8.1 Metcalfe County

The defined study area within Metcalfe County encompasses Census Tracts 9602 and 9603. Census Tract 9602 percentages for the aging population are consistent with those of the state, and the nation. Census Tracts 9603 has a higher percentage of persons 65 and over at 17.02%. Block Groups: 3 and 4 of Census Tract 9603 in the study area have percent persons 65 and over of 13.35% and 13.11% respectively, which is below the county average of 14.98%. Based on the census data and other discussions, there seem to be no significant concentration of a specific age group in this study area.

Discussions with local officials and community members resulted in the conclusion that additional concentrations of persons age 65 and over are not located in the study area; therefore, it is anticipated that the implementation of this project would not have a disproportionate effect on the population of persons age 65 and over residing in the proposed study area.

9.0 CONCLUSION

Following an extensive review of data obtained from the U.S. Census Bureau for income, race and age, discussions with local officials, and field observations, Barren River Area Development District staff has concluded that a defined Environmental Justice community does not exist within the study area in Metcalfe County.

Analysis of the minority population data showed several of the block groups as having an identified concentration of some sort. Some were significant, some were only minor. The more significant concentrations identified were noted in the narrative analysis of the county. All areas within this study should be given full consideration in the planning process to achieve the goals put forth by the U. S. Department of Transportation (DOT). The concentrations identified in Metcalfe County should not be affected by improvements to this route.

The high percentage of the population below poverty level is alarming. However, based on the economic status of this rural depressed county, these percentages are not uncommon for this area. Discussions with local officials and a field review came to the conclusion that no concentration of individuals below the poverty level will be disproportionately affected by this project.

There appear to be few small concentrations of populations by age Metcalfe County. Age analysis indicates that the distribution of elderly residents in Census Tract 9602 closely resembles the national and state average. Census Tract 9603 has a slightly higher concentration of elderly, but the concentrations identified in Metcalfe County should not be affected by improvements to this route.

Efforts were made to identify any high concentrations of a specific population. Community citizens, other ADD planners, local officials, and statistical data were all used in this process.

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

APPENDIX 1

PLANNING STUDY CONTACT LIST

Greg Wilson
Metcalfe County Judge Exec.
P.O. Box 149
Edmonton, KY 42129

Harold Stilts
City Superintendent
City Hall Box 374
Edmonton, KY 42129

Jeff Moore
Dept. Of Highways District 3
900 Morgantown Road
Bowling Green, KY 42102

Mayor Howard D. Garrett
City Hall Box 374
Edmonton, KY 42129

Sheriff Ronald Shirley
Metcalfe County Courthouse
Edmonton, KY 42129

Darla Hardy
Community Action of Southern Kentucky
P.O. Box 90014
Bowling Green, KY 42102

APPENDIX 2

Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies

Reviewed: December 2006

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

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

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

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

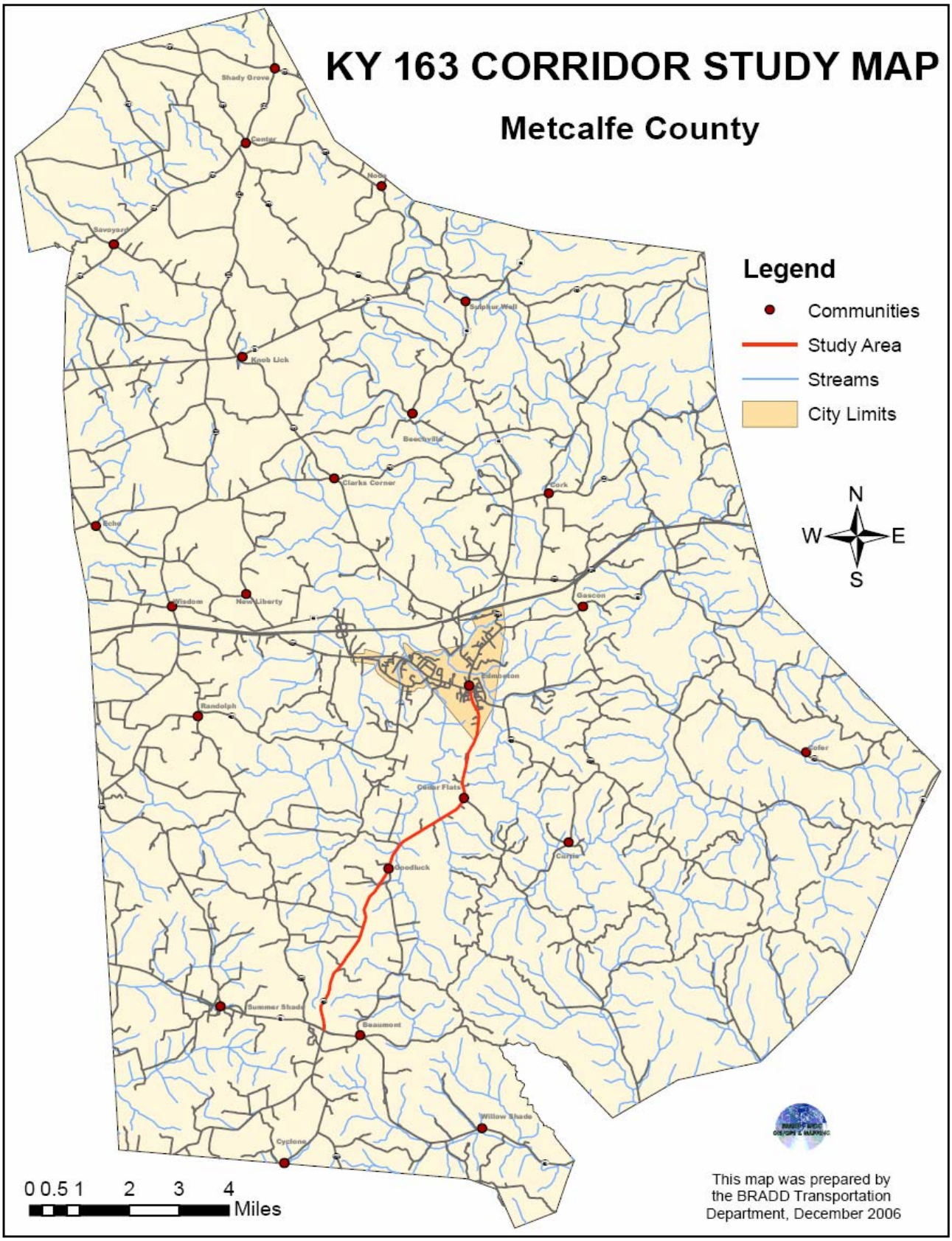
- Possible methods to minimize or avoid impacts on the target population groups.

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

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

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

APPENDIX 3


KY 163 CORRIDOR STUDY MAP
Metcalfe County
Legend
Communities
Study Area
Streams
City Limits
N
W
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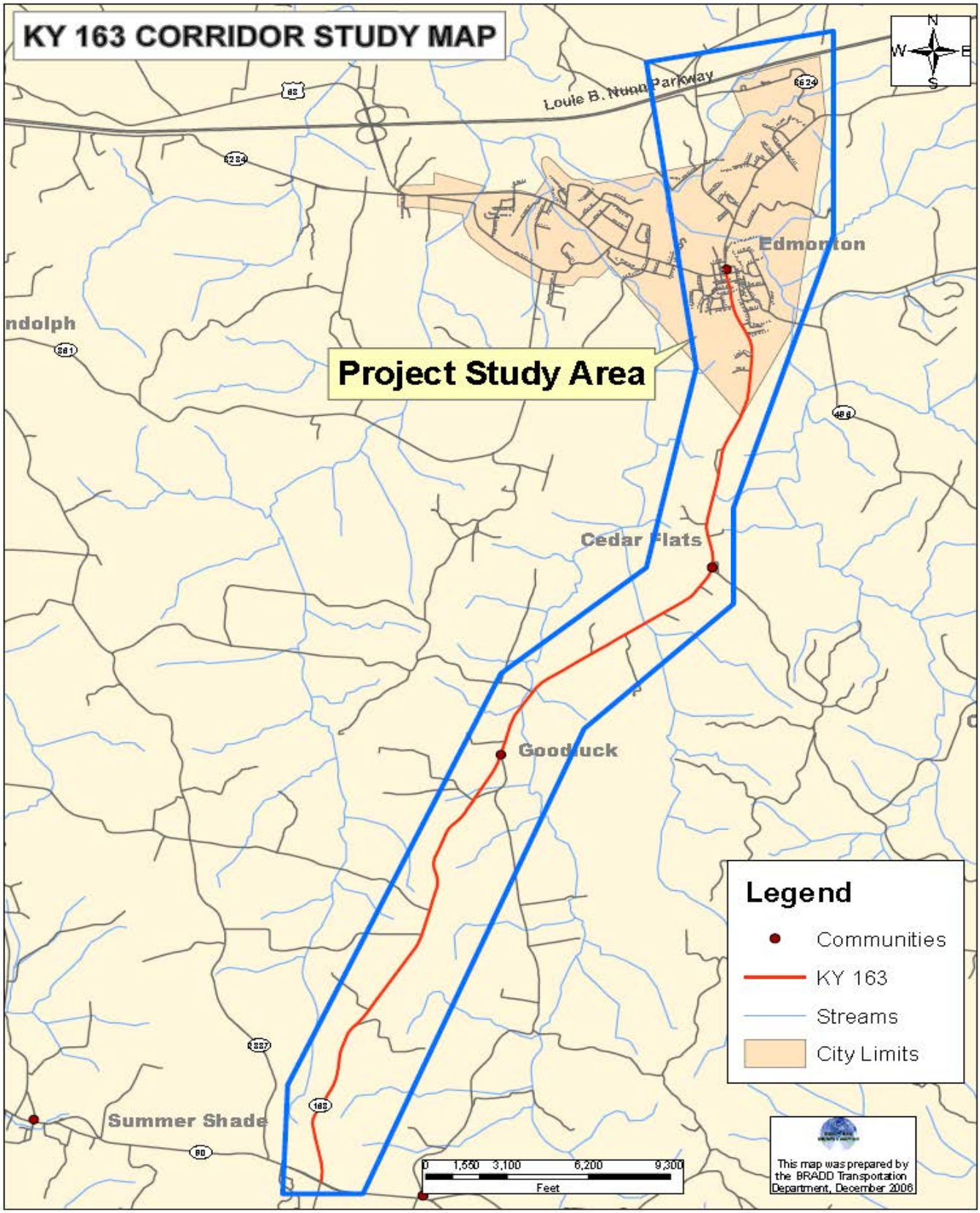
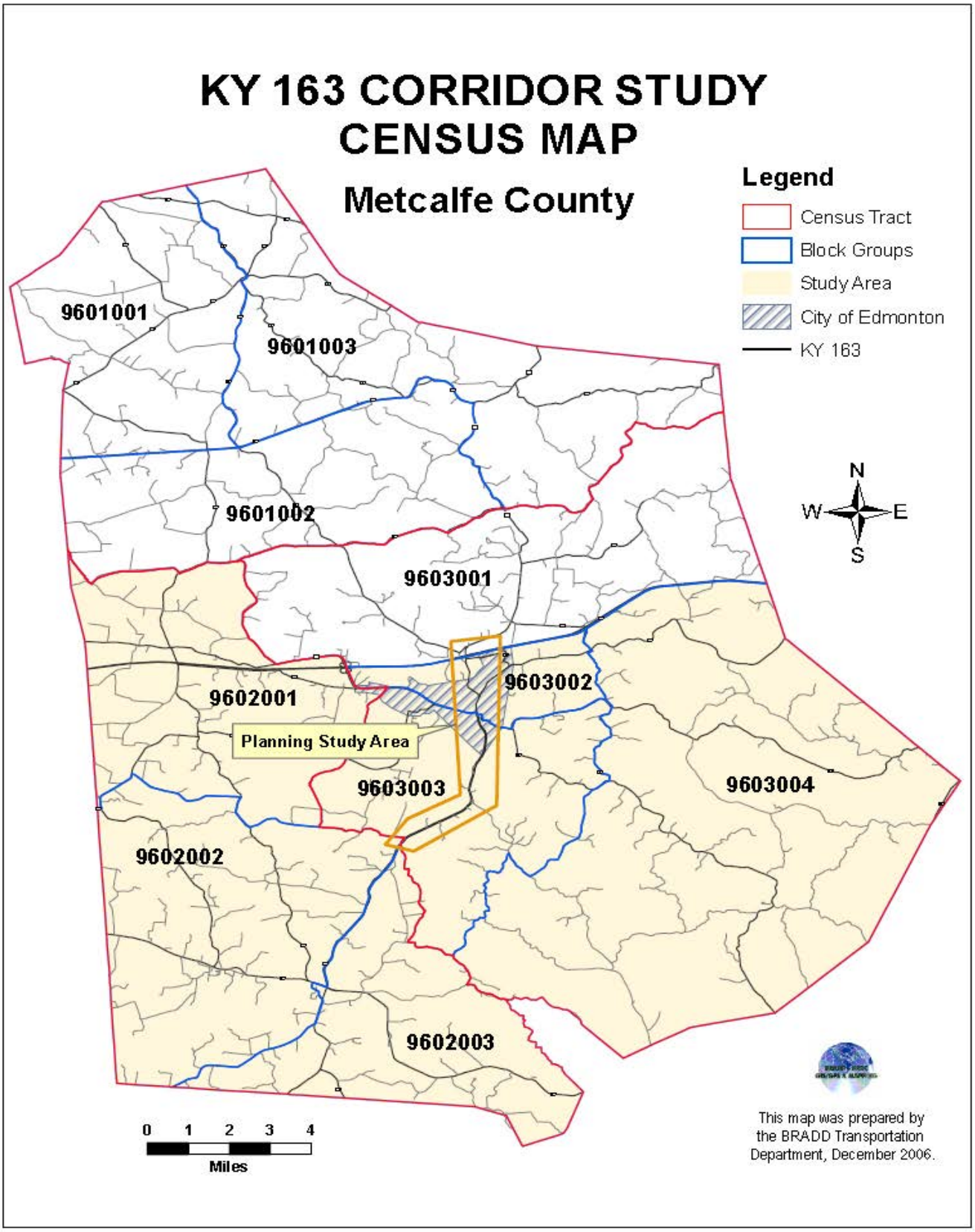
Shady Grove
Center
Savoyard
Sulphur Well
Knob Lick
Beechville
Clarks Corner
Cork
Echo
Wisdom
New Liberty
Gascon
Edmonton
Randolph
Cofer
Cedar Flats
Curtis
Goodluck
Summer Shade
Beaumont
Willow Shade
Cyclone
0 0.5 1 2 3 4
Miles
This map was prepared by
the BRADD Transportation
Department, December 2006

APPENDIX 4


KY 163 CORRIDOR STUDY MAP
Louie B. Nunn Parkway
Edmonton
Project Study Area
Cedar Flats
Goodluck
Summer Shade
Legend
Communities
KY 163
Streams
City Limits
0 1,550 3,100 6,200 9,300
Feet
This map was prepared by the BRADD Transportation Department, December 2006

APPENDIX 5


KY 163 CORRIDOR STUDY
CENSUS MAP
Metcalfe County
Legend
Census Tract
Block Groups
Study Area
City of Edmonton
KY 163
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9601001
9601003
9601002
9603001
9603002
9602001
Planning Study Area
9603003
9603004
9602002
9602003
0 1 2 3 4
Miles
This map was prepared by
the BRADD Transportation
Department, December 2006.

APPENDIX 6: METCALFE COUNTY CENSUS DATA

METCALFE COUNTY											
REGION	TOTAL POPULATION	WHITE ALONE	PERCENT WHITE ALONE	BLACK OR AFRICAN AMERICAN ALONE	PERCENT BLACK OR AFRICAN AMERICAN ALONE	AMERICAN INDIAN AND ALASKA NATIVE ALONE	PERCENT AMERICAN INDIAN AND ALASKA NATIVE ALONE	ASIAN ALONE	PERCENT ASIAN ALONE	NATIVE HAWAIIAN AND OTHER PACIFIC ISLANDER ALONE	PERCENT NATIVE HAWAIIAN AND OTHER PACIFIC ISLANDER ALONE
United States	281,421,906	211,353,725	75.10%	34,361,740	12.21%	2,447,989	0.87%	10,171,820	3.61%	378,782	0.13%
Kentucky	4,041,769	3,639,168	90.04%	293,915	7.27%	9,080	0.22%	28,994	0.72%	1,155	0.03%
Metcalfe Co.	10,037	9,690	96.54%	112	1.12%	54	0.54%	0	0.00%	0	0.00%
Census Tract 9602	2,970	2,914	98.11%	32	1.08%	0	0.00%	0	0.00%	0	0.00%
Block Group 1	1,097	1,091	99.45%	6	0.55%	0	0.00%	0	0.00%	0	0.00%
Block Group 2	1,147	1,097	95.64%	26	2.27%	0	0.00%	0	0.00%	0	0.00%
Block Group 3	726	726	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Census Tract 9603	4,590	4,408	96.03%	37	0.81%	54	1.18%	0	0.00%	0	0.00%
Block Group 1	811	770	94.94%	0	0.00%	25	3.08%	0	0.00%	0	0.00%
Block Group 2	1,182	1,140	96.45%	23	1.95%	0	0.00%	0	0.00%	0	0.00%
Block Group 3	1,491	1,432	96.04%	14	0.94%	2	0.13%	0	0.00%	0	0.00%
Block Group 4	1,106	1,066	96.38%	0	0.00%	27	2.44%	0	0.00%	0	0.00%

Source: www.census.gov

Summary File 3 (SF3)

Detailed Tables: P.6-Race, P.8-Sex by Age, P.87-Poverty Status in 1999 by Age

Summary File 3 (SF3)

Hispanic or Latino Origin was found on Table: P7. Hispanic or Latino by Race

APPENDIX 6: METCALFE COUNTY CENSUS DATA (Continued)

METCALFE COUNTY										
REGION	SOME OTHER RACE ALONE	PERCENT SOME OTHER RACE ALONE	TWO OR MORE RACES	PERCENT TWO OR MORE RACES	HISPANIC OR LATINO ORIGIN	PRECENT HISPANIC OR LATINO ORIGIN	PERSONS 65 AND OVER	PERCENT PERSONS 65 AND OVER	PERSONS BELOW POVERTY LEVEL	PERCENT PERSONS BELOW POVERTY LEVEL
United States	15,436,924	5.49%	7,270,926	2.58%	35,238,481	12.52%	34,978,972	12.43%	33,899,812	12.05%
Kentucky	22,116	0.55%	47,341	1.17%	59,939	1.48%	488,248	12.08%	621,096	15.37%
Metcalfe Co.	40	0.40%	141	1.40%	57	0.57%	1,504	14.98%	2,335	23.26%
Census Tract 9602	0	0.00%	24	0.81%	0	0.00%	359	12.09%	569	19.16%
Block Group 1	0	0.00%	0	0.00%	0	0.00%	109	9.94%	203	18.51%
Block Group 2	0	0.00%	24	2.09%	0	0.00%	143	12.47%	220	19.18%
Block Group 3	0	0.00%	0	0.00%	0	0.00%	107	14.74%	146	20.11%
Census Tract 9603	15	0.33%	76	1.66%	27	0.59%	781	17.02%	1,111	24.20%
Block Group 1	0	0.00%	16	1.97%	0	0.00%	97	11.96%	214	26.39%
Block Group 2	0	0.00%	19	1.61%	7	0.59%	340	28.76%	310	26.23%
Block Group 3	15	1.01%	28	1.88%	20	1.34%	199	13.35%	310	20.79%
Block Group 4	0	0.00%	13	1.18%	0	0.00%	145	13.11%	277	25.05%

Source: www.census.gov

Summary File 3 (SF3)

Detailed Tables: P.6-Race, P.8-Sex by Age, P.87-Poverty Status in 1999 by Age

Summary File 3 (SF3)

Hispanic or Latino Origin was found on Table: P7. Hispanic or Latino by Race

MINUTES

Project Team Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00

KYTC District 3 Office
Bowling Green, Kentucky
November 30, 2006
10:00 AM

A project team meeting for the KY 163 Alternatives Study in Metcalfe County was held at 10 a.m. CST on Thursday, November 30, 2006, in Bowling Green, Kentucky. The purpose of the meeting was to discuss the project purpose and history, the scope of work, the preliminary data collected, relevant project issues, and public input strategies. Participants in the meeting came from the Barren River Area Development District (BRADD), the Kentucky Transportation Cabinet (KYTC) District 3 Office, and the consultant firms, Wilbur Smith Associates (WSA) and Third Rock Consultants. Meeting attendees included the following persons:

Amy Scott	BRADD, Regional Transportation Planner
Bruce Siria	KYTC Central Office, Planning
Keirsten Jaggers	KYTC District 3, Public Information Officer
Jeff Moore	KYTC District 3, Planning
Misti Wilson	KYTC District 3, Planning
Steve James	KYTC District 3, Preconstruction
Andrew Stewart	KYTC District 3, Design
Deneatra Hack	KYTC District 3, Design
Renee Slaughter	KYTC District 3, Environmental Coordinator
Allen Cox	KYTC District 3, Traffic
Virginia Goodman	Third Rock Consultants
Carl Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key components and discussion items for this meeting is provided below, following the agenda outline.

1. Welcome and Introduction
Jeff Moore began the meeting, welcoming the participants and introducing the project team members in attendance. He emphasized the freshness of the project, assuring attendees that no pre-conceived solutions are favored for the route.

2. Purpose

Bruce Siria briefly outlined the purpose of the project: to extend the improvements along KY 163 north to Metcalfe County and allow Edmonton an opportunity to connect with a freight link along KY 90. Currently, truck turning movements are difficult in Edmonton; the parkway interchange west of the city is an old toll interchange providing the only access. The project also provides opportunities to improve safety hazards along the corridor and to mitigate congestion issues at the US 68 intersection in downtown Edmonton. Public input from the upcoming local officials, stakeholders, and public meetings will be used to guide alternative development.

3. Project History

Jeff reviewed the status of various other studies and construction projects occurring in the area. A trend has arisen that a number of freight trucks, to avoid construction and delays in the Nashville area, travel from Tennessee along KY 163 north to KY 90 west to access I-65. Traffic volumes along KY 163 noticeably decrease north of the intersection with KY 90. KY 163 also serves to connect the small industrial bases in Edmonton and Tompkinsville to Tennessee. In addition, a limited amount of recreational traffic uses KY 90 to access Dale Hollow and Cumberland Lake. This project should address the entire network, specifically planning how Edmonton will fit into these traffic patterns.

To better serve this traffic flow, improvements have been occurring along both KY 163 and KY 90 south of Metcalfe County. A widening project along KY 90 is in the current KYTC Six Year Plan in the design phase. A planning study along KY 90 identified 16 specific improvement projects, with a bypass around Summer Shade as a high priority. Portions of KY 163 in Tompkinsville have been reconstructed while the segment north of town in Monroe County is in the right-of-way acquisition phase. A bypass is in the design phase for Tompkinsville, as well, with an additional planning study in Monroe County to begin soon to complete a connection along KY 163 from Tennessee to the Nunn Parkway. Improving KY 163 through Edmonton could provide a more direct connection to the Parkway/Future I-66 which may reroute additional commercial traffic through the city. There is also an HES project underway on US 68 around milepoint 7 in Edmonton. A previous study was conducted at the KY 163/US 68 intersection to investigate the benefits of alternative striping or installation of a signal.

This KY 163 planning study for Metcalfe County was identified as a high priority locally and regionally and ranked as a medium priority at the district level. Goals, as shown on the KYTC planning process Project Identification Form, were first safety, then connectivity, followed by mobility. It was noted that there is a large degree of political interest in this project. It was suggested that members of the project team meet with Representative Comer and Senator Williams early in the planning phases.

4. Scope of Work
Carl Dixon discussed the scope of work, noting that Third Rock Consultants would be the subconsultant handling the environmental overview. He confirmed with Amy Scott that BRADD would provide environmental justice information by investigating and reporting demographic data on the population.

Three types of meetings are included in the scope.

- Project Team – Up to four meetings with the project team are anticipated, including the initial project scoping meeting and a meeting in March to review feasible solutions and refine the number of alternatives for external presentations.
- Local Officials/Stakeholders – Two meetings for each group are anticipated. The first, scheduled for November 30 at 2 p.m. and 3 p.m., respectively, is designed to establish a clearer purpose and need statement based on local perspectives. The second set of meetings is anticipated to occur in May and to provide an opportunity to gather local opinions about the final alternative corridors, including the No-Build Alternative.
- Public Meetings – Two meetings are anticipated to present information to the public. The first meeting is set for 4 – 6 pm CST on December 14, 2006, at the Edmonton High School cafeteria. This meeting is designed to allow the public an opportunity to comment on the project purpose and to voice their concerns. A public involvement plan will be presented to KYTC District personnel prior to the December 14th meeting.

WSA will provide the final recommendations around October 2007, in order to advance potential projects into the next KYTC six year plan.

5. Preliminary Data
Carl Dixon and Rebecca Ramsey presented an overview of the preliminary exhibits. The study area was defined along KY 163, with an eastern terminus corresponding to likely interchange locations along the Nunn Parkway. Other data is to be field verified, with KYTC providing traffic turning movement counts at select intersections. District personnel pointed out the topography around Edmonton potentially has karst features which will need to be mapped; the terrain is rolling farmland to the west of the city and hilly to the east. The environmental overview should pay special attention to the endangered Gray Bat, likely to be found on the eastern side of Edmonton. Three landfills shown on the environmental footprint could also merit special consideration.

Carl Dixon asked for clarification about the economy and workforce. Primarily, workers in Metcalfe County commute outside of the county for work. Economic engines within the area include an industrial park on the north side of Edmonton, the education system, agriculture, and a timber industry east of the city.

To obtain more detailed crash information, persons familiar with the area recommended contacting the sheriff's office. A significant amount of crash data goes unrecorded in this area.

6. Project Issues

Jeff Moore facilitated discussion about specific project issues likely to arise over the course of the study. Because there is not well-developed background accompanying the project, the team will rely heavily on local knowledge to identify potential concerns.

Due to the local concerns, the project team agreed that at least one alternative should avoid a bypass around the city of Edmonton. Other small communities in the area experienced economic stagnation after installing a bypass; community members may not respond warmly to a "bypass" whereas a "connection to the Parkway" might evoke a warmer reception.

Steve James expressed concern about funding and the typical cross section of the route. Emergency service access was another issue discussed; with the nearest hospital in Glasgow, fast access to the parkway is an important safety consideration.

7. Public Involvement

Carl Dixon asked about the characteristics of the population and any impacts that would cause on a public outreach effort. Generally speaking, the area has an older demographic with lower than average literacy rates. A simple survey, large mapping exercises with area photos, and verbal exercises were identified as potentially effective tools to gather information from the public. Jeff Moore recommended a post-it open discussion for the local officials and stakeholders meetings occurring later that day. Attendees would be asked to write their answers to the following questions and then to discuss results.

- What works about KY 163?
- What doesn't work about it?
- Are there any spots to avoid?

The meeting was adjourned around 11:30 CST.

AGENDA
KY 163 Alternatives Study
KY 90 to Louie B. Nunn (Cumberland) Parkway
Metcalfe County

November 30, 2006

1. Welcome and Introductions	**Highway District**
2. Purpose of Meeting	**Division of Planning**
3. Project History **a. Origin** **b. Purpose** **c. Group Discussion**	**Division of Planning/ Highway District**
4. Scope of Work **a. Tasks** **b. Responsible parties** **c. Schedule**	**Wilbur Smith Associates**
5. Preliminary Data/Exhibits **a. Study Area** **b. Highway Systems** **c. Roadway/Bridge Data** **d. Traffic** **e. Volume/Service Flow** **f. Highway Crashes** **g. Adequacy Ratings** **h. Environmental Footprint**	**Wilbur Smith Associates**
6. Project Issues **a. Study Area** **b. Local Issues** **c. Project Goals** **d. Environmental Justice**	**Group Discussion**
7. Public Involvement **a. Special groups** **b. Tasks** **c. Schedule**	**Group Discussion**
8. Q & A	**Group Discussion**
ADJOURN	**Division of Planning**

MINUTES

Local Officials Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00

Judicial Center
Edmonton, Kentucky
November 30, 2006
2:00 PM

A stakeholders meeting for the KY 163 Alternatives Study in Metcalfe County was held at 2 p.m. CST on Thursday, November 30, 2006, in Edmonton, Kentucky. The purpose of the meeting was to discuss the project purpose and history, the scope of work, the preliminary data collected, relevant project issues, and public input strategies. Participants in the meeting came from Monroe County, the Barren River Area Development District (BRADD), the Kentucky Transportation Cabinet (KYTC) District 3 Office, and the consultant firm, Wilbur Smith Associates (WSA). Meeting attendees included the following persons:

Judge William Graves	Monroe County Judge Executive
Amy Scott	BRADD, Regional Transportation Planner
Bruce Siria	KYTC Central Office, Planning
Jeff Moore	KYTC District 3
Keirsten Jaggers	KYTC District 3
Misti Wilson	KYTC District 3
Carl Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key components and discussion items for this meeting is provided below, following the agenda outline.

1. Welcome and Introduction
Jeff Moore began the meeting, welcoming the participants and introducing the project team members in attendance. He stressed the freshness of the project and the need to obtain local input to clarify existing problems and a community vision for the future.

2. Purpose
Bruce Siria briefly outlined the purpose of the project: to extend the improvements along KY 163 north to Metcalfe County and allow Edmonton an opportunity to connect with a freight link along KY 90. Currently, truck turning movements are difficult in Edmonton; the parkway interchange west of the city is

an old toll interchange providing the only access. The project also provides opportunities to improve safety hazards along the corridor and to mitigate congestion issues at the US 68 intersection in downtown Edmonton. He stressed that this was the first step in the study process and that there were no preconceived ideas or decisions made on what should be done. Public input from the upcoming local officials, stakeholders, and public meetings will be used to guide alternative development.

3. Project History

Jeff Moore reviewed the status of various other studies and construction projects occurring in Monroe and Metcalfe Counties. Improvements are occurring along both KY 163 and KY 90 south of Metcalfe County to serve a freight volume using this path to access I-65 while avoiding traffic delays in Nashville, TN. A planning study along KY 90 identified 16 specific improvement projects, with a bypass around Summer Shade as a high priority. Portions of KY 163 in Tompkinsville have been reconstructed while the segment north of town in Monroe County is in the right-of-way acquisition phase. A bypass is in the design phase for Tompkinsville as well, with an additional planning study in Monroe County beginning soon to complete a connection along KY 163 from the Tennessee state line to the Nunn Parkway. Improving KY 163 through Edmonton could provide a more direct connection to the Parkway/Future I-66 which may reroute additional commercial traffic through the city.

4. Scope of Work

Carl Dixon summarized the scope of work, focusing on key scheduling elements. There is a public meeting December 14, 2006. Alternatives will be developed and presented to local officials, stakeholders, and public in May of 2007. Final report recommendations are anticipated by October 2007.

5. Preliminary Data

Carl Dixon briefly described the data and exhibits distributed to participants, emphasizing that the information is preliminary, but it will provide a starting point for field investigations.

6. Project Issues

From the Monroe County perspective, having access to the future I-66 is a positive improvement for economic development.

With no further questions, the meeting was adjourned around 3:00 CST.

AGENDA
KY 163 Alternatives Study
KY 90 to Louie B. Nunn (Cumberland) Parkway
Metcalfe County

November 30, 2006

1. Welcome and Introductions	**Highway District**
2. Purpose of Meeting	**Division of Planning**
3. Project History **a. Origin** **b. Purpose** **c. Group Discussion**	**Division of Planning/ Highway District**
4. Scope of Work **a. Tasks** **b. Responsible parties** **c. Schedule**	**Wilbur Smith Associates**
5. Preliminary Data/Exhibits **a. Study Area** **b. Highway Systems** **c. Roadway/Bridge Data** **d. Traffic** **e. Volume/Service Flow** **f. Highway Crashes** **g. Adequacy Ratings** **h. Environmental Footprint**	**Wilbur Smith Associates**
6. Project Issues **a. Study Area** **b. Local Issues** **c. Project Goals** **d. Environmental Justice**	**Group Discussion**
7. Public Involvement **a. Special groups** **b. Tasks** **c. Schedule**	**Group Discussion**
8. Q & A	**Group Discussion**
ADJOURN	**Division of Planning**

MINUTES

Stakeholders Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00

Judicial Center
Edmonton, Kentucky
November 30, 2006
3:00 PM CST

A stakeholders meeting for the KY 163 Alternatives Study in Metcalfe County was held at 3 pm CST on Thursday, November 30, 2006, in Edmonton, Kentucky. The purpose of the meeting was to discuss the project purpose and history, the scope of work, the preliminary data collected, relevant project issues, and public input strategies. Participants in the meeting came from local stakeholder groups, the Barren River Area Development District (BRADD), the Kentucky Transportation Cabinet (KYTC) District 3 Office, and the consultant firm, Wilbur Smith Associates (WSA). Meeting attendees included the following persons:

Jack Vrocher	Edmonton City Council
Harold Stilts	City of Edmonton
Willard Hansford	Governor's Office
Mike Swift	Barren/Metcalfe EMS, Director
Amy Scott	BRADD, Regional Transportation Planner
Bruce Siria	KYTC Central Office, Planning
Jeff Moore	KYTC District 3
Keirsten Jaggers	KYTC District 3
Misti Wilson	KYTC District 3
Carl Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key components and discussion items for this meeting is provided below, following the agenda outline.

1. Welcome and Introduction
Jeff Moore began the meeting, welcoming the participants and introducing the project team members in attendance. He stressed the freshness of the project and the need to obtain local input to clarify existing problems and a community vision for the future.

2. Purpose
Bruce Siria briefly outlined the purpose of the project: to extend the improvements along KY 163 north to Metcalfe County and allow Edmonton an opportunity to connect with a freight link along KY 90. The project also provides opportunities to improve safety hazards along the corridor and to mitigate congestion issues at the US 68 intersection in downtown Edmonton. He stressed that this was the first step in the study process and that there were no preconceived ideas or decisions made on what should be done. The purpose of this meeting is to get local input on problems and possible solutions.

3. Project History
Jeff Moore reviewed the status of various other studies and construction projects occurring in the area. A trend has arisen that a number of freight trucks, to avoid construction and delays in the Nashville area, travel from Tennessee along KY 163 north to KY 90 west to access I-65. To better serve this traffic flow, improvements have been occurring along both KY 163 and KY 90 south of Metcalfe County. A planning study along KY 90 identified 16 specific improvement projects, with a bypass around Summer Shade as a high priority. Portions of KY 163 in Tompkinsville have been reconstructed while the segment north of town in Monroe County is in the right-of-way acquisition phase. A bypass is in the design phase for Tompkinsville as well, with an additional planning study in Monroe County beginning soon to complete a connection along KY 163 from the Tennessee state line to the Nunn Parkway. Improving KY 163 through Edmonton could provide a more direct connection to the Parkway/Future I-66 which may reroute additional commercial traffic through the city. There is also an HES project underway on US 68 around milepoint 7 in Edmonton.

4. Scope of Work
Carl Dixon summarized the scope of work, focusing on key scheduling elements. There is a public meeting December 14, 2006, which will provide an opportunity for the city of Edmonton to share their ideas with KYTC. Alternatives will be internally reviewed and presented to the local officials, stakeholders, and public again in May of 2007. Final report recommendations are anticipated by October 2007 in order to be included in the next KYTC Six Year Plan.

5. Preliminary Data
Attendees were provided with handouts of data and exhibits for the major state highways in the study area, showing systems, geometrics, traffic, critical rate factors, and volume/service flow. There was no detailed discussion of the information since time limitations made it imperative that the study proceed into a discussion of the local issues.

6. Project Issues
Jeff Moore explained that this project is a recent development with no pre-conceived solutions. The main goals identified in the KYTC statewide planning process Project Identification Form (PIF) were first safety, then connectivity,

followed by mobility. It is important to hear from a local perspective what the issues are with the route and what solutions will work best for the city. Jeff opened the floor for a roundtable discussion, allowing participants to introduce themselves in turn. Identified issues include the following points:

- Participants identified existing problems with the system. These included:
    - Narrow lanes and bridges along KY 163
    - No shoulders north of intersection with KY 90
    - Congestion at intersection with US 68 because there are no redundant routes – traveling north-south or east-west through Edmonton; the only crossing point is the 4-way stop
    - Intersection at Cedar Flats is a safety problem
    - Interchange with Nunn Parkway does not have a history of excessive accidents, despite deficient geometrics
    - Noticeable backup and delays when trucks entering/leaving stockyard at junction of US 68 and KY 80
    - Geometrics at KY 1243 intersection with US 68 north of Industrial Park
- A strong interest was expressed in seeing a second interchange with the parkway, east of the existing one. An interchange with US 68 would provide better access to the Industrial Park without routing trucks through town.
- There is a recognized need for route redundancy within Edmonton.
    - Help reduce congestion at 4-way stop
    - Provide alternative routes for emergency services
- Emergency response services are limited by existing layout of Edmonton. Fire and ambulances are located on US 68 west of the 4-way stop, in the same quadrant as the schools and primary retail developments. There is an existing Industrial Park in the north side of town along US 68 and a 38 acre industrial site being developed in the south along KY 163. If an event were to occur requiring immediate response, an alternative route east-west or north-south would speed response time. One report estimates ambulances could spend 3-4 minutes delayed in traffic at the 4-way stop. Similarly, the nearest hospitals are TJ Sampson in Glasgow and West Lake Cumberland Hospital in Somerset, best accessed via the parkway.
- Edmonton bypass options were discussed as well. General consensus was that a bypass is a logical option and will be a wise move for the community. Some conflicts may arise with residential properties, but downtown businesses are not heavily dependent on passing traffic which would be diverted; the schools and courthouse generate enough activity to continue supporting the businesses. Traffic congestion at the 4-way stop is actually thought to hurt downtown businesses by reducing accessibility. Two options were discussed, a bypass to the east or to the west.
    - East, reconnecting at the US 68/KY 80 split – which may make the most sense assuming there will be a second interchange with the parkway. It would reduce congestion at the 4-way stop, encourage economic development due to increased access, and improve

emergency response ability with route redundancy nearer the industrial park.
    - West – approaches nearer the existing interchange, again diverting trips from the congestion at the existing 4-way stop. HES improvements in front of McDonalds would already address some route safety issues
- Lane configurations were discussed. The typical section will most likely include two lanes because there isn't enough volume to justify four lanes. Truck passing lanes are encouraged, if feasible.
- Stakeholders also identified additional areas to avoid based on potential environmental complications.
    - "Missionary Mound" is a cemetery across from the church
    - A high pressure steel gas line connects into KY 163 at Cedar Flats
    - Three existing landfills (old city dumps) are marked on the preliminary environmental footprint, but none remain operational.

7. Public Involvement

Jeff Moore and Keirsten Jaggers asked the local representatives present which methods would best interest the community in the public meeting scheduled for December 14. Radio ads, letters to local businesses, announcements in the Herald News and Glasgow Times, and flyers posted around town were recommended. The District office will also place a variable message sign coming into town along US 68. It was noted that the legal notice appearing in the Light Newspaper did not include the meeting date.

The meeting was adjourned around 4:30 CST.

AGENDA
KY 163 Alternatives Study
KY 90 to Louie B. Nunn (Cumberland) Parkway
Metcalfe County

November 30, 2006

1. Welcome and Introductions	**Highway District**
2. Purpose of Meeting	**Division of Planning**
3. Project History **a. Origin** **b. Purpose** **c. Group Discussion**	**Division of Planning/ Highway District**
4. Scope of Work **a. Tasks** **b. Responsible parties** **c. Schedule**	**Wilbur Smith Associates**
5. Preliminary Data/Exhibits **a. Study Area** **b. Highway Systems** **c. Roadway/Bridge Data** **d. Traffic** **e. Volume/Service Flow** **f. Highway Crashes** **g. Adequacy Ratings** **h. Environmental Footprint**	**Wilbur Smith Associates**
6. Project Issues **a. Study Area** **b. Local Issues** **c. Project Goals** **d. Environmental Justice**	**Group Discussion**
7. Public Involvement **a. Special groups** **b. Tasks** **c. Schedule**	**Group Discussion**
8. Q & A	**Group Discussion**
ADJOURN	**Division of Planning**

Public Involvement Meeting

KY 163 Corridor Alternatives Study
Metcalfe County
Item No. 3-129.00
Metcalfe County High School
Edmonton, Kentucky
December 14, 2006 – 4:00 – 6:00 p.m.

A public involvement open house meeting was held on Thursday, December 14, 2006, from 4:00 p.m. to 6:00 p.m. at Metcalfe County High School in Edmonton, Kentucky. The purpose of the meeting was to provide preliminary information to the public on the proposed project and to get public input on possible issues, impacts, and alternates. The following Kentucky Transportation Cabinet (KYTC), Area Development District (ADD), and consultant staff were in attendance:

Amy Scott	Barren River Area Development District
Shane Blankenship	KYTC, District 3
Keirsten Jaggers	KYTC, District 3
Steve James	KYTC, District 3
Jeff Moore	KYTC, District 3
Andy Stewart	KYTC, District 3
Misti Wilson	KYTC, District 3
Bruce Siria	KYTC Central Office, Division of Planning
Carl D. Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates
Virginia Goodman	Third Rock Consultants

The public involvement meeting was arranged with several informational display boards, with KYTC, ADD, and consultant staff available to answer questions and discuss issues. As attendees entered the meeting room, they were invited to participate in the following areas:

- Sign-In

  Upon arrival, attendees were greeted at the door and asked to sign the attendance list. At this station, attendees were given a survey questionnaire, study area map, and information regarding KYTC roadway projects. Attendees were asked to complete the survey prior to leaving the meeting, or return it to KYTC at a later date in the postage-paid envelope provided. Attendees were encouraged to view a slide presentation prior to walking through the project exhibits.

- KY 163 Corridor Study Presentation

  A PowerPoint slide presentation was prepared for the public involvement meeting, providing information on the current KY 163 Corridor Study. The presentation included information such as: the study area; project history; preliminary project goals; traffic, design and environmental considerations; public involvement opportunities; and contact information.

This slide show was played continuously during the public involvement session, with a seating area provided nearby for viewers.

- Exhibit Boards

  A section of the room was set up with a semi-circular arrangement of project exhibits, including the following maps:

  - Regional Study Area
  - City of Edmonton Map
  - Roadway Geometry and Systems Information
  - Average Daily Traffic and Volume/Service Flow Data
  - General Accident Information, illustrated by Critical Rate Factors
  - Photos of Potential Environmental Issues, Natural and Manmade
  - Environmental Footprint

Attendees were invited to view the project exhibits and discuss any questions or concerns with KYTC, ADD, and consultant staff. Comments and concerns made during the public involvement meeting could also be recorded on one of the flip charts in this area of the room or drawn directly onto the display boards. General comments recorded consisted of the following:

- A second interchange with the Nunn Parkway (north/east of Edmonton) would help truck traffic, serve the existing industrial park and area saw mills, and improve emergency services response times.
- The four-way stop intersection where KY 163 meets US 68/KY 80 needs to be addressed. Traffic backs up during the afternoon peak hour and turning movements are difficult for large trucks.
- Several bypass locations were identified, including options on the east, west, and south. Eastern bypass recommendations were typically linked to a new interchange.
- Safety is the primary concern along KY 163.
- Make spot improvements to the existing route: straighten curves, widen lanes and bridges, add striping to the outer pavement edge, and add truck passing lanes.
- Preserve the farmlands and homes.
- KY 163 is not a high volume route; no improvements are needed. The fault lies with the driver, not the roadway itself.
- Relocate the livestock yard.

- Map Drawing Exercise

Two tables were set up with study area maps of both the region and city for attendees to draw on. Markers were provided at either table for attendees to identify potential areas of impact, existing problem locations along the existing route, and realignment alternatives to consider.

- Multiple sharp/steep curves exist on the current alignment which pose safety hazards: just north of KY 90 (MP 4), north of Roy Grider Road (MP 5.8), south of Goodluck (MP 6.8), surrounding Cedar Flats (MP 9.1), and at Hill Street (MP 10.7).
- Bridges at Rogers Creek (MP 7.2) and Black Rock Creek (MP 8.4) were identified as narrow.
- There is a high crash location just north of the curve at Cedar Flats.
- Truck traffic is concentrated on KY 80 and US 68, north of Edmonton.
- There is a high volume of pull-out traffic on KY 80, east of the junction with US 68.

- Survey Area with Refreshments

Tables were available to attendees to fill out their survey form and read over the project materials. Refreshments were also provided.

A total of 73 persons registered their attendance at the two-hour public session (this number includes the staff members listed above).

Additional comments are anticipated through the public comment surveys, which were distributed at the meeting to be returned during the meeting or by mail to KYTC. Once all of the questionnaires are received by KYTC, these comments will also be included in the official meeting record.

The meeting closed at 6:00 p.m.

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Ernie Fletcher
Governor

Bill Nighbert
Secretary

Marc Williams
Commissioner of Highways

January 23, 2007

«Mailing_Title» «First_Name» «Last_Name»«Suffix»
«Title»
«Organization»
«Address1»
«Address2»
«City» «State» «Zip»

Dear «Letter_Title» «Last_Name»:

Subject: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements
from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

We are requesting your agency's input and comments on a planning study to determine the appropriate corridor for improvements to KY 163 from KY 90 to the Louie B. Nunn Parkway. The Kentucky Transportation Cabinet has assembled a study team to evaluate KY 163. That study is currently in the initial data-gathering stage.

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

We respectfully ask that you provide us with your comments by March 7, 2007, to ensure timely progress in this planning effort.

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

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

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

- Study Area Map
- Environmental Footprint
- Crash Critical Rate Factors
- Year 2006 Traffic and Volume to Service Flow Ratios
- Year 2030 Traffic and Volume to Service Flow Ratios

We appreciate any input you can provide concerning this project. Please direct any comments, questions, or requests for additional information to Bruce Siria of the Division of Planning at (502) 564-7183 or at bruce.siria@ky.gov. Please address all written correspondence to Daryl J. Greer, P.E., Director, Division of Planning, Kentucky Transportation Cabinet, 200 Mero Street, Frankfort, KY 40622.

Sincerely,

Daryl J. Greer

Daryl J. Greer, P.E.
Director
Division of Planning

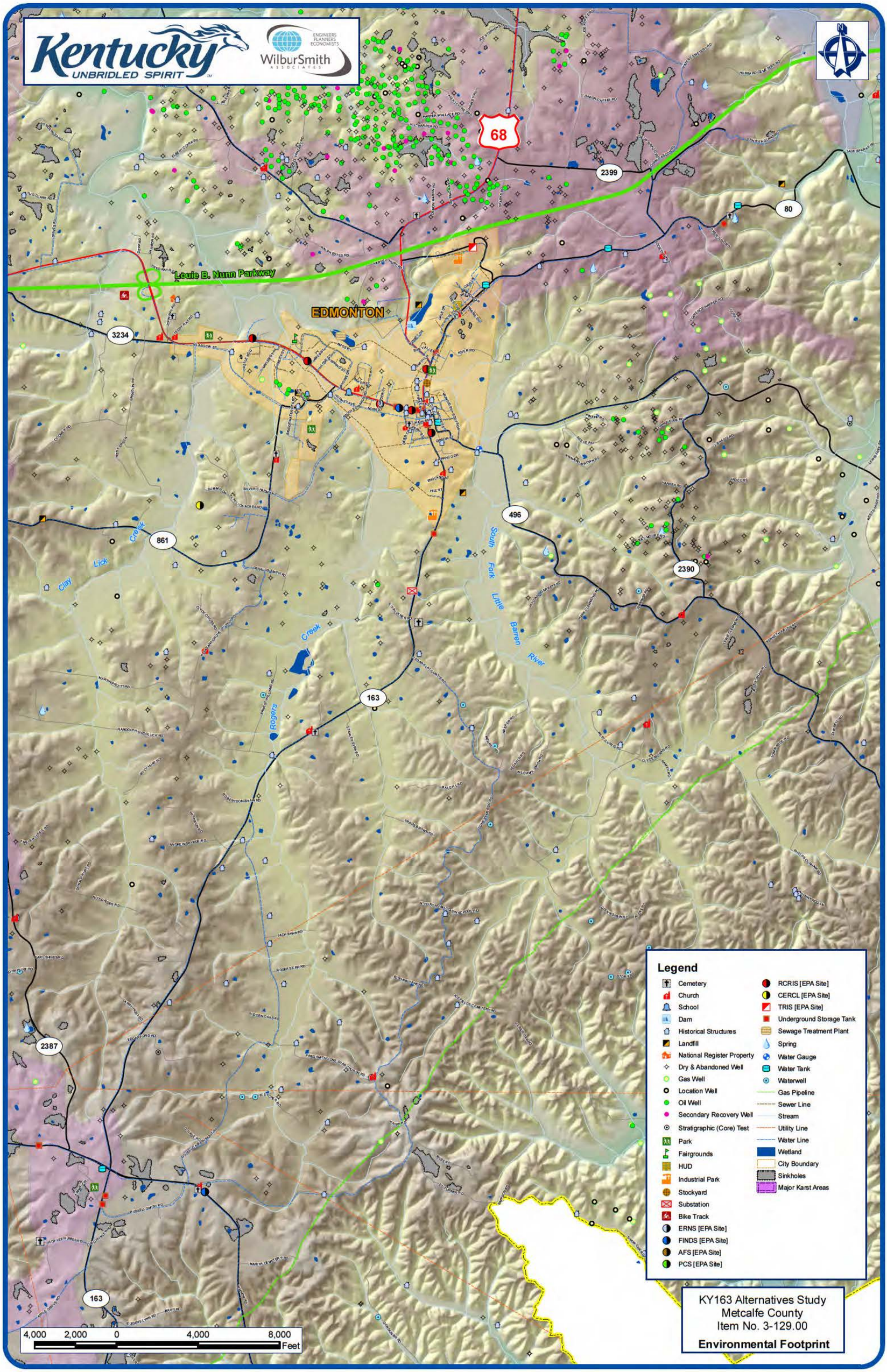
DJG/BSS/NH

Enclosures

c/enc: Carl Dixon - WSA
Shane Blankenship
Jeff Moore
Keirsten Jaggers
Steve James
Scott Pedigo
Renee Slaughter
Jim Simpson
David Harmon
Jason Hyatt

New Liberty
Gascon
Cedar Flats
Curtis
Goodluck
Beaumont
EDMONTON
Exit 27
Louie B. Nunn Parkway
1243
2399
80
3524
68
3234
533
861
496
163
2387
90
Clear Creek
Little Barren River
Rogers Creek
5,000 2,500 0 5,000 Feet

KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Location Map


Kentucky
UNBRIDLED SPIRIT
WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS
N
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Louie B. Nunn Parkway
EDMONTON
3234
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2390
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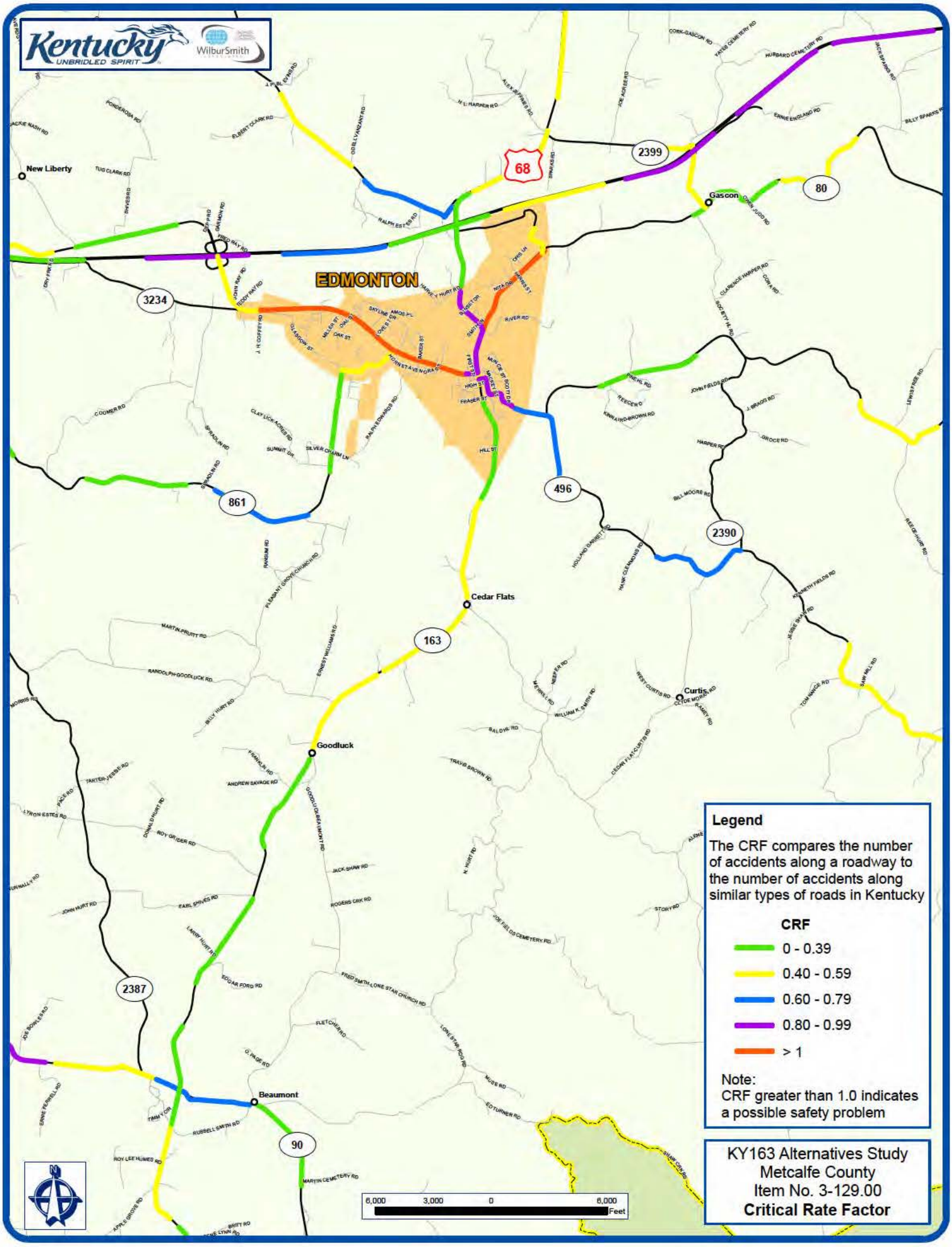
2387
Clay Lick Creek
South Fork Little Barren River
Rogers Creek
4,000 2,000 0 4,000 8,000 Feet
Legend
Cemetery
Church
School
Dam
Historical Structures
Landfill
National Register Property
Dry & Abandoned Well
Gas Well
Location Well
Oil Well
Secondary Recovery Well
Stratigraphic (Core) Test
Park
Fairgrounds
HUD
Industrial Park
Stockyard
Substation
Bike Track
ERNS [EPA Site]
FINDS [EPA Site]
AFS [EPA Site]
PCS [EPA Site]
RCRIS [EPA Site]
CERCL [EPA Site]
TRIS [EPA Site]
Underground Storage Tank
Sewage Treatment Plant
Spring
Water Gauge
Water Tank
Waterwell
Gas Pipeline
Sewer Line
Stream
Utility Line
Water Line
Wetland
City Boundary
Sinkholes
Major Karst Areas
KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Environmental Footprint


Kentucky
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Goodluck
Curtis
Beaumont
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2387
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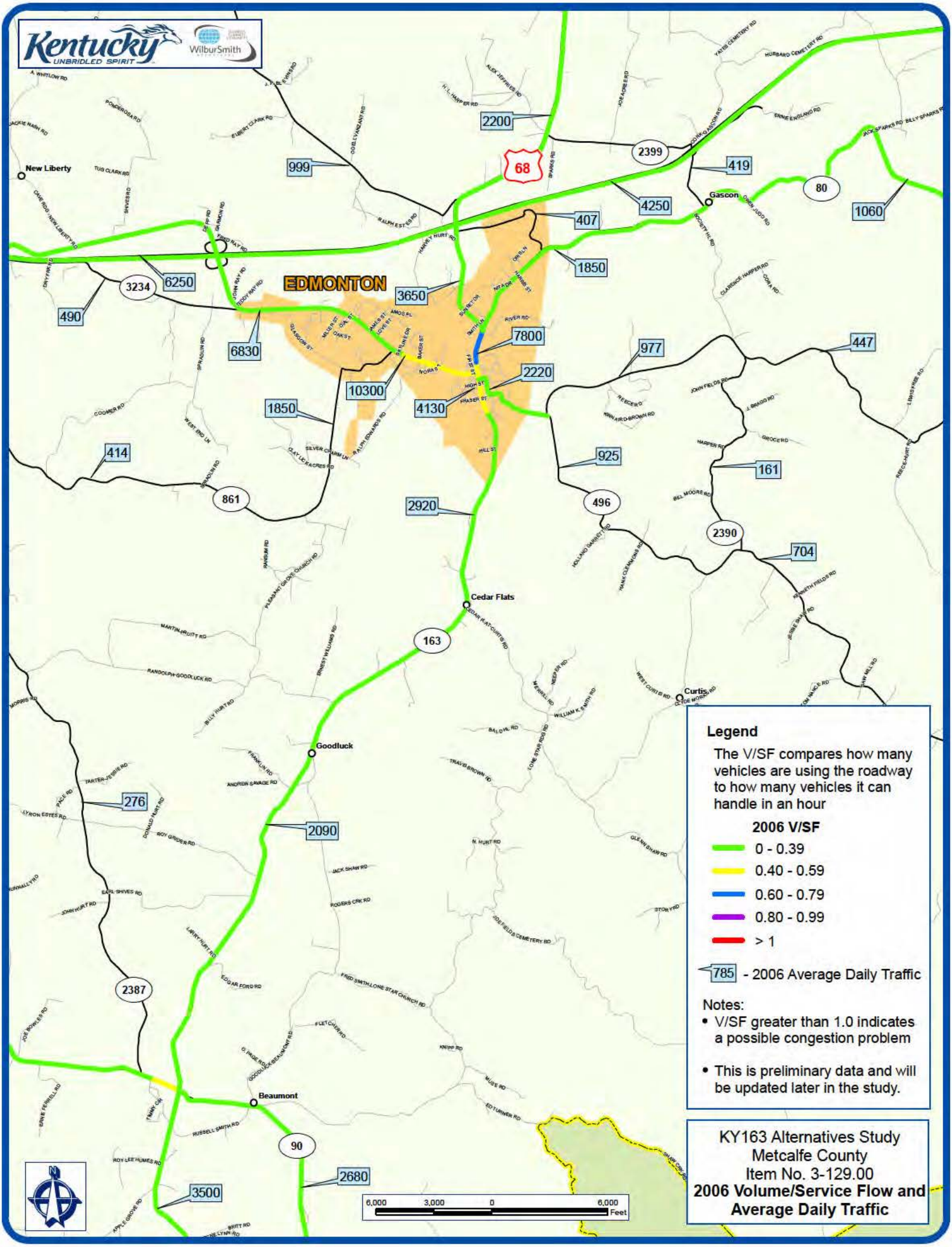
Legend
The CRF compares the number of accidents along a roadway to the number of accidents along similar types of roads in Kentucky
CRF
0 - 0.39
0.40 - 0.59
0.60 - 0.79
0.80 - 0.99
> 1
Note:
CRF greater than 1.0 indicates a possible safety problem
6,000 3,000 0 6,000
Feet
KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Critical Rate Factor


Kentucky
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407
1850
999
3234
6250
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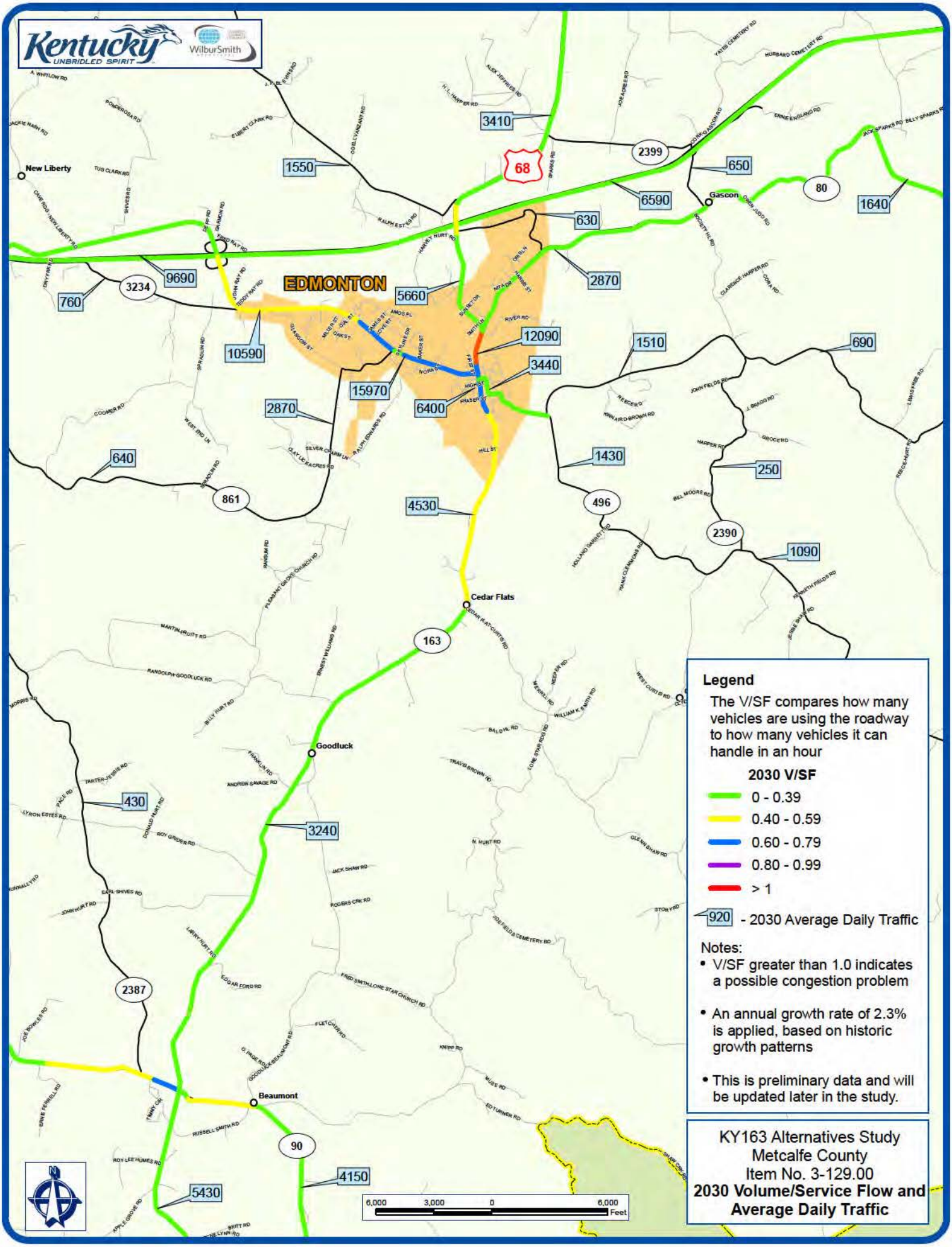
6830
3650
7800
2220
4130
10300
1850
977
447
925
161
496
2390
704
414
861
2920
163
276
2090
2387
90
2680
3500
Legend
The V/SF compares how many vehicles are using the roadway to how many vehicles it can handle in an hour
2006 V/SF
0 - 0.39
0.40 - 0.59
0.60 - 0.79
0.80 - 0.99
> 1
785 - 2006 Average Daily Traffic
Notes:
• V/SF greater than 1.0 indicates a possible congestion problem
• This is preliminary data and will be updated later in the study.
6,000 3,000 0 6,000 Feet
KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
2006 Volume/Service Flow and Average Daily Traffic


Kentucky
UNBRIDLED SPIRIT
WilburSmith
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New Liberty
Gascon
Cedar Flats
Goodluck
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9690
3234
760
10590
5660
12090
3440
15970
6400
2870
640
861
1510
690
1430
250
496
2390
1090
4530
430
3240
2387
4150
5430
Legend
The V/SF compares how many vehicles are using the roadway to how many vehicles it can handle in an hour
2030 V/SF
0 - 0.39
0.40 - 0.59
0.60 - 0.79
0.80 - 0.99
> 1
920 - 2030 Average Daily Traffic
Notes:
V/SF greater than 1.0 indicates a possible congestion problem
An annual growth rate of 2.3% is applied, based on historic growth patterns
This is preliminary data and will be updated later in the study.
6,000 3,000 0 6,000 Feet
KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
2030 Volume/Service Flow and Average Daily Traffic

Ms. LaVerne Reid
District Manager
Airports District Office, Federal Aviation Administration
2862 Business Park Drive #G
Memphis TN 38118-1555

American Association of Truckers
P.O. Box 487
Benton KY 42025

Mr. Donald C. Storm
Adjutant General
Department of Military Affairs
Boone Nat'l Guard Ctr., 100 Minuteman Pky.
Frankfort KY 40601

Mr. John Kington
Deputy Commissioner
Department of Parks
10th Floor, Capital Plaza Tower
500 Mero Street
Frankfort KY 40601

Mr. George Crothers
Director, Office of State Archaeology
Dept. of Anthropology, University of Kentucky
211 Lafferty Hall
Lexington KY 40506-0024

Mr. William Straw, Ph.D.
Regional Environmental Officer
Federal Emergency Management Agency, Region IV
3003 Chamblee-Tucker Road
Atlanta GA 30341-4130

Mr. Jack Fish
President
Kentuckians for Better Transportation
10332 Bluegrass Parkway
Louisville KY 40299

Kentuckians for The Commonwealth
105 Reams Street
P.O. Box 1450
London KY 40743

Mr. Mark Birdwhistell
Secretary
Cabinet for Health and Family Services
275 East Main
Frankfort KY 40601

Mr. John Houlihan
Kentucky Airport Zoning Commission
Transportation Office Building, W3-09-02
200 Mero Street
Frankfort KY 40622

Mr. Bob Arnold
Executive Director
Kentucky Association of Counties
380 King's Daughters Drive
Frankfort KY 40601

Mr. Dave Adkisson
President
Kentucky Chamber of Commerce Executives, Inc.
464 Chenault Road
Frankfort KY 40601

Mr. Richie Farmer
Commissioner
Kentucky Department of Agriculture
32 Fountain Place
Frankfort KY 40601

Ms. Cheryl A. Taylor
Commissioner
Kentucky Department of Environmental Protection
14 Reilly Road
Frankfort KY 40601

Dr. Jonathan Gassett
Commissioner
Kentucky Department of Fish and Wildlife Resources
Arnold L. Mitchell Bldg., #1 Game Farm Rd.
Frankfort KY 40601

Ms. Susan Bush
Commissioner
Kentucky Department of Nat'l. Resources
#2 Hudson Hollow
Frankfort KY 40601

Mr. Stephen A. Coleman
Director
Kentucky Department of Nat'l. Resources, Division of Conservation
#2 Hudson Hollow
Frankfort KY 40601

Mr. John Adams
Commissioner
Kentucky Department of State Police
919 Versailles Road
Frankfort KY 40601

Mr. Paul Rothman
Director
Division of Mine Reclamation and Enforcement
2 Hudson Hollow
Frankfort KY 40601

Kentucky Disabilities Coalition
P.O. Box 1589
Frankfort KY 40602-1589

Mr. John Lyons
Director
Kentucky Division of Air Quality
803 Schenkel Lane
Frankfort KY 40601

Ms. Leah W. MacSwords
Director
Kentucky Division of Forestry
627 Comanche Trail
Frankfort KY 40601

Mr. Greg Howard
Commissioner
Kentucky Department of Vehicle Enforcement
Transportation Office Building, Suite T-500
200 Mero Street
Frankfort KY 40622

Mr. R. Bruce Scott
Director
Kentucky Division of Waste Management
14 Reilly Road
Frankfort KY 40601

Mr. David Morgan
Director
Kentucky Division of Water
14 Reilly Road
Frankfort KY 40601

Mr. Marvin E. Strong, Jr.
Secretary
Kentucky Economic Development Cabinet
Capital Plaza Tower, 24th Floor
500 Mero St.
Frankfort KY 40601

Mr. John Bird
Executive Director
Kentucky Forward
464 Chenault Road
Frankfort KY 40601

Mr. Jim Cobb
State Geologist & Director
Kentucky Geological Survey, University of Kentucky
228 Mining and Mineral Resources Bldg.
Lexington KY 40506

Mr. David L. Morgan
Executive Director
Kentucky Heritage Council
300 Washington Street
Frankfort KY 40601

Mr. Kent Whitworth
Director
Kentucky Historical Society
100 W. Broadway
Frankfort KY 40601

Kentucky Association of Economic Development
2225 Lawrenceburg Road, Bldg. B., Suite 4
Frankfort KY 40601-8489

Ms. Sylvia L. Lovely
Executive Director
Kentucky League of Cities, Inc.
101 East Vine Street, Ste. 600
Lexington KY 40507

Kentucky Motor Transport Association
617 Shelby Street
Frankfort KY 40601

Ms. Teresa J. Hill
Secretary
Kentucky Environmental and Public Protection Cabinet
Capital Plaza Tower, 5th Floor
Frankfort KY 40601

Mr. Donald S. Dott, Jr.
Executive Director
Kentucky Nature Preserves
801 Schenkel Lane
Frankfort KY 40601

Ms. Vickie Bourne
Executive Director
Kentucky Office of Transportation Delivery
Transportation Office Building, W3-10-01
200 Mero Street
Frankfort KY 40622

Mr. Beecher Hudson
Executive Director
Kentucky Public Transit Association
c/o Louisville Red Cross
P.O. Box 1675
Louisville KY 40201

Ms. Marcheta Sparrow
President
Kentucky Tourism Council
612B Shelby Street
Frankfort KY 40601

Mr. George Ward
Secretary
Kentucky Commerce Cabinet
Capital Plaza Tower, 24th Floor
500 Mero Street
Frankfort KY 40601

Mr. Allan Frank
Director
KYTC, Division of Structural Design
Transportation Office Building, E3-16-01
200 Mero Street
Frankfort KY 40622

Ms. Greta Smith
Director
KYTC, Division of Construction
Transportation Office Building, W3-06-01
200 Mero Street
Frankfort KY 40622

Mr. David Waldner
Director
KYTC, Division of Environmental Analysis
Transportation Office Building, W5-22-02
200 Mero Street
Frankfort KY 40622

Mr. Wesley Glass
Director
KYTC, Division of Materials
1227 Wilkinson Boulevard, C-5
Frankfort KY 40622

Mr. Duane Thomas
Director
KYTC, Division of Traffic Operations
Transportation Office Building, E3-04-03
200 Mero Street
Frankfort KY 40622

Mr. Tom Napier
Branch Manager
KYTC, Permits Branch
Transportation Office Building, E3-04-03
200 Mero Street
Frankfort KY 40622

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

Mr. James Aldridge
Director
Nature Conservancy - Kentucky Chapter
642 West Main Street
Lexington KY 40508

Ms. Keith P. Eiken
Executive Director
Scenic Kentucky
P. O. Box 2646
Louisville KY 40201

Sierra Club
259 West Short Street
Lexington KY 40507

Mr. Heinz Mueller
Attorney
U. S. Environmental Protection Agency, Region 4 Office
Sam Nunn Atlanta Federal Center
61 Forsyth St. SW
Atlanta GA 30303

Mr. Michael D. Hubbs
State Conservationist
U.S. Dept. of Agriculture, Natural Resources Conservation Service
711 Corporate Drive, Suite 110
Lexington KY 40503

Mr. Kenneth W. Holt
U.S. Dept. of Health & Human Serv., Center for Disease Control, Emergency And Environmental Healtl Services Division
Mail Stop F-16
4770 Buford Highway, N.E.
Atlanta GA 30341-3724

Mr. Lee Andrews
Field Supervisor
U.S. Dept. of the Interior, Fish and Wildlife Service
3761 Georgetown Road
Frankfort KY 40601

Mr. Roger Wiebusch
Bridge Administrator
United States Coast Guard, Bridge Branch
1222 Spruce Street
St. Louis MO 63103

The Honorable Jim Bunning
United States Senator
United States Senate
316 Hart Senate Office Building
Washington DC 20510

The Honorable Mitch McConnell
United States Senator
United States Senate
361-A Russell Senate Office Building
Washington DC 20510

Mr. Thomas M. Hunter
Executive Director
Appalachian Regional Commission
1666 Connecticut Ave., NW
Washington DC 20235

Colonel William Howard
Executive Director
Kentucky Association of Riverports, Henderson County Riverport
6200 Riverport Rd.
Henderson KY 42420

Colonel Raymond E. Midkiff
District Engineer
U. S. Army Corps of Engineers, Louisville District
P.O. Box 59
Louisville KY 40201

The Honorable Ed Whitfield
United States Representative - District 1
U. S. House of Representatives
236 Cannon House Office Building
Washington DC 20515

Ms. Krista Mills
Field Office Director
U.S. Department of Housing & Urban Development, Ky.
Louisville Field Office
601 West Broadway
Louisville KY 40202

Mr. Buddy Yount
Kentucky Division Administrator
Federal Motor Carrier Safety Administration
300 West Broadway
Frankfort KY 40601

Mr. Bill Lally
Executive Director
Kentucky Household Goods Carrier Association Inc.
P.O. Box 22204
Louisville KY 40252-0204

Mr. Tony Reck
President & CEO, P& L Railway, Inc.
Kentucky State Rail Association
1500 Kentucky Avenue
Paducah KY 42003

Ms. Linda Strite Murnane
Executive Director
Kentucky Commission on Human Rights
332 West Broadway, Suite 700
Louisville KY 40202

Siria, Bruce (KYTC)

From: Houlihan, John (KYTC)
Sent: Monday, January 29, 2007 9:31 AM
To: Siria, Bruce (KYTC)
Subject: Item No 3-129.00 KY163, Metcalfe County

Mr. Siria,

The proposed project will have no adverse effect to air navigation. However if any construction equipment exceeds 200 feet above ground level a permit will have to be issued. If you have any questions, please let me know.

Thank you.

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

COMMERCE CABINET
DEPARTMENT OF PARKS

Ernie Fletcher
Governor

Capital Plaza Tower, 11th Floor
500 Mero Street
Frankfort, Kentucky 40601-1974
Phone 502-564-2172
Fax 502-564-9015
www.parks.ky.gov

George Ward
Secretary

J.T. Miller
Commissioner

January 31, 2007

Daryl J. Greer
P.E. Director
Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Dear Mr. Greer:

Subject: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

The Kentucky Department of Parks received your request for input and comments relating to a study for improvements to KY 163 from KY 90 to the Louie B. Nunn Parkway.

The Department of Parks does not own any facilities located close to the area in question. KY 163 is not a major route to our Parks and would not impact traffic.

Sincerely,

John Kington
Deputy Commissioner
Kentucky Department of Parks

CABINET FOR ECONOMIC DEVELOPMENT

Ernie Fletcher
Governor

Old Capitol Annex
300 West Broadway
Frankfort, Kentucky 40601
thinkkentucky.com

Benjamin E. Fuqua
Acting Secretary

February 26, 2007

Daryl J. Greer, P.E.
Director
Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40601

Dear Mr. Greer:

This response is to a Scoping Study to determine appropriate corridor for improvements from KY 90 to the Louie B. Nunn Parkway; Item 3-129.00

Metcalfe County has two primary industrial parks. One park is located within the northeastern city limits of Edmonton (see attached map Site 169-001) and the other park is located within the southern portion of Edmonton's city limits (see attachment map Site 169-003).

As you can see, the 38.5 acre Edmonton industrial site is located along KY 163.

It is our opinion that improving KY 163 will greatly improve the community twofold. One, it will improve the entrance to the 38.5 acre site and second, it will positively effect the transportation for the community.

Sincerely,

Terri Stamper

Terri L. Stamper
Industrial Site Representative
Cabinet for Economic Development
300 West Broadway
Frankfort, KY 40601

Attachments

c: Russell Casey

Richie Farmer, Commissioner
32 Fountain Place
Frankfort, KY 40601

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

Kentucky
Department of
Agriculture

A Consumer Protection and Service Agency

January 24, 2007

Mr. Daryl J. Greer, P.E.
Director, Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, Kentucky 40601

Subject: KY 163, Metcalfe County
Item No. 3-129.00

Dear Mr. Greer:

The Department of Agriculture has no issues or concerns relating to the above noted project.

Yours truly,

Richie Farmer, Commissioner

EDUCATION CABINET
DEPARTMENT OF EDUCATION

Ernie Fletcher
Governor

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

Kevin M. Noland
Interim Commissioner of Education

March 12, 2007

Mr. Daryl J. Greer, P.E.
Director, Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Dear Mr. Greer:

Our office received your letter (attached) requesting input and comments on a planning study to determine the appropriate corridor for improvements to KY 163 from KY 90 to Louie B. Nunn Parkway. Our office contacted the Metcalfe County School District's office and in their opinion, there are no specific issues or concerns that could affect the development of the project.

If you have any questions, please contact our office.

Sincerely,

Louis Hupp FOR
Mark W. Ryles, Director
Division of Facilities Management

MWR/efh

Attachments (1): Correspondence

c: Laura Owens, Secretary, Education Cabinet
Patricia Hurt, Superintendent, Metcalfe County Schools
Mark Ryles

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-2150
FAX (502)564-4245
www.dep.ky.gov

Teresa J. Hill
Secretary

Cheryl A. Taylor
Commissioner

March 9, 2007

Mr. Daryl J. Greer, P.E., Director
Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Re: KY 163 Scoping Study to Determine Appropriate Corridor for Improvements from KY90 to the Louie B. Nunn Parkway (SERO 2007-2)

Dear Mr. Greer,

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

The Kentucky agencies listed on the attached sheet have been provided an opportunity to review the above referenced report. Responses were received from 3 of the reviewing agencies that were forwarded a copy of the document. Attached are the comments from Kentucky Divisions of Air Quality and Waste Management, and the Division of Conservation.

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

Sincerely,

Larry C. Taylor
State Environmental Review Officer

Enclosures

COMMONWEALTH OF KENTUCKY
STATE ENVIRONMENTAL REVIEW PROCESS

Project Number: SERO 2007 - 2

Scoping Document

Project Title:

KY 163 Scoping Study to Determine Appropriate Corridor for Improvements from KY90 to the Louie B. Nunn Parkway

The following Commomwealth of Kentucky agencies make up the State Environmental Review Process. Their response is listed below. Agencies that did not receive the document for review or did not respond are also noted.

REVIEWING AGENCIES:	RESPONSE:
Division of Water	NO COMMENT
Division of Waste Management	COMMENTS ATTACHED
Division for Air Quality	COMMENTS ATTACHED
Department for Public Health	No Response Received
Cabinet for Economic Development	No Response Received
Department of Forestry	No Response Received
Department of Parks	Not Sent for Review
Department of Agriculture	No Response Received
Nature Preserves Commisssion	NO COMMENT
Kentucky Heritage Council	No Response Received
Division of Conservation	COMMENTS ATTACHED
Department for Natural Resources	No Response Received
Department of Fish and Wildlife Resources	No Response Received
Transportation Cabinet	Not Sent for Review
Department for Military Affairs	Not Sent for Review

Division for Air Quality Comments

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

Kentucky Division for Air Quality Regulation **401 KAR 63:005** states that open burning is prohibited. Open Burning is defined as the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the outdoor atmosphere without passing through a stack or chimney. However, open burning may be utilized for the expressed purposes listed on the Open Burning Fact Sheet located at http://www.air.ky.gov/homepage_repository/e-Clearinghouse.htm

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

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

Division of Conservation Comments

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

Division of Conservation
375 Versailles Road
Frankfort, Kentucky 40601
Phone (502) 573-3080
Fax (502) 573-1692
www.conservation.ky.gov

Teresa J. Hill
Secretary

Stephen A. Coleman
Director

MEMORANDUM

TO: Larry Taylor, Commissioner's Office
Department of Environmental Protection

FROM: Mark Davis, Division of Conservation MD

DATE: February 26, 2007

SUBJECT: Environmental Review Project #SER02007-02

As requested, the Division of Conservation has reviewed the scoping study for improvements to KY 163 from KY 90 to the Louie B. Nunn Parkway and has provided the following comments.

There is one agricultural district, # 085-01, certified by the Kentucky Soil and Water Conservation Commission in July 1996 in the project area. This agricultural district was established in order to conserve, protect, develop, and improve agricultural land for production of food, fiber, and other agricultural products. Under KRS 262.850(12), state agencies must mitigate any impact their programs may have on land in agricultural districts.

ArcGIS shape files of the location of this agricultural district were sent to Ms. Virginia Goodman of Third Rock Consultants, LLC, who was conducting an initial environmental study on behalf of the Kentucky Transportation Cabinet.

In addition to the location of this agricultural district, the loss of farmland is an issue. Both prime farmland and farmland of statewide importance could be impacted by this project. Every year pressure imposed by utility right-of-ways, urban expansion, and new roads reduce the land available for agricultural use in the Commonwealth. A document that could be utilized to identify these farmland designations is the Soil Survey of Metcalfe County (NRCS 1967) and Important Farmland Soils of Kentucky (NRCS 1985). Both are available through this office.

One other area of concern we would like to comment on is that of controlling erosion and sedimentation during and after earth-disturbing activities once this project begins. We recommend best management practices (BMPs) be utilized to prevent nonpoint source water pollution. This would help protect the water quality and aquatic habitat of several perennial and intermittent streams that this project could impact.

The manual, *Best Management Practices for Construction Activities*, contains information on the kinds of BMPs most appropriate for this project and is available through the Scott County Conservation District, the Kentucky Division of Water, or this office. Also, an electronic version of the *Kentucky Erosion Prevention and Sediment Control Field Guide* is available online at http://www.water.ky.gov/sw/nps/Publications.htm

MJD

Division of Waste Management Comments

Project # SERO 2007-2

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

KENTUCKY STATE POLICE

Ernie Fletcher
Governor

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

John (Jack) Adams
Commissioner

March 1, 2007

Daryl J. Greer, P.E.
Director, Division of Planning
Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

RE: KY 163, Metcalfe County Improvements

Dear Mr. Greer,

In regards to your letter dated January 23, 2007, requesting input from the Kentucky State Police on the KY 163, Metcalfe County planning study, the officers assigned to that area were polled for suggestions.

The first concern of the officers was the need for wider shoulders on KY 163. In the event of an accident, the traffic has to be directed away from KY 163 and not around the scene. One other concern was the fact that the bridge between Randolph Goodluck Road and Beaumont Goodluck Road appears to be very narrow.

If we can provide further information or assistance, please feel free to contact me at 270-384-4796.

Sincerely,

Capt. Greg Speck

Captain Greg Speck
Kentucky State Police
Columbia, Kentucky

ls

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Ernie Fletcher
Governor

Bill Nighbert
Secretary

Marc Williams
Commissioner of Highways

February 12, 2007

Mr. Daryl J. Greer, P.E.
Director
Division of Planning

Dear Mr. Greer:

Subject: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

In response to your request for comments from the Division of Construction pertaining to the subject study, representatives of the Division have made a field inspection of KY 163 between KY 90 and the Louie B. Nunn Parkway. Based on this inspection and the maps, information, etc which you provided to us, our comments are:

- The existing route location would be difficult to reconstruct due to maintaining traffic while doing major vertical and horizontal realignment.
- This realignment would also cause difficulty in providing residential access during construction as well as requiring right of way acquisition of residential property.
- From a construction standpoint it appears that relocating the corridor to the west of the existing route would be better. The new location of the corridor would begin at the reconstructed intersection of KY 90 and KY 163 and extend north along the ridge system to near the Pleasant Grove Church. From there the corridor would connect to US 68 south of the US 68 & Louie B. Nunn Parkway Interchange. (Possibly at the intersection of US 68 and KY3234)

Thank you for the opportunity to comment on this study.

Sincerely,

Greta Smith
Director
Division of Construction

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Ernie Fletcher
Governor

Bill Nighbert
Secretary

Marc Williams
Commissioner of Highways

MEMORANDUM

TO: Daryl Greer, P.E.
Director
Division of Planning

FROM: Cass T. Napier
Branch Manager
Permits

DATE: January 25, 2007

RE: KY 163, Metcalfe County
Scoping Study, Improvements to KY 90 to Louie B. Nunn Parkway
Item No. 3-129.00

The Permits Branch has reviewed the data provided for subject study site and wish to offer the following.

1. We recommend the Cabinet classify this project and as a partially controlled access facility.

2. Assuming the project is partial control access, we encourage all possible access points be set on the plans in accordance with 603 KAR 5:120, even if they are not to be constructed at that time. We encourage using the existing roadway as a frontage road to provide access to closely spaced entrances to reduce the amount of conflict points.

3. When buying R/W for this and all reconstruction routes, assuming the access control is partial control, new deeds for all adjoining property owners need to be executed to identify the access control even if no new R/W is acquired.

4. In addition, we would like to make every effort possible to have the design speed to be the same as anticipated posted speed when the project is complete.

5. We would like to see access control fence installed with the project.

6. If the proposed roadway is to be on the N. H. S., early notification of the final line and grade is needed. This enables us to monitor outdoor advertising devices prior to road construction being completed.

7. Please notify this office if the proposed roadway is to be placed on the National Highway System. This information is needed to assist this office in regulating the installation of any outdoor advertising device.

Thank you for the opportunity to verbalize our concerns.

CTN/pm

Ernie Fletcher
Governor

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Bill Nighbert
Secretary

Marc Williams
Commissioner of Highways

January 23, 2007

C.S ROUTING

	INFO	ACTION	FILE	INITIALS
				RW
		PS		

COMMENTS: any issues?

Mr. Roger Wiebusch
Bridge Administrator
United States Coast Guard, Bridge Branch
1222 Spruce Street
St. Louis MO 63103

Dear Mr. Wiebusch:

Subject: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements
from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

We are requesting your agency's input and comments on a planning study to determine the appropriate corridor for improvements to KY 163 from KY 90 to the Louie B. Nunn Parkway. The Kentucky Transportation Cabinet has assembled a study team to evaluate KY 163. That study is currently in the initial data-gathering stage.

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

We respectfully ask that you provide us with your comments by March 7, 2007, to ensure timely progress in this planning effort.

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

Pursuant to the Coast Guard Authorization Act of 1982, it has been determined this is not a waterway over which the Coast Guard exercises jurisdiction for bridge administration purposes. A Coast Guard bridge permit is not required.

2/8/07
(Date)

ROGER K WIEBUSCH
Bridge Administrator
Eighth Coast Guard District (obr)

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

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

- Study Area Map
- Environmental Footprint
- Crash Critical Rate Factors
- Year 2006 Traffic and Volume to Service Flow Ratios
- Year 2030 Traffic and Volume to Service Flow Ratios

We appreciate any input you can provide concerning this project. Please direct any comments, questions, or requests for additional information to Bruce Siria of the Division of Planning at (502) 564-7183 or at bruce.siria@ky.gov. Please address all written correspondence to Daryl J. Greer, P.E., Director, Division of Planning, Kentucky Transportation Cabinet, 200 Mero Street, Frankfort, KY 40622.

Sincerely,

Daryl J. Greer, P.E.
Director
Division of Planning

DJG/BSS/NH

Enclosures

c/enc: Carl Dixon - WSA
Shane Blankenship
Jeff Moore
Keirsten Jaggers
Steve James
Scott Pedigo
Renee Slaughter
Jim Simpson
David Harmon
Jason Hyatt

United States Department of Agriculture

NRCS

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

January 29, 2007

Daryl J. Greer, P.E.
Director, Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Re: Kentucky 163 Scoping Study, Metcalfe County

Dear Mr. Greer:

In regards to the above study, the USDA-Natural Resources Conservation Service (NRCS) is concerned with potential impacts that the proposed project might have upon prime farmland soils and additional farmlands of statewide importance. If federal dollars are to be used to convert important farmlands from agricultural uses to non-agricultural uses, a Form AD-1006 (or Form NRCS-CPA-106 if the project is a corridor type project) must be submitted to the local NRCS office.

These forms may be obtained from the local NRCS office and are also available as electronic forms on the web at http://www.nrcs.usda.gov/programs/fppa/pdf_files/AD1006.PDF and http://www.nrcs.usda.gov/programs/fppa/pdf_files/CPA106.pdf .

The electronic soils data for Metcalfe County is currently being developed and should be completed in late 2007. However, the NRCS district conservationist for Metcalfe County can help in providing local soil information and identifying prime farmlands and additional farmlands of statewide importance in the proposed project area. The NRCS contact person for Metcalfe County is Melinda Cave, district conservationist, NRCS-USDA, 109 Sartin Road, Edmonton, Kentucky 42129; phone: 270-432-3191, fax: 270-432-7328.

Sincerely,

Michael D. Hubbs

MICHAEL D. HUBBS
State Conservationist

cc:
Melinda P. Cave, District Conservationist
Gary J. Reckner, Area Conservationist, 1830 Lantaff Blvd., Madisonville, KY 42431

UNIVERSITY OF KENTUCKY

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

February 8, 2007

Daryl J. Greer, P.E.
Director, Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Dear Mr. Greer:

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

Ky. 163, Metcalfe County
To determine an appropriate corridor for improvements from Ky. 90 to the Louie B. Nunn Parkway.
Item No. 3-129.00

Physiographic Region
The study area is in the Mississippian Plateau (Pennyroyal or Pennyrile) Physiographic Region, which is underlain by limestone, some argillaceous in parts.

Karst Potential
The study area might encounter karst features such as sinkholes and caves.

Landslide Potential
The study area would not encounter any pre- or post-landslide hazard.

Unconsolidated Sediments
The study area would encounter unconsolidated sediments, such as clay, silt, sand, gravel, and chert rubble in the streams.

Resource Conflicts
The study area might encounter resource conflicts such as prior ownership of property for quarrying or mining

Materials Suitability

The study area would encounter the St. Louis and the Salem and Warsaw Limestones. The St. Louis Limestone might contain expansive argillaceous aggregate layers that would not be suitable for construction stone. The Salem and Warsaw Limestone has a large thickness that is free of siltstone, clay, and any other impurities. It has been quarried in this area for construction stone.

Fault Potential

The study area would not encounter faulted areas.

Earthquake Ground Motions

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

Sincerely,

Richard A. Smath
Geologist

Growing a strong workforce for the Bluegrass State

Cabinet for Workforce Development

TO: MARK RYLES

FROM: Charlie Harman

OFFICE:

DATE: 2/12/07

☐ For Review ☐ Please Comment/Reply ☐ For Signature ☒ FYI

Comments:

Ky 163 Metcalf Co.

Comment for KDE

Thanks

CH

FEB 13 2007

EDUCATION PAYS

Equal Education and Employment Opportunities M/F/D

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Ernie Fletcher
Governor

Bill Nighbert
Secretary

Marc Williams
Commissioner of Highways

January 23, 2007

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

FEB 13 2007

Dear Ms. Owens:

Subject: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements
from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

We are requesting your agency's input and comments on a planning study to determine the appropriate corridor for improvements to KY 163 from KY 90 to the Louie B. Nunn Parkway. The Kentucky Transportation Cabinet has assembled a study team to evaluate KY 163. That study is currently in the initial data-gathering stage.

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

We respectfully ask that you provide us with your comments by March 7, 2007, to ensure timely progress in this planning effort.

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

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

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

- Study Area Map
- Environmental Footprint
- Crash Critical Rate Factors
- Year 2006 Traffic and Volume to Service Flow Ratios
- Year 2030 Traffic and Volume to Service Flow Ratios

We appreciate any input you can provide concerning this project. Please direct any comments, questions, or requests for additional information to Bruce Siria of the Division of Planning at (502) 564-7183 or at bruce.siria@ky.gov. Please address all written correspondence to Daryl J. Greer, P.E., Director, Division of Planning, Kentucky Transportation Cabinet, 200 Mero Street, Frankfort, KY 40622.

Sincerely,

Daryl J. Greer, P.E.
Director
Division of Planning

DJG/BSS/NH

Enclosures

c/enc: Carl Dixon - WSA
Shane Blankenship
Jeff Moore
Keirsten Jaggers
Steve James
Scott Pedigo
Renee Slaughter
Jim Simpson
David Harmon
Jason Hyatt

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-2150
FAX (502)564-4245
www.dep.ky.gov

Teresa J. Hill
Secretary

Cheryl A. Taylor
Commissioner

March 9, 2007

Mr. Daryl J. Greer, P.E., Director
Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Re: KY 163 Scoping Study to Determine Appropriate Corridor for Improvements from KY90 to the Louie B. Nunn Parkway (SERO 2007-2)

Dear Mr. Greer,

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

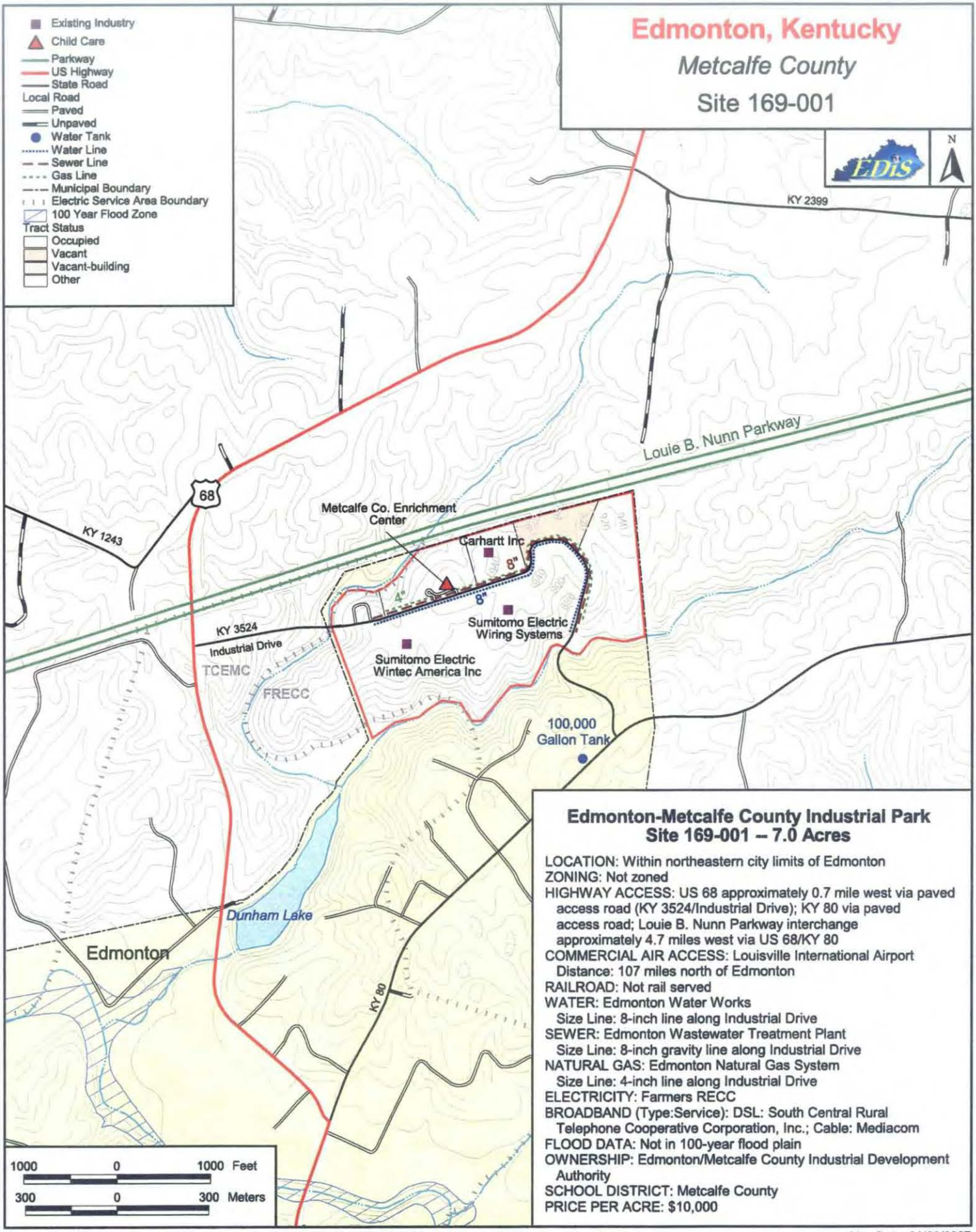
The Kentucky agencies listed on the attached sheet have been provided an opportunity to review the above referenced report. Responses were received from 3 of the reviewing agencies that were forwarded a copy of the document. Attached are the comments from Kentucky Divisions of Air Quality and Waste Management, and the Division of Conservation.

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

Sincerely,

Larry C. Taylor
State Environmental Review Officer

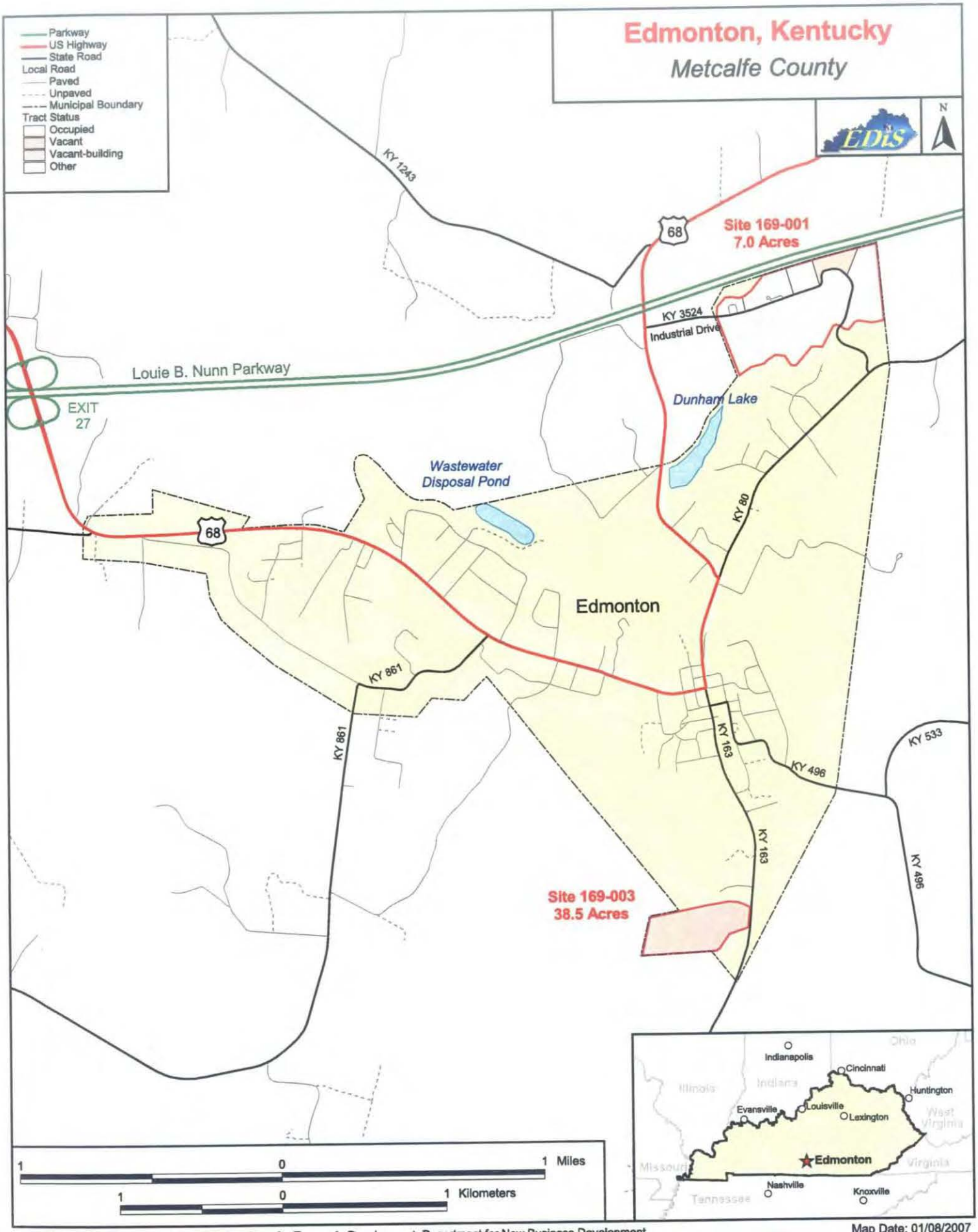
Enclosures



Edmonton-Metcalfe County Industrial Park
Site 169-001 – 7.0 Acres

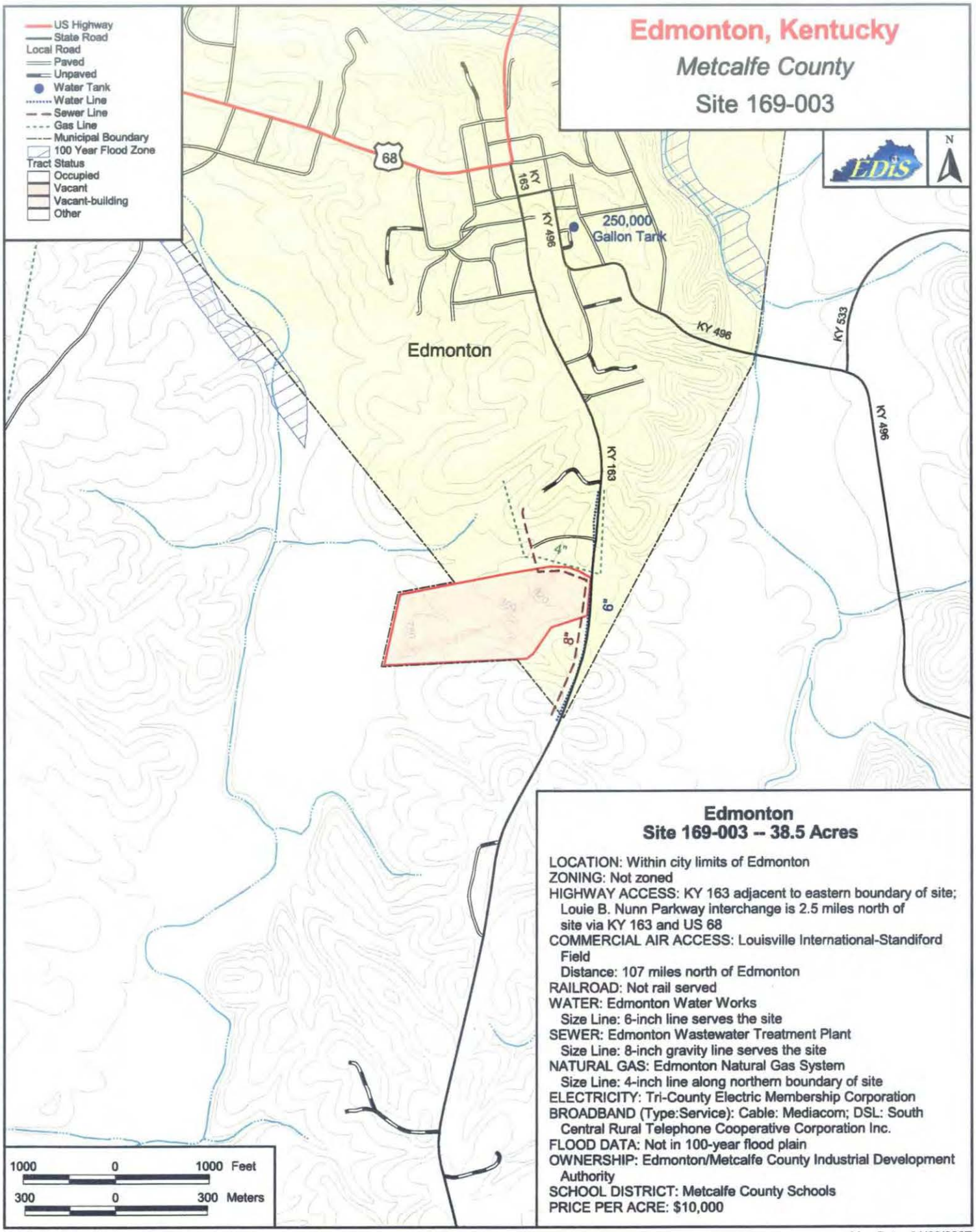
LOCATION: Within northeastern city limits of Edmonton
ZONING: Not zoned
HIGHWAY ACCESS: US 68 approximately 0.7 mile west via paved access road (KY 3524/Industrial Drive); KY 80 via paved access road; Louie B. Nunn Parkway interchange approximately 4.7 miles west via US 68/KY 80
COMMERCIAL AIR ACCESS: Louisville International Airport Distance: 107 miles north of Edmonton
RAILROAD: Not rail served
WATER: Edmonton Water Works
Size Line: 8-inch line along Industrial Drive
SEWER: Edmonton Wastewater Treatment Plant
Size Line: 8-inch gravity line along Industrial Drive
NATURAL GAS: Edmonton Natural Gas System
Size Line: 4-inch line along Industrial Drive
ELECTRICITY: Farmers RECC
BROADBAND (Type:Service): DSL: South Central Rural Telephone Cooperative Corporation, Inc.; Cable: Mediacom
FLOOD DATA: Not in 100-year flood plain
OWNERSHIP: Edmonton/Metcalfe County Industrial Development Authority
SCHOOL DISTRICT: Metcalfe County
PRICE PER ACRE: $10,000

For more information contact the Kentucky Cabinet for Economic Development, Department for New Business Development
Old Capitol Annex - 300 West Broadway - Frankfort, KY 40601 - Tel:(502)564-7140 - Fax:(502)564-3256 - http://www.thinkkentucky.com
Map Date: 01/08/2007
Contour Interval: 20 feet



For more information contact the Kentucky Cabinet for Economic Development, Department for New Business Development
Old Capitol Annex - 300 West Broadway - Frankfort, KY 40601 - Tel:(502)564-7140 - Fax:(502)564-3256 - http://www.thinkkentucky.com

Map Date: 01/08/2007

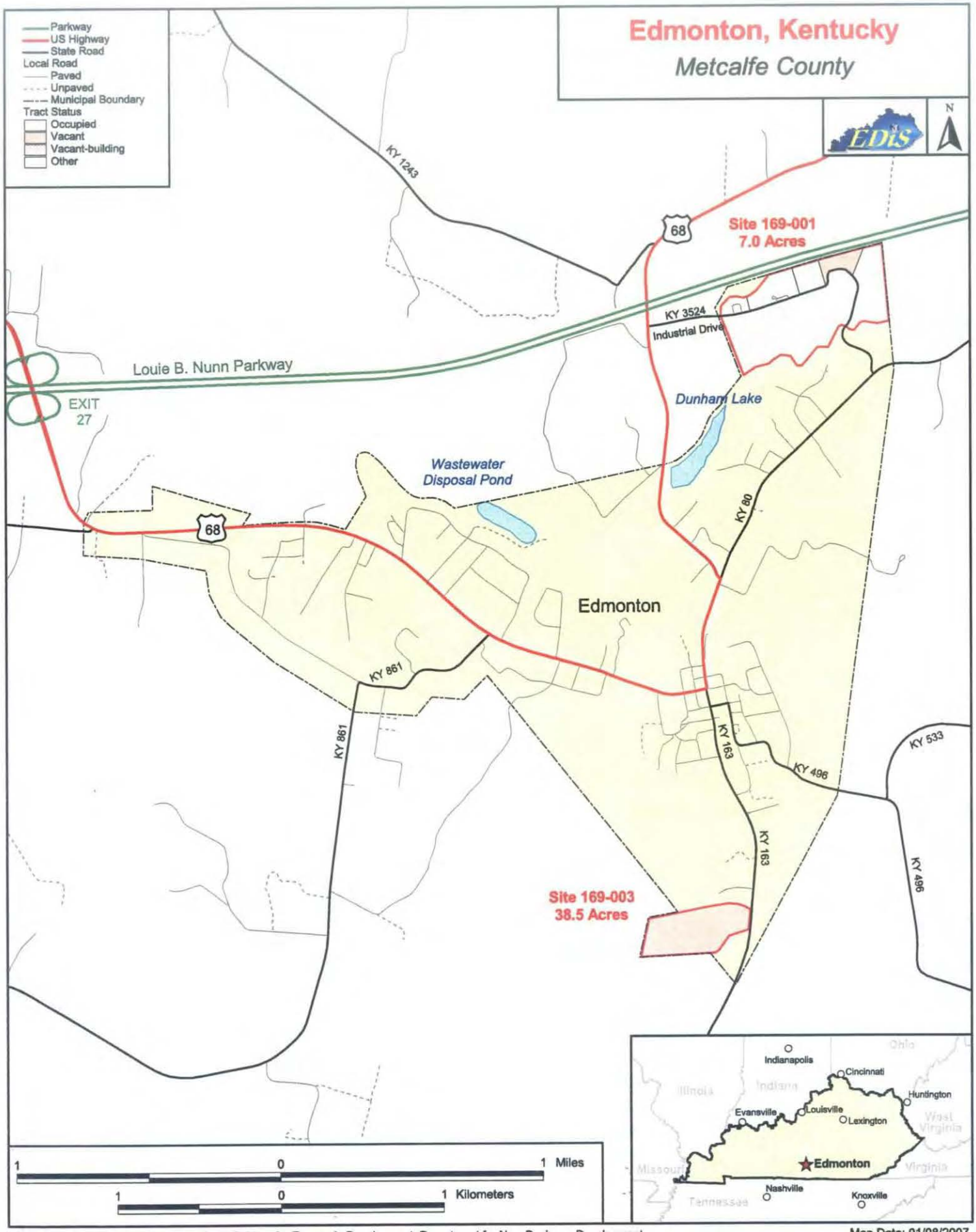


Edmonton
Site 169-003 -- 38.5 Acres

LOCATION: Within city limits of Edmonton
ZONING: Not zoned
HIGHWAY ACCESS: KY 163 adjacent to eastern boundary of site; Louie B. Nunn Parkway interchange is 2.5 miles north of site via KY 163 and US 68
COMMERCIAL AIR ACCESS: Louisville International-Standiford Field
Distance: 107 miles north of Edmonton
RAILROAD: Not rail served
WATER: Edmonton Water Works
Size Line: 6-inch line serves the site
SEWER: Edmonton Wastewater Treatment Plant
Size Line: 8-inch gravity line serves the site
NATURAL GAS: Edmonton Natural Gas System
Size Line: 4-inch line along northern boundary of site
ELECTRICITY: Tri-County Electric Membership Corporation
BROADBAND (Type:Service): Cable: Mediacom; DSL: South Central Rural Telephone Cooperative Corporation Inc.
FLOOD DATA: Not in 100-year flood plain
OWNERSHIP: Edmonton/Metcalfe County Industrial Development Authority
SCHOOL DISTRICT: Metcalfe County Schools
PRICE PER ACRE: $10,000

For more information contact the Kentucky Cabinet for Economic Development, Department for New Business Development
Old Capitol Annex - 300 West Broadway - Frankfort, KY 40601 - Tel:(502)564-7140 - Fax:(502)564-3256 - http://www.thinkkentucky.com

Map Date: 01/08/2007
Contour Interval: 20 feet



For more information contact the Kentucky Cabinet for Economic Development, Department for New Business Development
Old Capitol Annex - 300 West Broadway - Frankfort, KY 40601 - Tel:(502)564-7140 - Fax:(502)564-3256 - http://www.thinkkentucky.com

Map Date: 01/08/2007

Commonwealth of Kentucky
State Environmental Review Process
Transmittal

DATE: 1/30/2007 **Project Number: SERO 2007 - 2**

Scoping Document

TITLE: KY 163 Scoping Study to Determine Appropriate Corridor for Improvements from KY90 to the Louie B. Nunn Parkway

SPONSOR: Transportation Cabinet

Comment Deadline: February 27, 2007

The Environmental and Public Protection Cabinet serves as the state clearinghouse for environmental reviews required by the National Environmental Protection Act. Comments received from your agency are forwarded with those of other state agencies' comments to the originating sponsor.

If your agency is unable to meet the comment deadline listed above, please contact Larry Taylor at (502) 564-2150 prior to the due date and suitable arrangements will be made.

Review Instructions:

Please review the enclosed document carefully, bearing in mind the quality of the statement and the impact of the project. If the document is the Final EIS, consider the response made to your own and other agencies' previous comments.

Retain a copy of this form for your own files and return one with your comments to:

Department for Environmental Protection
Commissioner's Office
Attn: Larry Taylor
14 Reilly Road
Frankfort, Kentucky 40601

Response:

☑ Comments Attached ☐ No Comment ☐ Information Request

Name: _____ Date: _____

Agency: _____ Phone: _____

Russell Casey
Cabinet for Economic Development
Old Capitol Annex
300 West Broadway, Suite 307B

MINUTES

Project Team Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00

KYTC District 3 Office
Bowling Green, Kentucky
March 15, 2007
10:00 AM

A project team meeting for the KY 163 Alternatives Study in Metcalfe County was held at 10 a.m. CDT on Thursday, March 15, 2007, in Bowling Green, Kentucky. The purpose of the meeting was to review the input received at the first public meeting, review the existing conditions information, refine the purpose and need statement, and evaluate the initial alternatives prepared by Wilbur Smith Associates (WSA).

Participants in the meeting came from the Barren River Area Development District (BRADD), the Kentucky Transportation Cabinet (KYTC) District 3 Office, and the consultant firms, WSA and Third Rock Consultants. Meeting attendees included the following persons:

Amy Scott	BRADD, Regional Transportation Planner
Bruce Siria	KYTC Central Office, Planning
Keirsten Jaggers	KYTC District 3, Public Information Officer
Jeff Moore	KYTC District 3, Planning
Misti Wilson	KYTC District 3, Planning
Steve James	KYTC District 3, Preconstruction
Phil Carter	KYTC District 3, Construction
Deneatra Hack	KYTC District 3, Design
Scott Pedigo	KYTC District 3, Traffic
Gerry Fister	Third Rock Consultants
Carl Dixon	Wilbur Smith Associates
Bill Gulick	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key discussion items for this meeting is provided below.

1. Welcome and Introduction
Jeff Moore began the meeting by welcoming the participants and asking the project team members to introduce themselves. He then provided a brief project description.

2. Purpose
Bruce Siria briefly outlined the purpose of the meeting. This included a review of the information gathered by WSA up to this point, but the main purpose was to discuss the purpose and need and review the potential alternatives to select a smaller set for further development.

3. Public Input
Rebecca Ramsey presented a summary of findings from the first public meeting, held in December 2006. The primary concerns of community members were:

- Preserving homes and farmlands;
- Addressing the congestion issue at the intersection of KY 163 and US 68-KY 80;
- Improving safety at key points along the route, primarily curves and narrow bridges; and
- Facilitating truck traffic, especially at the KY 163 intersection with US 68-KY 80.

Summary handouts for the public meeting were provided. Two maps showed the results of the map-drawing exercise at the public meeting to identify specific areas of concern (sharp curves, narrow bridges, cemeteries, etc) and possible alternatives suggested by residents for consideration. Another handout showed results from the public survey, which stressed the importance of farmlands and homes as sensitive areas and identified the main problems with the existing route: sharp curves, large trucks, and narrow lanes and shoulders that limit passing opportunities. Carl Dixon reiterated the importance of farmlands to the community from the discussion with the attendees at the meeting.

Responses received to date from resource agencies were also reviewed. Thirteen replies have been received. According to the Kentucky Geological Survey, there is a high karst potential in the area and some of the stone may be usable for construction purposes. The Construction Division of KYTC recommends a route west of the existing alignment as the easiest to construct.

4. Environmental Overviews
Gerry Fister presented an overview of the environmental assessment performed by Third Rock. Karst topography is found at both the north and south ends of the project area. Air quality impacts should not be a major issue, though traffic traveling through downtown Edmonton may increase depending on the selected alternative. There are many streams in the study area which would potentially be impacted by the project; the stream running behind the stockyards would be a good candidate for mediation efforts. There is a known cave – Harvey Cave – at the southern end of the area and two known endangered species of bats. There are three parks in Edmonton, several hazardous waste sites, and many underground storage tanks. There is also an Agricultural District on the existing KY 163 alignment, but lands could be reassigned with a hearing.

Carl Dixon summarized the other environmental data collected. A noise analysis presented no major concerns. There are several historic properties within Edmonton and along KY 163, including two National Register sites downtown. Also, known archaeological sites were identified immediately east of downtown, so this will impact the selection of alternatives.

The Geotechnical Overview found that karst features were the main issue, including major karst areas at the southern terminus and in the northeast corner of the study area near the KY 2399-Nunn Parkway intersection, as well as a sizeable sinkhole south of the bend in KY 861. Bill Gulick elaborated: the soil and rock types found in the area should be usable for construction. Steve James expressed concern about split rock slopes previously encountered in the area. Cut slopes would probably be limited to 10 to 15 feet maximum height.

Bruce Siria asked if any flooding issues were associated with the south fork of Little Barren River. Because of the steepness of the watershed, flows are fast moving and don't tend to pool in this area.

A discussion followed about the limits of the project area regarding the following:

- The existing Industrial Park requires fast access to the Parkway, located nearby.
- The study area limits are from KY 90 in the south to the Nunn Parkway.
- The feasibility of an additional interchange will be considered. There is a prior expectation from the public that should be addressed, and the traffic patterns at the KY 163 intersection with US 68-KY 80 necessitate the investigation of an additional interchange to address local issues.
- The project, as it advances, could be broken into multiple design projects.

5. Environmental Justice

Amy Scott provided a summary of environmental justice issues in the area. Two census tracts lie in the study limits; demographics were discussed by race, income levels, and age groups:

- The percentage of minorities in the area was below state and national averages, but no concentrations of minority groups were identified.
- Statistics rank Metcalfe County as 32nd in Kentucky having the highest poverty rates. This rural depressed county does not show any specific concentrations of low income communities which would be considered environmental justice areas.
- Similarly, no concentrations of persons 65 years and older were identified in the area; percentages are comparable to state and national averages.

Gerry Fister pointed out that there are two mobile home parks within the study area that could create Environmental Justice problems. Although a relatively large portion of the population may be considered low income, infringing on the mobile home parks will likely generate extra concern from FHWA.

Economic generators for the area include the northern Industrial Park, farmlands, and the timber industry to the south and east. This is a key reason that taking farmlands from the community would be detrimental. Bruce Siria explained the perception of community pride and the aversion to change expressed by many participants at the public meeting.

6. Existing Conditions

Bill Gulick and Rebecca Ramsey shared information on the KY 163 existing conditions, specifically traffic and level of service (LOS), crash history, and geometric deficiencies.

From a capacity standpoint, there are not any existing (2006) problems within the study area. Assuming a low growth rate, some congestion can be expected to occur by 2030 at the KY 163 intersection with US 68-KY 80, primarily in the PM peak hour. LOS restrictions in the rural portions of KY 163 are related primarily to the absence of passing opportunities.

The crash history identifies multiple high crash spots and segments in the study area. Concentrations appear at the two main intersections in Edmonton: US 68 with KY 80 and US 68-KY 80 with KY 163. No crashes are recorded on two narrow bridges along KY 163, despite reports of incidents at the public meeting. The existing interchange with the Nunn Parkway has a high crash spot. The HES project (currently seeking additional funds, according to Steve James) should address the concentration of crashes on US 68-KY 80 west of downtown. The realignment of KY 90 will likely address the high crash spot occurring at the KY 163 intersection with KY 90.

WSA also reviewed existing plans to identify possible geometric deficiencies. Although plans for the existing roadways are extremely dated (1929 to 1947) and some changes may have occurred since then, the alignment on the ground should be consistent with the details laid out in the plans. Along KY 163, the deficiencies form a continuous line of grade issues, sight distance restrictions, and minimum radius violations, in addition to the narrow lanes and shoulders. This will make it challenging to identify spot fixes along the existing route. Efforts to identify a correlation between geometric deficiencies and crash history trends yielded no definite conclusions.

Bill Gulick also presented an overview to the cost estimation methodology. Base rates per mile were developed based on unit costs; $2.9 million per mile of two-lane section and $3.6 million per mile of three lane section were assumed. Major structure costs were added to these base rates, where needed.

7. Purpose and Need of Project

A discussion followed, focusing on the actual purpose of this KY 163 Alternatives study. At present, KY 163 is a rural road with typical rural travel characteristics.

The traffic using this route is composed of primarily local trips, so users familiar with the facility can anticipate the curves and problem spots. However, the network changes occurring in the area (improvements to KY 163 farther south and KY 90 to the west, additional truck traffic on KY 90, and the eventual designation of I-66) will likely change the character of the traffic traveling along this route, and quickly magnify existing capacity, geometric, and safety issues. This study provides an opportunity to anticipate and address these needs. Jeff Moore explained that these issues all work together, giving the project purpose both regional and local elements.

Carl Dixon presented an overview of the draft purpose and need statement developed by WSA. The primary purpose has been identified as improving safety and mobility.

Phil Carter presented the project from an opposite point of view. Metcalfe County has a small population and is not likely to get significant funding. This project could be intended to provide a direct connecting corridor for Monroe County and Tompkinsville to reach the parkway. From this view, a straight link from KY 90 to the existing interchange would best meet the project needs, although it provides no benefits for Metcalfe County or the city of Edmonton. A similar situation occurring in Smith's Grove, where local needs were ranked second to regional, is currently creating complications. Not specifically helping the city could likely damage Edmonton's economy. Increasing the roadway mileage to be maintained by the state in this area where traffic is adequately served by the existing route would increase costs without justification.

Carl Dixon indicated that it may be possible to meet the stated purpose of improving safety and mobility, while also providing improved connectivity and meeting other goals, and WSA has prepared some alternatives to address all of these issues.

8. Proposed Alternatives

Due to time limitations, the purpose and need discussion was not fully resolved. It was agreed that WSA would work with the Project Managers to determine if further refinement is needed. However, as indicated, alternatives exist which address both local and regional issues.

Bill Gulick began the alternatives presentation by discussing four alternative interchange locations.

- Existing US 68-KY 80 – Costs associated with improving the existing toll booth style interchange come to around $10 million.
- US 68 (D) – A standard diamond interchange on US 68, with small rerouting of KY 3524 (Industrial Park entrance) costs around $13 million
- KY 3524 (E) – An interchange located at rear of Industrial park, either conventional diamond or trumpet layout to KY 80, would cost approximately $14 million

- KY 2399 (F) – Several smaller roads converge here though surface terrain minimizes earthwork at this location. A conventional diamond interchange would cost around $15 million at this location.

To help with deciding which alternatives should not move forward, WSA provided an evaluation matrix focusing on Purpose and Need and on environmental and community impacts.

Rebecca Ramsey gave an overview of traffic projections anticipated for different sets of alternatives, based on the KY Statewide Traffic Model:

- A direct connection to the far west or east (e.g., Alternative AB or AF) would create minimal benefits for traffic within Edmonton and carry less traffic: 1,000 to 1,500 vehicles per day.
- A connection west of downtown Edmonton with an interchange at US 68 north of town (Alternative A2D) had the greatest impact on the KY 163 intersection with US 68-KY 80 and can be anticipated to serve 2,100 to 2,500 trips per day.
- Creating an interchange at D with no other improvements would change the traffic patterns at the four-way stop intersection, removing the need for large trucks to make the tight turns to and from US 68-KY 80 westbound to access the parkway.
- Eastern and western bypasses were also considered without an additional interchange; a bypass to the west would provide greater benefits and carry more traffic.

Carl Dixon presented the "Build" highway improvement recommendations prepared by WSA, plus three Interchange Only alternatives at US 68 north of Edmonton (D), KY 3524 which serves the existing industrial park (E), and KY 2399 (F). He then summarized WSA's evaluation and recommendations:

- Alternatives passing to the far west of the city (e.g. AB, A1B, A2B, A2C) do not adequately address the purpose and need of the project since they do not address local needs.
- These alternates also consume more farmland and appear to only carry minor traffic volumes, although the impacts for A2B and A2C are not as severe as those for AB and A1B.
- These alternates would also add additional lane-miles for the state to maintain.
- Alternatives passing to the far east of the city (i.e., AE, A3E, AF, A3F) also do not adequately address the purpose and need of the project since they do not address local needs. These alternates also consume more farmland and appear to only carry minor traffic volumes
- A2C is located near the schools along US 68-KY 80 and, therefore, could have 4f implications, which – coupled with the other issues – makes it unsuitable for further consideration.
- Historic sites and archaeological sites east of downtown create potential 4f concerns for both eastern (outer) bypasses, and they may also be

hampered by stream problems near the stockyards, so these are also unsuitable for further consideration.

- Improvements along the existing alignment (e.g. A5D, A5E, A5F) could create some right-of-way and relocation impacts for area homes and businesses. The only reason to include these would be to provide better access for alternates that terminate at the E or F interchanges.
- Given the karst and constructability problems at Interchange Location F, and the constructability problems and potential negative impacts on the existing industrial park at Interchange Location E, it was agreed that none of the E and F alternatives were suitable for further consideration.

Improvements to the existing interchange on US 68-KY 80 are not included in any of the alternates, but this will be addressed as a separate issue in the study.

It was agreed that the No Build alternate and recommendations for spot improvements along the existing route would be included for further analysis.

With these factors in mind, the following alternatives were dismissed by the Project Team from further consideration: AB, A1B, A2C, A5E, A5F, all inner & outer bypass options, A3E, AE, A3F, AF, as well as interchanges at E or F.

Consequently, the following alternatives were selected by the Project Team for further consideration in the study: A2B, A2G, A2D, A4G, A4D, A5D, Interchange Only at D, Spot Improvements, and No Build.

The meeting was adjourned at approximately 12:15 p.m. CDT.

AGENDA

KYTC Project Team Meeting

KY 163 Alternatives Study
KY 90 to Louie B. Nunn (Cumberland) Parkway
Metcalfe County

KYTC District 3 Office
Bowling Green, Kentucky
March 15, 2007
10 a.m. CDT

1. Welcome and Introductions	**KYTC District 3**
2. Purpose of Meeting	**KYTC Division of Planning**
3. Public Input	**Wilbur Smith Associates**
a. Comments from December Public Meeting	
b. Survey Responses	
4. Environmental Overview (Aquatic/Terrestrial/Socioeconomic/Air/UST/Hazmat)	**Third Rock Consultants**
5. Environmental Overview (Noise/Cultural Resources)	**Wilbur Smith Associates**
6. Geotech Overview	**Wilbur Smith Associates**
7. Environmental Justice	**Barren River ADD**
8. KY 163 Existing Conditions	**Wilbur Smith Associates**
a. Traffic and LOS	
b. Crash History	
c. Geometric Deficiencies	
9. Purpose and Need of Project	**Wilbur Smith Associates**
10. Proposed Alternatives	**Wilbur Smith Associates**
a. Review of Alternatives	
b. Cost Estimates	
c. Traffic Analysis	
d. Evaluation of Alternatives	
e. Recommendations	
11. Discussion by Project Team	**KYTC District 3/ Division of Planning**
12. Next Steps	**KYTC/WSA**
13. Adjourn	**KYTC**

MINUTES

Project Team Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00

KYTC District 3 Office
Bowling Green, Kentucky
April 17, 2007
10:00 AM

A project team meeting for the KY 163 Alternatives Study in Metcalfe County was held at 10 a.m. CDT on Tuesday, April 17, 2007, in Bowling Green, Kentucky. The purpose of the meeting was to review the Level 2 Screening of the proposed Corridor Alternatives, review proposed spot improvements, and establish the materials and format for the upcoming local officials, stakeholders, and public meetings. The meeting agenda is attached.

Participants in the meeting came from the Barren River Area Development District (BRADD), the Kentucky Transportation Cabinet (KYTC) Central and District 3 Offices, and the consultant firms, WSA and Third Rock Consultants. Meeting attendees included the following:

Amy Scott	BRADD, Regional Transportation Planner
Bruce Siria	KYTC Central Office, Planning
Keirsten Jaggers	KYTC District 3, Public Information Officer
Jeff Moore	KYTC District 3, Planning
Misti Wilson	KYTC District 3, Planning
Steve James	KYTC District 3, Preconstruction
Deneatra Hack	KYTC District 3, Design
Todd Morrison	KYTC District 3, Operations
Allen Cox	KYTC District 3, Permits
Scott Pedigo	KYTC District 3, Traffic
Virginia Goodman	Third Rock Consultants
Carl D. Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key discussion items for this meeting is provided below.

1. Welcome and Introduction
Jeff Moore began the meeting by welcoming the participants and asking the project team members to introduce themselves.

2. Purpose
Jeff Moore briefly outlined the purpose of the meeting. The meeting provides an opportunity to present an overview of the information prepared by WSA up to this point and to prepare for the upcoming meetings with local officials, stakeholders, and the public.

3. Scheduled Meetings
A local officials meeting is scheduled for 10:00 AM on April 26. A stakeholders meeting is scheduled for 1:30 PM the same day. Both meetings will be held at the Metcalfe County Judicial Center.

A public meeting is scheduled from 4:00 – 7:00 PM on May 17, 2007, in the Metcalfe County High School cafeteria.

4. Public Meeting Format
The format of the public meeting is anticipated to be an open-house meeting similar to the December meeting. A PowerPoint presentation will be given by members of the project team at 4:30 to allow time for participants to arrive. If necessary, the presentation may be repeated later in the meeting.

The project team agreed that three sets of corridor maps on aerials would be placed on tables to give attendees a better opportunity to view how the corridor alternatives are located.

5. Handouts/Exhibits for Future Meetings
Carl Dixon explained the concept for the upcoming meeting exhibits: the displays should step viewers through the alternatives development process. Officials, stakeholders, and the public will be able to see the existing conditions, the project purpose statement, the alternatives, and the screening process outlined through the tables and maps displayed.

Meeting Exhibits: Some of the display boards prepared for the upcoming meetings were presented to the project team, showing:

- Environmental footprint
- Geometric deficiencies map
- Crash history information
- Purpose and need statement
- Level 1 Corridor Map and Evaluation Matrix
- Level 2 Corridor Map and Evaluation Matrix

Presentation strategies aimed at adding clarity to various exhibits were discussed. It was agreed that the overall corridor maps would be supplemented by “key maps” to better illustrate each corridor alternative instead of just on a single map. A “key map” would be available at each location where the corridor alternatives map is used.

Level 2 Evaluation: Information obtained during the secondary screening process for the remaining Level 2 corridors was then presented by Third Rock, BRADD, and WSA staff. The project team was invited to review the exhibits and provide feedback prior to the upcoming local officials/stakeholders meetings.

Virginia Goodman presented the environmental overview for the remaining alternatives. Each corridor has some environmental issues associated with its alignment, but none are severe enough to merit dismissing the alternative. Forty units of Section 8 housing, several UST sites, and major grading issues are present for corridors passing between points I and G, at the end of Bushong Lane. The segment between points 2 and B has the most potential impacts on wetlands and farmlands. The segment between 4 and I could potentially impact three cemeteries, located on Dunham and Murrell Streets. The existing Industrial Park entrance and nearby stream could be impacted by any alternative with an interchange at D. There is a park located near the stockyard at the US 68-KY 80 split. Missionary Mound Church, located along KY 163, may be associated with a potential for archaeological sites. Homes are scattered along KY 163 with clusters near Larry Hurt Road, Cedar Flats, and within Edmonton. These and other conclusions from the Level 2 Environmental Overview are summarized in the Level 2 screening matrix.

Amy Scott explained the environmental justice impacts associated with the Level 2 Corridors. There is a minor concentration of elderly persons in block group 9603003. Block group 9603002 also has a higher concentration of persons 65 and older, perhaps due to the nursing home within Edmonton. There is a slightly higher percentage of low income persons in this group and several mobile home clusters. Block group 9603001 has a minor concentration of low income populations as well. None of these populations qualify as having significant environmental justice impacts. Alternatives A2B and Interchange at D are preferable from an EJ viewpoint.

Bruce Siria asked about the increased population of Indian/Alaskan Natives in Block Group 9603001. According to BRADD investigations, this population is focused nearer Edmonton and would not be impacted disproportionately by any construction at D.

Carl Dixon presented summaries of the Cultural Resources and Geotechnical findings for the remaining corridors. There are several cemeteries and historic properties near the corridors. The Metcalfe County Court house and the Beauchamp property are listed on the National Register of Historic Places, but neither is expected to be impacted by any of the corridors. Three rack-sided barns with inward sloping sides lie along KY 163 which may have historical significance. Sections 2B, 2D and 2G may have the highest number of archaeological sites simply based on the fact that it is a completely new alignment, and using the existing corridor of KY 163 would be likely to affect the most historic structures

From a geotechnical perspective, karst issues are the predominant issue. There are large sinkholes near the US 68-KY 80 split and along A2B which could present challenges. Segments of alluvium lie along each of the 6 corridor alternatives. These could require groundwater and soft soil mitigations. Based solely upon the geotechnical data, the ranking of the best three alternatives are A4G, A4D, and A2B.

Rebecca Ramsey gave an overview of the remaining existing conditions data. The traffic, safety, and deficiencies maps and cost estimates have been presented to the project team at a previous meeting; similar displays would be used for the upcoming meetings.

A discussion followed about what the "Address Geometry" score on the Evaluation Matrix reflects. A newly designed roadway would meet current standards and therefore should receive a "high" rating regardless of its alignment. Alternately, leaving long sections of the existing roadway unaddressed to build a new alignment does not improve the existing geometry. It was decided that the screening matrix should reflect corrections to the existing geometry and the language in the matrix should be revised to clarify this point.

Projected traffic volumes for each of the Level 2 Alternatives were summarized. Alternatives within Edmonton are anticipated to carry higher traffic volumes. The format of this exhibit (a single corridor per page) was recognized as an effective "key map" tool to illustrate the overlapping corridor locations to the public.

Spot Improvements: Rebecca Ramsey then gave a brief presentation of the potential Spot Improvements identified by WSA. These included:

- Adding a truck climbing lane north of the KY 90 intersection;
- Widening the two bridges on KY 163;
- Addressing the vertical alignment at Missionary Mound;
- Adjusting curves and grades at Cedar Flats;
- Reconfiguring the KY 163/US 68-KY 80 intersection to remove parking and add a northbound left turn lane;
- Adding turning lanes at both entrances to the Industrial Park;
- Adding turning lanes at Bowling Park; and
- Reconfiguring the US 68-KY 80 split intersection.

The project team was asked for recommendations or additions to the spot improvements list. Scott Pedigo mentioned that the parking configuration at the KY 163/US 68-KY 80 intersection has been studied previously. Adding a turning lane northbound could restrict the movement of trucks turning right from the eastbound approach. There are also drainage problems at this intersection, which lies at the bottom of a hill. Runoff pools there and runs into the sidewalks and adjacent businesses just uphill at the bank on KY 163. A retirement home

on KY 163 within Edmonton relies upon a crosswalk across KY 163 to access the sidewalk network. Warning signs have been installed.

An additional spot identified was the existing Nunn interchange. Preliminary investigation suggests the existing structure could remain in service. Thus, changing the ramps to a diamond configuration would be a relatively low-cost alternative to improve safety.

The project team requested that cost estimates be available for the upcoming meeting with local officials and stakeholders. Jeff Moore mentioned the importance of segmenting the project to keep components within manageable costs. Carl Dixon affirmed that WSA would do this with the final study recommendations, presented at a project team meeting in June 2007.

Public Input Survey: Carl Dixon also indicated that a public input survey would be developed for the May 17th public meeting. No draft has been prepared yet, but it was anticipated that the following questions will be asked:

- Which Alternative(s) do you prefer? Why?
- Which Spot Improvement(s) do you prefer? Why?
- Are there any additional spots you would add?

A draft of the survey should be prepared and presented at the local officials and stakeholders meetings the upcoming week.

6. Project Team Discussion/Approval

The project team requested modifications to the color-coded maps showing the alternatives to make them easier to read and easier to reference in discussions.

With the modifications discussed in this meeting, the project team agreed that the exhibits presented by the consultant should be used for the upcoming meetings with local officials, stakeholders, and the public.

7. Next Steps

Carl Dixon indicated that the next steps in the project would be the Local Officials and Stakeholders meetings on April 26th, the Public Meeting on May 17th, the presentation of the Public Meeting Notebooks by early July, another Project Team meeting probably in mid-June, and the submittal of the Draft Report for the study by the end of July.

It was noted that there would not be a final Public Meeting to present the results of the study. This would be handled with a news release and presentations to the fiscal court, city council, and/or Barren River ADD by the District staff, with assistance from WSA as needed.

8. Adjourn

The meeting was adjourned at approximately 12:15 p.m. CDT.

AGENDA

KYTC Project Team Meeting

KY 163 Alternatives Study
KY 90 to Louie B. Nunn (Cumberland) Parkway
Metcalfe County

KYTC District 3 Office
Bowling Green, Kentucky
April 17, 2007
10 a.m. CDT

1. Welcome and Introductions	**KYTC District 3**
2. Purpose of Meeting	**KYTC Division of Planning**
3. Scheduled Public Meetings	**KYTC**
a. Local Officials/Stakeholders: April 26, 2007	
b. Public Meeting: May 17, 2007	
4. Public Meeting Format	**Discussion**
5. Handouts/Exhibits for Future Meetings	**Wilbur Smith Associates**
a. Purpose and Need	**WSA**
b. Evaluation of Preliminary Corridors	**WSA**
c. Evaluation of Final Corridors	**WSA, et al.**
i. Environmental Review	**Third Rock**
ii. Environmental Justice	**Barren River ADD**
iii. Historic	**WSA**
iv. Geotech	**WSA**
v. Traffic/Safety	**WSA**
vi. Geometric Deficiencies	**WSA**
vii. Cost	**WSA**
d. Spot Improvements	**WSA**
e. Public Input Survey	**WSA**
6. Project Team Discussion/Approval	
7. Next Steps	**KYTC**
a. Public Meeting Notebooks: c. July 2, 2007	
b. Draft Report to Planning: c. July 30, 2007	
8. Adjourn	**KYTC**

MINUTES

Local Officials Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00

Judicial Center
Edmonton, Kentucky
April 26, 2007
10:00 AM

A local officials meeting for the KY 163 Alternatives Study in Metcalfe County was held at 10 a.m. CDT on Thursday, April 26, 2007, in Edmonton, Kentucky. The purpose of the meeting was to present an update of the study information and the alternatives development. A copy of the agenda is attached. Participants in the meeting came from Metcalfe County, the Kentucky Transportation Cabinet (KYTC) District 3 Office, and the consultant firm, Wilbur Smith Associates (WSA). Meeting attendees included the following persons:

Judge Greg Wilson	Metcalfe County Judge Executive
Barry Gilley	Metcalfe County Attorney
Tommy A. Garrett	Metcalfe County Circuit Court
Bruce Siria	KYTC Central Office, Planning
Jeff Moore	KYTC District 3
Misti Wilson	KYTC District 3
Carl Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key components and discussion items for this meeting is provided below, following the agenda outline.

1. Welcome and Introduction
Bruce Siria began the meeting, welcoming the participants and providing a summary of the project history over the past six months.

2. Purpose
Bruce Siria briefly outlined the purpose of the meeting: to show the local officials what the project team has been developing and to seek their input. Over the last months, the project team has been looking at possible improvements to KY 163 between KY 90 and the Nunn Parkway. Other improvements have been occurring along KY 163 further south. In November and December, the first round of meetings with the community provided initial input for the project team. From here, more than 25 potential alternatives were developed, which were narrowed to 8 build alternatives.

At this meeting, the project team presents its findings and solicits comments and preferences from the local officials. There is a public meeting on May 17th when the public will have an opportunity to provide feedback as well. The results of this input will help in making a study recommendation, which will be fed into the KYTC six year planning process this fall.

3. Existing Conditions

Carl Dixon reviewed the steps WSA has taken over the past months. Preliminary data was assembled for presentation at the first round of meetings. From input received at these meetings and more detailed data collected about the study area, WSA identified existing problems with the roadways and created alternatives to address these. The strategy was to think of all possible alternatives to be sure the best solution was available for selection.

Rebecca Ramsey presented the existing conditions data. Capacity analysis based on existing traffic volumes shows levels B and C throughout the project area. Volumes projected to 2030 with a 1.9% growth rate indicate some delay will occur by the design year, degrading level of service in Edmonton around the KY 163/US 68 intersection to unacceptable levels. Despite this, capacity does not appear to be the controlling problem. This data did contribute to the development and analysis of alternatives.

Officials present indicated that traffic problems at the KY 163/US 68 intersection are driven by large trucks. People have to stop a significant distance behind the stop bars to allow trucks to make tight turns. At 3 pm, traffic from the industrial park lets out, also causing long delays for a period of time in the afternoon, especially on the southbound approach. Carl Dixon affirmed that these issues were taken into consideration, though they are do not show up in the traffic analysis.

Rebecca Ramsey presented an overview of the crash history and geometric deficiency data. Concentrations of crashes occur along US 68-KY 80 between the parkway and KY 861 and at the two primary intersections within Edmonton: KY 163 with US 68 downtown and US 68 with KY 80 on the east side. Based on the as-built plans for KY 163, the existing roadway geometrics were compared to current design standards and geometric deficiencies were identified. Narrow lanes, narrow shoulders, sharp curves, poor passing sight distance, and steep hills are the primary concerns, spanning the length of the roadway and making it difficult to improve KY 163 by only fixing portions of the roadway.

An environmental overview was also presented for the project area. Historic structures and cemeteries occur throughout the project area. Karst features, grading issues, streams, and wetlands are common, as well. As with many other projects, any improvement selected could involve trade-offs between the natural and the human environment.

4. Input from the Public Meeting

Rebecca Ramsey presented the results from mapping exercises and the survey distributed at the public meeting. Existing roadway problems and environmental features in the area were identified and included in the alternatives analysis. Suggested

alternatives from the public meeting were mapped and considered in a Level 1 corridor screening process. Results from the survey identified sharp curves, large trucks, no passing opportunities, and narrow shoulders as issues with the existing KY 163 alignment. Homes and farmlands were most frequently identified as sensitive areas to be considered.

5. Purpose and Need

One of the most important parts of the study is to establish the purpose and need for the proposed project. This helps to determine what should be done and helps evaluate to see how well any proposed alternative solution meets the purpose. Based on the existing conditions data and public input, the project team developed a project purpose and need statement. Carl Dixon summarized the purpose and need: to improve safety and mobility within Edmonton, Metcalfe County, and the region. Perhaps the biggest issue is that all traffic must now go through the 4-way stop at the KY 163-US 68 intersection in downtown Edmonton, which already has some inherent safety and operational problems. Other goals were also developed which the project should try to achieve, although they are not the primary purpose. These include:

- Improving connections between highways;
- Fixing the geometric deficiencies;
- Helping move trucks through Edmonton;
- Improving access to goods and services within Edmonton; and
- Helping the economy.

6. Initial Alternatives

Carl Dixon explained the initial alternatives and screening process: with these project goals in mind, initial alternatives were developed. Corridors were drawn on a map to get from point A (at KY 90) to somewhere along the parkway going east of the city, through the city, around the city, west of the city, and far west of the city. Alternatives considered using the existing interchange or a number of potential new interchanges nearby. The screening process evaluated how well each alternative performed compared to one another in addressing the project purpose and avoiding negative environmental issues. Based on this, several alternatives were removed. Routes far west of Edmonton don't impact local traffic and would take a larger amount of farmlands; A2B was retained for Level 2 screening to provide a comparison point. Bypass routes within Edmonton east of the existing alignment were dismissed due to known archeological sites and stream impacts. The far eastern alternatives were associated with low elevations and would have potential flooding concerns; less traffic would use these routes. A route along the existing alignment (A5D) was included to demonstrate the extent of impacts to downtown development.

7. Final Alternatives

Carl Dixon presented the remaining Level 2 Alternatives following this screening process. There are 6 corridors, 1 interchange only option, spot improvements, plus a no build scenario. Routes on the existing alignment have greater impacts on community resources, whereas routes off the existing alignment have greater impacts on environmental resources. Jeff Moore explained the color and naming conventions used on the alternatives maps.

Bruce Siria reviewed the larger context of the project. KY 163 is part of a larger connection between I-40 in Tennessee and the future I-66 corridor to I-65 in Kentucky. This project could run a straight line from KY 90 to the existing interchange and totally bypass Edmonton, but that wouldn't address any of Edmonton's local problems. This study is designed to help the local transportation network in Edmonton, specifically addressing problems reported at the KY 163-US 68 intersection downtown. Since there is no practical way to redo this intersection where it stands, other alternatives look at removing traffic from it or changing the flow characteristics by adding an interchange to the north.

Examining the potential alternatives, the local officials in attendance made the following comments:

- An interchange at D would provide direct access to the industrial park.
- Reconstructing KY 163 in Metcalfe County may divert trucks from KY 90 trying to reach the parkway via Glasgow. Carl Dixon pointed out that these volumes are difficult to anticipate.
- The work on KY 163 in Monroe County has already increased traffic and trucks on KY 163 in Metcalfe County.
- Trucks coming off the parkway at the existing interchange will turn the wrong way and have to try turn around. The Dripping Springs Church parking lot catches a lot of these turns and is in bad condition because of it. Bruce Siria explained that this may be due in part to the toll ramp configuration.
- A crash study on KY 1243 is underway; this area will be affected by a new interchange on US 68 if this alternative is selected.
- Alternative A2B is likely to meet with more public opposition and doesn't look like it will meet Edmonton's needs.
- Alternative A2D seems like a good fit; the Interchange at D should be a priority.

8. Spot Improvements

Rebecca Ramsey presented the spot improvements. Ten spots were identified, as shown on the display maps. Associated costs and crash histories were presented for each location.

9. Cost Estimates

Carl Dixon presented cost estimates for each of the build alternatives. Costs range from $13 million for the interchange only to $45 million for the longer distance builds. These costs include only construction, right-of-way and utilities will significantly affect these values. It assumes a two lane section, with three lane portions for truck climbing lanes or turning lanes where needed.

Bruce Siria put these values in perspective. Although the costs sound really high, they are feasible for highway projects. Lower cost projects do have an advantage though. Jeff Moore explained that any recommendations which come out of this study will be broken into separate projects and put in the Six Year Plan. Currently, the US 68 interchange project is on the unscheduled projects list. This study will help expand on the concept and advance the project(s) to the Six Year Plan to be scheduled with funding. From here, the next phase would be design, followed by right-of-way

acquisition, utility relocations, and eventually construction. Without any delays, this process would take 8 years or more.

10. Public Meeting

A public meeting is scheduled for May 17th, 2007 from 4:00 to 7:00 p.m. at the Metcalfe County High School cafeteria. A slide presentation will be made around 4:30 to allow people time to come in. With an open house format, it is not necessary to get there at 4:00 or stay until 7:00. There will be displays, maps to draw on, and one-on-one discussion as well.

The local officials were invited to review and complete the attached survey. A set of exhibits will be left at the courthouse after the public meeting, along with some blank surveys, for anyone who could not make it to the public meeting.

With no further questions, the meeting adjourned at about 11:45 a.m.

AGENDA
Kentucky Transportation Cabinet (KYTC)
KY 163 Alternatives Study, Metcalfe County
KY 90 to Nunn Parkway
KYTC Item No. 3-129.00

April 26, 2007
Metcalfe County Judicial Center
Edmonton, Kentucky

1.	Welcome and Introductions	KYTC
2.	Purpose of Meeting	KYTC
3.	Existing Conditions Overview	Wilbur Smith Associates
	a. Traffic	
	b. Safety	
	c. Geometry	
	d. Environmental	
4.	Input from Public Meeting and Survey	Wilbur Smith Associates
5.	Purpose and Need	Wilbur Smith Associates
6.	Initial Alternatives	Wilbur Smith Associates
7.	Final Alternatives	
	a. Environmental Overview	Wilbur Smith Associates
	b. Geotechnical Issues	Wilbur Smith Associates
	c. Cultural Resources	Wilbur Smith Associates
	d. Environmental Justice Concerns	Barren River ADD
8.	Spot Improvements	Wilbur Smith Associates
9.	Cost Estimates	Wilbur Smith Associates
10.	Public Meeting: May 17, 2007	KYTC
	a. Advertisement	
	b. Meeting Agenda	
	c. Alternatives Survey	
11.	Next Steps	KYTC
12.	Q & A	Group Discussion
13.	Adjourn	KYTC

MINUTES

Stakeholders Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00

Judicial Center
Edmonton, Kentucky
April 26, 2007
1:30 PM

A stakeholders meeting for the KY 163 Alternatives Study in Metcalfe County was held at 1:30 p.m. CDT on Thursday, April 26, 2007, in Edmonton, Kentucky. The purpose of the meeting was to present an update of the study information and the alternatives development. A copy of the agenda is attached. Participants in the meeting came from the cities of Edmonton and Glasgow, the Barren River Area Development District (BRADD), the Kentucky Transportation Cabinet (KYTC) District 3 Office, and the consultant firm, Wilbur Smith Associates (WSA). Meeting attendees included the following persons:

Harold Stilts	City of Edmonton
Austin Bragg	City of Edmonton
Captain Travis	Glasgow Police Department
Amy Scott	Barren River ADD
Bruce Siria	KYTC Central Office, Planning
Jeff Moore	KYTC District 3
Misti Wilson	KYTC District 3
Carl Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key components and discussion items for this meeting is provided below, following the agenda outline.

1. Welcome and Introduction
Jeff Moore began the meeting, welcoming the participants and providing an opportunity for everyone present to introduce themselves.

2. Purpose
Jeff Moore briefly outlined the purpose of the meeting: to show the local officials what the project team has been developing and to seek their input. Over the last months, the project team has been looking at possible improvements to KY 163 between KY 90 and the Nunn Parkway. In November and December, the first round of meetings with the community provided initial input for the project team. Since then, potential alternatives have been developed and the project team would like to get feedback from community members about each of them.

3. Existing Conditions
Carl Dixon reviewed the steps WSA has taken over the past months. Preliminary data was assembled for presentation at the first round of meetings. From input received at these meetings and more detailed data collected about the study area, WSA identified existing problems with the roadways and created alternatives to address these. The strategy was to think of all possible alternatives to be sure the best solution was available for selection.

Rebecca Ramsey presented the existing conditions data. Planners looked at traffic, safety, and geometric data to help identify what the problems are along KY163 today. Capacity analysis based on existing traffic volumes shows levels B and C throughout the project area. Volumes for the year 2030 indicate some delay will occur and level of service in Edmonton around the KY 163/US 68 intersection to unacceptable levels. Even though it does not show up in the analysis, reported traffic problems at the KY 163 intersection with US 68 were taken into account as well.

Concentrations of crashes occur along US 68-KY 80 between the parkway and KY 861 and at the two primary intersections within Edmonton: KY 163 with US 68 and US 68 with KY 80. Based on the as-built plans for KY 163, geometric deficiencies based on today's design standards were identified. Narrow lanes, narrow shoulders, sharp curves, poor passing sight distance, and steep hills are the primary concerns, spanning the length of the roadway and making it difficult to improve KY 163 by only fixing portions of the roadway.

4. Input from the Public Meeting
Rebecca Ramsey presented the results from mapping exercises and the survey distributed at the public meeting. Existing roadway problems and environmental features in the area were identified and included in the alternatives analysis. Suggested alternatives from the public meeting were mapped and considered in a Level 1 corridor screening process. Results from the survey identified sharp curves, large trucks, no passing opportunities, and narrow shoulders as issues with the existing KY 163 alignment. Homes and farmlands were most frequently identified as sensitive areas to be considered.

5. Purpose and Need
One of the most important parts of the study is to establish the purpose and need for the proposed project. This helps to determine what should be done and helps evaluate to see how well any proposed alternative solution meets the purpose. Based on the existing conditions data and public input, the project team developed a project purpose and need statement. Carl Dixon summarized the purpose and need: to improve safety and mobility within Edmonton, Metcalfe County, and the region. Perhaps the biggest issue is that all traffic must now go through the 4-way stop at the KY 163-US 68 intersection in downtown Edmonton, which already has some inherent safety and operational problems. Other goals were also developed which the project should try to achieve, although they are not the primary purpose. These include:

- Improving connections between highways;
- Fixing the geometric deficiencies;
- Helping move trucks through Edmonton;
- Improving access to goods and services within Edmonton; and

- Helping the economy.

6. Initial Alternatives
Carl Dixon explained the initial alternatives and screening process: with these project goals in mind, initial alternatives were developed. Corridors were drawn on a map to get from point A (at KY 90) to somewhere along the parkway going east of the city, through the city, around the city, west of the city, and far west of the city. Alternatives considered using the existing interchange or a number of potential new interchanges nearby. The screening process evaluated how well each alternative performed compared to one another in addressing the project purpose and avoiding negative environmental issues. Based on this, several alternatives were removed. Routes far west of Edmonton don't impact local traffic and would take a larger amount of farmlands; A2B was retained for Level 2 screening to provide a comparison point. Bypass routes within Edmonton east of the existing alignment were dismissed due to known archeological sites and stream impacts. The far eastern alternatives were associated with low elevations and would have potential flooding concerns; less traffic would use these routes.

7. Final Alternatives
Carl Dixon presented the remaining Level 2 Alternatives following this screening process. There are 6 corridors, 1 interchange only option, spot improvements, plus a no build scenario. Routes on the existing alignment have greater impacts on community resources, whereas routes off the existing alignment have greater impacts on environmental resources.

Similar to the Level 1 process, these corridors were compared against each other to see which would best meet Edmonton's needs with the fewest negative impacts. At this point, WSA has identified potential issues within each of the corridor sections. Next, public input is needed to determine which issues are more important locally and what the community would like to see happen. After selecting one or two recommended corridors, an actual alignment within the corridor would be developed, avoiding as many impacts as possible.

Some of the issues within the project area include historic structures (e.g., rack sided barns which are unique to this area of the state), National Register Historic Places, cemeteries, streams, the industrial parks, prime farmland, and an Agricultural District.

Amy Scott gave an overview of the environmental justice data available. The Barren River ADD used census data to look at minority, elderly, and low income populations for each segment of the suggestion alternatives. Within Edmonton, there was a larger concentration of each of these groups, due in part to mobile home parks and a nursing home. From an environmental justice viewpoint, alternatives A2B and D have the fewest impacts on populations. Jeff Moore explained that these statistics are used not just to avoid negative impacts, but to identify special populations that could be helped.

8. Spot Improvements
Rebecca Ramsey presented the spot improvements. Ten spots were identified, as shown on the display maps. Associated costs and crash histories were presented for the locations.

Improvements at the KY 163-US 68 intersection were investigated but it is difficult to make improvements without losing the buildings on three of the four corners. Various signal studies have been undertaken in the past, but having a four-way stop control improves safety and actually helps the truck flow.

9. Cost Estimates

Rebecca Ramsey presented cost estimates for each of the build alternatives. Costs range from $13 million for the interchange only to $45 million for the longer distance builds. The total cost for all spot improvements is $17 million. These costs include only construction, but right-of-way and utilities could significantly affect these values. It assumes a two lane section, with three lane portions in heavy turning areas.

Jeff Moore explained how the projects will be staged. Any recommendations from this study will be divided into smaller projects and built in sections. He went over an example of how this process might look for an alternative. Carl Dixon added that the spots would be prioritized as well.

The stakeholders expressed concern about the value of public input. Members of the project team affirmed that no solution has been selected or preferred. Public input was used to develop the initial alternatives. The concept of a second interchange for Edmonton came from community input; it was not something the project team was looking at initially. Additional input is going to be necessary to help determine which alternative moves forward to be recommended as a result of the study.

Meeting participants discussed the alternatives. A2B will have the most impacts to farmlands and higher construction costs but would be easy to construct. It remained in the Level 2 Corridors to provide a comparison point for the other alternatives; stakeholders anticipate a negative reaction from the public to this alternative. The alternatives on the east side of Edmonton did not pass the Level 1 screening because there was an increased likelihood to encounter archaeological artifacts and a concern about the floodplain. However, this area has fewer utilities to relocate. The Interchange at D option is difficult to distinguish as an option since it does not appear as a separate item on the displays; this will be addressed for the public meeting. Alternatives with an interchange at D help the emergency services to respond, making it unnecessary for responders to wait in traffic at the KY 163-US 68 intersection twice. It would also help reduce traffic volumes and remove a portion of the cattle trailers accessing the stockyard from downtown.

10. Public Meeting

A public meeting is scheduled for May 17th, 2007 from 4:00 to 7:00 p.m. at the Metcalfe County High School cafeteria. A presentation of this data will be made around 4:30 to allow people time to come in. With an open house format, it is not necessary to get there at 4:00 or stay until 7:00. There will be displays, maps to draw on, and one-on-one discussion as well. The stakeholders were asked to review and complete the attached survey. A set of exhibits will be left at the courthouse after the public meeting, along with some blank surveys, for anyone who could not make it to the public meeting.

11. Next Steps

This study should be finished by October for inclusion into the KYTC six year planning process. Recommendations will enter this process for funding and scheduling, moving through design, right-of-way, utility, and construction phases in a minimum of 8 years.

In the next phase, the recommended corridor would be narrowed down to a single alignment. This involves a deeper level of detail to identify issues and impacts.

The stakeholders expressed a concern that the interchange at D should be a top priority. Its benefits to Edmonton should be more clearly explained at the public meeting. There is a Statewide Planning meeting scheduled for Monday afternoon at the judge's office for district staff to determine local priorities.

With no further questions, the meeting adjourned at about 2:45 p.m.

AGENDA
Kentucky Transportation Cabinet (KYTC)
KY 163 Alternatives Study, Metcalfe County
KY 90 to Nunn Parkway
KYTC Item No. 3-129.00

April 26, 2007
Metcalfe County Judicial Center
Edmonton, Kentucky

1.	Welcome and Introductions	KYTC
2.	Purpose of Meeting	KYTC
3.	Existing Conditions Overview	Wilbur Smith Associates
	a. Traffic	
	b. Safety	
	c. Geometry	
	d. Environmental	
4.	Input from Public Meeting and Survey	Wilbur Smith Associates
5.	Purpose and Need	Wilbur Smith Associates
6.	Initial Alternatives	Wilbur Smith Associates
7.	Final Alternatives	
	a. Environmental Overview	Wilbur Smith Associates
	b. Geotechnical Issues	Wilbur Smith Associates
	c. Cultural Resources	Wilbur Smith Associates
	d. Environmental Justice Concerns	Barren River ADD
8.	Spot Improvements	Wilbur Smith Associates
9.	Cost Estimates	Wilbur Smith Associates
10.	Public Meeting: May 17, 2007	KYTC
	a. Advertisement	
	b. Meeting Agenda	
	c. Alternatives Survey	
11.	Next Steps	KYTC
12.	Q & A	Group Discussion
13.	Adjourn	KYTC

Public Involvement Meeting

KY 163 Corridor Alternatives Study
Metcalfe County
Item No. 3-129.00
Metcalfe County High School
Edmonton, Kentucky
May 17, 2007 – 4:00–7:00 p.m.

A public involvement open house meeting was held on Thursday, May 17, 2007, from 4:00 p.m. to 7:00 p.m. at Metcalfe County High School in Edmonton, Kentucky. The purpose of the meeting was to communicate the study process with attendees and receive feedback about the developed build alternatives from community members. The following Kentucky Transportation Cabinet (KYTC), Area Development District (ADD), and consultant staff were in attendance:

Amy Scott	Barren River Area Development District
Steve James	KYTC, District 3
Jeff Moore	KYTC, District 3
Andy Stewart	KYTC, District 3
Deneatra Hack	KYTC, District 3
Misti Wilson	KYTC, District 3
Keirsten Jaggers	KYTC, District 3
Bruce Siria	KYTC Central Office, Division of Planning
Thomas Witt	KYTC Central Office, Division of Planning
Carl D. Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates
Virginia Goodman	Third Rock Consultants

The public involvement meeting was arranged in auditorium style with several informational display boards located in one area of the meeting area. KYTC, ADD, and consultant staff were available to provide information, answer questions, and discuss issues. As attendees entered the meeting room, they were invited to participate in the following areas:

- Sign-In and Survey

  Upon arrival, attendees were greeted at the door and asked to sign the attendance list. At this station, attendees were given a survey questionnaire with attached maps, and a postage paid envelope to return the questionnaire. Attendees were encouraged to view a slide presentation prior to walking through the project exhibits.

- KY 163 Alternatives Study Presentation

  A PowerPoint slide presentation was given at approximately 4:30 p.m. to provide information on the current KY 163 Alternatives Study. The presentation included information on the existing roadway conditions, public input received at the December meeting, the project purpose, the alternatives development and evaluation phases, the initial and final proposed corridor alternatives, and proposed spot improvements on KY 163, US 68, and KY 80. This

slide show was played continuously during the public involvement session, with a seating area provided nearby for viewers.

- Exhibit Boards

  A section of the room was set up with a semi-circular arrangement of project exhibits, including the following displays:

  - Summary of December Public Involvement Survey and Meeting Responses (2 exhibits)
  - 2006 and 2030 Traffic Volumes and LOS
  - Crash History and Analysis
  - Geometric Deficiencies
  - Environmental Resources and Issues (5 exhibits)
  - Project Purpose and Need
  - Level 1 Alternative Corridors Map
  - Level 1 Screening Matrix
  - Level 2 Corridor Alternative Map (showing all corridor alternatives)
  - Level 2 Corridor Alternatives Maps (displayed individually with traffic projections)
  - Level 2 Screening Matrix
  - Spot Improvements Map
  - Spot Improvements Data Table (including cost of each spot improvement)
  - Cost Estimates for All Build Alternatives

  Attendees were invited to view the project exhibits and discuss any questions or concerns with KYTC, ADD, and/or consultant staff. Comments and concerns made during the meeting could also be recorded on one of the flip charts in this area of the room or drawn directly onto the display boards.

- Map Drawing Exercise

  Three tables were set up with two exhibits showing the seven potential build corridors for attendees to draw on or write comments, one with all alternatives together on an environmental footprint aerial map and one showing a map of each alternative to clarify the location. Markers were provided for attendees to identify any concerns or sensitive areas.

- Survey Area

  Tables were available to attendees to fill out their survey form and read over the project materials.

A total of 40 persons registered their attendance at the three-hour public session (this number includes the staff members listed above).

Comments received during the session verified previously input regarding opposition to impacts to homes and farmlands. Suggestions for spot improvement modifications were also given. Additional comments were anticipated through the public comment surveys, which were distributed at the meeting to be returned during the meeting or by mail to KYTC within two weeks after the meeting. Seven (7) questionnaires were returned at the meeting, and several attendees took surveys and envelopes to return later. Additional surveys and copies of the corridor alternatives and spot improvements maps were to be left at the court house to provide additional opportunities for involvement. Once all of the questionnaires are received by KYTC, these comments will also be included in the official meeting record.

The meeting closed at 7:00 p.m.

MINUTES

Project Team Meeting

Alternatives Study to Relocate/Reconstruct KY 163
from KY 90 to Nunn Parkway
Metcalfe County
Item 3-129.00
KYTC District 3 Office
Bowling Green, Kentucky
July 13, 2007
10:00 AM CDT

A project team meeting for the KY 163 Alternatives Study in Metcalfe County was held at 10 a.m. CDT on Friday, July 13, 2007, in Bowling Green, Kentucky. The purpose of the meeting was to review the input received during the second round of community involvement meetings, present the final evaluation and cost estimates for recommended alternatives, and discuss the final study recommendations. The meeting agenda is attached.

Participants in the meeting came from the Barren River Area Development District (BRADD), the Kentucky Transportation Cabinet (KYTC) Central and District 3 Offices, and Wilbur Smith Associates (WSA). Meeting attendees included the following:

Amy Scott	BRADD, Regional Transportation Planner
Steve Ross	KYTC Central Office, Planning
Boday Borres	KYTC Central Office, Planning
Keirsten Jaggers	KYTC District 3, Public Information Officer
Jeff Moore	KYTC District 3, Planning
Misti Wilson	KYTC District 3, Planning
Steve James	KYTC District 3, Preconstruction
Andy Stewart	KYTC District 3, Design
Scott Pedigo	KYTC District 3, Traffic
Carl D. Dixon	Wilbur Smith Associates
Rebecca Ramsey	Wilbur Smith Associates

A summary of the key discussion items for this meeting is provided below.

1. Welcome and Introduction
Jeff Moore began the meeting by welcoming the participants and asking the project team members to introduce themselves.

2. Purpose
Jeff Moore briefly outlined the purpose of the meeting: to review public input received during the second public involvement session and discuss final study recommendations.

3. Review of Alternatives
To frame the upcoming recommendations discussion, Carl Dixon briefly outlined the study process leading up to this meeting. He reviewed the project purpose and need and the debate accompanying this issue: whether the KY 163 Alternatives study in Metcalfe County is intended as a regional connection to the future I-66 corridor or as a local route serving Edmonton. One overwhelming theme from the past discussion with the community is that Metcalfe County is a rural community and its population is committed to preserving this character.

Carl Dixon noted that the Cabinet already has plans to improve KY 163 south of KY 90 to Tompkinsville and KY 90 from KY 163 to Glasgow to meet regional transportation needs. This seems to be consistent with current and anticipated traffic demand, especially for trucks traveling between I-40 and the future I-66 (Louie B. Nunn Parkway) and on to I-65. Therefore, no overriding need appears to exist for improving all of KY 163 north of KY 90 as a major regional or statewide facility for trucks and other traffic.

Traffic conditions, crash history information, Level 1 Alternatives, and the Final (Level 2) Alternatives were presented as well.

4. Public Meeting Survey Results
Rebecca Ramsey gave an overview of the results of the public input survey completed in May/June 2007. Public votes favored Alternatives A2D and A4D; 73% of respondents preferred an alternative including a new interchange. The narrow bridges over Rogers Creek and Black Rock Creek along KY 163 were the favored spot improvements. The public opposition to home and farmland impacts encountered during the initial round of public input was also apparent during this phase; citizens prefer that new routes utilize existing alignments.

Rebecca Ramsey also presented a synopsis of the resource agency responses.

5. Study Recommendations
Carl Dixon explained WSA's preliminary recommendations to the project team.

- No Build – This alternative did not meet the project purpose and need and so this alternative was dismissed.
- A2B – Because of sizeable farmland impacts and low impacts on local traffic, this alternative was dismissed.
- A2D – Despite public preference, this alternative has major impacts to farmlands and the Agricultural District. It also increases mileage for the state to maintain and does not address the project purpose and need better than alternatives which have fewer farmland impacts or require fewer new miles of roadway. This alternative was dismissed.
- A2G – This route also has large farmland and Agricultural District impacts and only moderately addresses the project purpose and need; this alternative was dismissed.

- A5D – Cutting through the center of downtown Edmonton on the existing alignment, impacts to businesses and homes would be extensive for this alternative; it was dismissed.

He then presented the final major recommendations and the priorities assigned to them.

6. Project Priorities

The primary recommendation, based on public input and technical analysis, was an interchange at D (on US 68 north of Edmonton). Carl Dixon noted that the interchange would present some special design challenges, including the need to relocate some other roads in the immediate vicinity, especially KY 1243 north of the Parkway and the entrance to the Industrial Park on KY 3524 south of the Parkway. This project may require an Interchange Justification Study for FHWA approval since the Nunn Parkway is designated as a future interstate route. The cost for this project is about $19 million, largely due to the relocation of the additional roads.

The new interchange would improve truck movements by removing the necessity for them to turn at the existing KY 163-US 68/KY 80 intersection. It also provides better access for both Industrial Parks and the Stockyard. It would also help any north-south truck traffic since they could go straight through town and not face the difficulty of turning onto US 68-KY 80 (Stockton Street).

Also recommended for future consideration was a new route within Edmonton west of the existing KY 163 alignment (4 to G). The total cost of the northern and southern sections of this connector is about $11.5 million. If the IJS is not approved or funds are not available for the interchange, the Edmonton Bypass (4G) should move up as the primary recommendation.

WSA does not recommend reconstruction of the rural portion of the route south of Edmonton (A4). Instead, a number of spot improvements were recommended to correct additional deficiencies and safety issues at other places along the route. This seems to be consistent with input received from the public.

Rebecca Ramsey then presented the prioritized recommendations for the spot improvements.

The bridge widening projects received the highest public support, and these were assigned the top priority among the spot improvements. The bridge projects may be eligible for bridge replacement funding. Two options were discussed for the project limits of the realignment at Cedar Flats.

Two of the proposed spot improvements were not recommended at this time:

- Fixing the existing interchange ramps was not recommended at this time; future consideration as part of an I-66 Corridor upgrade may be warranted.
- Turn lanes into the Industrial park on US 68 would be included in the Interchange at D Alternative, so it should be dismissed; however, it could be resurrected as a stand-alone spot improvement if the interchange is not implemented.

Typical cross sections were presented for rural and urban segments.

7. Potential Issues

Some special issues were noted:

- Karst topography is common in the study area, especially at the northeastern project limits near the proposed new interchange.
- There are multiple historic structures which may require further investigation.
- The Agricultural District along the existing KY 163 alignment will require special procedures and possible mitigation if it is impacted.

8. Group Discussion

Steve James pointed out the high cost associated with the new interchange, noting that this seems like a large expense for a small, rural community that already has an interchange. The less expensive bypass option may help just as much for a lower cost. Due to resource constraints, it may be more realistic to make the bypass the first priority. This recommendation received approval from the project team.

In support of making the bypass as the primary recommendation, Carl Dixon mentioned that a gap currently exists in the development patterns around US 68-KY 80 which would be a good site for the bypass. Without planning and zoning, this gap may not be there if the KYTC waits for very long; moving forward with the bypass while relocation impacts would be minimal is advisable.

Carl Dixon also recommended that consideration be given to changing the official US 68 and KY 163 routing over the new northern and southern sections, respectively, of the new bypass/connector. Each route through downtown Edmonton could possibly be designated as a business route.

The project team agreed that the second interchange should still be considered as a priority, and it should be evaluated as part of any Future I-66 upgrades. It will be included on the Unscheduled Projects List at this point, which should address the public expectation.

The spot improvement on US 68-KY 80 was also discussed. It was decided that this project should tie into the existing widening project underway in the vicinity. *(The existing project extends from MP 7.0 – 7.7 on US 68.)*

A group consensus was reached that the final recommendations approved by the project team are as follows:

- The western bypass of Edmonton should be defined as Priorities 1A (north of US 68-KY 80) and 1B (south of US 68-KY 80), rather than Priorities 2 and 3.
- The Interchange at D would be dropped from Priority 1 to Priority 2.
- Spot improvements 1-9 should be completed in concert with Priorities 1A, 1B, and 2 (maps showing final spot improvement recommendations should show priority number rather than ID number):

    - The right-turn lane at the existing industrial park on US 68 should be included if funding is not provided for the new US 68-Nunn Parkway interchange at D in the near future.
    - The 3-lane section along US 68-KY 80 should be extended to meet the project limits of the existing widening project.
    - The Cedar Flats improvement should be extended north to also address the intersection with C. Faulkner Road.
- The rural portions of KY 163 are not recommended for full reconstruction.

WSA will prepare and submit a draft report to KYTC by the end of July. After a 30-day period for KYTC review, the final report should be submitted in early September.

9. Adjourn
The meeting was adjourned at 11:05 AM CDT.

AGENDA

KYTC Project Team Meeting

KY 163 Alternatives Study
KY 90 to Louie B. Nunn (Cumberland) Parkway
Metcalfe County

KYTC District 3 Office
Bowling Green, Kentucky
July 13, 2007
10 a.m. CDT

1. Welcome and Introductions	**KYTC**
2. Purpose of Meeting	**KYTC**
3. Review of Alternatives	**WSA**
4. Public Meeting Survey Results	**WSA**
5. Study Recommendations	**WSA**
6. Project Priorities	**WSA**
7. Potential Issues	**WSA**
a. General Environmental	
b. Agricultural District	
c. Historic Structures	
d. Community Resources	
e. Environmental Justice	
8. Group Discussion	**KYTC**
9. Adjourn	**KYTC**

August 29, 2007

«Mailing_Title» «First_Name» «Last_Name»«Suffix»
«Title»
«Organization»
«Address1»
«Address2»
«City», «State» «Zip»

SUBJECT: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements
from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

Dear «Letter_Title» «Last_Name»:

Previously, we had requested that your office identify specific issues or concerns that could affect the development of the Kentucky Transportation Cabinet's planning study to determine the appropriate corridor for improvements to KY 163 in Metcalfe County from KY 90 to the Louie B. Nunn Parkway. We thank you for your initial comments.

The study has progressed to the point where we are once again seeking your input. Based on the comments received, existing transportation system conditions, and the human and natural environment in the project area, our consultant partners-Wilbur Smith Associates of Lexington-developed twenty-six possible alternative concepts to provide transportation system improvements. The Cabinet's Project Team has reduced those alternatives to those identified on the enclosed map, plus "spot improvements" and "no build". We ask that you.advise us if your office has a strong preference for or against any particular alternative or alternatives.

We respectfully ask that you provide us with your comments by April 13 2007, to ensure timely progress in this planning effort.

We appreciate any input you can provide concerning this project. Please direct any comments, questions, or requests for additional information to Bruce Siria of the Division of Planning at 502/564-7183 or at bruce.siria@ky.gov. Please address all written correspondence to Daryl Greer, P.E., Director, Division of Planning, Kentucky Transportation Cabinet, 200 Mero Street, Frankfort, KY 40622.

Sincerely,

Daryl Greer , P.E., Director
Division of Planning

DJG:BSS:

Enclosures

c: Marc Williams
Jeff Moore
Keirsten Jaggers
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P.O. Box 22204
Louisville KY 40252-0204

Mr. Tony Reck
President & CEO, P& L Railway, Inc.
Kentucky State Rail Association
1500 Kentucky Avenue
Paducah KY 42003

Ms. Linda Strite Murnane
Executive Director
Kentucky Commission on Human Rights
332 West Broadway, Suite 700
Louisville KY 40202

Richie Farmer, Commissioner
32 Fountain Place
Frankfort, KY 40601

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

Kentucky
Department of
Agriculture

A Consumer Protection and Service Agency

March 27, 2007

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

Re: KY 163, Metcalfe County
Scoping Study to Determine Appropriate Corridor for Improvements from
KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

Dear Mr. Greer:

Please be advised that this agency has no specific concerns or issues concerning the above-noted project.

Sincerely,

Ann Stewart
Staff Assistant

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

Department for Natural Resources
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone: (502) 564-6940
Fax: (502) 564-5698
www.eppc.ky.gov
www.dnr.ky.gov

Teresa J. Hill
Secretary

Susan C. Bush
Commissioner

April 11, 2007

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

RE: KY 163, Metcalfe County
KY 90 to the Louis B. Nunn Parkway
Item No. 3-129.00

Dear Mr. Greer:

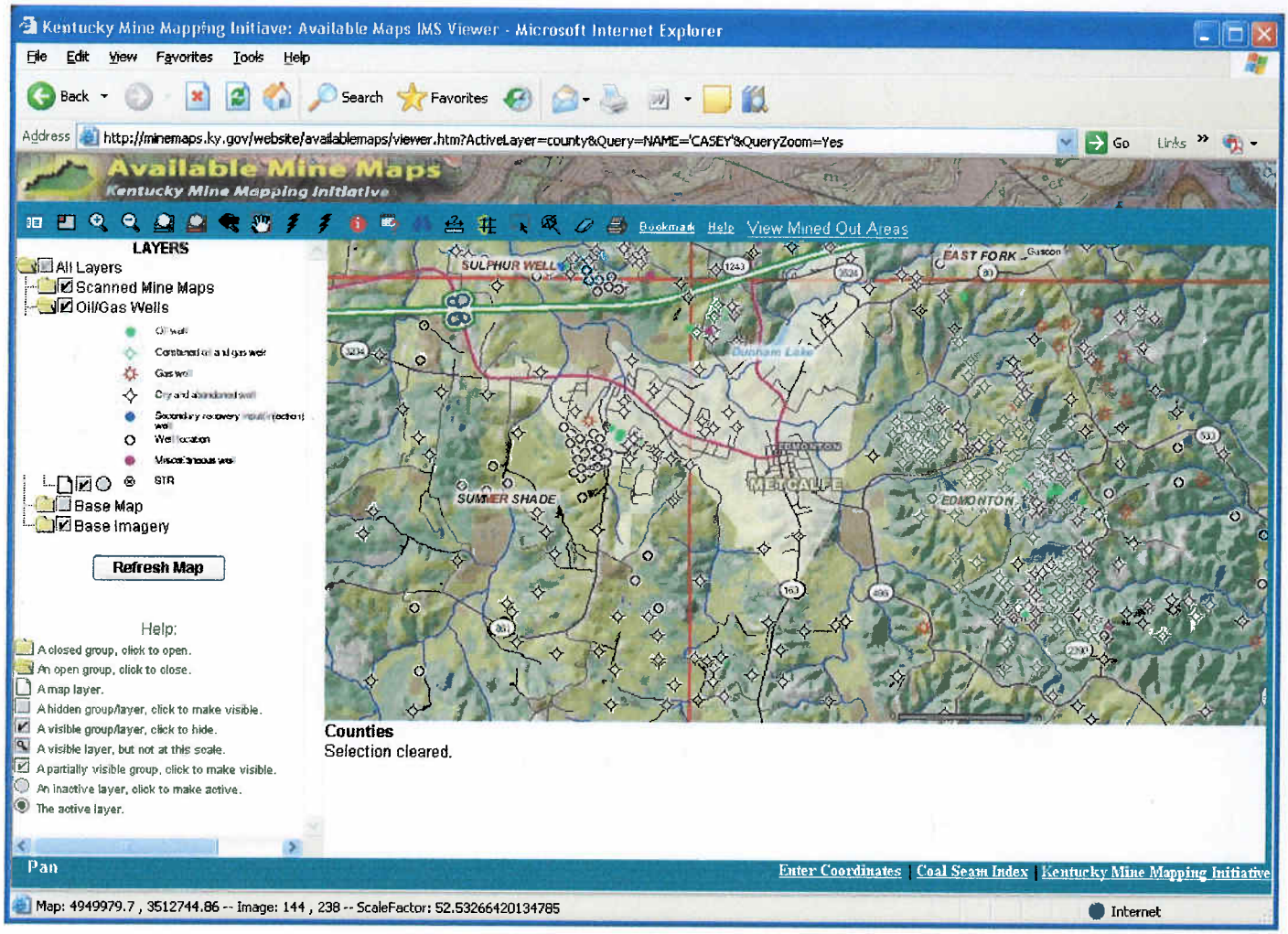
Thank you for the opportunity to comment on the scoping study to determine the appropriate corridor for improvements to KY 163 in Metcalfe County. The Department for Natural Resources has examined the documentation. The Division of Mine Reclamation and Enforcement has found no surface or underground mining activities in the area, nor are there pending permits in the vicinity. In addition, there are no quarries or historic mining in the area. Similarly, the Division of Forestry has no strong preference for or against any particular alternative.

According to the Kentucky Division of Oil and Gas Conservation, this is an area of known oil and gas exploration activity. Enclosed is a map, obtained from the Kentucky Mine Mapping Web site, http://minemaps.ky.gov, showing several oil and gas wells. The Kentucky Geological Survey can provide an overlay with the wells plotted for this area. Should you have any additional questions or concerns, please call Kim Collings at (502) 573-0147 or Linda Potter at (502) 564-6940.

Sincerely,

Susan C. Bush

Susan C. Bush, Commissioner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Kentucky Mine Mapping Initiative
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All Layers
Scanned Mine Maps
Oil/Gas Wells
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Base Imagery
Refresh Map
Help:
A closed group, click to open.
An open group, click to close.
A map layer.
A hidden group/layer, click to make visible.
A visible group/layer, click to hide.
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A partially visible group, click to make visible.
An inactive layer, click to make active.
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SUMMER SHADE
MERCALFE
EDMONTON
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Map: 4949979.7 , 3512744.86 -- Image: 144 , 238 -- ScaleFactor: 52.53266420134785
Internet

COMMERCE CABINET
DEPARTMENT OF PARKS

Ernie Fletcher
Governor

Capital Plaza Tower, 11th Floor
500 Mero Street
Frankfort, Kentucky 40601-1974
Phone 502-564-2172
Fax 502-564-9015
www.parks.ky.gov

George Ward
Secretary

J.T. Miller
Commissioner

April 3, 2007

Daryl J. Greer
P.E. Director
Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Dear Mr. Greer:

Subject: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

The Kentucky Department of Parks received your request for input and comments relating to a study for improvements to KY 163 from KY 90 to the Louie B. Nunn Parkway.

The Department of Parks has no preference in the routing of KY 163.

Sincerely,

John Kington
Deputy Commissioner
Kentucky Department of Parks

From: Gowins, John (EPPC DEP DAQ)
Sent: Wednesday, March 28, 2007 8:33 AM
To: Siria, Bruce (KYTC)
Subject: Scoping studyfor KY90 to Louie B. Nunn Parkway, Metcalf County

Bruce,
We do not have any additional comments for this project. Will this e-mail suffice, or do we need to send a letter?
Thanks.

John E. Gowins, Supervisor
Program Evaluation Section
Program Planning Branch
Kentucky Division for Air Quality
(502) 573-3382 ext. 347
John.Gowins@ky.gov

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

Division of Conservation
375 Versailles Road
Frankfort, Kentucky 40601
Phone (502) 573-3080
Fax (502) 573-1692
www.conservation.ky.gov

Teresa J. Hill
Secretary

Stephen A. Coleman
Director

April 13, 2007

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

Subject: KY 163 Corridor Improvements, Metcalfe County

Dear Mr. Greer:

As requested, the Division of Conservation has reviewed the proposed alternatives for the improvements to KY 163 beginning at KY 90 and ending at the Louie B. Nunn Parkway. We would like to provide the following comments and express concerns that may help in choosing an appropriate alternative.

As stated in our letter dated March 6, 2007, there is one agricultural district, # 085-01, certified by the Kentucky Soil and Water Conservation Commission within the project corridor. This agricultural district was established in order to conserve, protect, develop, and improve agricultural land for production of food, fiber, and other agricultural products.

In looking at the map provided, it is certain that the agricultural district could be affected by any of the three possible alternatives. Of the three presented, we would like to see the A4D & A4G corridor chosen because it seems to follow the existing KY 163 right-of-way which would lessen the impacts to the established agricultural district.

In addition, the other alternative corridors, A28, A2D and A2G, would require new construction that would result in the loss of farmland, both prime and farmland of statewide importance as well as impacting the agricultural district. Every year pressure imposed by utility right-of-ways, urban expansion, and new roads reduce the land available for agricultural use in the Commonwealth.

We realize that improving Kentucky's highways is vital to the economy and safety of our citizens. We support the Transportation Cabinet's effort in providing the Commonwealth with improved roadways while trying to design, construct, and maintain these roadways with as minimal environmental impact as possible.

We appreciate the opportunity to comment on this project. If you have any questions, please contact this office any time.

Sincerely,

Stephen A Coleman SAC

Stephen A. Coleman, Director
Kentucky Division of Conservation

SAC/aeh

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-2150
FAX (502)564-4245
www.dep.ky.gov

Teresa J. Hill
Secretary

Cheryl A. Taylor
Commissioner

April 16, 2007

Mr. Daryl J. Greer, P.E., Director
Division of Planning
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Re: KY 163 Scoping Study to Determine Appropriate Corridor for Improvements from KY90 to the Louie B. Nunn Parkway

Dear Mr. Greer,

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

We received your letter dated March 26, 2007 requesting input on the alternatives that are proposed including "spot improvements" and "no build". I contacted the divisions and agencies that commented on the previous submission. The Department for Environmental Protection does not have additional comments or preference based on out review of the maps that were submitted for our review. The Division of Conservation in the Department of Natural Resources also received a letter and plans on issuing a separate response.

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

Sincerely,

Larry C. Taylor
State Environmental Review Officer

c: Lloyd Cress, OOS

UNIVERSITY OF KENTUCKY

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

March 29, 2007

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

Dear Mr. Greer:

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

Ky. 163, Metcalfe County
A follow-up to determine an appropriate corridor for improvements from Ky. 90 to the Louie B. Nunn Parkway.
Item No. 3-129.00

Physiographic Region

The study area is in the Mississippian Plateau (Pennyroyal or Pennyrile) Physiographic Region, which is underlain by limestone, some argillaceous in parts.

Karst Potential

The study area might encounter karst features such as sinkholes and caves.

Landslide Potential

The study area would not encounter any pre- or post-landslide hazard.

Unconsolidated Sediments

The study area would encounter unconsolidated sediments, such as clay, silt, sand, gravel, and chert rubble in the streams.

Resource Conflicts

The study area might encounter resource conflicts such as prior ownership of property for quarrying or mining

From: Jasper, Danny (KYTC)
Sent: Tuesday, April 03, 2007 1:52 PM
To: Siria, Bruce (KYTC)
Cc: Greer, Daryl (KYTC); Smith, Greta (KYTC); Criswell, Steve (KYTC); Carter, Phil C (KYTC-D03)
Subject: Item No. 3-129.00 Scoping Study for KY 163 corridor in Metcalfe County

Bruce,

The Division of Construction does not have any additional comments on the subject corridor.

Thanks,

Danny Jasper P.E.

Trans. Engr. Spec. Division of Construction

MEMORANDUM **PA-001-2007**

TO: Daryl Greer, P.E.
Director
Division of Planning

FROM: William Broyles, P.E.
Geotechnical Engineering
Branch Manager
Division of Structural Design

BY: Christian Wallover, P.G.
Geotechnical Branch

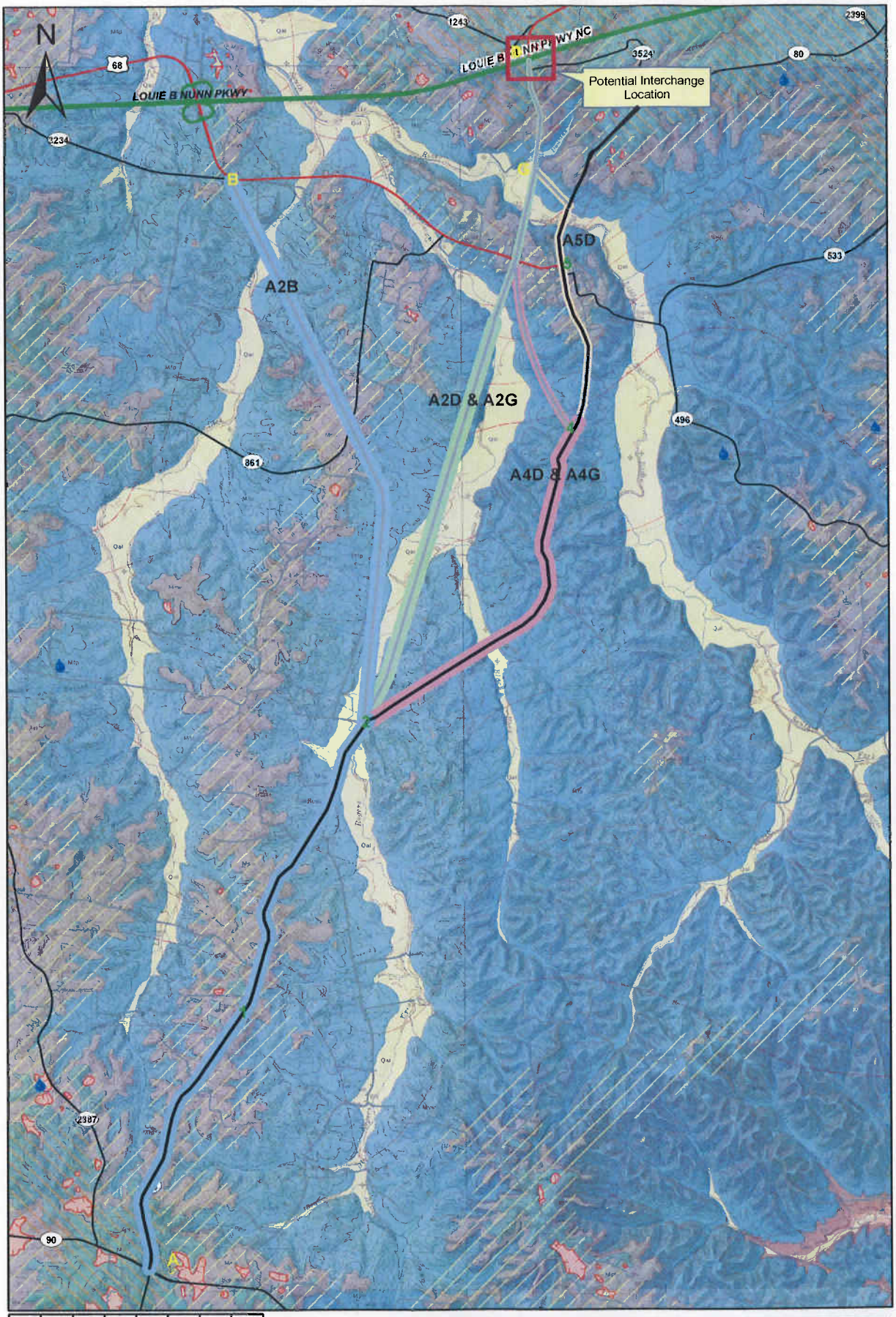
DATE: April 24, 2007

SUBJECT: Metcalfe County
FD04 085 0163 000-000 D
KY 163
KY 90 to the Louie B. Nunn Parkway
Mars No. 7966301P
Scoping Study to Determine Appropriate Corridors
Item No. 3-129.00

At your request, a geotechnical evaluation for the selected corridors has been completed based on available geologic mapping for proposed improvements to KY 163 from KY 90 to the Louie B. Nunn Parkway. Any concerns that have been identified are expressed in the following paragraphs and are represented on the attached geologic map.

All corridors are acceptable; however, in the opinion of the Branch, alternate A2B is the least preferred. Corridors A2D, A2G, A4D, A4G & A5D are favored because they best avoid seepage from groundwater flow by relatively paralleling the dip of the bedrock based on the structural contours displayed on the geological quadrangles.

Should you have additional questions, please contact the Geotechnical Branch at (502) 564-2374.



Metcalfe County KY-163
Alternatives Study
Corridor alternatives from KY-90
to the Louie B. Nunn Parkway
Item No. 3-129.00

KYTC Division of Traffic, Permits Branch

From: Mann, Phillip (KYTC)
To: Daryl Greer
Cc: Napier, Cass (KYTC)
Sent: Mar 29, 2007 8:51 AM
Subject: KY 163, Metcalfe County, Item No. 3-129.00

Daryl: We have no additional comments to make concerning the subject scoping study. All encroachment concerns were addressed in our initial response. Thanks for including us in the loop. Phillip Mann

JUSTICE AND PUBLIC SAFETY CABINET

Ernie Fletcher
Governor

Kentucky Vehicle Enforcement
Frankfort, Kentucky 40601

BG Norman E. Arflack
Secretary

Gregory G. Howard
Commissioner

April 12, 2007

Mr. Daryl J. Greer, P.E.
Division of Planning
Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Dear Mr. Greer:

We are in receipt of your letter requesting additional input that Kentucky Vehicle Enforcement might have to your planning study to determine the appropriate corridor for improvements to KY 163 in Metcalfe County from KY 90 to the Louie B. Nunn Parkway.

After I gave your request to my staff to investigate, they contacted the Barren/Metcalfe County EMS. They seem to think the alternative A2D & A2G selection would be the best route for emergency personnel because EMS would not have to travel through the city limits of Edmonton. In an emergency situation, they feel this would be the best for both the responders and the motoring public.

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

Sincerely,

Gregory G. Howard
Commissioner
Department of Kentucky Vehicle Enforcement

KENTUCKY COMMERCE CABINET

Ernie Fletcher
Governor

Capital Plaza Tower, 24th Floor
500 Mero Street
Frankfort, Kentucky 40601
Phone (502) 564-4270
Fax (502) 564-1512
www.commerce.ky.gov

George Ward
Secretary

April 9, 2007

Mr. Daryl Greer, P.E., Division of Planning Director
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, Kentucky 40622

Re: Scoping Study
Metcalf County
KY 163
Item No. 3-129.00

Dear Mr. Greer:

The Department of Parks has reviewed your correspondence to me regarding the subject. We do not have a strong preference for the corridor.

I appreciate you seeking our Agency's comments on this project.

Sincerely:

Mr. George Ward, Secretary
Kentucky Commerce Cabinet

C: John Drake

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Ernie Fletcher
Governor

Bill Nighbert
Secretary

Marc Williams
Commissioner of Highways

March 26, 2007

OB ROUTING				
	INFO	ACTION	FILE	INITIALS
OB				
SEC				
CLERK				
BR SPEC		PS		
BR SPEC				
BR SPEC				
BR SPEC				
COMMENTS:				

Mr. Roger Wiebusch
Bridge Administrator
United States Coast Guard, Bridge Branch
1222 Spruce Street
St. Louis MO 63103

Dear Mr. Wiebusch:

Subject: KY 163, Metcalfe County
Scoping Study to determine appropriate corridor for improvements
from KY 90 to the Louie B. Nunn Parkway
Item No. 3-129.00

Previously, we had requested that your office identify specific issues or concerns that could affect the development of the Kentucky Transportation Cabinet's planning study to determine the appropriate corridor for improvements to KY 163 in Metcalfe County from KY 90 to the Louie B. Nunn Parkway. We thank you for your initial comments.

The study has progressed to the point where we are once again seeking your input. Based on the comments received, existing transportation system conditions, and the human and natural environment in the project area, our consultant partners Wilbur Smith Associates of Lexington developed twenty-six possible alternative concepts to provide transportation system improvements. The Cabinet's Project Team has reduced those alternatives to those identified on the enclosed map, plus "spot improvements" and "no build". We ask that you advise us if your office has a strong preference for or against any particular alternative or alternatives.

We respectfully ask that you provide us with your comments by April 13 2007, to ensure timely progress in this planning effort.

Pursuant to the Coast Guard Authorization Act of 1982, it has been determined this is not a waterway over which the Coast Guard exercises jurisdiction for bridge administration purposes. A Coast Guard bridge permit is not required.

4/3/07

ROGER K WIEBUSCH (Date)
Bridge Administrator
Eighth Coast Guard District (obr)

We appreciate any input you can provide concerning this project. Please direct any comments, questions, or requests for additional information to Bruce Siria of the Division of Planning at (502) 564-7183 or at bruce.siria@ky.gov. Please address all written correspondence to Daryl Greer, P.E., Director, Division of Planning, Kentucky Transportation Cabinet, 200 Mero Street, Station W5-05-01, Frankfort, KY 40622.

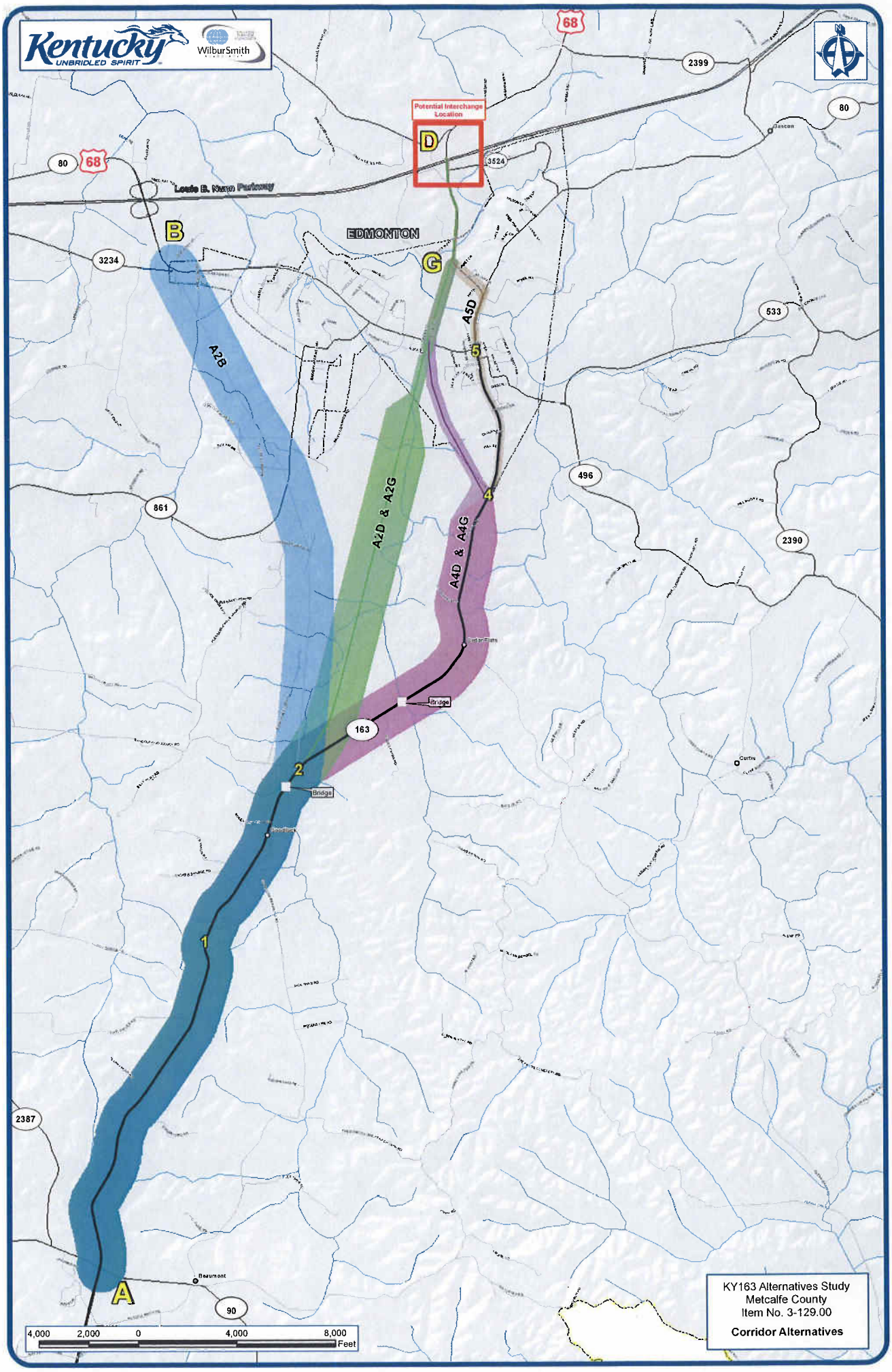
Sincerely,

Daryl J. Greer, P.E
Director
Division of Planning

DJG/BSS/NH

Enclosure

c: Carl Dixon - WSA
Marc Williams
Jeff Moore
Keirsten Jaggers
Steve James
Scott Pedigo
Renee Slaughter
Jim Simpson
David Harmon
Jason Hyatt
Phil Carter


Kentucky
UNBRIDLED SPIRIT
WilburSmith
Potential Interchange Location
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Louie B. Nunn Parkway
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EDMONTON
G
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A2D & A2G
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861
A4D & A4G
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Bridge
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Beaumont
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Feet
KY163 Alternatives Study
Metcalfe County
Item No. 3-129.00
Corridor Alternatives

From: thomas_bilodeau@hud.gov [mailto:thomas_bilodeau@hud.gov]
Sent: Friday, March 30, 2007 10:40 AM
To: Siria, Bruce (KYTC)
Cc: barbara_rooney@hud.gov; krista_mills@hud.gov
Subject: Louie B. Nunn Parkway Scoping Study

Mr. Siria,

Our office received a request for comments on the proposed alternatives for transportation improvements to KY 163 in Metcalfe County from KY 90 to the Louie B. Nunn Parkway. After reviewing the attached map detailing the proposed alternatives, out office has no preference for or against any of the proposed routes.

Thank you for the opportunity to comment.

Tom Bilodeau
CPD Representative
HUD - Louisville, KY
(502) 582-6163, ext. 312