August 2004

Item No. 01-182.00

US 51 Planning *Study*

Clinton, Kentucky
Hickman County

Final Report

Project Summary

KENTUCKY TRANSPORTATION CABINET

Prepared for:

Kentucky Transportation Cabinet
Division of Planning

Kentucky Transportation Cabinet
District 1

Prepared by:

PB PARSONS BRINCKERHOFF

In Association With:

Jordan, Jones and Goulding, Inc.
Third Rock Consultants, LLC
Cultural Resource Analysts, Inc.

Study Background and Purpose

The US 51 Study in Clinton, Kentucky is a planning and feasibility study to assess the need for and potential improvements to US 51 in the vicinity of Clinton in Hickman County, Kentucky. The Kentucky Transportation Cabinet (KYTC) initiated the study in 2002 as part of the implementation of the KYTC Six-Year Highway Plan. This project was programmed in the highway plan in response to a 1995 US 51 Wickliffe to Fulton corridor study. The 1995 study concluded that widening US 51 from Wickliffe to Fulton was not warranted. However, it identified the portion of US 51 through the town of Clinton as a potential future traffic congestion area.

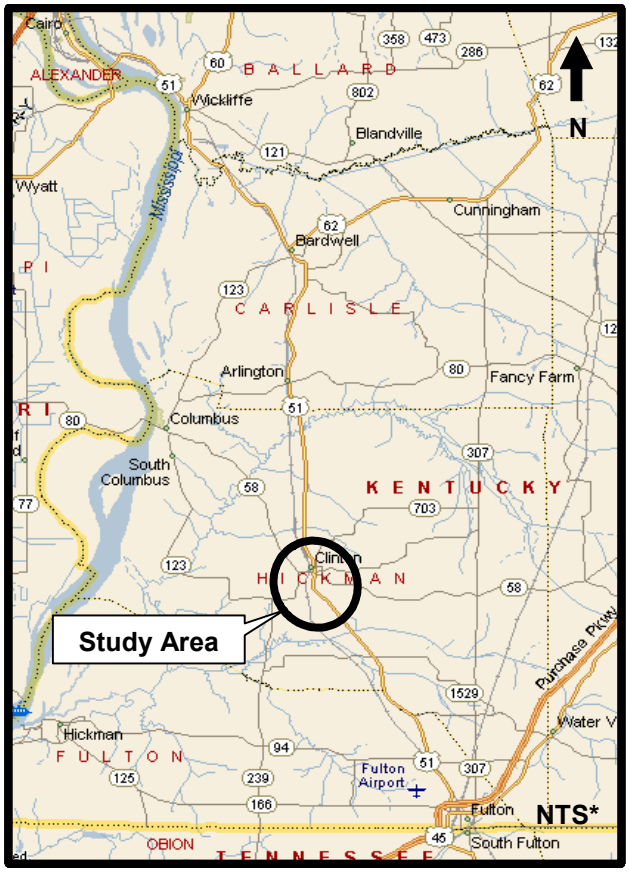
This current study therefore examined traffic and highway conditions on US 51 in Clinton to confirm whether there are current or projected future deficiencies and to evaluate the extent of those deficiencies. A range of improvement alternatives was developed to address each identified deficiency. The alternatives were then compared and evaluated based on transportation, community, economic, environmental, and construction benefits and impacts/costs. The result of the study was a recommended set of highway improvements for future implementation.

At the outset of the project, KYTC informed the project team, local officials, and members of the public that the study would examine a wide range of possible improvements from doing nothing, to in-town improvements, to bypass alternatives. The Cabinet also made it clear that there was not a predetermined solution or outcome to the study.

Study Location and Limits

US 51 is a north-south highway in Western Kentucky, connecting Cairo, Illinois to Fulton, Kentucky near the Tennessee border. Clinton, Kentucky is located along US 51 in Hickman County. This study is limited to the portion of US 51 in the vicinity of Clinton and extends from Cane Creek in the north to the Bayou de Chien in the south for a distance of approximately 5.4 miles. Figure 1 illustrates the study location.

Figure 1: Study Location



*NTS = Not to Scale

No-Build Conditions Analysis

US 51 is an undivided two-lane highway. Average daily traffic volumes (ADT) peak at approximately 7,100 ADT in town, with

2,200 ADT north of town and 2,500 ADT south of town. Truck traffic percentages are approximately 7 percent in town, 14 percent south of town, and 18 percent north of town. Based on the traffic volumes, the current traffic levels of service (LOS) are acceptable (LOS B or C) indicating little vehicle delay and good traffic flow conditions from a capacity standpoint.

Traffic growth on US 51 in Clinton has been modest over the last 19 years with an average growth rate of less than 1.0 percent per year at the eight study area count stations. (In fact, traffic volumes are lower now on US 51 than they were in the late 1970s due to the construction of I-55 in Missouri.) However, for purposes of this study a 1.5 percent growth rate was applied to evaluate how traffic conditions would change if the growth rate were higher.

Using the 1.5 percent per year growth rate, 2030 traffic volumes increase to a high of approximately 10,900 ADT in town, with volumes of around 3,300 to 3,900 ADT north and south of town, respectively. With these traffic volumes and assuming no highway improvements, the two-lane highways north and south of town are projected to operate at acceptable levels of service through 2030. The two key intersections in town however, are expected to fall below the threshold of LOS C. The US 51 / KY 58 / KY 123 intersection will fall to LOS D in 2020 and the side street approaches to the US 51 / KY 58 (Mayfield Road) intersection will fall to LOS E in 2010.

There are several geometric issues with the current highway. While the average lane width ranges from 10 to 14 feet, there are sections with limited shoulders of less than 3 feet. There are curb and gutter sections in town, but the curb heights are small (or missing) in some areas due to damaged curbs and pavement overlays. There are utility poles and other objects in close proximity to the highway in some areas. Also, sight distance is limited along US 51 at some locations due to the vertical geometry.

There are two intersections with deficient turning radii. Field observations indicate that trucks have a difficult time turning at the US 51 / KY 58 / KY 123 intersection due in part to the presence of on street parking on all legs of the intersection. The parking also poses a safety problem for pedestrians and vehicles since many of the parking spaces are angled thereby requiring that vehicles back out into traffic on US 51 or the side streets when leaving. Much of this parking is well used, particularly around the courthouse. The US 51 / KY 58 (Mayfield Road) intersection also has a deficient corner radius. Many sidewalks along US 51 are in disrepair.

A review of recent crash data did not reveal a significant crash problem when US 51 was compared to the statewide critical crash rate for similar roadways. Clusters of crashes were observed however at US 51 / KY 58 (Mayfield Road) and south on US 51 toward Martin Road, indicating the possible need for improvements to the existing highway at these locations.

Project Issues and Goals

Based on the technical analysis, as well as extensive public involvement, the project team identified a number of important issues for consideration in examining US 51 in Clinton. A list of these issues is provided below.

- Vehicular Safety and Highway Design
- Pedestrian Safety
- Truck Traffic
- Traffic Flows
- Economic Development and Regional Access
- Historic Preservation, Property Impacts, and Community Character
- Environmental Issues
- Parking, Drainage, and Utilities
- Highway Beautification
- Minority, Low-Income, and Senior Populations
- Project Implementation and Funding

The goals for projects to be evaluated in the US 51 study directly relate to the key issues discussed above. These goals were developed with extensive input from the local community as well as the project team and technical analysis. The key project goals include:

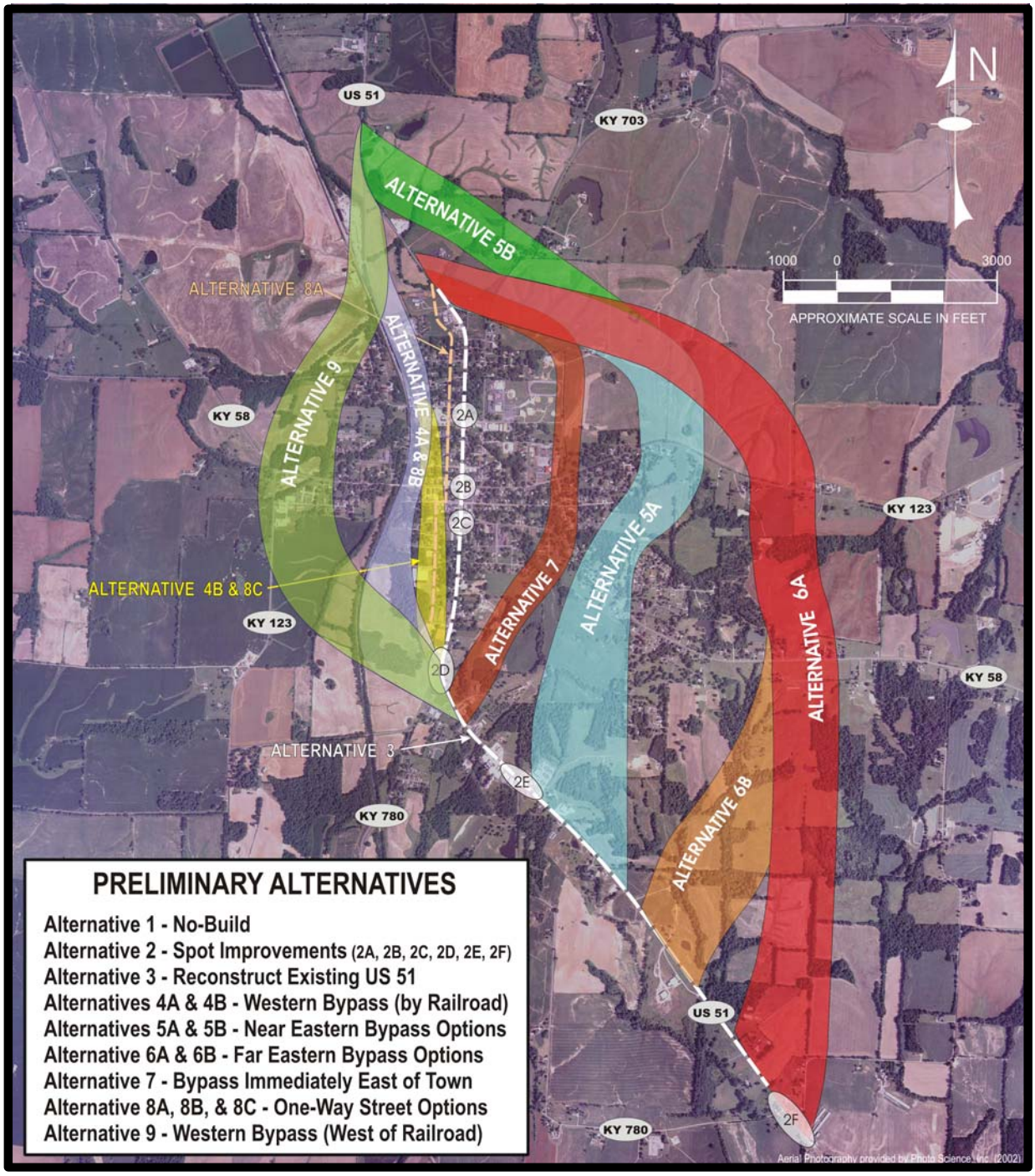
1. Enhance vehicle and pedestrian safety on US 51 in the study area;
2. Mitigate the negative impacts of heavy truck traffic on US 51, while maintaining an efficient through route for trucks and other vehicles;
3. Maintain appropriate traffic controls and traffic flow conditions;
4. Preserve downtown business, while enhancing overall economic development opportunities;
5. Improve highway geometry and drainage;
6. Avoid, minimize, and/or mitigate property takings on US 51 as well as other community and environmental impacts (This was put forward specifically by many local citizens and has been included even though it is understood to be part of the normal KYTC planning and design process); and
7. Facilitate improved regional connections to the Purchase Parkway and other existing regional highways as well as to the possible future I-66 corridor (should it be implemented).

Alternative Development

In response to roadway deficiencies identified in the No-Build Conditions Analysis, fourteen alternatives were developed (see Figure 2). These alternatives were based on both technical analysis and public input. They include:

- Alternative 1 – No-Build
- Alternative 2 – Spot Improvements
  - 2A – US 51 in the Vicinity of Cresap Street
  - 2B – US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)
  - 2C – Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)
  - 2D – US 51 in the Vicinity of KY 780 (North)
  - 2E – US 51 in the Vicinity of Martin Road
  - 2F – US 51 in the Vicinity of KY 780 (South)
- Alternative 3 – Reconstruct US 51 as a Two-Lane Roadway with Center Two-Way Left Turn Lane

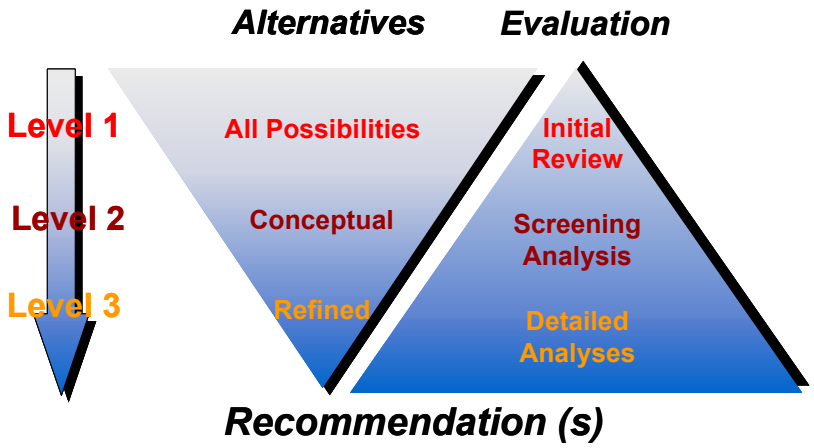
Figure 2: All Preliminary Alternatives



- Alternative 4A – Western Bypass Option A
- Alternative 4B – Western Bypass Option B
- Alternative 5A – Near Eastern Bypass Option A
- Alternative 5B – Near Eastern Bypass Option B
- Alternative 6A – Far Eastern Bypass Option A
- Alternative 6B – Far Eastern Bypass Option B
- Alternative 7 – Bypass Immediately East of Town
- Alternative 8A – One-Way Street System Using Existing Streets
- Alternative 8B – One-Way Street System Using Mainly New Highways
- Alternative 8C – One-Way Street System Using a Combination of Existing and New Streets
- Alternative 9 – Western Bypass (West of Railroad)

Alternative Evaluation

Figure 3: Three-Level Process



The evaluation process used in this study is a three-step process (see Figure 3). The goal is to successively refine the list of alternatives from all possible alternatives, to a short list of promising alternatives, and then finally to the recommended alternative(s). The evaluation begins at Level 1 with a qualitative analysis applied to all possible alternatives. Alternatives advanced to Level 2 are subjected to a screening analysis that combines both qualitative and quantitative evaluation criteria. The final level, Level 3, uses the most detailed information about each of the remaining alternatives to select the recommended alternative or set of alternatives.

The Level 1 evaluation began with fourteen initial alternatives. Of these, eight were recommended for more detailed analysis and six were set aside from further consideration (Alternatives 4B, 5B, 6B, 7, 8B, 8C).

Most of the alternatives set aside in Level 1 were the less desirable corridors from each pair of alternatives. For example, Alternative 4B was set aside because it was determined to have greater property impacts compared to Alternative 4A since it went through town instead of following the railroad tracks. Compared to Alternative 5A, Alternative 5B is longer and is expected to have higher costs and more impacts. As a result, Alternative 5A was advanced to Level 2 and Alternative 5B was set aside. Of the Alternative 6 corridors, Alternative 6B is shorter, but the terrain at the southern end is not as good as Alternative 6A, which follows a ridgeline. Also, Alternative 6B was determined to have more potential environmental impacts than Alternative 6A and was therefore not advanced to Level 2. For the one-way street pair alternatives, Alternatives 8B and 8C were not considered further since Alternative 8A was determined to be the

preferable one-way street alternative. The primary reason for setting Alternative 8B aside was that the one-way street pairs would be located far apart (several blocks) without good connections between them. Alternative 8C had the same connectivity issue as Alternative 8B, but also had the potential community and environmental impacts associated with Alternative 4B since they follow similar corridors.

Alternative 7 was not paired with another similar corridor, but it was not considered past Level 1 because of several major issues. This corridor stays close to town, going through a residential neighborhood east of town. As a result, significant property impacts would result from implementing this alternative. Furthermore, the corridor is located very close to the schools, thereby directing heavy truck traffic close to them. The construction cost would likely be high to build a highway through the built up portions of Clinton. This alternative was also not supported by the public.

In Level 2, five of the remaining alternatives were recommended for more detailed analysis and three were set aside from further consideration (Alternatives 4A, 5A, 8A). Also, each Alternative 2 spot improvement was analyzed separately in Level 2, which led to the recommendation of removing Alternatives 2D, 2E, and 2F from further consideration and the advancement of Alternatives 2A, 2B, and 2C to the Level 3 evaluation. This evaluation level included specific quantitative analysis elements.

Alternatives 2D, 2E, and 2F were developed to address identified geometric deficiencies as the result of perceived safety issues at three intersections south of town. However, a review of the crash data showed that the total crash rates were below the critical rates for these spot locations. In addition, most of the crashes did not appear to be directly related to intersection geometrics. The traffic volumes at these intersections are very low, and without the supporting crash data, the high improvement costs were not deemed to be warranted. Therefore these spot improvements were not considered further.

During the Level 2 evaluation, the potential corridors for a bypass were narrowed down to one east of town (Alternative 6A) and one west of town (Alternative 9). The other western bypass, Alternative 4A was also not considered further for a number of reasons including:

- Little travel time savings expected.
- Did not address the traffic and geometric deficiencies in town.
- May impact the western neighborhoods through property impacts, noise, and increased traffic on local streets.
- Potential impact to the Environmental Justice Community in the north and west portions of town.
- Potential significant environmental impacts including extensive stream relocation and floodplain issues.
- High construction cost estimate.

The other eastern bypass, Alternative 5A was set aside during the Level 2 evaluation as a result of the following issues / impacts:

- Did not address the traffic and geometric deficiencies in town.
- Low forecasted traffic volumes on the bypass.
- Separates a small neighborhood from the rest of town.

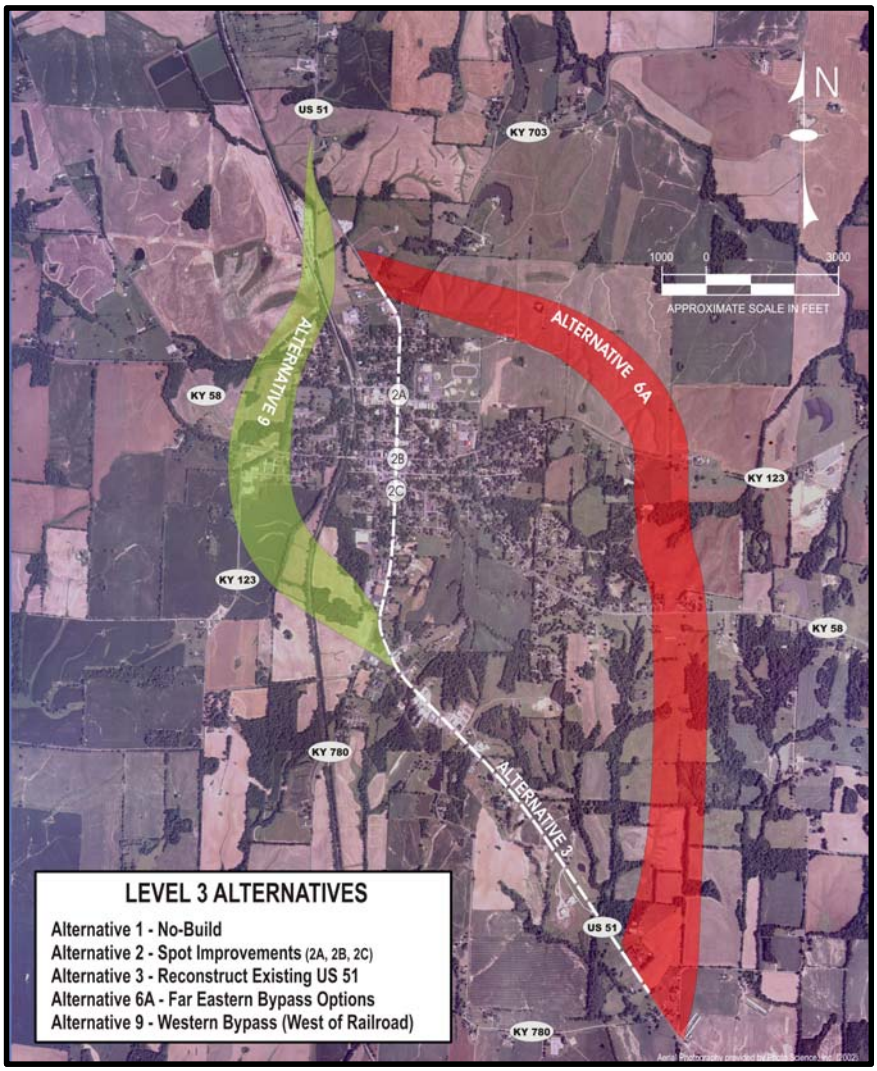
- Potential property impacts.
- Potential environmental impacts.
- Low public support.

Alternative 8A, the last one-way street option was also set aside in Level 2 due to a number of drawbacks including: expected operational problems, residential community impacts, business and community impacts, potential property impacts near the courthouse, safety concerns, environmental justice issues, and a high capital cost. It also appeared to be unwarranted based on the traffic volumes and out of character for the community.

The five alternatives remaining in Level 3 included the No-Build option (Alternative 1), spot improvements 2A, 2B, and 2C (Alternative 2), reconstruction of the existing alignment of US 51 with a center two-way left turn lane south of town (Alternative 3), an eastern bypass option (Alternative 6A), and a western bypass option (Alternative 9). Figure 4 shows these alternatives on a map.

For the five alternatives advanced to Level 3 (Alternatives 1, 2, 3, 6A, and 9), the following section includes the evaluation discussion as well as the recommended alternative.

Figure 4: Level 3 Alternatives



Level 3 Analysis Summary

Overall, the No-Build alternative did not compare favorably with the build alternatives in addressing the project goals (in areas such as safety, truck traffic, capacity and level of service, and economic development); therefore it was not recommended as the preferred alternative.

Alternative 2A was a spot improvement proposed by the community to improve pedestrian safety. However, the data did not show this to be a high crash location; therefore, the potential benefits might not warrant

pursuing it as a separate project. Consequently, it was not recommended as a stand-alone project, but is instead recommended as part of Alternative 3, which includes reconstructing US 51 through town.

Alternative 2B directly addressed a number of the key project goals including safety, traffic flow, truck traffic operations, and highway geometrics. It is one of only two alternatives (Alternative 3 is the other) that improved the US 51 / KY 58 / KY 123 intersection to an acceptable LOS in the design year. Therefore, to ensure adequate operating conditions, improved geometrics, and enhanced safety it was recommended that Alternative 2B be included as part of the recommended implementation package (either as a stand alone project or in conjunction with another project).

Alternative 2C also addressed the project goals of traffic flow, level of service, safety, truck turning movements, and geometric design. The costs associated with the operational improvements (signing, striping, beacon, and signal) were modest (only the geometric improvements raised issues related to property acquisition). Therefore, it was recommended that some form of Alternative 2C be included in the recommended implementation package either as a stand-alone project or in conjunction with another project.

Overall, Alternative 3 addressed all seven of the project goals in some manner. It improves safety on the existing highway (for all users); it improves truck operations through town; it directly addresses the level of service issues in town; it preserves downtown business, while still encouraging new development and investment in the area; it improves the highway geometry; it limits property/community/and environmental impacts; and it facilitates connections through town to other regional highways. Furthermore, it serves the most users (10,900 in the design year); has the lowest construction cost estimate of the three long-term alternatives (Alternatives 3, 6A, and 9); and could easily be phased over time. Alternative 3 is also compatible with the philosophy of maintaining the existing highway system. Therefore, Alternative 3 was recommended at present, as the most appropriate and cost-effective long-term option for improving US 51 in Clinton.

Alternative 6A meets some of the key project goals. It significantly reduces truck traffic through town; provides a new highway meeting current design standards; and limits impacts to the human environment. It also opens new land parcels to development but, based on recent University of Kentucky research, bypasses may cause economic activities to relocate, but they do not necessarily lead to economic growth.

Other aspects of Alternative 6A are in conflict with key project goals including the low traffic volume on the bypass (1,200 ADT in 2030), loss of visibility of businesses through town; a small reduction in travel times through Clinton; insufficient traffic improvements in town (without Alternative 2B or 2C); and no improvements benefiting the large volume of traffic that will remain on the old highway. In addition, the cost is high and public support for a far eastern bypass has been modest. In general, the benefits of Alternative 6A do not appear to be worth the cost. For these various reasons

Alternative 6A is not recommended for further study at this time. However, Alternative 6A does offer a very feasible bypass corridor. If traffic volumes, especially traffic traveling through the study area, increases beyond the projected levels, it would be reasonable to revisit the traffic projections and reassess this recommendation.

Similar to Alternative 6A, Alternative 9 meets some of the project goals. It significantly reduces truck traffic through town; it opens new land parcels to development; it provides a new highway meeting current design standards; and it limits impacts to the human environment. In comparison to Alternative 6A, it also is located closer to town, is predicted to carry higher traffic volumes, and does not bypass all of the businesses in town but improves access to some of them. Alternative 9 also has the highest public support of any alternative. However, Alternative 9 still has low traffic volumes (2,200 – 2,600 ADT in 2030); yields insufficient traffic improvements in town (without Alternative 2B or 2C); has a similar modest per trip travel-time savings; offers no physical improvements for the large volume of traffic that will remain on the old highway; runs adjacent to an Environmental Justice community; involves construction of two bridges over the railroad (which could lead to higher future maintenance costs); and overall costs more to build when including improvements south of the study area boundary. As with Alternative 6A, it is not clear that the high cost of Alternative 9 is justified given the projected use, modest travel-time savings, and other issues. Therefore, the Alternative 9 bypass is not recommended at this time.

Recommendation

The final recommendation for improvements to US 51 through Clinton was Alternative 3 – Reconstruct US 51 as a Two-Lane Roadway with Center Two-Way Left Turn Lane South of Town. Alternative 3 was selected for implementation because overall, it best addresses the following key project goals.

- **Enhance vehicle and pedestrian safety on US 51 in the study area.**

  Alternative 3 enhances vehicular safety for all 10,900 vehicles in the design year through improved geometrics, turn lanes, signal upgrades, improved sight distance, access control, wider lanes, and wider shoulders. The spot improvements 2A and 2B specifically target pedestrian safety on US 51 by improving sight distance at US 51 and Cresap Street, and improving pedestrian circulation around the courthouse. Furthermore, the reconstruction of US 51 through town will provide an upgraded sidewalk system.

- **Mitigate the negative impacts of heavy truck traffic on US 51, while maintaining an efficient through route for trucks and other vehicles.**

  Alternative 3 improves the existing highway for better truck circulation and safety for all truck traffic. These improvements include wider lanes through town and increased turning radii for trucks at select intersections that are currently insufficient with regard to truck turning movements. (The bypasses do remove a

substantial portion of the truck traffic from town, but they leave most of the rest of the traffic on the old highway.)

- **Maintain appropriate traffic controls and traffic flow conditions.**

  Alternative 3 directly addresses the need for appropriate traffic controls and traffic flow conditions on US 51 in town. Without these improvements, the two key intersections will operate poorly by the years 2010 / 2020. Therefore, only Alternatives 3, 2B, and 2C address this goal.

- **Preserve downtown business, while enhancing overall economic development opportunities.**

  Alternative 3 preserves downtown business opportunities better than the other possible alternatives. Whether it enhances overall economic development opportunities is a more open question. One could argue that improving the existing highway (including adding left turn lane access south of town) could spur more development activity in the established US 51 business corridor. Alternatively, an argument could be made that opening new land to development is key to new local economic activity. However, based on the recent University of Kentucky research regarding bypasses, it is not clear that any of the proposed alternatives will have a significant positive impact on economic development in the study area. Instead it may simply cause some businesses to decline and other new businesses to open with little or no net gain to the area's economy. Furthermore, it appears based on recent business developments in the area that macro economic changes may overshadow any transportation system changes that would be made.

- **Improve highway geometry and drainage.**

  Alternative 3 addresses this goal as it specifically calls for reconstructing US 51 to improve highway geometry and drainage.

- **Avoid, minimize, and/or mitigate property takings on US 51 as well as other community and environmental impacts.**

  This goal was put forward specifically by many local citizens and has been included even though it is understood to be part of the normal KYTC planning and design process. All alternatives were developed in accordance with this goal. However, Alternative 3 meets this goal well because it has little impact on the environment and requires the least amount of new property. Also, no homes or businesses are expected to be relocated.

- **Facilitate improved regional connections to the Purchase Parkway and other existing regional highways as well as to the possible future I-66 corridor (should it be implemented).**

  For this goal, Alternative 3 simply improves the existing, regional through-connections by improving and reinforcing US 51 as the major north-south spine in the area.

Overall, Alternative 3 is the preferred alternative because it best addresses the key project goals in the most cost effective manner and in so doing serves the largest number of people. However, if traffic volumes increase substantially, construction of an eastern bypass as proposed in Alternative 6A could be justified. Therefore, it is suggested that traffic counts be monitored over the next five to ten years. Should traffic volumes increase considerably, KYTC may choose to re-evaluate the viability of an Eastern Bypass.

Next Steps / Implementation

The next step would be to allocate funding for the design and implementation of Alternative 3. Based on the proposed project phasing plan, Alternatives 2B and 2C would be undertaken first, as they involve the least construction and cost. They are also needed sooner than the other improvements. After this first phase is underway, it would be appropriate for KYTC to review the traffic count data on US 51 to verify the scope and phasing of the remainder of the proposed project elements. Subsequently, funding could be allocated for the design and implementation of the remaining phases.

1.0 INTRODUCTION

In 1995, the Kentucky Transportation Cabinet (KYTC) Division of Transportation Planning completed a study examining the US 51 corridor from Fulton to Wickliffe. The purpose of the study was to evaluate the need for future improvements in the corridor. In the study, KYTC concluded that corridor-wide improvements, including widening to four lanes, were not warranted. Instead, the No-Build option was recommended. However, KYTC did recommend that bypasses be considered for Clinton (Hickman County) and Bardwell (Carlisle County), based on projected poor traffic flow conditions in 2020.

In 2002, the KYTC initiated a more extensive planning study as part of the implementation of the KYTC Six-Year Highway Plan to re-evaluate and specifically define the need for improvements to US 51 in the vicinity of Clinton. The KYTC Division of Planning intended for the study to examine a wide range of possible alternatives from doing nothing, to in–town improvements, to bypass options. The KYTC Division of Planning made it clear to both the project team and the community that there was not a predetermined solution or outcome for the study.

Members of the project team included: KYTC Central Office Division of Planning, KYTC Central Office Division of Design, KYTC District 1 – Planning, KYTC District 1 – Design, Federal Highway Administration, and the Purchase Area Development District. KYTC selected the consulting firm of Parsons Brinckerhoff (PB) to lead the study effort. Three specialty subconsultant firms were also employed: Jordan, Jones and Goulding for traffic forecasting and analysis; Third Rock Consultants for the environmental overview; and Cultural Resource Analysts for the cultural historic overview.

1.1 Study Objectives

Based on the initial direction provided by the KYTC Division of Planning, the project team developed six primary study objectives as summarized below.

1. Examine the current and future transportation conditions on US 51;
2. Determine where (or if) there are problems or deficiencies;
3. Define the key project issues and project goals;
4. Develop a range of possible alternatives to address the identified problems;
5. Evaluate and compare the alternatives (including the No-Build), considering transportation, community, environmental, and economic benefits and impacts; and
6. Recommend a preferred alternative or set of alternatives for implementation.

While the KYTC has the ultimate responsibility for constructing and maintaining safe and efficient highways, KYTC desires to incorporate public and agency input into the evaluation and decision making process. Therefore, all six of these study objectives were addressed in coordination with a comprehensive public and agency involvement program.

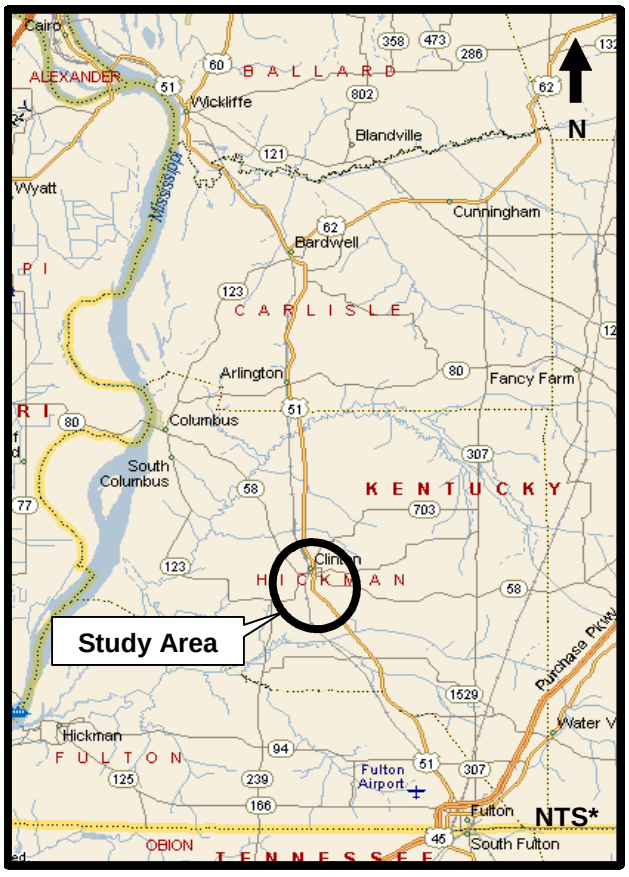
1.2 Project Location and Study Area

The town of Clinton is located in Hickman County in Western Kentucky as shown in Figure 1.

Figure 1: Location of Study Area in Kentucky

Figure 2 shows the general location of the study area within Hickman County.

Figure 2: Study Location



*NTS = Not to Scale

The project team set a study area boundary to determine the extent of US 51 to be studied and to establish an approximate limit for investigating new bypass corridors. The study area runs from the northern limit of the current US 51 construction project south of Clinton (near the Bayou de Chien) to Cane Creek (just north of the Oak Hill Recreation Association Golf Course). This is a distance of approximately 5.4 miles (from milepost 4.5 to milepost 9.9). To the east and west, the study area extends approximately one to two miles from US 51. Figure 3 (Appendix B) shows the specific study area boundary. Large tables and figures are in Appendices A and B for reference.

1.3 Study Process

The study process used to examine US 51 in Clinton consisted of four major elements: 1) Define project issues and

goals, 2) Develop alternative corridors, 3) Evaluate the alternatives, and 4) Recommend an alternative(s).

The subsequent chapters in this report follow these steps, beginning with the development of the key project issues and goals. The following six chapters contain the technical analysis and documentation used to confirm the issues and goals and then develop the alternatives. These chapters include an analysis of existing and future no-build highway conditions, a review of related studies, an overview of past and future transportation projects, a summary of the human environment, a summary of the natural environment, and a geotechnical overview. In addition to the technical analysis, public input and feedback was gathered throughout the study process. The framework for including the public in the study process as well as the agency coordination efforts are presented in the section following the technical analysis. Next, the discussion of the alternatives development procedure and a description of the initial alternatives are presented. Once defined, the initial alternatives were subjected to a three-level evaluation procedure. The goal of the three-level evaluation process was to successively refine the list of alternatives from all possible alternatives (Level 1), to a short list of promising alternatives (Level 2), and then finally to the recommended alternative(s) (Level 3). Each of these evaluation levels is presented in the report. The final stage in the study process was to recommend an alternative(s), which is also the final section in this report.

2.0 STUDY ISSUES AND GOALS

2.1 Project Issues

Based on the technical analyses, as well as extensive public involvement, the Project Team identified a number of important issues for consideration in examining US 51 in Clinton. A summary of the issues is given below.

Vehicular Safety and Highway Design – There are locations on US 51 in the study area with narrow shoulders, steep grades, sharp curves, inadequate turning radii, no turn lanes, angled intersections, and poor lines of sight. Some of the locations with safety concerns include US 51 near Cresap Street, US 51 at KY 58 (W. Clay Street), US 51 at KY 58 (Mayfield Road), US 51 in the vicinity of KY 780 (North and South) and US 51 near Martin Road.

Pedestrian Safety – There are sidewalk and crosswalk deficiencies at locations along US 51, including on Beeler Hill and near Cresap Street. School children cross US 51 at Cresap Street. The high population of senior citizens in the study area (approximately 22 percent) and low auto ownership raises additional pedestrian safety concerns.

Truck Traffic – Truck traffic is an important part of the local and regional economy, however the large percentage of truck traffic also presents issues for the local transportation system and community such as geometric issues (turning radii and narrow lanes) and truck noise. Truck percentages as high as 21 percent have been observed on US 51 north of Clinton. In town however, the truck percentages are closer to 7 percent. One potential reason for the high truck volumes is that the next major river crossing to the south is near Dyersburg, Tennessee (I-155). Traffic from Union City in northwest Tennessee, a major generator of truck traffic, likely does not backtrack to Dyersburg but heads north on US 51 to cross at Cairo, Illinois. Truck turning issues at US 51 / KY 58 (W. Clay Street) is a significant problem. Farm equipment traffic, both tractors and shipments of equipment, is a related issue.

Traffic Flows – Overall, the highway system currently operates well with regard to traffic flow, with minimal delay and congestion. However, in the future the level of service for some of the intersections will drop below LOS C because of poor operating conditions generally associated with the left turn movements to and from the minor streets onto US 51. School traffic and traffic from local establishments is an important issue for local traffic planning. The schools cause traffic peaking around 7:30 – 8:00 a.m. in the morning and around 3:00 p.m. in the afternoon.

Economic Development and Regional Access – The relationship between US 51 and local economic development is a critical issue. Promotion of economic development is very important to both Clinton and Hickman County. The recent closure of a clothing manufacturing plant caused the loss of over 130 local jobs (10 percent of the county job base). Local economic decline has also caused a loss of local tax base. Most recent

commercial development in the area has been on US 51 south of Clinton. Preservation of the current businesses (downtown and on US 51 south) is one significant concern, while another is the attraction and/or development of new businesses in the area. A third issue relates to connections from the county to other regional roadways such as the Purchase Parkway.

Project Implementation and Funding – Obtaining the necessary funding to make roadway improvements in the study area in a reasonable time frame is an important issue for the community.

Historic Preservation, Property Impacts, and Community Character – Preservation of the County Courthouse and other historic buildings (churches and residences) along US 51 is important. First Christian Church, a 100-year old church, was given as an example. With regard to highway widening, the potential for property impacts to homes and businesses fronting US 51 (without large setbacks) is a concern. There is also a desire among local residents to maintain and improve their rural community character and quality of life.

Parking, Drainage, and Utilities – Parking in the vicinity of the courthouse is an important issue to some local employees and businesses. Drainage problems are present at various places along US 51 and flooding occurs during times of heavy rain (such as near the Bayou De Chien). The presence of utility poles close to the roadway edge in sections with limited shoulders and/or narrow lanes (such as on the hill north of town) are a potential traffic safety hazard. The presence of underground and aboveground utilities (water, sewer, electric, telephone, gas, etc.) all in the existing right-of-way and close to the current curb face also presents a major issue. Relocation of these utilities could result in substantial cost that would likely be passed on to local customers.

Highway Beautification – In addition to sidewalk improvements, improving the town visually through streetscape enhancements is an important issue.

Minority, Low-Income, and Senior Populations – There are substantial minority, low-income, and elderly populations in the study area. These residents should be involved in the study process to the greatest extent practicable.

Environmental Issues – The study area may contain a number of state or federal threatened or endangered species and does contain many wetlands. Avoidance, minimization, and/or mitigation will be pursued with respect to these sensitive environmental features.

2.2 Project Goals

The goals for projects to be evaluated in the US 51 study directly relate to the key issues discussed above. These goals were developed with extensive input from the local community. Local leaders and citizens participated through the Project Work

Group in proposing specific goals and even assisting with drafting the language for the goals. The general public also had opportunities to propose and comment on the goals. The key project goals include:

1. Enhance vehicle and pedestrian safety on US 51 in the study area;
2. Mitigate the negative impacts of heavy truck traffic on US 51, while maintaining an efficient through route for trucks and other vehicles;
3. Maintain appropriate traffic controls and traffic flow conditions;
4. Preserve downtown business, while enhancing overall economic development opportunities;
5. Improve highway geometry and drainage;
6. Avoid, minimize, and/or mitigate property takings on US 51 as well as other community and environmental impacts (This was put forward specifically by many local citizens and has been included even though it is understood to be part of the normal KYTC planning and design process); and
7. Facilitate improved regional connections to the Purchase Parkway and other existing regional highways as well as to the possible future I-66 corridor (should it be implemented).

The issues discussed above were put forward by the Project Team, Project Work Group, or the general public. However, they were also supported by the technical analysis that is presented in the following chapters. Similarly, the goals were put forward by various individuals, but again they were substantiated by documented issues and/or by significant public concerns.

Overall, the project goals and issues were critical to the success of the study. The issues were referenced to make sure that all key aspects were given proper attention. They were also used to develop the project alternatives. The goals were used to focus the study and to bring it to completion. They were also used to evaluate the alternatives and to make sure the final recommendations achieved the goals set for the project.

3.0 EXISTING AND FUTURE NO-BUILD CONDITIONS

To determine if there are deficiencies or problems with the existing highway a detailed analysis was completed looking at traffic volumes, highway geometrics, truck traffic, vehicle speeds, levels of service, crash rates, and other key issues. The analysis considered current and future traffic conditions assuming no changes to the current highway. In support of the analysis, highway and traffic data was collected from a variety of sources including:

- KYTC Highway Information System database;
- KYTC District 1 data sources;
- Study area field reviews;
- Peak hour turning movement traffic counts;
- 24-hour vehicle classification counts; and
- Field spot speed data collection.

3.1 US 51 Highway Characteristics and Average Daily Traffic Volumes

US 51 is the primary north-south highway in the study area. It is an undivided two-lane highway and is functionally classified as a Rural Principal Arterial. US 51 runs from Cairo, Illinois in the north, south through Wickliffe, Bardwell, and Arlington to Clinton. From Clinton it runs south to Fulton and into Tennessee.

In 2002, US 51 carried approximately 2,200 vehicles per day (vpd) north of Clinton and 2,500 vpd south of Clinton. In town, traffic peaks at approximately 7,100 vpd between Clay St. (KY 58 / KY 123) and Mayfield Road (KY 58). Figure 4 (Appendix B) shows average daily traffic volumes on US 51.

A summary of the highway characteristic data for US 51 is presented in Table 1 (Appendix A) and Figure 5 (Appendix B). The highway has adequate lane widths of approximately 11 feet in most portions of the study area. The shoulders are paved and average 4 feet north and south of town. Through town there are minimal shoulders and the curb heights are small (or missing) in some areas due to damaged curbs and pavement overlays. There are utility poles and other objects in close proximity to the highway in some areas. Refer to Figure 6 (Appendix B) for pictures.

The posted speed limit through Clinton ranges from 55 mph on the outskirts of town, to 25 mph in the center of town. The typical right-of-way (ROW) width through town is 50 feet with wider right-of-ways north and south of town as shown in Figure 5. Sidewalks are present on US 51 through much of the town. Some are in good condition, while others are in poor condition (see Figure 6).

There is parking along portions of US 51 in downtown Clinton. Most of the parking on US 51 is parallel parking with angled parking along the curb facing the courthouse. The parking restricts lane widths in some locations such as in front of the courthouse. The parking is also well used.

There are curves (horizontal curves) on US 51 both north and south of Clinton. There are also hills (vertical curves) at various locations north and south of town including just north of Cresap Street, south of Mayfield Road (known as Beeler Hill), immediately south of Martin Road, and near KY 780 (south). Sight distance is limited due to the vertical geometry at a number of these locations. There are two overhead flashing warning beacons on US 51 in the study area, one north of town at the curve near the jail and one south of town at the curve near the KY 780 (north) intersection.

There is one traffic signal on US 51 at the intersection with KY 58 / KY 123 (Clay St.). All other intersections are STOP controlled on the minor street approach. The US 51 / KY 58 (Mayfield Road) intersection is STOP controlled on KY 58, but the stop bar is set back due to the gas station driveway (refer to Figure 6).

Field observations indicate that trucks have a difficult time turning at the US 51 / KY 58 / KY 123 intersection. This is due to narrow travel lanes, inadequate corner radii, and the presence of on street parking on all legs of the intersection. On one occasion, vehicles on KY 58 were observed having to back up to provide adequate clearance for a truck turning from the northbound approach (US 51) onto KY 58. Reports have also been given that drivers have had to move parked cars to make room for an oversized vehicle turning at the intersection. At the US 51 / KY 58 / South St. intersection, the northeast corner does not have a curb and the turning radius is deficient.

3.2 Other Study Area Roadways and Average Daily Traffic Volumes

Other important roadways in the study area include KY 58, KY 123, KY 703, and KY 780. Table 2 presents summary information for each highway. Current traffic volume data is shown in Figure 4 (Appendix B). **KY 58** is a major east-west highway through the study area. It is a two-lane undivided highway and is functionally classified as a Rural Major Collector. KY 58 enters Clinton from the east just south of the Courthouse Square and departs to the west just north of the Courthouse Square. It carries approximately 1,000 to 4,500 vehicles per day (vpd) in the study area. **KY 123** runs east-west through the study area. It is a two-lane undivided highway and is functionally classified as a Rural Major/Minor Collector (depending on location). It carries between 500 and 1,800 vpd through the study area. **KY 703** is a two-lane undivided Rural Minor Collector running northeast from Clinton, out of the study area toward KY 307. It carries less than 1,000 vpd in the study area. **KY 780** is a two-lane undivided Rural Local highway running through the southern portion of the study area. It intersects US 51 just south of Clinton. From this location it runs south and then east to cross US 51 near the southern boundary of the study area. This crossing includes two offset intersections. From that location, KY 780 continues east to intersect KY 58 (Mayfield Road). KY 780 carries less than 200 vehicles per day except at its northern end (near Greg's Supermarket) where it carries approximately 1,650 vehicles per day.

Table 2: Summary of Study Area Roadway Characteristics

ROUTE	FROM MP	TO MP	VEHICLE CLASS	ADT	R.O.W. (FT.)	LANE WIDTH (FT.)	NUMBER OF LANES	POSTED SPEED LIMIT MPH
KY 58	6.273	7.892	Rural Major Collector	920	60	10	2	55
	7.892	9.49	Rural Major Collector	1,010	60	10	2	55
	9.49	9.785	Rural Major Collector	2,170	55	10	2	45
	9.785	10.146	Rural Major Collector	4,430	55	12	2	25
	10.146	10.212	Rural Major Collector	3,270	60	12	2	35
	10.212	11.168	Rural Major Collector	2,450	60	11	2	45
	11.168	13.94	Rural Major Collector	1,600	60	11	2	55
KY 123	5.311	7.55	Rural Minor Collector	490	55	9	2	55
	7.55	7.853	Rural Minor Collector	1,330	35	12	2	35
	7.853	8.86	Rural Major Collector	850	60	10	2	55
	8.86	10.048	Rural Major Collector	1,810	60	10	2	55
KY 703	0	0.065	Rural Minor Collector	310	35	10	2	35
	0.065	0.828	Rural Minor Collector	950	45	10	2	55
	0.828	2.1	Rural Minor Collector	620	45	10	2	55
KY 780	0	0.29	Rural Local	1,650	55	9	2	55
	0.29	3.254	Rural Local	170	55	7	2	55
	3.254	4.096	Rural Local	60	55	8	2	55
	4.096	5.288	Rural Local	70	55	8	2	55
KY 1037	0	0.633	Rural Local	800	50	10	2	55
KY 1728	0	0.202	Rural Local	350	35	10	2	25
	0.202	0.836	Rural Local	130	40	9	2	55
KY 1731	0	0.12	Rural Local	470	35	8	2	25
	0.12	0.35	Rural Local	600	35	11	2	25
	0.35	0.634	Rural Local	950	35	9	2	25
KY 1745	0	0.065	Rural Local	1,480	45	13	2	35
	0.065	0.225	Rural Local	1,050	45	10	2	35
	0.225	0.538	Rural Local	360	45	9	2	35
KY 1826	2.686	4.166	Rural Local	270	45	9	2	55
	4.166	4.785	Rural Local	110	45	9	2	55
	4.785	4.942	Rural Local	770	45	9	2	25
	4.942	5.095	Rural Local	1,290	45	9	2	25
	5.095	5.147	Rural Local	600	35	9	2	25
KY 2206	0	3.337	Rural Local	170	50	9	2	55

Source: KYTC Highway Information System

3.3 Truck Volumes

To determine the current truck volumes on US 51, directional 48-hour vehicle classification tube counts were conducted at three locations in the study area as shown on Figure 7 (Appendix B). The results, given in Table 3, indicate that 18 percent of the observed traffic north of Clinton is truck traffic (10 percent being semi-trailer traffic) and 14 percent of the traffic south of Clinton is truck traffic (7 percent being semi-trailer traffic). Counts were also taken on KY 58 east of Clinton. At this location, 17 percent of the traffic was truck traffic, but only 1.5 percent was semi-trailer traffic. Based on these counts, the truck percentage in the center of town was estimated at 7 percent with about half of that being semi-trailer traffic.

The range of 14 to 18 percent trucks on US 51 is somewhat higher than the statewide average for similar rural principal arterials, which is 13.4 percent.[1] Historic classification

[1] Traffic Forecasting Report 2002, KYTC Division of Multimodal Programs, August 2002, Page 20.

counts on US 51 were obtained to examine historic trends. Four classification counts were taken at mile point 8.00 between 1990 and 2001 as shown in Table 4. During that time, the average truck percentage at that location increased from 15.7 percent to 21.0 percent. The historical data combined with the current truck count numbers indicates that truck percentages may have increased over time. Regardless, it is clear that trucks make up a substantial portion of the traffic steam.

Table 3: 2002 Vehicle Classification Counts

Location	Total Vehicles Per Day	Cars, 2-Axle Trucks, and Motorcycles	Buses and Trucks with 3-4 Axles	Trucks with 5 or more axles (semi-trailers)	Total Truck %
Station 1: US 51 North of Clinton – Milepoint 9.1	2,649	2,164 (82%)	207 (8%)	278 (10%)	18
Station 2: Mayfield Rd. (KY 58) East of Clinton – Milepoint 10.7	2,542	2,116 (83%)	390 (15.5%)	36 (1.5%)	17
Station 3: US 51 South of Clinton – Milepoint 6.7	3,503	3,028 (86%)	246 (7%)	229 (7%)	14

Table 4: Historic Vehicle Classification Counts on US 51

Location	Year	Axles per Truck	Percent Trucks
US 51 at Cresap St. (Milepoint 8.0)	1990	4.023	15.7%
US 51 at Cresap St. (Milepoint 8.0)	1993	3.843	17.5%
US 51 at Cresap St. (Milepoint 8.0)	1994	4.401	12.4%
US 51 at Cresap St. (Milepoint 8.0)	1998	3.664	21.0%

Source: KYTC Multimodal Programs 2001 Vehicle Classification Database

3.4 Spot Speeds

Speed data was collected on US 51 to determine vehicle speeds relative to the posted speed limit. The data was collected manually by recording vehicle description and the time of passage at two points separated by a distance of 100 feet. Vehicle speeds were calculated by comparing the times the same vehicle passed each endpoint. Directional speed data were collected at two locations on US 51; one north and one south of Clinton as shown on Figure 7 (Appendix B). The posted speed limit on US 51 north and south of Clinton is 55 mph. As drivers approach the corporate limits, the speed limit drops to 45 mph, then 35 mph, and then again to 25 mph for a short stretch in downtown Clinton (see Figure 7 in Appendix B). The speed survey locations were just beyond the corporate limits where the speed limit changes from 55 mph to 45 mph north of Clinton and from 35 mph to 45 mph south of Clinton.

In speed studies the most significant statistic is the 85th percentile speed. The 85th percentile speed is the speed threshold at or below which 85 percent of the motorists travel. Generally, speed limits are set within five mph of the 85th percentile speed.

Table 5 presents a summary of the speed statistics for US 51. At Station 1 (north of Clinton), the northbound 85th percentile speed of 60 mph was five mph above the posted 55 mph speed limit. Southbound, the 85th percentile speed was 12 mph higher than the 45 mph posted speed limit. This is not unusual, as drivers often do not begin decelerating until after they have entered the lower speed zone. It should be noted that the 45 mph speed zone at this location is quite short, and located on a curve. At Station 2 (south of Clinton), the southbound 85th percentile speed was five mph less than the 45 mph posted speed limit, while the northbound 85th percentile speed was 8 mph above the posted 35 mph speed limit. Again, the observed speeds were not unusual for transition zones.

Table 5: US 51 Speed Data Summary

Statistics	Station 1		Station 2	
	Northbound	***Southbound***	***Northbound***	***Southbound***
Location (Milepoint)	8.57	8.57	7.28	7.28
Number of Observations	43	40	49	50
Minimum Speed (mph)	38	36	29	24
Maximum Speed (mph)	78	80	48	86
Mean (mph)	53	49	38	36
50th Percentile (mph)	53	48	37	36
85th Percentile (mph)	60	57	43	40
Posted Speed Limit (mph)	55	45	35	45
Difference (85th – Posted)	+5	+12	+8	-5

3.5 Traffic Analysis Methodology

Study Intersections and Highway Segments

The US 51 study in Clinton focused on critical intersections and highway segments in the study area. Specifically, traffic operations were examined at the following locations:

Intersections

- US 51 at KY 58 / KY 123 (Clay Street) - Signalized
- US 51 at KY 58 (South Street/Mayfield Road) - Unsignalized

Highway Segments

- US 51 south of Clinton
- US 51 north of Clinton

Intersection Analysis

For this analysis the Highway Capacity Software package (HCS 2000) was used to assess the morning and afternoon (AM and PM) peak hour traffic operating conditions for both current and future years. This software package implements the Highway Capacity Manual intersection analysis method. For each study intersection, average vehicle delays were calculated as well as the resulting levels of service.

Level of service (LOS) is a qualitative measure of expected traffic conflicts, delay, driver discomfort, and congestion. Levels of service are described according to a letter rating system ranging from LOS A (free flow, minimal or no delays – best conditions) to LOS F (stop and go conditions, very long delays – worst conditions). For intersections the Highway Capacity Manual defines levels of service based on the average delay due to signal or STOP control as shown in Table 6.

Table 6: LOS Criteria for Intersections

LOS	Signalized Intersections Control Delay (seconds/vehicle)	Unsignalized Intersections Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	>10 – 20	>10 – 15
C	>20 – 35	>15 – 25
D	>35 – 55	>25 – 35
E	>55 – 80	>35 – 50
F	>80	>50

Source: Highway Capacity Manual (2000)

In general terms, a facility is considered to have reached its physical capacity at LOS E. However, for rural conditions, LOS C is often considered the threshold for desirable traffic conditions. In this study, levels of service below this threshold are noted as undesirable and warrant improvement. LOS C corresponds to ≤ 35 seconds of delay per vehicle at a signalized intersection and ≤ 25 seconds of delay at an unsignalized intersection.

Rural Two-Lane Highway Analysis

A peak hour traffic operations analysis was prepared for segments of US 51 north and south of town using the Highway Capacity Software two-lane road analysis package. This is based on the 2000 Highway Capacity Manual (Chapter 20) methodology. For this method, there are two classes of roadways: Class I highways include higher speed arterials and daily commuter routes, while Class II highways include lower speed collector roadways and roads primary designed to provide access. Driver expectations regarding speed and flow are important in determining a highway's class. US 51, as the main arterial and as the major through-route, is a Class I highway.

Levels of service for Class I highways are based on the estimated average travel speeds and percent time vehicles spend following other vehicles as shown in Table 7. Again, LOS C is the threshold used for desirable traffic operations in this study. Operations below this threshold are noted as undesirable and warrant improvement. For Class I highways, LOS C corresponds to an average travel speed of >45 miles per hour with ≤65 percent of the time spent following another vehicle.

Table 7: LOS Criteria for Two-Lane Highways

LOS	Class I Highways	
	Percent Time Spent Following	Average Travel Speed
A	≤ 35	>55
B	>35 - 50	>50 – 55
C	>50 - 65	>45 – 50
D	>65 – 80	>40 - 45
E	>80	≤40
F	LOS F applies whenever the flow rate exceeds the capacity	

Source: Highway Capacity Manual (2000)

3.6 Existing Traffic Operating Conditions

Intersection Level of Service and Delay

In order to evaluate the current traffic conditions at the two study intersections, a.m. and p.m. peak period turning movement counts were conducted at each location. Figure 8 (Appendix B) shows the intersection controls, geometrics, and turning movement volumes. The approaches to all intersections are single lane approaches (i.e. there are no turn lanes). The resulting 2002 levels of service during the peak hours counted are LOS B or better for both locations as shown in Table 8. Figure 9 (Appendix B) illustrates the levels of service graphically. On Figure 9, the LOS displayed for the unsignalized intersection is that of the stop-controlled approach with the highest delay (the HCM method does not calculate whole intersection levels of service for unsignalized intersections).

Table 8: 2002 Intersection LOS Summary

Int. No.	Intersection	Type	LOS AM	LOS PM
1	US 51 (Washington St.) / KY 58 / KY 123 (Clay St.)	Signal	B	B
2	US 51 / KY 58 (Mayfield Road)*	2-Way STOP	B	B

* LOS is for the intersection approach with the highest delay.
Note: LOS analysis is based on the peak hour count data

Two-Lane Highway Level of Service and Delay

The current traffic volumes and roadway characteristics were used to evaluate operating conditions on US 51 north and south of Clinton. The analysis showed that both highway segments are currently operating at LOS C or better with average travel speeds of 49 to 51 mph and a percent time-spent following ranging from 36 to 51 percent. This indicates that the roadways north and south of Clinton are functioning in an acceptable manner. The segment levels of service are illustrated on Figure 9 (Appendix B).

3.7 Future No-Build Traffic Operating Conditions

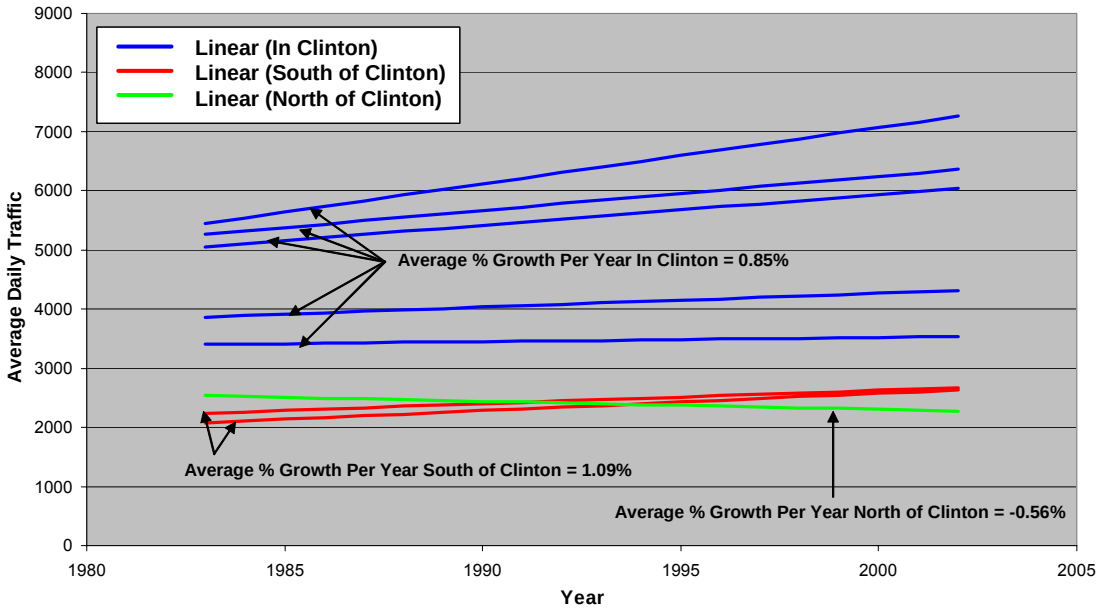
Traffic projections were developed for 2010, 2020, and 2030 to determine how the highway system would function if no improvements (beyond normal maintenance) were made during that time period. This scenario is referred to as the No-Build Scenario. The No-Build Scenario provides a snapshot of future traffic conditions, highlighting expected problems and deficiencies. It also provides a baseline for developing and evaluating possible build alternatives. Typically, projects that are under construction or planned for construction in the KYTC Six-Year Plan are taken into account in this analysis. However, in this study area there are no significant planned projects that would affect the future No-Build traffic conditions. (For further discussion of planned projects refer to Chapter 5.)

Future Traffic Volumes

Traffic growth on US 51 in Clinton has varied over the last 19 years with an average growth rate of 0.74% per year at the eight study area count stations from 1983 to 2002. Since the beginning of the study, new traffic counts were taken for 2003, indicating

traffic may not be growing as fast as previously indicated. However, as a result of consolidation of the count stations, the new data for 2003 is not directly comparable to the previous analysis and was not included. Based on data from 1983 to 2002, traffic volumes on US 51 have increased in town and south of town by about 20 percent since 1983, but decreased north of town by about 10 percent since 1983. This decline in traffic volumes north of town could be due in part to traffic shifting to Interstate 55 in Missouri. For comparison purposes, historic data for the eight count stations was examined for 1983 to 2002 using linear interpolation. The stations were grouped by location (in town, north of town, and south of town) to show traffic trends over the last 19 years. These results are shown in Figure 10. Traffic growth at the five in town count stations had a modest growth rate, averaging 0.85% annually. Growth south of town showed the highest increase at 1.09% per year. Traffic actually decreased north of town at a rate of -0.56% per year. However, for purposes of this study a 1.5% traffic growth rate was applied to evaluate how traffic conditions would change if the growth rate were higher. Figure 11 (Appendix B) shows average daily traffic volumes (ADT) on US 51 for 2010, 2020, and 2030 using this higher 1.5% growth rate. Traffic volumes for 2002 are included for comparison purposes.

Figure 10: US 51 Historic Traffic Volumes (1983 to 2002)



Intersection Level of Service and Delay

No-Build Scenario levels of service for the two key intersections on US 51 were evaluated using the projected traffic volumes. As mentioned previously, both intersections currently operate at LOS B based on the 2002 peak hour count volumes. Table 9 provides a summary of the future year levels of service for each intersection. Figure 12 (Appendix B) illustrates the 2030 intersection LOS for both of these intersections, giving the worst approach LOS for the unsignalized intersection.

In 2010, the existing signal at US 51 / KY 58 / KY 123 (Clay Street) will operate at a good LOS by maintaining appropriate signal timing. However, based on the projected design

hour volumes, the eastbound and northbound approaches to US 51 / KY 58 / KY 123 may begin to operate poorly in 2020. Based on the assumed traffic growth, the LOS at this intersection will degrade further in the future, and in 2030 the intersection operates at LOS E overall. However, if traffic does not increase in the future at the assumed 1.5 percent per year growth rate, these levels of service may be better than are shown.

For the intersection of US 51 and Mayfield Road (KY 58) the side street approaches may begin to experience undesirable delays in 2010 as shown in Table 9. The side street approaches continue to decline over the next 20 years and operate at LOS F in 2030. The poor levels of service are related to delays for vehicles turning left to / from US 51.

Table 9: PM Peak Hour Intersection Levels of Service for No-Build Scenario

Int. No	Intersection	Type	Approach	2002		2010		2020		2030	
				Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS
1	US 51 / KY 58 / KY 123 (Clay Street)	Signal	Eastbound	13.8	B	33.7	C	62.8	E	145.5	F
			Westbound	12.9	B	20.0	C	26.0	C	33.3	C
			Northbound	17.0	B	32.1	C	53.3	D	61.5	E
			Southbound	15.9	B	16.0	B	16.7	B	15.1	B
			Whole Int.	15.7	B	26.6	C	41.5	D	61.6	E
2	US 51 / KY 58 (Mayfield Road)	2-Way STOP	Eastbound	14.0	B	45.3	E	138.1	F	*	F
			Westbound	14.9	B	39.8	E	329.8	F	*	F
			Northbound	7.9	A	8.0	A	8.1	A	8.2	A
			Southbound	7.8	A	9.1	A	9.7	A	10.3	B

Notes: Only the p.m. peak is shown, as it represents the higher of the two peak periods.
The 2000 Highway Capacity Manual analysis methods were used (implemented by HCS 2000).
2002 LOS analysis employed the peak hour count data collected for the study.
2010-2030 LOS analyses used projected ADT with design hour and directional distribution factors and the turn percentages from 2002 turning movement counts; 2010 and 2020 ADT were based on linear growth.
For 2010, 2020, and 2030 the signal timing was optimized.
Average delay is in seconds per vehicle.

Installation of a traffic signal at the intersection of US 51 and Mayfield Road was evaluated based on the poor operating conditions for the side street approaches in the future. According to the Manual on Uniform Traffic Control Devices (MUTCD), a traffic control signal should not be installed unless one or more of the warrants detailed in the manual are met. For this intersection, the estimated 2010 traffic volumes are just above the minimum vehicular volume threshold for the Eight-Hour warrant, indicating that a signal may be warranted in 2010.[2] The 2020 volumes are higher still, indicating that a signal is even more likely to be warranted by 2020. According to this analysis and assuming traffic grows at 1.5 percent per year, a traffic signal could be installed as early as 2010, however, other issues should be considered in this evaluation, including the additional delay to through traffic on US 51 and the delay to all motorists during non-peak periods.

[2] The 70% value was used because the community is an isolated community with a population of < 10,000.

Two-Lane Highway Level of Service and Delay

The two-lane highway methodology was used to assess the future traffic conditions on US 51 outside of town. As shown on Table 10, all four study segments will continue to operate acceptably at LOS C through 2030 without improvements. Figure 12 (Appendix B) illustrates the year 2030 segment LOS results.

Table 10: PM Peak Hour Two-Lane Levels of Service for No-Build Scenario

Segment	2002	2010	2020	2030
KY 1728 to KY 1540	C	C	C	C
KY 1540 to KY 288	B	B	B	C
KY 1529 to KY 780	C	C	C	C
Fulton Co. Line to KY 1529	B	C	C	C

Note: Only the p.m. peak is shown, as it represents the higher of the two peak periods.

3.8 Crash Analysis

The Kentucky Transportation Cabinet provided crash data for a three and one half-year period from January 1, 1998 through June 30, 2001. During this period, 21 crashes occurred on US 51 within the study area (between mileposts 4.508 and 9.871).

Crash rates were computed for five specific segments of US 51 within the study area. Segment crash rates are typically expressed in terms of crashes per 100 million vehicle-miles to take into account the amount of traffic on a particular highway segment. A segment's crash rate is then compared to a statewide critical crash rate for the same type of roadway to identify high crash locations. Highway sections with a crash rate higher than the critical crash rate are considered high crash locations and are potential candidates for safety improvements.

For the segments of US 51 studied, none of the observed crash rates exceeded the critical rate for that roadway type. The observed crash rate to critical crash rate ratios ranged from 0.11 to 0.67, indicating that all segments are below the critical crash rate. Table 11 shows the crash statistics for the segments analyzed.

Table 11: Segment Crash Analysis

Section	Description	Total Crashes	ADT	Section Length (miles)	Statewide Average Crash Rate	Section Crash Rate	Section Critical Rate	Critical Crash Rate Factor
1	MP 4.508 to 5.38	6	2650	0.872	131	203	303	0.67
2	MP 5.38 to 6.65	5	2630	1.27	131	117	274	0.43
3	MP 6.65 to 7.65	6	5500	1	131	85	242	0.35
4	MP 7.65 to 8.88	3	5460	1.23	131	35	232	0.15
5	MP 8.88 to 9.871	1	2400	0.991	131	33	300	0.11

Notes: Crash data for January 1, 1998 to June 30, 2001
Rates are in crashes per 100 million vehicle-miles.
Critical crash rate factor is the section crash rate divided by the section's critical crash rate.

A crash cluster analysis was also conducted for the study area. Two crash clusters were identified: one near US 51 and Martin Road and a second near US 51 and KY 780 (south) as shown on Figure 13 (Appendix B). A spot crash analysis was conducted to determine how the crash rates at these two "spots" compared to the critical spot crash rates for similar facilities (refer to Table 12).

Table 12: Spot Crash Analysis

Location	Begin MP	End MP	No. of Crashes	Analysis Period (Years)	Average ADT	Spot Crash Rate*	Critical Crash Rate*	Ratio of Spot Rate to Critical Rate
US 51 at Martin Rd.	6.5	6.8	6	3.5	4,100	1.15	1.69	0.68
US 51 at KY 780 (South)	5.1	5.4	3	3.5	2,700	0.87	1.89	0.46

* Crashes per million vehicles

As indicated in the table, the spot crash rate observed on US 51 at Martin Road was lower than the critical crash rate. A review of the crash data showed that all six crashes were non-injury. The spot crash rate observed on US 51 at KY 780 South was also lower than the critical crash rate. Two of the three observed crashes were non-injury. The crash analysis also showed that one fatal crash was recorded at US 51 and KY 780 North. Details for the spot crashes are shown in Tables 13 through 15 (Appendix A).

3.9 Pedestrian and Bicycle Facilities

There are no marked bicycle routes in Clinton. There are sidewalks on portions of US 51 in Clinton, as well as on some side streets. Some segments of US 51 in Clinton do not have sidewalks and there are no sidewalks outside of the town. The condition of the existing segments ranges from good to poor with much of the current sidewalk system in poor condition. Two specific locations in town with deficient sidewalks are at Cresap Street and at North Street. At these locations, there are gas stations / markets with full-width curb cuts and no sidewalks. There are no striped crosswalks or pedestrian signals on US 51. Also, there are no school warning signals or crossing guards.

3.10 Existing and Future No-Build Traffic and Highway Conditions Summary

An analysis of the existing and future No-Build traffic and highway conditions on US 51 in the Clinton area was performed considering the following items: average daily traffic volumes, vehicle classification information, speed data, levels of service, highway geometry, pedestrian facilities, and crash data. US 51 currently carries between 2,000 and 7,000 vehicles per day with 7 to 18 percent truck traffic. Traffic growth in the study area has been modest (0.74%) over the last 19 years (however a conservatively high growth rate of 1.5% was employed in the study). There are a number of geometric issues that were identified such as limited shoulders, missing curb sections, inadequate clear zones, intersections with deficient turning radii, and deteriorated sidewalks. The speed data did not show any clear problems, though vehicle speeds entering the town in the transition zones are higher than the posted speed limits. The current (2002) levels of service are generally LOS C or better for all intersections and road segments,

indicating little vehicle delay and good traffic operation conditions from a capacity standpoint. However, in the future the level of service for some of the intersections will drop below LOS C because of poor operating conditions generally associated with the left turn movements to and from the minor streets onto US 51. The crash analysis did not reveal a crash problem on US 51 in the study area when compared to the statewide critical crash rates for similar roadways.

4.0 REVIEW OF RELATED STUDIES

A review of previous transportation studies is necessary to understand the problems and solutions that have already been identified or studied. In this case there is only one previous report relevant to the current study, the *US 51 Fulton to Wickliffe Scoping Study*, prepared by the KYTC, Planning Division in October 1995. The purpose of the study was to evaluate the need for and feasibility of improvements in the US 51 corridor.

KYTC evaluated the existing (1995) physical infrastructure and highway operations and found deficiencies with regard to passing sight distance, vertical and horizontal alignments, and stopping sight distance. Most bridges on US 51 were physically and operationally adequate, though the older structures had narrow widths. Most sections of US 51 were found to operate at LOS C, with some sections operating at LOS B. Crashes (accidents) were also examined on US 51 and found to be within normal ranges for similar roadways throughout the state.

The following improvement alternatives were examined in the study:

1) The No-Build Alternative (termed the Do-Nothing Alternative in the study)
2) Reconstruct US 51 on its existing alignment (2-lanes)
3) Widen US 51 to 4 lanes on its existing alignment
4) Improve (2-lane or 4-lane) US 51 with bypasses in Clinton and Bardwell

For the No-Build Alternative, the 2020 design year level of service was calculated to be LOS C or D throughout the length of the study corridor, except through the towns of Clinton and Bardwell, where it would be LOS F. This projection was based on an assumed annual traffic growth rate of approximately 3 percent per year. (The actual growth rate has been less than 1 percent per year in the vicinity of Clinton.)

The 2-lane Reconstruction Alternative resulted in LOS C on all segments in the design year of 2020, again with the exception of US 51 in Clinton and Bardwell, which would operate at LOS E and F, respectively. The proposed bypasses in Clinton and Bardwell would operate at LOS B and C, respectively. To achieve LOS B or better, the 4-lane widening alternative was required. The 4-lane alternative would provide LOS A 50 years beyond the design year.

Construction cost estimates were developed on a per mile basis (in 1995 dollars). The 2-lane alternative costs ranged from $110 to $130 million, depending on whether the bypasses were constructed. The 4-lane costs ranged from $170 to $200 million, depending on whether the bypasses were constructed. Environmental, socio-cultural and geotechnical overviews were performed. While impacts were anticipated, the analysis did not reveal any issues that would prevent the alternatives from advancing.

Ultimately, the study concluded, that with a reasonably good alignment, 11’ lane widths, no apparent crash problems, and average truck traffic, that the no build or do-nothing alternate was adequate. However, it was recommended that the existing narrow bridges be replaced and that construction of bypasses at Clinton and Bardwell be considered if funding were to become available.

5.0 PAST AND FUTURE TRANSPORTATION PROJECTS

An understanding of the region's past transportation projects and future plans is important for study context and decision-making. Plans analyzed for this study include:

- Recommended KYTC Six-Year Highway Plan FY 2005–FY 2010 (February 2004)
- KYTC Statewide Transportation Plan FY 1999 – FY 2018 (December 1999)
- KYTC District 1 Unscheduled State Highway Plan Needs (May 2002)

Past Transportation Projects – A number of transportation projects have been completed in or near the study area during the past several decades. The projects mainly include spot improvements to structures and bridges such as widening, replacements and rehabilitation and some work to sections of highways such as paving shoulders, grading, drainage, etc. One recent project is the US 51 improvement project directly south of the Clinton study area to improve safety on the highway (such as intersection sight distance). Most of the projects have been done for safety and/or operational reasons and have not added capacity.

Future Transportation Projects – A review of relevant planning and programming documents indicates that there are three projects that are programmed in the current KYTC Six-Year Highway Plan in Hickman County. Only one is of consequence in the Clinton study area. The project is located in Clinton and involves replacing the bridge over Cane Creek Branch on Water Street near Depot Street.

Another planned project in the study area is an eastern bypass of Clinton, which is included as a long-range project (2005 to 2018) in the KYTC Statewide Transportation Plan. The proposal identifies the bypass length as approximately 3.4 miles at a cost of $10.7 million. The Statewide Transportation Plan does not include any other projects in or near the Clinton study area.

There are two other projects that have been proposed in the study area but are not included in the Six-Year Highway Plan or the Statewide Transportation Plan. They are:

1. US 51 – Reconstruction with urban section (curb and gutter) and turn lanes from Clinton south city limits to Clinton north city limits
2. US 51 – Reconstruction to 2-lane standards from proposed eastern Clinton bypass to proposed eastern Bardwell bypass.

The current US 51 Study at Clinton is examining the proposed eastern bypass project as well as potential improvements to US 51 in Clinton.

Another regionally relevant project is the I-66 project. I-66 is proposed as a new interstate-type highway facility that would possibly traverse the southern portions of Kentucky. KYTC is considering four major segments of I-66. The westernmost section may begin in the vicinity of I-24 near Paducah and run north and/or west into either Missouri or Illinois. A number of different corridors have been evaluated as part of an

on-going I-66 planning study for the westernmost section; however, none of the corridors run through Hickman County.

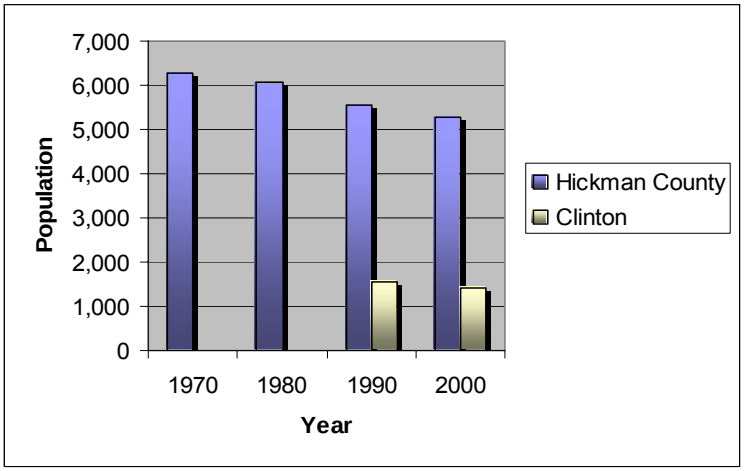
6.0 HUMAN ENVIRONMENT

An overview was conducted to determine the general characteristics of the human environment in the study area. The analysis addresses: general socioeconomic characteristics, environmental justice, land use, agricultural activity, hazardous materials sites, historic resources, and archeological resources.

6.1 Socioeconomic Profile

Population Growth – According to the 2000 Census, the population of Hickman County was 5,262 and the population of the City of Clinton was 1,415. These numbers are down slightly from 1990 when the populations for Hickman County and the City of Clinton were 5,566 and 1,547 respectively. According to the Kentucky State Data Center, the population of Hickman County is projected to decline to 4,360 by 2030 (a decrease of 0.57% per year). Refer to Figure 14 for the historic population data.

Figure 14: Historic Population Data (1970-2000)



Source: 2000 U.S. Census

Minority Populations – Hickman County has a minority population of 12.3 percent. The City of Clinton has a higher percent minority population at 30.0 percent. These minority populations exceed the statewide average of 10.7 percent. During an informal interview, one Hickman County official mentioned the presence of a minority community in the northwest portion of the town. This was substantiated by the Environmental Justice analysis (refer to Environmental Justice section – 6.2).

Low – Income Populations – In 2000, approximately 17.4 percent of the Hickman County population was below the poverty line. In Clinton, approximately 28.3 percent was below the poverty line. These numbers exceed the national average of 12.4 percent and the statewide average of 15.8 percent.

Age of Population – The City of Clinton and Hickman County both have a larger than average percent of residents age 62 and over (28.3 and 22.0 percent respectively) compared to the national and statewide averages (14.7 and 14.9 percent respectively).

Local Economy – In 2001, Hickman County's unemployment rate was 6.2 percent. This is higher than the 2001 unemployment rates for Kentucky and the U.S., which were 5.5 and 4.8 percent, respectively. Of the 1,320 people working in the county (in 2000), the highest percentage (28.9 percent) work in manufacturing, followed by services (17.7

percent), and retail trade (10.5 percent). The remainder of the county workforce is employed in a range of other fields as shown in Table 16 (Appendix A). There is only one major manufacturer in the Clinton area, Harper's Country Hams Inc. as shown in Table 17 (Appendix A). Two others, Garan (an apparel manufacturer) and Jakel (a motor assembly plant) closed within the last three years, eliminating as many as 450 jobs.

Commuting – Approximately 54 percent of employed Hickman County residents work in the county, with the remaining 46 percent commuting to other nearby counties such as Fulton, McCracken, Graves, and Carlisle as shown in Table 18 (Appendix A). Most of the employees working in the county also live in the county (65%).

Community Facilities and Development Patterns – Typical community facilities are located within Clinton, e.g., courthouse, city hall, elementary school, high school, senior center, police department, health department, churches, etc. (Refer to Figure 15 in Appendix B). Most commercial development is located on US 51 with a concentration in downtown Clinton and south of Clinton near KY 780 (North). Residential development is also centered on Clinton (both east and west of US 51). There is also a pocket of residential development on KY 58 east of town and additional homes scattered throughout the remainder of the study area. Other than the town of Clinton, there are no named communities in the area.

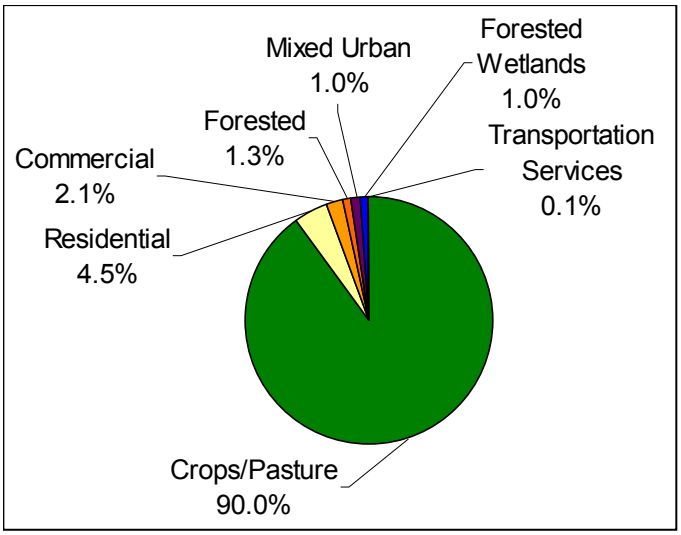
6.2 Environmental Justice

Based on the race and income data available from the U.S. Census Bureau and input from the community of Clinton, an Environmental Justice community does exist within the study area. The primary focus of the community is the northwest section of town with portions of the community located just to the east and south. Also, based on the age distribution in the study area, there is a concentration of residents age 62 years or older primarily in the southern portion of the study area. Refer to the Environmental Justice Review in Appendix C for more details.

6.3 Land Use

Hickman County currently does not have land use planning ordinances in effect (zoning or subdivision regulations). There are seven primary land use types found within the study area as shown in Figure 16. By far, the largest land use category is crops/pasture land (7,774 acres). Figure 15 (Appendix B) shows a map of the land use categories.

Figure 16: Land Use



6.4 Agricultural Activity and Prime and Unique Farmland

As noted above, agriculture is the predominant land use in the study area. In 1998, the county ranked 11th in production of corn for grain, 9th for winter wheat, 8th for sorghum, and 6th for dark fired tobacco. The prevalence of agricultural activity may be in part attributable to the availability of fertile soils. Over half (58.7 percent) of the county's 161,926 acres are considered prime and unique farmland. Related to this, there is one agricultural district located partially within the study area boundaries. This agricultural district is located in the southernmost portion of the study area along Bayou de Chien and covers a total of 475 acres (275 acres are located within the study area boundary).

6.5 Underground Storage Tanks/Hazardous Materials

Potential hazardous materials sites are primarily located in and around the urban limits of Clinton. An environmental database search for the study area revealed 11 underground storage tank sites in the study area as shown on Figure 15 in Appendix B. A limited site reconnaissance located three additional sites on US 51 in Clinton. Outside Clinton, hazardous materials location considerations are primarily related to agricultural activity since farming operations often store fuel and oil on-site.

6.6 Previously Documented Cultural Historic and Archeological Sites

The cultural historic overview identified 129 cultural historic sites (50 years of age or older) within the study area. Each site is listed in Table 19 (Appendix A) and mapped on Figure 17 (Appendix B). Two sites are currently listed in the National Register of Historic Places (NRHP). Site HIC-2 consists of the field surveyed Site 56 Marvin College's President's House and Site 58 Marvin College. The Marvin College's President's House and Marvin College are located near the intersection of US 51 and Cresap Street. The other site, Site HIC-5, is the Hickman County Courthouse located at the intersection of US 51 and KY 123 / KY 58.

Fifteen other sites were identified as potentially eligible, including eight along the existing US 51 corridor as shown in Figure 17 (Appendix B). Final determinations of NRHP eligibility and effect cannot be recommended until a baseline survey has been completed. For additional information, refer to the Cultural Historic Overview Survey and Determinations of Eligibility Report for Clinton, Hickman County, Kentucky.

The archeological overview showed no previously surveyed archaeological sites within the project overview area. However, the cultural historic overview of the project area identified 129 historic sites / structures (50 years of age or older) within the study area that have the potential to contain associated archaeological remains. The reconstruction of US 51 or a US 51 Bypass of Clinton has high potential to impact archaeological sites. Historic period archaeological sites may be found along US 51 through town, with the potential for encounters of prehistoric sites along the bypass corridors.

7.0 NATURAL ENVIRONMENT OVERVIEW

An overview was conducted to determine the characteristics of the natural environment in the study area. Resources addressed in this section include: aquatic ecosystems (surface waters, wetlands, ponds, and 100-year floodplains) and terrestrial ecosystems (threatened and endangered species, floral communities, and faunal communities). Refer to Appendix D for more information and copies of agency correspondence.

7.1 Aquatic Ecosystems

Surface Water – The study area drains primarily into Cane Creek in the north, the Bayou de Chien in the south, and a small portion of Hurricane Branch in the west as shown in Figure 18 (Appendix B). All streams in the study area flow short distances into tributaries of the Mississippi River system (the Mississippi River is less than nine miles west of Clinton). Most blueline streams and tributaries in the study area flow north. However, at least five intermittent blueline streams flow laterally near downtown Clinton. Creeks and tributaries in the study area are unnamed with the exception of Cane Creek, which runs laterally along the northeast corner of the study area and Hurricane Branch, which runs laterally on the western edge of the study area.

Wetlands and Ponds – A total of 115 wetlands were indicated on National Wetland Inventory (NWI) mapping for the study area, however slightly more than half of these (60) are impounded or diked areas (i.e. farm ponds) and another 33 are the result of mining activities (see Figure 18 in Appendix B). Only 22 appear to be natural wetlands based on their type and may be considered jurisdictional by USACE. Most of these natural wetlands are located in the eastern and southern sections of the study area. The largest wetland in the study area is Bayou de Chien, located in the southeast quadrant of the study area. Bayou de Chien is a complex of 10 interlinked (natural) wetlands found in and adjacent to the study area covering over 600 acres. Eight other wetlands are significant in size ranging from one to seven acres. Four potential hydric soils areas are also found within the study area suggesting the presence of other wetlands.

Floodplains – Three 100-year floodplains cover 8.4 percent of the study area (728 acres), with the largest floodplain being the Bayou de Chien floodplain (see Figure 18 in Appendix B). The other two floodplains are from unnamed tributaries of Cane Creek, one covering 287 acres, the other covering 98 acres.

7.2 Terrestrial Ecosystems

Threatened and Endangered Species – Initial research indicated that a total of 11 threatened or endangered species may occur in or near the study area as listed in Table 20 (Appendix A). All of these species have been known to occur in the area.

Floral and Faunal Communities – No major issues or concerns were identified relative to plant or animal communities in the study area, other than the potential for 11 threatened or endangered species as discussed above.

8.0 GEOTECHNICAL OVERVIEW

A geotechnical overview was prepared by the Geotechnical Branch of the Kentucky Transporation Cabinet, Division of Materials. Information was also provided by the University of Kentucky, Kentucky Geological Survey (KGS). According to the KYTC Geotechnical Branch "There are no significant geotechnical concerns within the study area or any proposed corridor."

There are seven geologic map units present at the surface in the study area as shown in Figure 19 (Appendix B). However, the majority of the study area is underlain by Loess, Alluvium, and Continental deposits. These deposits are mainly made up of silt, sand, and gravel. The first two deposits are the most common and are unconsolidated Quaternary deposits; Loess sediment on upland surfaces and Alluvium along stream drainages, particularly along the tributaries to Cane Creek and the Bayou de Chien. Neither of these presents severe limitations for road construction.

The majority of the material in the project area that would be encountered in any cuts or fills is silt of the Peoria Loess and Roxana Silt. These silts are very susceptible to erosion in cut sections. Slope protection may be needed to prevent erosion of the cut slope face in cut sections. Cuts with high water tables may require 3:1 slopes and additional right-of-way. According to the KGS documentation, Loess sediment is susceptible to mass movement and landslides on slopes that are exposed to moisture, and vertical cuts are more stable.

Areas underlain by Alluvium require more extensive geotechnical evaluation because they are often sources of groundwater, sites for archeological settings, and may be susceptible to liquefaction during regional earthquakes. Alluvial valleys along major streams in the study area are 2,000 to 3,000 ft wide, a considerable span where special attention to structures is needed. Embankments over Alluvium deposits may require fabric and rock to be placed as a working platform. Embankments constructed from rock and geotextile fabric may be required up to the high water elevation and should be stable on 2:1 slopes. Embankments over known wetlands may require waiting periods for foundation consolidation. It is preferred to avoid wetlands if possible.

Continental Deposits composed of gravel occur at the headwaters of small tributaries. These gravels may be a local source for road metal, subgrade, and base materials. They may, however, be locally cemented with iron oxide and difficult to excavate.

Occurring in isolated pockets within the study area are deposits of Artificial Fill and deposits from the Tertiary geologic age, which includes formations of the Jackson and Claiborne. The Jackson and Claiborne Formations contain sand, silt and clay, with the Claiborne formation containing a few lignite seams.

9.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

9.1 Public Involvement Program Summary

To encourage public participation and ensure that all groups are represented equally throughout the study process, a Public Involvement Program was developed for the US 51 Study at Clinton. The public refers to the full range of interest groups such as citizens, businesses, local organizations, public interest groups, and any other affected parties interested in participating. It was the Kentucky Transportation Cabinet's (KYTC) and the consultant team's desire to engage the public in determining the overall direction of the study, as well as in advising the KYTC in the decision making process.

The public was asked to give input to the KYTC at various points during the study. Input was requested on the following:

1. Identification of Study Issues and Goals
2. Development of the Range of Improvement Alternatives to be Considered
3. Evaluation of the Alternatives
4. Selection of a Preferred Alternative

The process and methods for public involvement are outlined in this chapter. The results and feedback from implementation of the public involvement are provided throughout the entire report. For example, public input on the alternatives development is included in that section of the report and feedback on the alternatives is integrated into the alternatives evaluation sections.

Specific public involvement methods used included a Project Work Group, stakeholder meetings, public workshop / meetings, community outreach activities, and other publicity efforts. This section describes each of these activities in more detail. Meeting minutes for these meetings are included in Appendix E in the back of the report.

Project Work Group – A Project Work Group (PWG) was created for the US 51 Study at Clinton. The PWG was comprised of landowners, business representatives, local residents, community leaders, and government officials. The members of the PWG were selected to represent the various stakeholders that would have an interest in the study. They were to work with the project team which is comprised of KYTC Central Office staff, KYTC District Office staff, Purchase Area Development District staff, and consultant staff.

The purpose of the PWG was to provide input and feedback to the project team regarding key project issues and decisions. They helped the project team by putting forward a wide range of ideas, opinions, and suggestions. Three PWG meetings were held during the study. Each of these meetings is described below.

- Project Work Group Meeting #1 – This meeting was held on April 29, 2002. Items that were presented and discussed included the study process and schedule, study background information, public involvement program, and study issues and goals. Feedback on the last two items played a prominent role in the meeting.

- Project Work Group Meeting #2 – The second meeting was held on August 22, 2002. A portion of this meeting was used to review the previous PWG meeting, the work that had been completed to date, existing conditions data, and project issues and goals. The rest of the meeting was devoted to discussing the three-level evaluation process and the range of potential alternatives to be included in the first level of analysis.

- Project Work Group Meeting #3 – A third PWG meeting was held on May 12, 2003. The project goals and study process were reviewed along with existing and future traffic conditions. A brief presentation of each of the three analysis levels was made, followed by a discussion of the preliminary findings and possible recommendations. Potential short and long term recommendations were also discussed.

Stakeholder Meetings and Information Table Event – Two meetings were held with different stakeholder groups. A meeting with the business stakeholders in the study area took place on June 27, 2002. A meeting with neighborhood stakeholders was held on July 12, 2002. The stakeholder meetings were conducted in the community to gather input on the project. This second meeting was specifically aimed at gaining input from the minority community. The attendees to these meetings were involved to gather their thoughts, input and opinions about various project related issues. A special information table event was also held to gather input from the broader community. This event included setting up an information table (staffed by KYTC and PB) at the courthouse in the morning and at the local grocery store in the afternoon. Information sheets and comment forms were passed out at this event.

Meetings with Local Officials – Public officials' briefings were held to introduce local officials to the study and to inform them regarding the study process. An initial meeting was held on February 22, 2002 with the Hickman County Judge Executive. Subsequent meetings were held with the Hickman County Fiscal Court and the Clinton City Council on March 18, 2002 and April 1, 2002, respectively. The meetings were held to inform those present about the study and to encourage them and their constituents to be involved.

Public Meetings (Open House Workshops) – Two public meeting were held in the study area. Key goals for these meetings were to gather public input on the issues and alternatives to be considered and then to obtain feedback on the final refined alternatives before a final recommendation was made. Each of these meetings is described below.

- Public Meeting #1 – This meeting was held on September 9, 2002. The main purpose of the workshop was to 1) inform the public regarding the study; 2) obtain feedback from the public on the study goals and issues, and 3) receive input on the alternatives to be evaluated. This was done through the presentation of the study area, existing conditions, project issues and goals, and possible alternatives. The public was asked to provide written feedback regarding the above items. They were also encouraged to offer additional alternatives for consideration in the study.

- Public Meeting #2 – This meeting was held on June 30, 2003. The purpose of the meeting was to present to the public all of the analysis work completed up to that time and to present and request feedback on the final round of refined alternatives prior to KYTC making a final decision on the project.

These public meetings utilized an open forum format after a brief presentation on relevant study topics and issues. Take home / leave behind materials and a series of display stations were utilized during each meeting. The purpose of this approach was to facilitate an environment of open communication between all in attendance. All attendees were encouraged to provide their thoughts and opinions on the comment forms provided at each meeting. Project team representatives were also present to discuss all aspects of the study.

9.2 Agency Coordination

An agency mailing was prepared at the outset of the study. The mailing was prepared by PB and sent by the Kentucky Transportation Cabinet to various local, state and federal agencies to obtain input early in the study process. A copy of the mailing and the list of recipients are both included in Appendix D for reference. Supplemental letters were sent by Third Rock Consultants to gather data from four specific agencies for the environmental overview. These letters are also included in Appendix D.

Responses were received from a variety of agencies. Many of the responses indicated that their agency did not anticipate any significant project related issues in the study area. Others outlined standard requirements and guidance related to project planning, design, and construction. A third set of agencies did have specific concerns or issues that they wanted to have considered in the study. The agencies with specific concerns or issues included:

- United States Department of the Interior, Fish and Wildlife Service
- Kentucky Department of Fish and Wildlife Resources
- National Park Service
- The Kentucky State Nature Preserves Commission
- MeadWestvaco
- Mayor of Clinton, Tommy Kimbro

A brief summary of concerns and comments related to the project from these agencies is provided below. Copies of all responses to the agency mailing are included in Appendix D.

Both the United States Fish and Wildlife Service and the Kentucky Department of Fish and Wildlife Resources expressed concern regarding the potential for impacts to the federally endangered Indiana bat that is known to have a summer maternity habitat in this area of western Kentucky. The Kentucky Department of Fish and Wildlife Resources suggested that the project should examine the impact on this species. The United States Fish and Wildlife Service requested an assessment of impacts and recommended submitting a copy of the assessment and finding to them for review.

In addition, the Kentucky Department of Fish and Wildlife Resources provided a list of rare and/or endangered species known to occur in the study area. They also expressed concern regarding the potential for wetlands impacts in the study area.

The National Park Service (NPS) expressed interest regarding the preservation and protection of historic resources associated with the Trail of Tears. While the currently designated routes for the Trail of Tears National Historic Trail do not pass through the study area, NPS indicated that there may be trail segments in this part of Kentucky that are eligible for the National Register of Historic Places. In particular, the Benge Route has been tentatively identified as crossing Hickman and Carlisle Counties. NPS recognized the difficulty in assessing impacts during the early planning process, but requested consideration as an interested party to the project development process. They asked to review cultural resource reports and that archeological testing or historical investigations account for the possibility of Trail of Tears associated resources.

The Kentucky State Nature Preserves Commission (KSNPC) reviewed their Natural Heritage Program Database and determined that five occurrences of plants or animals monitored by KSNPC are reported as occurring in the project area. Of particular concern is the relict darter. The Bayou de Chien drainage supports the only known relict darter population in the world. They requested that stream alterations or disturbances be avoided or held to a minimum. Also, construction activities should be completed during periods of low flow. A written erosion control plan should be developed, implemented, and monitored periodically to ensure that all erosion control measures are functioning as planned. Finally, they request that heavy equipment should not be used in the Bayou de Chien or any of its tributaries.

A letter requesting input on the study was also sent to MeadWestvaco which is a paper mill in Wickliffe, Kentucky. They haul wood products through both Bardwell and Clinton, but have a heavier truck flow through Bardwell. According to MeadWestvaco's letter, their primary concern is safety, and they support local residents deciding which alternative is best for the town. They also stated that a bypass would provide some benefits in terms of speed and time, but for the hauling distance, the time savings are not very significant.

The mayor of Clinton, Tommy Kimbro, also responded to the request for input on the study. In his response, he provided his thoughts on some of the preliminary alternatives for improvements to US 51 through Clinton. He expressed concern about property impacts associated with Alternatives 2 and 3, and did not think they would be viable choices because of potential impacts. He did not favor Alternatives 4A or 4B since both alternatives were shown as impacting natural wetland and floodplain areas. As for Alternatives 5 and 7, he noted that there was the potential for major impacts to the residential areas and would limit future development of the city. The alternatives he viewed as most promising were Alternatives 6A and 6B. He thought that they were the least costly (in terms of impacts) and would be the most desirable options for improvements to US 51 in Clinton.

10.0 ALTERNATIVES DEVELOPMENT

10.1 Alternatives Development Process

The alternatives development process involved both technical analysis and public input. The process was iterative, with the project team developing concepts and then asking for feedback from the public (including new concepts). To begin the process, the project team completed a preliminary examination of reasonable alternatives, taking into account topography, environmental constraints, community constraints, previous studies, and feedback from early public involvement activities. Six generalized alternatives were then put forward first at a Project Work Group meeting and then at a Public Information Meeting. Based on feedback at these two meetings and on additional project team input, the total number of alternatives increased to fourteen.

Overall, the alternatives development process was designed to be inclusive with input from the following sources contributing to the final set of alternatives:

- General Public
- Specific Stakeholders
- Initial Technical Review (environmental, topographic, etc.)
- Project Work Group Members
- Project Team
- Previous Studies

For copies of meeting minutes with each of the above groups refer to Appendix E.

10.2 Preliminary Alternatives

The fourteen preliminary alternatives are defined below. Please refer to Figure 20-A (Appendix B) for a concept map of the preliminary alternatives. Figure 20-B shows a local street map that can be used for reference in the alternatives discussion.

10.2.1 Alternative 1 – No-Build

This alternative assumes that no new improvements are made to US 51. The current highway would remain in place with no modifications.

10.2.2 Alternative 2 – Spot Improvements

This alternative is intended to improve six specific locations identified as having potential safety or design concerns as described below and illustrated in Figure 20-A.

<u>Alternative 2A - US 51 in the Vicinity of Cresap Street</u>
This location was identified by the community as a pedestrian safety problem area. School students and other pedestrians cross US 51 at this location. The small hill north of Cresap Street limits sight distance. Possible improvements include roadway and

sidewalk reconstruction. The hill north of Cresap Street would be lowered to improve lines-of-sight if feasible.

Alternative 2B - US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)
The intersection does not provide sufficient space for turning trucks, due in part to the presence of on-street parking. Truck turning problems were reported by local residents and were confirmed through field observation. Sight distance is limited in some directions by buildings on the intersection corners. Future 2020 and 2030 levels of service are below the LOS C threshold. The intersection signal equipment is also outdated, leading to longer wait times than necessary. Potential improvements include providing adequate turning radii for northbound and southbound left turns and possibly left or right turn lanes on one or more approaches. The current signal could be upgraded to a traffic-actuated signal (a signal that can detect and then give a green light to waiting vehicles) with pedestrian signal heads. This project may eliminate some on-street parking and may require right-of-way acquisition. However, if on-street parking is eliminated for the proposed improvements, suggestions could be made to provide alternate parking options.

Alternative 2C - Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)
This intersection is STOP controlled on the side street (KY 58). The STOP sign on the east leg is located in advance of the intersection and there are missing curb sections. There is a hill south of the intersection leading down into the town. Four crashes were reported in the last three and a half years from the hill to the US 51 / Jackson Street intersection. Possible intersection improvements include new curb and gutter, sidewalks, improved turning radii, and modified placement of the STOP sign and stop bar. (It is important to note that KYTC recently improved the southeast corner of the intersection, but decided not to improve the northeast corner due to impacts to the gas station access.) In addition, the installation of a traffic signal could be considered in the future if traffic volumes continue to grow such that it is warranted.

Alternative 2D - US 51 in the Vicinity of KY 780 (North)
The intersection is skewed and located on a curve. A fatal accident was also reported in the vicinity of this intersection. A possible improvement would be to realign the intersection to a “T” intersection. Improvements could also be considered to the south at Kimbro Street and Ezell Lane.

Alternative 2E - US 51 in the Vicinity of Martin Road
The US 51 / Martin Road intersection is skewed with both roads approaching on a hill, limiting sight distances. There is little control of access to US 51 in this area with many wide driveways. The area also has the largest accident cluster in the study area. Possible improvements include flattening US 51 to lengthen sight distance as well as realigning the Martin Road intersection to a standard “T” intersection.

Alternative 2F - US 51 in the vicinity of KY 780 (South)
This intersection consists of two offset, skewed intersections. There is also a small hill at the northern of the two intersections. Three accidents were reported in the vicinity of

these two intersections. Potential improvements include realignment of the intersections and lowering the hill to improve sight distances.

10.2.3 Alternative 3 – Reconstruct US 51 as a Two-Lane Roadway with Center Two-Way Left Turn Lane

This alternative involves reconstructing US 51 from north of the town (in the vicinity of the Hickman County jail), south to the Bayou de Chien where US 51 has recently been improved. South of the town, a two-way left turn lane could be constructed to just south of the development near Martin Lane. The Alternative 2 spot improvements would be included as part of Alternative 3.

Alternative 3 employs a two-lane urban cross-section in town as shown in Figure 21 (Appendix B).[3] Turn lanes could be provided at major intersections. It would have two 13-foot travel lanes with a 2-foot curb and gutter (with bicycle safe grates). The 13 foot lanes and bicycle safe grates were included to provide a "wide curb lane" to better accommodate bicyclists in town. (This was done to conform to planning requirements of the KYTC *Pedestrian and Bicycle Travel Policy*.) If the wide curb lane was not pursued the lanes could be reduced to 12 feet.

The urban cross-section also includes a sidewalk and buffer area on either side of the roadway. Widths for these items were minimized to keep the minimum cross-section at 50 feet. This was done because the majority of US 51 through Clinton has a 50-foot right-of-way. The presence of a number of potentially historic properties through town, particularly near Cresap Street and Beeler Hill, emphasizes the need for a limited right-of-way. Where possible the urban right-of-way should be increased to provide additional buffer area. It would have to be widened at intersections were left turn lanes are being considered. In areas with side slope problems, small retaining walls may be required.

From just south of town to the development near Martin Road, a two-way left turn lane is proposed. An urban cross-section similar to that proposed for the in-town improvements would be used with the right-of-way widened to accommodate a 14-foot turn lane in the center. The highway would be a partially controlled access facility in this area.

South of town a typical rural two-lane cross section is proposed, with 12-foot lanes and 10 foot shoulders (8 feet paved). The shoulders provide sufficient paved width to support bicycling at all operating speeds and with high truck volumes. For sections where buildings or historic properties limit the available right-of-way, the cross-section could be limited to 100 feet or less. In areas where significant cut or fill is necessary, the required right-of-way could be as much as 200 to 300 feet.

[3] Typical sections were developed for the range of alternatives in Clinton. The typical sections are not for design, but rather provide a conceptual basis for evaluating the alternatives including the development of cost estimates.

10.2.4 Alternative 4A – Western Bypass Option A

This alternative would create a new two-lane highway west of the current US 51 alignment. It would run south along the railroad line, reconstructing a portion of the existing local street system (such as Farmers Gin Road [KY 1728]). It would remain close to the railroad right-of-way to minimize impacts to existing residences and businesses. It would reconnect to the current US 51 alignment in the vicinity of KY 780 (north). From that location south to the study area boundary, the Alternative 3 and/or Alternative 2 improvements could be implemented as part of this alternative. The new highway would have a two-lane rural cross-section north and south of town and an urban section in town (refer to Figure 21). Side street traffic would be STOP controlled, while traffic on the new route would have the right-of-way. Turn lanes would be provided at major intersections only. Design speeds range from a high of 60 mph at the north end to a low of 35-40 mph within town. Speeds on this route would be similar to the current US 51 because the corridor passes through the town.

10.2.5 Alternative 4B – Western Bypass Option B

Alternative 4B is similar to Alternative 4A in that it would create a new US 51 corridor west of the current US 51 alignment. However, instead of following the railroad right-of-way it would run more directly through town. This alternative would use reconstructed existing streets when possible. Again, the Alternative 3 (and/or Alternative 2) improvements from KY 780 (north) south to the Bayou de Chien could be incorporated into this alternative to provide improvements through the entire corridor. A number of individuals at the first public meeting requested that this alternative (or a similar alternative) be considered.

10.2.6 Alternative 5A – Near Eastern Bypass Option A

Alternative 5A would construct a new US 51 highway east of Clinton. A goal of this alternative would be to remain relatively close to the town but at the same time minimize community and property impacts. It would depart from the current US 51 alignment south of Martin Road, cross KY 58 (East) west of Evans Lane and continue north to cross KY 123 east of town. It then would run northwest to reconnect with the current US 51 alignment north of town, but south of the Assembly of God Church. The bypass would be a two-lane rural type highway with turn-lanes at the intersections with KY 58, KY 123, and KY 703 (refer to Figure 21). Side street traffic would be STOP controlled, with the bypass traffic having the right-of-way. The bypass would have a design speed of at least 50 mph throughout.

Additional improvements to the current alignment of US 51 south of Martin Road where the bypass would connect to US 51 could be included in Alternative 5A. Improvements that would be considered include Alternative 3 south of Martin Road and/or spot improvement 2F.

10.2.7 Alternative 5B – Near Eastern Bypass Option B

Alternative 5B is similar to Alternative 5A, but it extends further north to tie into US 51 north of the Assembly of God Church. The typical sections and other design elements would be similar to those proposed for Alternative 5A.

10.2.8 Alternative 6A – Far Eastern Bypass Option A

Alternative 6A would also construct a new US 51 bypass east of Clinton, but further east than Alternatives 5A and 5B. Alternative 6A would depart from the current US 51 alignment near KY 780 in the south end of the study area. The highway would then run north along a ridgeline to cross KY 58 (East) a little over a mile east of US 51, and then continue north to cross KY 123 well east of town. From there Alternative 6A turns west to follow a similar path as Alternative 5A. Alternative 6A would be a two-lane rural type highway with turn-lanes at major intersections such as KY 58, KY 123, and KY 703 (refer to Figure 21). Side street traffic would be STOP controlled, with the bypass traffic having the right-of-way. It would have a design speed of at least 50 mph.

10.2.9 Alternative 6B – Far Eastern Bypass Option B

Alternative 6B is similar over much of its length to Alternative 6A. The major difference is that it departs from the current US 51 corridor closer to town and then runs northeast to rejoin Alternative 6A. The conceptual typical section and other concept attributes for Alternative 6B would be similar to Alternative 6A. The Alternative 3 and/or Alternative 2 improvements south of the bypass could be included as part of Alternative 6B to better connect it to the recent construction project south of the Bayou de Chien.

10.2.10 Alternative 7 – Bypass Immediately East of Town

Alternative 7 would provide a bypass corridor immediately east of Clinton. This bypass would be the shortest of the eastern bypass options, but would also encroach on the developed portion of the town. The bypass would begin in the vicinity of Trinity Chapel Road south of the US 51 curve and the KY 780 intersection. It would then run northeast to the east side of the town, where it would follow College Street north. The corridor would run on the east side of the high school and would then turn west to reconnect with US 51 north of town. The highway would be a two-lane highway, but might employ an urban section rather than a rural section over much of its length. Sidewalks might be planned for both sides of the highway. Alternative 7 may lessen the need for improvements through town, but will not improve US 51 south of town. Therefore, Alternative 3 (and/or Alternative 2) could be implemented south of the KY 780 (north) intersection to the current project near the Bayou de Chien.

10.2.11 Alternative 8 – One-Way Street System Options

Alternative 8 includes various proposals for one-way streets. In all cases the current US 51 would remain US 51 northbound and a new route would be developed for US 51

southbound. Improvements to US 51 would be made to support the one-way street operations. Additional improvements proposed in Alternatives 2 and 3 to the current alignment of US 51 south of the one-way street system could be included in any of the one-way street options. The potential options have been grouped into three alternatives and are discussed below.

Alternative 8A – One-Way Street System Using Existing Streets

Existing streets would be used for southbound travel through town. This would include conversion of Jefferson Street and Moss Drive to one-way streets. These streets would be upgraded to handle the increase in heavy truck traffic as well as the increased overall volume of traffic. Improvements would also be made at either end of the new corridor to better connect the southbound streets with the existing US 51 corridor. This would include a new road segment extending from Jefferson Street north to connect with US 51 in the vicinity of the jail property. In the south, Moss Drive would likely be realigned behind the Jakel manufacturing facility to provide a more direct connection to US 51 in the vicinity of KY 780 (north).

A direct link would be constructed between Moss Drive and Jefferson Street to provide a continuous US 51 southbound route. This would be very important to accommodate the through truck traffic as well as other through traffic. The grades and sight distances on Jefferson Street west of the courthouse would be improved. This may require new, larger retaining walls. Parking may also have to be eliminated or reduced along Jefferson Street in this vicinity to provide adequate highway geometry, traffic operations, and pedestrian safety. However, provisions could be made to provide alternate parking options if current parking is reduced or eliminated.

Alternative 8B – One-Way Street System Using Mainly New Highways

The southbound flow of traffic would be accommodated on a one-way southbound version of Alternative 4A. This alternative would use KY 1728 (Farmers Gin Road) and then would follow the railroad south to connect with the current US 51 near KY 780 (North). This alternative would be similar to Alternative 4A but with only one southbound lane.

Alternative 8C – One-Way Street System Using a Combination of Existing and New Streets

Alternative 8C would be similar to Alternative 8B in the north. A new one-way highway would be constructed generally following KY 1728 (Farmers Gin Road) south to Moore Street. From that point the corridor would follow one of three or four different routes. It might use portions of the following existing streets: Short Street, Water Street, Jefferson Street, Moss Street, and Dunlora Street. It may also use new corridors cutting across blocks to connect the existing roads. A likely corridor would use Short Street to Water Street to Dunlora Street to Moss Street, with a new road segment straightening out the connection between Dunlora Street and Moss Street. Another option that was suggested at the first public meeting would create a new road connecting from Farmers Gin Road/Short Street/Water Street to Jefferson Street. It would then follow Alternative 8A (Moss Street) to reconnect with the current US 51 alignment.

10.2.12 Alternative 9 – Western Bypass (West of Railroad)

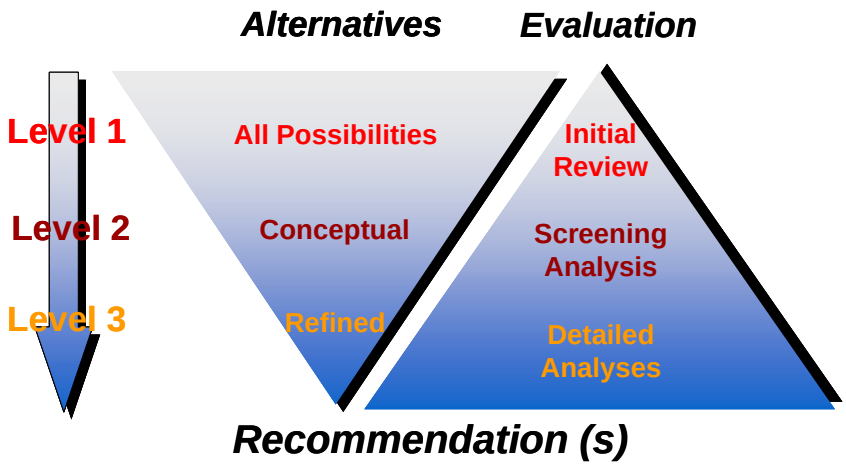
Alternative 9 includes construction of a new bypass west of Clinton and west of the railroad. The new highway would diverge from the current US 51 alignment near the intersection of US 51 and KY 1728 (Farmers Gin Road). From this point it would run south toward town. The corridor would then turn to the southwest, bridging over the railroad to the northwest of the town. The new highway would continue running southwest to pass around most if not all of the developed areas west of the railroad. The new highway would then turn to the southeast, bridging back over the railroad to reconnect to the current US 51 alignment in the vicinity of KY 780 north. Additional improvements suggested in Alternatives 2 and/or 3 could be included in Alternative 9 to improve US 51 south of where the bypass would connect to the current US 51 alignment. The highway would be a two-lane roadway with turn-lanes at major intersections only, such as at KY 58 or KY 123. A rural typical section would be used. Side street traffic would be STOP controlled, while traffic on the new route would have the right-of-way. The expected design speed would range from between 40 and 60 mph depending on the segment.

11.0 EVALUATION METHODOLOGY

The alternatives evaluation procedure used in this study is a three-step process. The purpose of the three-step process is to refine the list of alternatives from all possible alternatives to a short list of promising alternatives and then finally to a recommended alternative or set of alternatives. The evaluation process uses increasingly detailed analysis methods to complete the screening and to refine the alternatives remaining after each round of analysis. The goal is to study and further develop feasible alternatives that best meet the project's goals, while not spending extensive effort on those that are unworkable or do not meet the project's goals.

Initially, a few pertinent and important details will be identified about a broad array of possible alternatives. As the analysis progresses, the range and depth of information increases and the number of alternatives being studied decreases as shown in Figure 22.

Figure 22: Three-Level Evaluation Procedure



During Level 1, much of the analysis is based on qualitative or comparative information. The principal goals at this level are to determine if an alternative is feasible (physically, financially, environmentally, and socio-politically) and generally how it compares to the other alternatives. During the next two levels, the amount of quantitative data and analysis increases substantially (i.e. traffic forecasts, cost estimates, potential numbers of impacted wetlands, etc.) allowing for more detailed and definitive comparisons. The goal of the final Level 3 analysis is to determine a recommended project(s).

Appendix F describes in more detail the evaluation procedures for each level of analysis. This includes a detailed discussion of the evaluation criteria used for each evaluation level. The following three report sections present a summary of each of the three analysis levels.

12.0 LEVEL 1 EVALUATION – INITIAL SCREENING

12.1 Level 1 Evaluation Summary

The following pages present the results of the Level 1 Initial Screening analysis. For the alternatives advanced to Level 2, a brief summary is given. However, for the alternatives set aside from further consideration in Level 1, a more in-depth discussion is provided to clearly illustrate the reasons for not pursuing those alternatives further. Refer to Table 21 (Appendix A) for a list of the preliminary alternatives and the corresponding ratings for each in the following five evaluation categories:

- *Implementation / Construction Feasibility*
- *Project Goals*
- *Community Impacts*
- *Environmental Impacts*
- *Public Support*

Alternative 1 – No-Build

The No-Build Alternative involves no new construction and is therefore rated GOOD for both *Implementation / Construction Feasibility* and *Environmental Impacts.* However, with regard to *Project Goals*, the No-Build Alternative is rated POOR. While the No-Build limits negative impacts, it offers no benefits to safety, traffic flow, highway geometry, and truck traffic conditions. In fact, the current traffic safety issues may intensify if traffic volumes grow. The No-Build is rated FAIR for *Community Impacts*. Again, it limits physical impacts to the community but it also offers no community benefits. It also does nothing to change the impact of truck traffic on the community. The initial meetings in the community and the first public meeting revealed moderate support for doing nothing, giving it a rating of FAIR for *Public Support.*

Although the No-Build Alternative may not improve the transportation system or address the transportation deficiencies identified in the study, it was carried forward to Level 2 (and throughout the study) both as a possible alternative, as well as to provide a baseline for comparing the potential build alternatives.

Alternative 2 – Spot Improvements

The spot improvements are rated GOOD for *Implementation / Construction Feasibility* because they require the least amount of new construction of any build alternative, minimizing cost and construction complexity. The spot improvements may achieve a number of project goals such as enhanced traffic flow and safety, improved geometry, and better truck traffic operations. However, they are not expected to provide the same traffic benefits as complete reconstruction of the highway or a new highway. They do leave traffic flowing through town, providing continued visibility for existing businesses on US 51. They are rated FAIR for *Project Goals*. The spot improvements may have minimal impacts on the community (both positive and negative), giving a rating of GOOD for *Community Impacts.* They are also unlikely to have significant negative

environmental impacts, yielding a GOOD rating for *Environmental Impacts.* Based on initial meetings in the community and on results from the first public meeting, the spot improvements had considerable support, with nearly a third of all comment form respondents supporting this alternative. It is rated GOOD for *Public Support.*

Alternative 2 (Spot Improvements) has the potential to achieve many project goals with minimal cost and impact. It also has local support. Therefore this alternative was recommended for further study in Level 2.

Alternative 3 – Reconstruct US 51 as a Two-Lane Roadway with Center Two-Way Left Turn Lane

Improving the existing highway is feasible, but may be complicated and costly, especially given the expected utility and right-of-way issues through town. It is rated POOR for *Implementation / Construction Feasibility.* Improving the current highway addresses many project goals including improved traffic flow, safety, and truck traffic operations. The benefits in these areas are expected to be greater for Alternative 3 than for Alternative 2. Visibility for existing businesses on US 51 is also maintained. Overall, it is rated GOOD for *Project Goals.* Alternative 3 is expected to support current businesses through continued visibility and enhance the aesthetics of the existing developed community. It may have some physical or right-of-way impacts on businesses and properties along US 51. Overall it is rated GOOD for *Community Impacts.* Improving the current highway may have minor impacts on the natural environment, and may potentially impact historic resources in a number of locations in town. However, these would be avoided or minimized to the greatest extent possible. Alternative 3 is rated FAIR for *Environmental Impacts.* There appears to be support for Alternative 3, with almost one-third of comment form respondents at the first public meeting supporting this alternative. It is rated GOOD for *Public Support*.

Alternative 3 is likely to achieve a number of the key project goals, while minimizing most negative community and environmental impacts. It also has local public support. Therefore this alternative was recommended for further study in Level 2.

Alternative 4A – Western Bypass Option A

Existing development (businesses and homes), the railroad, streams, utilities, and potential hazardous materials sites in the corridor may all make the implementation of Alternative 4A more difficult and expensive. However, keeping the corridor close to the railroad may minimize the impact to existing businesses, residents and development. Overall, it is rated FAIR for *Implementation / Construction Feasibility*. A new western bypass along the railroad may meet the traffic related goals of the study by providing greater safety, and a more efficient route for both trucks and other vehicles. Alternative 4A shifts some traffic away from downtown, but will not bypass the business community near KY 780 north. As Alternative 4A is fairly close to downtown, there may be limited new land opened up for economic development opportunities. Overall, it is rated GOOD for *Project Goals.* While impacts to the community may be minimized through the use

of some existing public right-of-way, there may still be some minor impacts on businesses and residents including a potential environmental justice community located along the corridor. Economic concerns are minimized by the proximity of the bypass to downtown as well as the fact that the businesses near KY 780 north are not bypassed. Overall, it is rated FAIR for *Community Impacts.* This alternative may have several potential areas of environmental impacts including streams, wetlands, floodplains, hazardous material sites, and possible impact to the Clinton Seminary Site (a potential historic structure) located on Dunlora Lane at West Jackson Street. As a result, Alternative 4A is rated POOR for *Environmental Impacts.* There has been moderate support for this alternative. Approximately one-fifth of comment form respondents at the first public meeting supported this alternative, indicating that it was favored by the public over the eastern bypass alternatives. It is rated GOOD for *Public Support.*

Alternative 4A is likely to achieve a number of the key project goals, limits impacts to existing businesses, and has a moderate level of local public support. Therefore Alternative 4A was recommended for further study in Level 2.

Alternative 4B – Western Bypass Option B

Implementation / Construction Feasibility - Alternative 4B may have many of the same construction and cost issues as Alternative 4A, but they are expected to be more severe since Alternative 4B runs through the town instead of following the railroad tracks. Constructing Alternative 4B may be difficult given the development that currently exists in town. Alternative 4B may require the acquisition of more privately owned, developed right-of-way than Alternative 4A. Traffic control, property access during construction, and utility relocations are also expected to be more problematic, with more disruptions to the local community. Overall, it is rated POOR.

Project Goals - While Alternative 4B could improve traffic flow on the current US 51, it may not mitigate the effects of heavy trucks through town, because the trucks would continue through town on another street. Essentially Alternative 4B shifts the truck traffic, safety, and traffic issues to the west side of the town. Regarding local businesses and economic development, Alternative 4B may have benefits and drawbacks similar to Alternative 4A, however even less new land would be opened for development. Property impacts could be considered similar or even greater for Alternative 4B, with traffic impacts to properties along the street alignments to be used in town. Overall, it is rated POOR.

Community Impacts - The construction of Alternative 4B may have minimal impacts to the businesses north of town along KY 1728 (Farmers Gin Road), but property impacts are likely when the roadway enters town. One of the most significant community impacts of Alternative 4B may be increased traffic on the existing streets used for the new bypass. Traffic increases along the predominantly residential streets could be detrimental to the community. There is also a potential impact to an environmental justice community on the west side of town. The highway would isolate part of the community by confining it between a major two-lane highway and the existing railroad

line. With regard to existing businesses, Alternative 4B may be fairly similar to Alternative 4A by maintaining US 51 near the existing downtown business, and not bypassing the new businesses south of town near KY 780 north. Overall, it is rated POOR.

Environmental Impacts - There are several environmental issues to be expected with this alternative including impacts to streams, wetlands, floodplains, and potential hazardous materials sites. Alternative 4B may also result in cultural historic impacts including a potential impact to the Clinton Seminary site. Overall, it is rated FAIR.

Public Support - There has been moderate public support for an alternative in this area of town. At the initial public meeting, Alternative 4A (Western Bypass) was presented and received the support of approximately one-fifth of those who filled out public comment forms. It is not clear that all of these people would support Alternative 4B, which was a variation of Alternative 4A that came out of the meeting. However, it does show public support for a western bypass of some type and therefore, Alternative 4B is rated GOOD in the area of public support.

Alternative 4B might achieve some of the project goals, but it is expected to cause more harm than benefit to the community and environment. Specifically, it may have negative traffic, environmental, and community impacts that outweigh any project benefits. It also will leave the truck traffic going through town, simply on a new street. Therefore this alternative was NOT recommended for further study in Level 2.

Alternative 5A – Near Eastern Bypass Option A

Construction of Alternative 5A may be easier than for the previous alternatives because it is located on the eastern edge of town where there is less existing development. Overall, it is rated GOOD for *Implementation / Construction Feasibility*. Alternative 5A could improve safety, traffic flow and mobility in the area, including improved access between US 51 and KY 58 / KY 123 east of town. Also, it could mitigate the negative effects of truck traffic in town and decrease travel times because of higher posted speeds. It may draw traffic away from downtown and from the commercial center near KY 780 (north), but new land would be opened up for potential development. It is rated FAIR for *Project Goals*. Alternative 5A is the closest bypass on the eastern side of town without significant impact on the community. It avoids the more developed areas of the town thereby limiting residential and business property impacts and traffic increases on residential streets. Required new right-of-way will be taken from a combination of farmland, vacant land and some developed (residential) land. It may have an impact on downtown businesses, especially those that are dependent on pass-by traffic. Overall, it is rated FAIR for *Community Impacts.* Alternative 5A crosses a floodplain, at least one stream, may impact a few small wetlands and runs through an area of potential maternity (summer) Indiana Bat habitat located between US 51 and KY 58. Overall, it is rated FAIR for *Environmental Impacts*. There is some limited support for an eastern bypass near Clinton. (Approximately 7 percent of comment form respondents at the first public meeting favored Alternative 5.) Overall, it is rated FAIR for *Public Support*.

Alternative 5A is likely to achieve a number of the key project goals, especially in the area of improved safety and mobility. It is expected to have only moderate community and environmental impacts; however it may reduce traffic through town. It has a limited level of public support. Given the mix of positive and negative indicators for Alternative 5A it was recommended for further study in Level 2.

Alternative 5B – Near Eastern Bypass Option B

Implementation / Construction Feasibility - Alternative 5B constructs a bypass close to Clinton similar to Alternative 5A, but ties back into US 51 further to the north. Many of the expected implementation issues are therefore similar. The increased length could however increase the cost of the alternative and may lead to more potential impacts and complications. The longer corridor does not appear necessary or beneficial. Overall, it is rated FAIR.

Project Goals - Similar to Alternative 5A, Alternative 5B meets certain project goals through improved mobility, improved roadway geometry, enhanced safety, and by mitigating the impact of heavy truck traffic on the town (by transferring the traffic to the bypass). It also has the conflicting result of offering the potential for new development outside the town but reduced through traffic in the town. Overall, it is rated FAIR.

Community Impacts - The potential community impacts for Alternative 5B are similar to those for Alternative 5A with the exception that additional right-of-way may be required and therefore there may be more property acquisition (though the additional area in the north is sparsely developed). Overall, it is rated FAIR.

Environmental Impacts - There are several potential environmental impacts with Alternative 5B. It has the same environmental issues in the south as Alternative 5A such as at least one floodplain, a stream crossing and the crossing of a potential Indiana Bat habitat area. In the northern extension it may cross one or two additional streams and is likely to have additional wetland impacts. It could also impact a potential historic site in the northern section. Overall, Alternative 5B could have more negative impacts than Alternative 5A and is therefore rated POOR.

Public Support - The limited public support for an Alternative 5 corridor was discussed for Alternative 5A. Approximately seven percent of comment form respondents were in favor of an Alternative 5 option. Therefore, it is rated FAIR in this category.

Alternative 5B may achieve some of the same benefits as Alternative 5A, but at a higher cost and with the potential for increased impacts. Therefore Alternative 5B was NOT recommended for further study in Level 2.

Alternative 6A – Far Eastern Bypass Option A

Alternative 6A may be the easiest alternative to construct of those discussed thus far because the corridor is through undeveloped land on the far eastern side of Clinton. It is however, the longest proposed route and therefore costs may increase for this alternative. Substantial right-of-way acquisition may be necessary, likely requiring the most acreage of any of the alternatives. Overall, it is rated GOOD for *Implementation / Construction Feasibility.* The alternative achieves some key project goals, including improved safety, mobility, connectivity to KY 58 and KY 123, and efficiency for through traffic in the corridor. Heavy truck traffic could also be diverted to the bypass. Because it is the longest bypass, travel time could be longer than for Alternatives 5A and 5B. The highway would be constructed through crop/pasture land, with the potential for opening new areas to economic development. However, the land is distant from the current town center and the other main areas of economic activity, and may divert traffic away from town thereby impacting economic development downtown. Overall, it is rated FAIR for *Project Goals*. Most of the required right-of-way is crop/pasture land, with minimal impact to other businesses and residences. However, the economic development and indirect business impacts are a concern. Overall, it is rated FAIR for *Community Impacts*. Minimal impacts to the natural environment are expected since this alternative follows an eastern ridgeline, but it does cross the eastern edge of a potential maternity (summer) Indiana Bat habitat and it may have scattered wetland impacts. Overall, it is rated FAIR for *Environmental Impacts*. There has been very limited public support for this alternative (approximately five percent of comment form respondents supported this alternative). It is rated FAIR for *Public Support*.

Alternative 6A is likely to achieve certain project goals such as mobility and safety, but with an uncertain cost. Other goals such as economic development are mixed and/or uncertain. Given the uncertainty, Alternative 6A was recommended for further study in Level 2.

Alternative 6B – Far Eastern Bypass Option B

Implementation / Construction Feasibility - This alternative may have many of the same construction and cost issues as Alternative 6A. It is slightly shorter than Alternative 6A because it rejoins US 51 closer to town. Therefore, the required right-of-way and construction costs might be less, but they are unlikely to be significantly less. More importantly, the terrain for the southern end of Alternative 6B (crossing two streams and some low areas) is not as good as that for Alternative 6A, which follows the ridgeline. Overall, it is rated FAIR.

Project Goals - Alternative 6B is very similar to Alternative 6A in how it meets or does not meet the various project goals including traffic flow, safety, truck traffic mitigation, and economic development. One difference is that the geometry for Alternative 6B is not as good as the geometry for Alternative 6A at the southern end. Overall, it is rated FAIR.

Community Impacts - The community impacts for Alternative 6B are essentially the same as those discussed for Alternative 6A above. Overall, it is rated FAIR.

Environmental Impacts - There are several impacts to the natural environment associated with Alternative 6B. While Alternative 6A crosses the eastern edge of the potential maternity (summer) Indiana Bat habitat, Alternative 6B would go directly though this area. Furthermore, Alternative 6B diverges from Alternative 6A in the south and crosses two streams and some low areas before rejoining US 51. Overall, it is rated as POOR.

Public Support - Again, as was stated for Alternative 6A, there is very limited support for an Alternative 6 option, with approximately five percent of the comment form respondents indicating support for the Alternative 6 corridor. Based on this response, the alternative is rated as FAIR.

Alternative 6B has many similarities to Alternative 6A, but it is likely to have more impacts with similar or even less benefit. Therefore Alternative 6B was NOT recommended for further study in Level 2.

Alternative 7 – Bypass Immediately East of Town

Implementation / Construction Feasibility - The construction of Alternative 7 could be quite complicated due to the encroachment on developed land. The impact on homes, schools and possibly churches could be high since this alternative goes through residential neighborhoods on the eastern side of town. Because this alternative goes through town, right-of-way costs, utility costs, maintenance of traffic costs, and connections back to the existing street system may all increase the total cost of the alternative. Overall, it is rated POOR.

Project Goals - Alternative 7 meets some project goals, but not others. It may improve safety and mobility, but it leaves truck traffic on the edge of town, impacting homes and schools along the route. It does not adequately satisfy the goals of preserving downtown business, minimizing property takings, or improving regional connections. Alternative 7 would go through residential neighborhoods on the eastern side of town, impacting these residents with regard to property loss, construction impacts and traffic impacts. While through traffic remains close to town, it may reduce the visibility of downtown businesses. Overall, it is rated POOR.

Community Impacts - There are several community impacts associated with Alternative 7 including right-of-way acquisition required in the developed area of Clinton. Significant portions of right-of-way may come from existing residential areas, including some property acquisitions. The corridor passes by a number of homes and two schools. This means that through traffic including the heavy truck traffic may pass directly by those homes and schools. It is the shortest of the eastern bypass alternatives, thereby keeping traffic close to downtown. The new highway would reroute through traffic to the bypass, reducing drive-by traffic for downtown businesses.

Furthermore, because of its proximity to downtown and developed areas, it may not open new land for economic development. Overall, it is rated POOR.

Environmental Impacts - There are potential impacts to the natural environment associated with Alternative 7 including potential impacts to wetlands, streams, and a floodplain area. In addition, the alternative follows the western edge of an area of potential maternity (summer) Indiana Bat habitat. Furthermore, the alternative may impact a historic site located near KY 123. Overall, it is rated FAIR.

Public Support - Public support for Alternative 7 is expected to be minimal. A member of the public raised Alternative 7 as an option at the first public meeting, but few if any others have expressed subsequent support for it. (Based on the comment form responses, approximately a third of the respondents were opposed to the construction of a bypass around Clinton.) Of the respondents that supported a bypass, the majority were in favor of a western bypass. Overall, Alternative 7 is rated POOR.

Alternative 7 is unlikely to meet many of the project goals, is expected to have significant impacts, and is not supported by the public. The residential and school impacts in particular are significant. Therefore this alternative was NOT recommended for further study in Level 2.

Alternative 8A – One-Way Street System Using Existing Streets

This alternative could be difficult to construct as the new US 51 southbound uses existing local roads, which are not designed for an increased traffic load. It may have significant property acquisition and utility issues, as well as maintenance of traffic and access issues. Retaining walls and significant grading may also be required in the vicinity of the courthouse. The cost and amount of construction could be less for this alternative than for alternatives that involve constructing a new highway, but there may still be construction difficulties with all of the improvements occurring downtown. Overall, it is rated POOR for *Implementation / Construction Feasibility.* This alternative may meet some of the projects goals, including improved through traffic flow and improved geometry for truck turning movements, but may not improve delays or noise associated with heavy truck traffic since trucks would remain in town. While downtown businesses could be preserved, visibility would be split for northbound and southbound traffic. With regard to safety, one-way streets can improve safety by decreasing conflict points for vehicles and pedestrians and by improving lines of sight[4]. However, safety could be decreased if drivers become impatient and use the wrong one-way street to reduce travel time. Furthermore, drivers may be inclined to drive faster on the one-way streets. Overall, it is rated FAIR for *Project Goals*. This alternative may impact the greatest number of properties of all the alternatives (including a potential environmental justice community), through a combination of property acquisition, traffic impacts, noise impacts, and other impacts. In particular the residential areas located along the

[4] There are some researchers that contend that one-way streets are less safe for pedestrians. (*Downtown Streets – Are We Strangling Ourselves on One-Way Networks?*, Walker, Kulash and McHugh, TRB Circular E-C109: Urban Street Symposium, F-2/p.10) December 2000.

southbound route (Jefferson Street and Moss Drive) could be impacted by the change from a quiet, low volume street to a moderately busy main street. It provides increased business visibility along Jefferson Street and a decline in visibility along the current US 51 through town. Overall, it is rated POOR for *Community Impacts*. There are minimal environmental impacts; therefore it is rated GOOD for *Environmental Impacts.* There is moderately strong public support associated with this alternative, with over one-fifth of the survey respondents supporting a one-way alternative of some kind. Overall, it is rated GOOD for *Public Support*.

Alternative 8A is likely to achieve a number of the key project goals, while minimizing environmental impacts. It offers improved traffic flow but may have some negative safety issues. It has mixed results in terms of cost and community impacts but it has moderately strong local public support. Alternative 8A was recommended for further study in Level 2.

Alternative 8B – One-Way Street System Using Mainly New Highways

Implementation / Construction Feasibility - The construction of this alternative could require the acquisition of new right-of-way similar to that required for Alternative 4A to construct a new US 51 southbound-only highway. Alternative 8B is therefore similar in nature for implementation and construction to Alternative 4A. Overall, it is rated FAIR.

Project Goals - This alternative may meet some of the project goals including improved traffic flow, but it does not completely address the impacts of heavy truck traffic, as half of that traffic will still use the current US 51 through Clinton. However, the geometry could be improved for truck traffic in both directions. In terms of mobility, improvements are made in terms of travel speed but this may be restricted due to the one-way nature of the system. The proposed north and south streets are also too far removed from each other, being many blocks away at certain points, and sometimes without good connections between the two streets. This may cause reduced mobility and frustration on the part of many drivers, especially given the low traffic volumes during most of the day. It may also cause cut through traffic on other local streets. (This is a difference from Alternative 8A where the streets are parallel and only one block away.) By building a new roadway similar to Alternative 4A, the southbound traffic is removed farther from the northbound traffic, decreasing the visibility and ease of access to downtown businesses, but providing visibility to those businesses located along the southbound route. With regard to safety, this alternative is similar to Alternative 8A; meaning that safety could be increased through less potential conflict points, but decreased by potential misuse of the one-way streets. Overall, it is rated POOR.

Community Impacts - The community impacts associated with Alternative 8B are similar to those for Alternative 4A. This includes the potential for environmental justice impacts. Overall, it is rated FAIR.

Environmental Impacts - There are some impacts to the natural environment related to this alternative including possible impacts to hazardous materials sites, streams, wetlands, and the floodplain. Overall, it is rated POOR.

Public Support - Based on public comments and the public meeting comments forms, it appears that there is moderately strong public support for this alternative. Overall, it is rated GOOD.

Alternative 8B is likely to achieve some of the project goals, but it may not achieve others. It is also expected to have significant negative environmental impacts. Furthermore, while the alternative may have local public support, it is anticipated to function poorly and both confuse and frustrate many drivers. Alternative 8B was NOT recommended for further study in Level 2.

Alternative 8C – One-Way Street System Using a Combination of Existing and New Streets

Implementation / Construction Feasibility - The construction of this alternative may be difficult because the corridor encroaches upon the developed areas of Clinton and in some cases may traverse through city blocks. Impacts to properties, property access, and utilities may be issues with this alternative. It has many similarities with Alternative 4B. Overall, it is rated POOR.

Project Goals - This alternative may meet some project goals (similar to Alternatives 8A and 8B) such as improved geometry for truck traffic turning movements, and preserving the visibility of downtown business. However, it may not fully address the issues of mitigating the negative effects of truck traffic on US 51, or certain community issues such as property impacts and property access. Similar to Alternatives 8A and 8B, safety and mobility are also issues for this alternative since safety is increased with the possibility of fewer conflict points, but decreased though the possible misuse of one-way streets and higher speeds. The corridor of the one-way street pairs is also somewhat similar to Alternative 8B in that they are too far removed from each other and do not provide good connection points in some locations. Overall, it is rated POOR.

Community Impacts - Alternative 8C is similar to Alternative 4B with regard to community impacts. Impacts include the acquisition of additional right-of-way in the downtown area and possible bisection of city blocks. Similar to the previous two alternatives, this alternative would split the downtown business visibility between two main streets, thereby enhancing the businesses along the southbound route, and detracting from the businesses along the northbound route. Also, this alternative has the potential for impact to an environmental justice community. Overall, it is rated POOR.

Environmental Impacts - The environmental impacts associated with this alternative are similar to those for Alternative 4B and include stream impacts, crossings of areas

designated as wetlands or floodplains, and minor potential for impacts to historic or hazardous material sites. Overall, it is rated FAIR.

Public Support - As discussed previously, there is public support for a one-way alternative. Overall, it is rated GOOD.
Alternative 8C has the potential to achieve some project goals, and there is public support for a one-way alternative. However, Alternative 8C is expected to function similar to Alternative 8B and may negatively impact traffic flow and safety instead of providing improvements. Therefore Alternative 8C was NOT recommended for further study in Level 2.

Alternative 9 – Western Bypass (West of Railroad)

Alternative 9 is the longest of the proposed western routes, and could lead to more construction and higher construction costs because of the length. Roadway construction may be less complicated than for many of the other alternatives since the corridor goes through undeveloped crop/pasture land, but it does cross the railroad twice, thereby requiring the construction of two railroad overpass bridges. Overall, it is rated FAIR for *Implementation / Construction Feasibility*. Alternative 9 could enhance vehicular safety, mobility, and traffic flow and provide an alternate route to remove heavy truck traffic from the town. It may decrease visibility for the downtown businesses but would not bypass the commercial area just south of Clinton. New areas of land may be opened for potential economic development. Also, depending on the corridor of the bypass, there is the potential for good connections to KY 58 and KY 123 on the western side of Clinton. Overall, it is rated GOOD for *Project Goals*. The community impacts related to Alternative 9 include a potential decline in downtown business if economic development shifts to the new bypass. With regard to property impacts, this alternative may have a minimal impact since most of the land that this alternative would cross is crop/pasture land. Overall, it is rated FAIR for *Community Impacts*. There is the potential for impact to known wetlands, floodplains, streams, a possible maternity (summer) Indiana Bat habitat and a potential historic site near KY 123 and KY 1037. Overall, it is rated FAIR for *Environmental Impacts.* Based on comment forms received at the first public meeting, approximately one fourth of the respondents support a bypass with approximately 80% of those respondents in favor of a western bypass. Therefore it is rated GOOD for *Public Support.*

Alternative 9 has the potential to achieve several key project goals. Impacts to the community and the environment may be modest. While the cost may be higher than for some other alternatives, this is offset by fewer impacts. Therefore this alternative was recommended for further study in Level 2.

12.2 Level 1 Analysis Summary

Of the fourteen (14) initial alternatives, eight (8) were recommended for further study in Level 2. These included Alternatives 1, 2, 3, 4A, 5A, 6A, 8A, and 9. It was recommended that the six (6) remaining alternatives (4B, 5B, 6B, 7, 8B, and 8C) be removed from further consideration. The reasons for discarding these six alternatives

included anticipated issues with implementation and construction costs, potential for significant negative community and environmental impacts, minimal expected benefit (including not meeting key project goals), and a lack of local support. Also, some alternatives were set aside from further consideration because a similar alternative in a pair had more advantages and / or fewer disadvantages.

13.0 LEVEL 2 EVALUATION – PRELIMINARY ANALYSIS

13.1 Level 2 Evaluation Summary

The Level 2 evaluation assigned qualitative ratings and/or numerical values for each alternative in each evaluation category. The results of the Level 2 evaluation are discussed below and presented in Tables 22 and 23 in Appendix A. Quantitative values presented in the matrices are approximations or estimates based on general alignments located within the proposed corridors. *Again, brief summaries are given for alternatives being carried forward to Level 3, while those not carried forward at this analysis level are discussed more thoroughly.*

Alternative 1 – No-Build

Alternative 1 (No-Build Alternative) offers no physical improvement to the current transportation system, nor does it address the traffic and transportation deficiencies identified in the study. It also offers no new opportunities for economic development. However, the No-Build Alternative also has few if any impacts on the human and natural environment; no construction costs; no property or utility impacts; and some local support. It preserves the visibility of current businesses on US 51 and has little effect on community character. The No-Build Alternative also provides the basis for comparing other build alternatives. Therefore Alternative 1 was carried on to Level 3 both as a benchmark and as a viable alternative.

Alternative 2 – Spot Improvements

Alternative 2 seeks to improve traffic operations on US 51 by upgrading six critical locations highlighted as potential problem areas. Each of the six locations is discussed briefly below, with a recommendation regarding advancement to the Level 3 evaluation.

Alternative 2A – US 51 in the Vicinity of Cresap Street

The proposed Alternative 2A improvements address pedestrian safety issues identified by the public. Major improvements include lowering the hill north of Cresap Street and reconstructing the highway and sidewalk. As shown in Table 22, the improvements are not anticipated to significantly improve traffic flow or truck operations, but are expected to improve pedestrian safety, particularly for students going to the public schools located a few blocks to the east.

As shown in Table 22, impacts to the natural environment are unlikely. There are however possible impacts to up to four potential hazardous material sites and more significantly three sites either listed on, or potentially eligible for, the National Register of Historic Places (NRHP). In the vicinity of US 51 and Cresap Street are two sites listed on the National Register of Historic Places, Marvin College and Marvin College's President's House. The other site potentially eligible for the NRHP is a 1.5 Story

Craftsman House. The proposed improvements would not directly impact these buildings because there is sufficient distance between the highway and the structures. However, retaining walls may be necessary to avoid or minimize impacts to the sites. The potential for impacts to these sites needs to be evaluated further.

As shown in Table 23, the Alternative 2A improvements are not expected to have any major impacts on the community as a whole, but may require minor property acquisition. According to Table 23 the total right-of-way required is less than one acre, but there may be some utility issues with the construction. Costs are expected to be "Low" with most of the estimated costs resulting from the earthwork, roadwork, and possible retaining walls needed to lower the hill.

Overall, the Alternative 2A improvements offer a means of improving an area identified by the public as having safety issues without significant negative impacts to the natural environment and community. Based on this analysis, Alternative 2A was recommended for further analysis in Level 3.

Alternative 2B – US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)

This intersection is the only signalized intersection in the study area. Preliminary analysis indicates that the intersection currently operates acceptably, but in the future it is anticipated that traffic growth may cause the intersection to function poorly. Suggested improvements include constructing an eastbound right turn lane, northbound and southbound left-turn lanes, upgrading the existing signal to an actuated signal, and upgrading the intersection to better accommodate truck turning movements. As shown in Table 22, traffic benefits and truck traffic benefits are rated "Medium" since improvements are expected to increase traffic flow and truck operations only at the intersection. The intersection currently has deficient radii for trucks turning to and from US 51. Vehicle/pedestrian/bicycle safety benefits are expected to be "Medium" as well with anticipated benefits resulting from the addition of pedestrian signal heads and repair / reconstruction of sidewalks at the intersection.

Similar to Alternative 2A, negative impacts to the natural environment are unlikely. According to Table 22, there is the potential for impact to one listed NRHP site, the Hickman County Courthouse. The improvements are unlikely to affect either the structure or the courthouse lawn areas, but may affect parking around the courthouse. To construct the turn lanes and widen the existing lanes, some existing on-street parking may need to be eliminated.

Many local residents and leaders favored spot improvements to this intersection; however removing parking spaces is a concern of some residents. It may be possible to leave some parking on US 51 fronting the court house by changing the orientation of parking spaces from angled to parallel. By reducing the number of on-street parking spaces, additional right-of-way acquisition can be limited and may not be necessary at all. The anticipated costs could range from "Low to Medium" depending on the extent of reconstruction and how many of the proposed improvements are implemented.

Improvements to this intersection may be necessary to maintain desirable traffic operations in the future. They are also necessary to provide adequate truck turning radii. Implementation is not expected to have major impacts to the environment and community, and could be accomplished at a reasonable cost. Therefore, Alternative 2B was recommended for further analysis in Level 3.

Alternative 2C – Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)

Currently, the intersection operates acceptably, though it has a limited radius on the northeast corner. Future increases in traffic as illustrated by Table 22 may cause undesirable delays for traffic on KY 58 (the side street). Possible improvements for this location include providing adequate turning radii for trucks, relocating the STOP sign installation, installing a flashing beacon, or installing a signal when warranted. Similar to Alternative 2B, the expected traffic benefits and truck traffic benefits are rated "Medium" because the improvements will only affect traffic and truck operations in the vicinity of this intersection. Vehicle/pedestrian/bicycle safety benefits are expected to be "Medium" as shown in Table 22.

Alternative 2C improvements are unlikely to cause impacts to the natural environment. There is the possibility that the First United Methodist Church could be affected since it is in the vicinity of the proposed improvements. The church is potentially eligible for the NRHP, and further evaluation is necessary to assess the possible affect to the site. Opposite from the church is a service station (potential hazardous materials and/or underground storage tank (UST) site) that is likely to be impacted. There may also be some issues with utilities during construction.

Impacts to the community are expected to be "Good' with minimal property impacts and little right-of-way acquisition. Community character was rated "Fair" because the proposed improvements are not expected to enhance or detract from the community.

Similar to Alternative 2B, preliminary analysis indicates that without improvements at this intersection, traffic operations and safety may become problematic. The overall potential for community and environment impacts is low, and the proposed improvements could be accomplished with "Low" cost. Therefore, Alternative 2C was recommended for further analysis in Level 3.

Alternative 2D – US 51 in the Vicinity of KY 780 (North)

Alternative 2D was proposed to realign the US 51 / KY 780 (North) intersection to a typical "T" intersection because the current configuration was identified as a potential safety issue. As shown in Table 22, traffic and truck traffic benefits are unlikely because this alternative was primarily proposed to improve safety. Crash data indicates that one fatal crash occurred at this location in the past three and a half years. However, based on the available information, the single vehicle run-off-road crash was likely not related to the KY 780 intersection geometry. Vehicle/pedestrian/bicycle safety benefits are expected to be "Low" for this alternative.

Impacts to the human environment are unlikely, but the proximity of a farm pond to the intersection could lead to design problems. Realignment of the intersection is not expected to impact the community negatively, but it also is not likely to greatly enhance the community. Therefore, in Table 23, impacts to the community are rated as "Good", and community character is rated as "Fair".

According to Table 23, the realignment of the intersection will require less than three acres of additional right-of-way. Construction costs could range from "Low to Medium" depending on design issues associated with the farm pond and the extent of work to realign the intersection.

According to the analysis in Tables 22 and 23, the stand-alone realignment of US 51 and KY 780 (North) is a potentially costly improvement that is anticipated to have little overall benefit to traffic operations, safety, or the community. As a result, Alternative 2D was not recommended for further study as a stand-alone project in Level 3. However, it is possible that improvements to this location could be made in concert with Alternative 3, which includes more extensive improvements throughout the corridor.

Alternative 2E – US 51 in the Vicinity of Martin Road

The intersection of US 51 and Martin Road was another intersection identified as having a potential safety problem. Crash data showed a concentration of accidents in the vicinity of the intersection. In response, the realignment of Martin Road at US 51 was proposed. However, further investigation revealed that Martin Road has very little traffic (ADT may be less than 100). In addition, the majority of crashes in this vicinity involved a single vehicle colliding with a fixed object. There was one angle collision and one rear end collision at this location; however, it seems likely that they are more related to the many driveways in the area than to the low volume Martin Road. In addition, the spot crash rate for US 51 and Martin Road is lower than the statewide critical spot crash rate for similar highways. Overall, the side street volume is low, and without supporting crash data, safety benefits are expected to be "Low". The side street realignment alone is also unlikely to provide significant benefits to general traffic flow or truck traffic operations.

Impacts to the environment, natural or human, are not anticipated with this alternative. Impacts to the community are similar to Alternative 2D; therefore the community analysis is the same in Table 23 for both alternatives. Realignment of the intersection is expected to require less than 5 acres of new right-of-way. However, the cost could be "Low to High" due to the potential earthwork necessary to provide adequate sight distance.

The crash data does not substantiate a safety problem directly related to Martin Road and the realignment of the intersection is not expected to significantly benefit traffic and truck operations. The cost of improving the intersection as a stand-alone project does not appear to be justified based on the analysis. Therefore Alternative 2E was not

recommended for further study in Level 3. Instead safety enhancements to US 51 in this area are being pursued as an important part of the Alternative 3 improvements.

Alternative 2F – US 51 in the Vicinity of KY 780 (South)

The existing configuration of the intersections in the vicinity of US 51 and KY 780 (South) combined with the topography limits sight distance. Alternative 2F is a proposal to realign the offset intersections and improve the sight distance by lowering the hill. Three crashes occurred in this area during the three and a half year crash data analysis period. However, inspection of the crash data shows only one crash that may be related to the intersection and highway geometry. In addition, the spot crash rate for this location does not exceed the critical spot crash rate. Average daily traffic volumes on KY 780 (South) are below 100 vehicles per day. The crash data does not indicate that the intersection is causing a significant safety problem at this location, therefore anticipated safety benefits are expected to be "Low" as shown in Table 22.

There are no anticipated environmental impacts, but intersection improvements could require the acquisition of one home (if KY 780 was completely realigned). Of the spot improvements, the reconfiguration of these offset intersections requires the most new right-of-way, and could have the highest cost.

Similar to Alternatives 2D and 2E, the crash analysis and traffic volumes do not indicate significant safety problems at this location, and the estimated construction cost does not appear to justify extensive intersection improvements. Therefore Alternative 2F was not recommended for further analysis as a separate spot improvement in Level 3. Instead, improvements to US 51 to improve sight distance have been incorporated into Alternative 3.

Alternative 3 – Reconstruct US 51 as a Two-Lane Roadway with Center Two-Way Left Turn Lane

Traffic Operations - Alternative 3 is a combination of the recommended Spot Improvements 2A, 2B, and 2C and reconstruction of the entire length of US 51 in the study area. A center two-way left turn lane is proposed south of town to improve traffic access and safety. Expected traffic benefits are rated "Medium" compared to the other build alternatives because the through traffic remains on US 51 in town. Traffic is projected to increase between 2002 and 2030 as shown in Table 22, however the improved highway will operate acceptably. Improved turning radii at major intersections and wider lanes will facilitate truck traffic movement on US 51 throughout the study area. However, with the truck traffic staying in town, truck safety and noise issues are likely to remain. As a result of a mix of positive and negative impacts, truck traffic benefits are expected to be "Medium" as shown in Table 22. The safety benefits associated with Alternative 3 are expected to be "High" because they include the safety benefits associated with Alternatives 2A, 2B, and 2C combined with the additional benefits of the two-way left turn lane south of town, wider travel lanes, shoulders, reconstructed continuous sidewalks and new bicycle facilities.

Environment - Because most of the land in the corridor is developed, minimal impact to the natural environment is expected as shown in Table 22. Along the study corridor there are ten potential hazardous material sites, and impacts to these sites are possible. The same concerns associated with the National Register of Historic Places (NRHP) and potentially eligible NRHP sites that were mentioned in Alternatives 2A, 2B, and 2C are concerns for Alternative 3 as well. In addition, Alternative 3 reconstruction may affect six other potentially eligible sites (five houses and the First Christian Church). Based on planning to date, it is likely that direct impacts to the buildings can be avoided. However, right-of-way acquisition from one or more of the sites may be necessary. Further analysis is necessary to determine the extent of potential impact to NRHP and NRHP eligible structures and sites.

Community - Similar to Alternatives 1 and 2, reconstructing US 51 will preserve business visibility through Clinton. South of town, a two-way left turn lane is proposed from KY 780 (North) to south of Martin Road. Much of the new commercial development in Clinton has been in this area. It is anticipated that constructing the two-way left turn lane will continue to encourage new development through improved access. Accordingly, economic development impacts are rated as “Good” for current businesses and “Fair” for new development. Property (frontage) impacts, parking impacts, traffic and access disruptions during construction are other issues associated with Alternative 3. Once construction is complete, the improved infrastructure (including sidewalks and bicycle facilities) will enhance the current community character, hence the rating of “Good” for this category.

Public Support - Based on the comment form responses at the first public meeting, approximately 27 percent of the local residents favor Alternative 3, improving the existing US 51. This was the second highest rated alternative, receiving a little less support than Alternative 2, the spot improvement alternative.

Implementation / Construction - Construction of Alternative 3 could be difficult given the constraints of existing buildings and utilities (underground and overhead). As shown in Table 23, approximately 20 acres or less of additional right-of-way could be required for construction. Most of the new right-of-way would be acquired south of town with minimal anticipated property acquisition through town. Utility impacts are rated as “Poor” in Table 23 because some utilities are located within a foot of the current edge of pavement in town. Construction costs are estimated to be “Medium to High” in Table 23 depending on the extent of reconstruction in the corridor.

During the construction of this alternative major disruption to the community is possible. However, upon completion the traffic and safety benefits are anticipated to offset the negative construction impacts. Furthermore, there is little detrimental impact to the community and the environment, and the character of the community essentially remains the same. The total estimated construction cost is expected to be medium to high depending on the extent of the reconstruction. Alternative 3 could easily be divided into three sections for phasing purposes – through town, the two-way left turn lane section, and from Martin Road south to the Bayou de Chien bridge. The order of

construction would depend on the priority of each section. By phasing construction of Alternative 3, not only would the costs be spread out over time but selected improvements could also be made early on to provide the community with immediate benefits. Therefore, Alternative 3 was recommended for further study in Level 3.

Alternative 4A – Western Bypass Option A

Traffic Operations - Alternative 4A is a new 2-mile bypass west of Clinton. As shown in Table 22, the expected traffic benefits are rated "Medium". The bypass provides an alternate route designed to avoid, not fix, the geometric problems in town. Based on the current ADT and future ADT volumes listed in Table 22, most of the traffic will continue to use US 51. The truck traffic benefits are rated "Medium". Truck traffic is expected to shift from the old US 51 to the new US 51 on the west side of town, thereby decreasing truck traffic in the existing town center. Posted speeds through town on the bypass will be only slightly higher than those on the current US 51. Due in part to the shift in truck traffic, the anticipated safety benefits are rated "Medium-High" in Table 22. The Alternative 4A bypass offers some traffic benefits, but primarily it shifts the traffic from the center of town to another part of town, where issues such as cross street traffic, speeds, and pedestrian conflicts are still present.

Environment - Alternative 4A follows the railroad on the western edge of town, going through a mix of developed and undeveloped areas. As shown in Table 22 there is the potential for a number of impacts to the natural environment. Approximately 2,200 feet of stream may need to be relocated, and almost the entire bypass is located in the floodplain. Because Alternative 4A affects so many water resources, there is the potential for impacts to habitats associated with streams, farm ponds, and floodplains. Human environmental issues include two properties potentially eligible for the NRHP in or near the corridor. One is the "Old Hotel", and the other is the Clinton Seminary Site. However, direct impacts to these sites could likely be avoided. The bypass could impact up to five potential hazardous materials sites. Overall, the Alternative 4A bypass could result in significant environmental impacts.

Community - With construction of the Alternative 4A bypass, businesses in the town center will no longer be visible from US 51. However, recent University of Kentucky research indicates a bypass located close to the town typically causes less downtown business loss than a bypass far removed from the town.[5] Therefore financial impacts to current businesses in the town center are expected to be somewhat less for Alternative 4A than for the other bypass alternatives, but still more than for Alternative 3. It is rated "Fair" in Table 23. New development is possible along the bypass; however, the new highway would provide access to a relatively small amount of undeveloped land. New development may occur south of town similar to Alternative 3 or on the north side of town where some non-retail commercial development exists.

[5] *The Impact of a New Bypass Route on the Local Economy and Quality of Life*, Thompson, Miller and Roenker, KTC Research Report KTC-01-10/SPR219-00-2I, June 2001.

In order to accommodate the new highway through town, 3-4 outbuildings (including buildings on the Hickman County Feed Mill site) and up to five homes may need to be acquired. As a result of the building impacts and anticipated property impacts, impacts to the community are expected to be "Fair". Based on an analysis of census data, there is a defined Environmental Justice population in the north and west portions of the town (refer to the Environmental Justice Review in Appendix C for more details). Alternative 4A will impact this community in a number of ways including direct property impacts, increased truck traffic, increased traffic noise, and neighborhood disruption. The bypass will also adversely affect the neighborhoods on the western side of Clinton by introducing additional traffic to previously local streets. As shown in Table 23, impacts to community character are rated "Fair".

Public Support - Based on the comment form responses it appears that the community is mixed on whether or not a bypass is needed. Of the respondents answering the question regarding which alternative they favored, approximately one-third (32%) indicated they opposed a bypass, one-fourth (25%) indicated they favored a bypass, and the remaining 43% did not take a position regarding a bypass. However, of the 25% that supported a bypass, approximately 80% supported Alternative 4A (corresponding to 20% of respondents).

Implementation / Construction - Alternative 4A is rated "Fair" with regard to construction feasibility. The portion of the alignment in flat, dry, undeveloped areas will be simple to construct. The portions of the alignment following the streambed, in the floodplain, and on the edge of town may be more complicated and expensive. As shown in Table 23, Alternative 4A requires more new right-of-way than Alternatives 1-3, but less than the other proposed bypasses because it is short and a portion of it follows existing roads. Similar to Alternative 3, utility impacts are rated "Poor" because a portion of the highway would be constructed in town. The order of magnitude costs for the alternative is expected to be "High".

The Alternative 4A bypass may lead to improved traffic flow and safety, but these benefits appear to be achieved at the expense of the environment and the community. The highway runs through a floodplain and may impact a significant section of stream area. The additional traffic associated with a new highway on the west side of town may disrupt the neighborhood on that side of Clinton, with possible environmental justice consequences. In addition, the construction cost is estimated to be high and a number of residential properties may need to be acquired. Therefore, it was recommended that this alternative be removed from further evaluation. As discussed later in the report, another western bypass (Alternative 9) is recommended for advancement to Level 3 instead of Alternative 4A.

Alternative 5A – Near Eastern Bypass Option A

Traffic Operations - Alternative 5A is a three-mile bypass on the east side of Clinton. As shown in Table 22, the expected traffic benefits are rated "High" because the bypass would provide a new, high speed route for through traffic with proposed design speeds

of 50 mph or higher, resulting in shorter travel times than for Alternatives 3 and 4A. It gives drivers another north-south option, bypasses geometric problems in the town, and reduces overall traffic through town. It does not however, directly address current traffic issues in the town center. The 2002 ADT projected to use the bypass is approximately 900 vehicles (approximately 13 percent of the total traffic). By 2030, the volume on the bypass could double to between 1,600 and 1,800 vehicles (approximately 17 percent of the total traffic). For truck traffic benefits, Alternative 5A is rated "Medium". Most through truck traffic would be shifted to the bypass, thus improving safety and reducing noise in the center of town. However, the truck traffic would shift to the east edge of town near existing homes, separating a small neighborhood from the rest of the town. From a safety perspective, Alternative 5A is rated "High". It would provide a new north-south route built to current design standards for both through and local traffic. It would divert heavy trucks from the town center and provide improved bicycle and pedestrian facilities along the new road.

Environment - As shown in Table 22, there is the possibility of impacts to several streams, a floodplain, and farm ponds located within the proposed bypass corridor. Similar to Alternative 4A, there are habitat concerns associated with the streams, farm ponds, and floodplains in the corridor. In addition to potential aquatic habitat impacts, the alternative traverses land designated as a potential maternity (summer) Indiana Bat habitat. With regard to the human environment, there are no known cultural historic issues, but there could be some farmland impacts. Much of the land in the proposed corridor is crop/pasture land, and the bisection of fields is possible. Two potential hazardous material sites are located in the corridor. Overall, the major environmental issues for Alternative 5A relate to the natural environment.

Community - Expected economic development impacts are "Poor" for current businesses because the downtown businesses would not be visible from the new bypass and some businesses, especially retail businesses may be adversely affected by this change. However, the majority of traffic currently on US 51 is local in nature and is expected to remain on the old US 51 in town.

Alternative 5A is rated "Fair" for new development because bypass construction opens additional land to new development and improves access to areas around Clinton. However, while there is the possibility of economic development along the bypass, recent University of Kentucky research indicates that there is not a strong direct correlation between bypass construction and county level economic growth.[6] The bypass may open new lands to development, but the fact that these lands are available does not necessarily mean development will occur.

Implementation of Alternative 5A may require the acquisition of five to eleven homes and one outbuilding. In addition, near KY 58 the corridor crosses through a residential area, separating one neighborhood from the remainder of the town. As mentioned

[6] *The Impact of a New Bypass Route on the Local Economy and Quality of Life*, Thompson, Miller and Roenker, KTC Research Report KTC-01-10/SPR219-00-2I, June 2001.

previously, it also divides some farmland. For these reasons, Alternative 5A is rated "Poor" in the community impact category. Construction of a bypass around Clinton is likely to cause changes to the overall character of the community by shifting the focus of some of the town's activity from US 51 to the bypass. However, there is the opportunity to construct new facilities for pedestrians and bicyclists, which could enhance overall mobility in the community. As a result of mixed community character impacts, Alternative 5A is rated "Fair" in this category.

Public Support - Approximately seven percent of the comment form respondents favored Alternative 5A. This is compared to 25 percent who expressed support for a bypass and 32 percent who opposed a bypass. A possible reason for the lack of support for Alternative 5A could be concern that the alternative would take too many homes and properties and hurt community character.

Implementation / Construction - As shown in Table 23, construction feasibility for Alternative 5A is rated "Fair". Much of the corridor is undeveloped crop/pasture land with the exception of the one residential area. As shown in Table 23, approximately 80 acres of new right-of-way is required for Alternative 5A construction. Minor impacts to utilities are likely to occur near KY 58 and KY 123. The order of magnitude cost estimate for Alternative 5A is rated "High".

The Alternative 5A bypass offers potential traffic flow and safety benefits, especially for through traffic. It does not provide improvements in town. It may require the acquisition of a number of homes and divides a residential area on the east side of town from the rest of the community. The bypass may also change the business environment and character of the community. The environmental issues include streams, wetlands / floodplains, and habitat areas (including a potential maternity Indiana Bat habitat). As a result of the community concerns, environmental issues, and minimal public support, it was recommended that Alternative 5A be dropped from further consideration.

Alternative 6A – Far Eastern Bypass Option A

Traffic Operations - Alternative 6A is the longest of the bypass alternatives at 3.9 miles. It avoids nearly all non-farm development around Clinton. While it may be the longest proposed bypass, it may yield the shortest through travel time because of higher design speeds and few cross streets or access points. This bypass is projected to carry 700 vehicles daily in 2002 and 1,200 vehicles in 2030, representing approximately 10 percent of the total traffic. As with Alternative 5A, it gives drivers another north-south option, bypassing geometric problems in town and reducing traffic through town. It does not however, directly address traffic issues in town.

Alternative 6A is rated "High" in Table 22 for truck traffic benefits. With Alternative 6A most through truck traffic would shift to the bypass on the far eastern edge of the community, improving safety and reducing noise in town. Alternative 6A is also rated "High" in the safety category because it would provide a new north-south route for through and local traffic (built to current design standards) and would divert heavy

trucks from the center of town. Improved bicycle and pedestrian facilities are also planned along the new road.

Environment - As indicated in Table 22, potential natural environment issues include one to four new stream crossings and one to four farm pond impacts. The Alternative 6A bypass also passes directly through a potential Indiana Bat habitat area. The habitat impact could be similar to or greater than that expected for Alternative 5A because it traverses a larger portion of the potential habitat. Similar to Alternative 5A, there are no known cultural resource impacts. Almost the entire Alternative 6A bypass goes through crop/pasture land. Farmland impacts are expected and the highway could divide some farms. One potential hazardous material site is located in the corridor.

Community - As with Alternative 5A, the expected economic development impacts of the Alternative 6A bypass are "Poor" for current businesses because the downtown businesses are not visible from the bypass and some businesses, especially retail businesses, may be negatively affected by this change. However, the majority of traffic currently on US 51 is local in nature and is expected to remain on the old US 51 in town. Alternative 6A is rated "Fair" for new development because the new highway opens substantial land up to new development and improves access to areas around Clinton. While there is the possibility of development in what is now farmland in the corridor, recent University of Kentucky research does not support a direct connection between bypass construction and overall county level economic growth. The bypass may open new lands to development, but the fact that these lands are available does not necessarily mean development will occur.

Direct property impacts could be limited to one home and one barn. There may be some disruption of farmlands in the corridor, as the highway may divide some fields. It is therefore rated "Fair" in the community impact category. With regard to community character, Alternative 6A is rated "Fair", similar to Alternative 5A.

Public Support - Approximately five percent of the comment form respondents favored Alternative 6A. This is compared to 25 percent overall who supported a bypass and 32 percent opposing a bypass. This is similar to the level of support for Alternative 5A.

Implementation / Construction - Of the proposed bypass alternatives, Alternative 6A may be the simplest to construct because the corridor consists primarily of undeveloped land with little difficult topography. Construction feasibility and potential utility impacts are both rated "Good". As indicated in Table 23, approximately 130 acres of new right-of-way is required for Alternative 6A construction. This is the largest amount of new right-of-way of any alternative. The order of magnitude cost estimate for Alternative 6A is "High".

There are several benefits associated with Alternative 6A including improved traffic operations, high operating speeds, and improved safety, especially for through traffic. Like Alternative 5A, the bypass does not provide improvements in town. Aside from economic impacts (which could be deemed similar for both of the eastern bypass

alternatives), the Alternative 6A bypass limits direct negative impacts to the community. It has a high estimated cost, but could be the simplest highway to construct and would result in a good bypass alignment, given local terrain and physical features. Overall, Alternative 6A is preferred over the other eastern bypass options. Alternative 6A was recommended for further study in Level 3.

Alternative 8A – One-Way Street System Using Existing Streets

Traffic Operations - Construction of Alternative 8A, the one-way street alternative, offers "Medium" benefits to traffic flow, as shown in Table 22. It will increase capacity but create a more complex local street system with directional restrictions. In particular, many local drivers may become frustrated with the circuitous travel patterns necessitated by a one-way street system and they may not abide by the system. Truck traffic benefits are rated "Low". Truck traffic will remain in town and will affect streets that are now primarily low volume residential streets. Average travel speeds will remain fairly low, but the wide one-way streets may encourage speeding through town. Safety benefits are rated "Medium". The major safety concerns relate to speeding and the potential for wrong way travel (intentional or otherwise) on the one-way streets. Overall, Alternative 8A may have more negative than positive traffic implications.

Environment - As shown in Table 22, the implementation of Alternative 8A is expected to have a minimal to moderate affect on the natural environment. There are ten known potential hazardous material sites in the corridor. There are also a total of 13 NRHP or potentially eligible NRHP sites in the vicinity of the proposed improvements, 11 of which are located along US 51 and have been identified in Alternative 3. The two additional sites are located on Jefferson Street north of KY 58. For most and possibly all of these locations, there may be no impact to the building or the site, because the current right-of-way is sufficient for one-way streets. However, further analysis is necessary to verify the extent of potential impact(s) to NRHP or potentially eligible NRHP structures and/or sites.

Community - Alternative 8A is rated "Fair" for both current development and future development. The construction of the alternative splits visibility for current downtown businesses between the northbound and southbound highways and complicates access. It leaves business visibility and access south of town unchanged. It opens little new land to development. Community impacts are rated "Poor" in Table 23 because half of the US 51 traffic will be shifted to what are now low volume residential streets (Jefferson Street and Moss Drive) significantly altering their function. The expected results of the increased traffic (including truck traffic) are increased noise and decreased pedestrian safety. In addition, Jefferson Street runs through an environmental justice community. Alternative 8A implementation may require the acquisition of up to four homes and three businesses for construction of the southbound highway. Construction will also affect parking near the courthouse. Finally, for a community the size of Clinton (and with relatively low traffic volumes), a one-way street system appears unnecessary and out of character.

Public Support - Based on the comment form responses, approximately 21 percent of local residents support a one-way street system. This is approximately the same percentage as supported Alternative 4A, the western bypass.

Implementation / Construction - Construction feasibility for Alternative 8A is rated "Poor" because of the complexity of converting the existing streets to a one-way street system. Of particular concern are issues related to Jefferson Street in the vicinity of the courthouse square, where buildings are close to the roadway and where the topography and grades may require extensive grading and possible retaining walls or building impacts. Maintenance of traffic, access, and parking during construction are all potential issues as well. Potential utility impacts are rated "Poor" since most of the reconstruction will occur through town. Construction of a one-way street system is expected to require less additional right-of-way than most of the bypass alternatives, but more than reconstruction of US 51. Also, the order of magnitude cost estimate is rated "High".

In addition to the above discussion, the Institute of Transportation Engineers, Traffic Engineering Handbook (ITE, 1999) lists a number of general conditions that should be met for a roadway to be converted from two-way operations to one-way operations. Two of these conditions include:

- *A specific traffic problem would be alleviated and the overall efficiency of the transportation system improved;*
- *The overall advantages significantly outweigh the disadvantages.*

The proposed one-way street system in Clinton does not clearly meet these two conditions. Instead, there appear to be other alternatives that would provide benefits to the local street system, thus meeting the needs of the community. It is also useful to note that there has been a recent trend across the nation away from one-way street systems. In fact, many communities are converting one-way streets back to two-way operations.

Alternative 8A has some positive aspects such as limited natural environment impacts and use of existing right-of-way in town. However, it has many more drawbacks including expected operational problems, residential community impacts, business and community impacts, potential property impacts near the courthouse, safety concerns, environmental justice issues, and a high capital cost. It also appears to be unwarranted based on the traffic volumes and out of character for the community. It was therefore recommended that Alternative 8A not be considered for further evaluation in Level 3.

Alternative 9 – Western Bypass (West of Railroad)

Traffic Operations - Alternative 9 is a proposed 2.3-mile bypass located west of Clinton and west of the railroad. Traffic benefits and safety benefits are expected to be similar to Alternatives 5A and 6A as shown in Table 22. However, compared to Alternative 4A, (the other western bypass), traffic benefits are rated higher for this alternative because

the proposed bypass would be located primarily outside the town and may limit new traffic on residential streets. Alternative 9 is expected to carry up to 23 percent of the traffic in Clinton. With construction of the bypass, most of the heavy truck traffic would shift to the bypass, mitigating truck traffic impacts in town.

Environment - The Alternative 9 bypass corridor includes a mix of land uses, but should not have any major impacts to developed areas other than possible impacts to up to six potential hazardous material sites. There are many water resources scattered throughout the proposed corridor as shown in Table 22. While there is the potential for impacts to several streams, farm ponds, and a floodplain, the anticipated impacts to the natural environment are not expected to be as severe as those anticipated for the construction of Alternative 4A.

Community - The Alternative 9 corridor was developed primarily to provide a western bypass route with limited residential impacts, while keeping the highway close to town. It also does not bypass the development south of town. As a result, it is expected that Alternative 9 would not cause as great an economic impact to the downtown as implementation of Alternatives 5A and/or 6A. Therefore, Alternative 9 is given a rating of "Fair" for economic development impacts to current businesses, similar to Alternative 4A. The economic development impacts for new development are also thought to be similar to Alternative 4A, and are therefore rated "Fair" as well. It may be necessary to acquire one house for construction of the highway. Alternative 9 runs along the edge of an environmental justice community, but it is not clear without further study, whether there would be impacts to that community. Overall, community impacts and character are rated "Fair" in Table 23.

Public Support - Of those who supported a bypass, the majority was in favor of some form of a western bypass. However, it is not clear what support exists for a bypass west of the railroad.

Implementation / Construction - The Alternative 9 bypass is expected to be longer than the Alternative 4A bypass, but construction may be easier since this bypass is not anticipated to have as much of an impact on developed areas. The two grade separated railroad crossings however, do add complexity and cost. Impacts to utilities are expected to be less than those for Alternative 4A and are rated "Fair". The estimated construction costs are expected to be similar to Alternatives 4A and 5A, but possibly less than Alternative 6A.

Alternative 9 offers a potential western bypass route with fewer direct community impacts than Alternative 4A. There are some environmental concerns with this alternative, but they are potentially offset by the anticipated benefits of improved traffic flow and safety. Compared to the other western bypass alternatives, this alternative has the least overall impact to the environment and community. Therefore Alternative 9 was recommended for further analysis in Level 3.

13.2 Level 2 Analysis Summary

After the Level 1 initial screening evaluation, eight (8) of the original fourteen (14) alternatives remained for further consideration. The more detailed analysis performed in the Level 2 preliminary analysis further reduced the alternatives to only five (5) alternatives. It was recommended that the other three alternatives (Alternatives 4A, 5A, and 8A) be removed from further consideration. Each element of Alternative 2 was analyzed separately in this evaluation, which led to the advancement of Alternative 2A, 2B, and 2C as Alternative 2. Alternatives 2D, 2E, and 2F were recommended to be set aside from further consideration. Major reasons for discarding the alternatives listed above include negative community impacts, high construction costs compared to anticipated benefits, major utility impacts, and lack of community support.

15.0 RECOMMENDED PLAN

15.1 Final Alternatives Comparison

Of the three spot improvements considered in Level 3, Alternatives 2B and 2C are recommended as reasonable projects to pursue either as independent projects or as part of a larger, longer term package of improvements. These spot improvements meet the key project goals for the near term (especially the goals of traffic flow and safety). This recommendation is substantiated by the technical analysis, agrees with the public input on the project, and is supported by sound professional judgment. The only questions remaining for these alternatives are implementation questions related to the specific scope and phasing.

In the longer term, Alternative 3 is recommended as the most appropriate and cost-effective alternative at present. Alternative 3 can meet the stated project goals more cost effectively than either Alternative 6A or 9.

In summary, Alternative 3 addresses all seven of the project goals in some manner. It improves safety on the existing highway; it improves truck operations through town; it directly addresses the level of service issues in town; it preserves downtown business, while still providing some new development opportunities; it improves the highway geometry; it limits property/community/and environmental impacts; and it facilitates connections through town to other regional highways. Furthermore, Alternative 3 serves the most users (10,900 in the design year); has the lowest cost of the three-long term alternatives; could be phased over time; and had moderate public support. Alternative 3 is also compatible with the philosophy of maintaining the existing highway system.

In contrast, while Alternative 6A meets some of the project goals, it has some substantial drawbacks. Two of the biggest drawbacks are the number of users, 1,200 vehicles per day in 2030 (a diversion of only 900 vehicles from the existing highway), and the limited travel-time savings (one minute per vehicle). These projected benefits are not considered sufficient to warrant a capital investment of over $10 million. However, the corridor itself is feasible and has a number of advantages, especially in the area of constructability. Therefore, if traffic volumes on US 51 were to increase substantially, it would be reasonable to re-evaluate this conclusion.

Similarly, Alternative 9 also has substantial drawbacks. While it has a somewhat higher traffic volume and preserves visibility for some existing development, the volume and travel time benefits are still not large enough. The 2,400 vehicles per day and one-minute travel-time savings are considered insufficient to warrant the $10+ million capital investment and the higher maintenance costs of two new railroad bridges.

15.2 Recommended Plan

Alternative 3 (including Alternatives 2B and 2C in the near term) is the recommended alternative for improving US 51 in Clinton. Of the proposed concepts, Alternative 3 is selected for implementation because it best addresses the following key project goals.

- **Enhance vehicle and pedestrian safety on US 51 in the study area.**

  Alternative 3 enhances vehicular safety for all 10,900 vehicles in the design year through improved geometrics, turn lanes, signal upgrades, improved sight distance, partial control access, wider lanes, and wider shoulders. The spot improvements 2A and 2B specifically target pedestrian safety on US 51 by improving sight distance at US 51 and Cresap Street, and improving pedestrian circulation around the courthouse. Furthermore, the reconstruction of US 51 through town will provide an upgraded sidewalk system.

- **Mitigate the negative impacts of heavy truck traffic on US 51, while maintaining an efficient through route for trucks and other vehicles.**

  Alternative 3 improves the existing highway for better truck circulation and safety for all truck traffic. These improvements include wider lanes through town and increased turning radii for trucks at select intersections that are currently insufficient with regard to truck turning movements. (The bypasses do remove a substantial portion of the truck traffic from town, but they leave most of the rest of the traffic on the old highway.)

- **Maintain appropriate traffic controls and traffic flow conditions.**

  Alternative 3 directly addresses the need for appropriate traffic controls and traffic flow conditions on US 51 in town. Without these improvements, the two key intersections will operate poorly by the design year of 2010/2020. Therefore, only Alternatives 3, 2B, and 2C address this goal.

- **Preserve downtown business, while enhancing overall economic development opportunities.**

  Alternative 3 preserves downtown business opportunities better than the other possible alternatives. Whether it enhances overall economic development opportunities is a more open question. One could argue that improving the existing highway (including adding left turn lane access south of town) could spur more development activity in the established US 51 business corridor. Alternatively, an argument could be made that opening new land to development is key to new local economic activity. However, based on the recent University of Kentucky research regarding bypasses, it is not clear that any of the proposed alternatives will have a significant positive impact on economic development in the study area. Instead it may simply cause some businesses to decline and

other new businesses to open with little or no net gain to the area's economy. Furthermore, it appears based on recent business developments in the area that macro economic changes may overshadow any transportation system changes that would be made.

- **Improve highway geometry and drainage.**

  Alternative 3 address this goal as it specifically calls for reconstructing US 51 to improve highway geometry and drainage.

- **Avoid, minimize, and/or mitigate property takings on US 51 as well as other community and environmental impacts.**

  This goal was put forward specifically by many local citizens and has been included even though it is understood to be part of the normal KYTC planning and design process. All alternatives were developed in accordance with this goal. However, Alternative 3 meets this goal well because it has little impact on the environment and requires the least amount of new property. Also, no homes or businesses are expected to be relocated.

- **Facilitate improved regional connections to the Purchase Parkway and other existing regional highways as well as to the possible future I-66 corridor (should it be implemented).**

  For this goal, Alternative 3 simply improves the existing regional through connections by improving and reinforcing US 51 as the major north-south spine in the area.

15.3 Difference of Opinion Regarding the Preferred Alternative

During the selection process for the preferred alternative, there was a difference in opinion among project team members. Some project team members supported Alternative 6A because it would provide a practical high-speed bypass around Clinton with minimal property impacts and good topography. They also highlighted some of its other benefits such as moving heavy truck traffic out of town, reducing travel times for through traffic, providing new connections between US 51 and KY 58 (East), and opening new land for potential economic development.

Other members supported the recommendation of Alternative 3 because it best addressed the key project goals in the most cost effective manner and in so doing would serve the largest number of people. They emphasized the high traffic volume that would benefit from the improvements and the lower, phased capital cost of Alternative 3 compared to Alternative 6A. These project team members concluded that the high construction cost of Alternative 6A was not warranted based on the low volumes and travel-time savings. They also pointed out that implementation of Alternative 6A would still require improvements to US 51 in town and that while

bypasses may cause economic activities to relocate, they do not necessarily lead to economic growth. For these reasons, Alternative 3 was selected as the preferred alternative for the study.

16.0 PROPOSED DESIGN / MITIGATION AND NEXT STEPS

16.1 Design Elements

The reconstruction of US 51 through town will have an urban section with a minimum 50-foot right-of-way (ROW) cross-section as shown in Figure 21. This cross section is used to attempt to stay within the existing right-of-way through Clinton. Where possible, the urban ROW could be increased to provide additional buffer area. In addition, in areas with side slope problems, retaining walls may be required.

The two-lane urban section will transition to the two-lane urban with a center two-way left turn lane just south of town, which will continue to just south of the development near Martin Road.

A rural typical section is to be used south of where the center turn-lane ends (near Martin Road). This will include two 12-foot lanes and 10-foot shoulders. The proposed minimum ROW is approximately 100 feet, but much more will likely be required in most areas to achieve acceptable grades and side slopes.

16.2 Bicycle / Pedestrian Facilities

The reconstruction of US 51 through town specifies lane widths of 13 feet. The increased lane width provides a slightly wider curb lane for bicycle use on US 51 through town. The conceptual rural cross section to be applied to the improvements south of town has shoulders with sufficient paved width to support bicycling at all operating speeds and with high truck volumes. Care should be taken in the placement of shoulder rumble strips to avoid conflicts with the travel way for cyclists.

The typical section also provides for sidewalks for pedestrians in the corridor through town. At the intersection of US 51 and KY 123 / KY 58 (Clay Street), pedestrians have also been provided for through the proposed installation of sidewalks on the north and east sides of the courthouse along with the possible installation of pedestrian signal heads as part of the new traffic signal. These bicycle and pedestrian provisions have been incorporated in keeping with the recently adopted KYTC Pedestrian and Bicycle Travel Policy (July 2002).

16.3 Intelligent Transportation Systems (ITS)

No intelligent transportation systems have been included in the proposed recommendations.

16.4 Phasing and Funding

In order to defer construction costs and ensure that higher priority elements are constructed first, the Alternative 3 improvements have been divided into four phases:

Phase 1

Phase 1 includes the recommended Alternative 2B and 2C spot improvements. Based on the traffic analysis, improvements at US 51 / KY 58 (Mayfield Road) may be warranted by 2010 and therefore Alternative 2C should be among the first improvements considered for the area. Part of this project would be to monitor the intersection to determine when (or if) a flashing beacon or signal is warranted. Alternative 2C is projected to be needed before 2020 from a capacity standpoint, but the near term improvements to the geometrics and the signal installation would be beneficial now. Therefore, it is recommended that at least the initial stages of this spot improvement also be completed by 2010 if feasible.

Phase 2

Phase 2 would include reconstructing US 51 through town to widen the lanes, improve sight lines (i.e. Alternative 2A at Cresap Street), replace curbs and sidewalks, improve drainage, and make any other necessary improvements. This would also include finishing Alternative 2B (if not done already). These later phases are not needed immediately.

Phase 3

Phase 3 consists of constructing the two-way left turn lane beginning from just south of town to just south of the development near Martin Road. This is a good stand-alone project due to the extensive construction work and the associated traffic delays.

Phase 4

The final phase is the reconstruction of US 51 south to the Bayou de Chien. This is the longest construction portion of Alternative 3.

16.5 Commitment Action Plan

KYTC is committed to incorporating appropriate pedestrian and bicycle facilities into the proposed highway projects. KYTC is also committed to working with KHC/SHPO as the project progresses to avoid, to the greatest extent possible, impacts to any identified National Register of Historic Places eligible properties. KYTC also received agency coordination letters from other agencies including the National Park Service (regarding the Trail of Tears and reviewing cultural resource reports), the Kentucky State Nature Preserves Commission (regarding potential impacts to the relict darter population in the Bayou de Chien), and the US Department of Fish and Wildlife (regarding potential impacts to Indiana Bat habitat). It is not expected that upgrading the existing highway will impact these resources. However, as the project progresses additional coordination efforts should be pursued with these agencies as necessary.

16.6 Next Steps / Implementation

The next step would be to allocate funding for the design and implementation of Alternative 3. Based on the proposed project phasing plan, Alternatives 2B and 2C would be undertaken first, as they involve the least construction and cost. They are also needed sooner than the other improvements. After this first phase is underway, it would be appropriate for KYTC to review the traffic count data on US 51 to verify the scope and phasing of the remainder of the proposed project elements. Subsequently, funding could be allocated for the design and implementation of the remaining phases.

APPENDIX A:
TABLES

Table 1: US 51 Highway Characteristics Data Summary

US 51 Study at Clinton US 51 - HIS Data (MP 4.508 - 9.877)		
Roadway Facility	Functional Classification	Rural Principal Arterial
	State System Class	State Primary
	Facility Type	2 Lane Undivided Highway
	Avg. Right-of-Way Width (feet)	60 (MP 0-7.181) 50 (MP 7.181-7.766) 60 (MP 7.766-7.801) 50 (MP 7.801-8.275) 60 (MP 8.275-13.672)
	Lane Width (feet)	11 (MP 0-.79) 10 (MP .79-7.148) 11 (MP 7.148-7.648) 19 (MP 7.648-7.69) varies by direction 13 (MP 7.69-7.84) 14 (MP7.84-8.045) 12 (MP 8.045-8.275) 11 (MP 8.275-15.095)
	Shoulder Width (feet)	2-4 (MP 0-7.37) 0 (MP 7.37-8.275) - Curbed 2-4 (MP 8.275-13.59)
	Shoulder Type	Curbed, Paved
	Percent Passing Sight Distance	41 (MP 0-7.181) 30 (MP 8.302-15.095)
	Type of Terrain	Rolling (Flat MP 7.181-7.381)
	Coal Haul (Annual Tons)	0
	Scenic Byway System	No
	National Highway System	No
	National Truck Network	Yes (State Only Auth. Route)
	Defense Highway	1 (Fulton-Carlisle)
	Extended Weight System	No
	Truck Weight Class	AAA
Volumes	Current Volume (Vehicles per Day)	2,210-7,130 (See Traffic Volume Figure)
Posted Speed Limits	Speed Limit (Miles per Hour)	55 (MP 0-6.505) 45 (MP 6.505-7.28) 35 (MP 7.28-7.713) 25 (MP 7.713-7.835) 35 (MP 7.835-8.38) 45 (MP 8.38-8.57) 55 (MP 8.57-15.095)
Pavement Structures	Surface Type	High
	Last Year Surfaced	1995 (MP 0-7.148) 1994 (MP 7.148-13.59)
	Number of Bridges	4

Source: KYTC Highway Information System Database (2002) and Field Reviews

Table 13: US 51 at Martin Road Crash Details

Date & Time	Location	Severity	Type	Directional Analysis	Roadway Character	Roadway Conditions
05/24/2000 17:03	MP 6.590	Non-Injury	Angle	Angle Collision – Both Vehicles Going Straight	Straight & Level	Ice*
12/09/1999 1:00	MP 6.648	Non-Injury	Non-Collision Other	Collision with Fixed Object (1 Vehicle Included with Rock Cut)	Straight & Grade	Wet
12/09/1999 1:00	MP 6.648	Non-Injury	Collision with Fixed Object Light Support / Utility Pole	Collision with Fixed Object (1 Vehicle Included with Rock Cut)	Straight & Grade	Dry
11/17/1999 11:45	MP 6.690	Non-Injury	Collision with Fixed Object Earth Embankment / Rock Cut / Ditch	Collision with Fixed Object (1 Vehicle Included with Rock Cut)	Straight & Grade	Dry
02/16/2000 5:36	MP 6.690	Non-Injury	Rear End	Rear End – One Vehicle Stopped	Straight & Grade	Dry
06/05/2001 15:40	MP 6.789	Non-Injury	Single Vehicle	Collision with Fixed Object	Straight & Grade	Dry

*Note: Crash database lists the roadway conditions for this crash as ice, but this is inconsistent with the typical weather conditions associated with the time of year.

Table 14: US 51 at KY 780 (South) Crash Details

Date & Time	Location	Severity	Type	Directional Analysis	Roadway Character	Roadway Conditions
04/02/1998 15:45	MP 5.190	Non-Injury	Collision with Other Motor Vehicle	Rear End in Traffic Lanes – One Vehicle Stopped	Straight & Hillcrest	Dry
09/19/2000 23:20	MP 5.278	Injury	Single Vehicle	Ran Off Roadway (1 Vehicle with Earth Embankment, Ditch)	Straight & Grade	Dry
02/03/2001 12:40	MP 5.378	Non-Injury	Single Vehicle	Collision with Fixed Object	Straight & Grade	Dry

Table 15: US 51 at KY 780 (North) Crash Details

Date & Time	Location	Severity	Type	Directional Analysis	Roadway Character	Roadway Conditions
05/07/1998 16:44	MP 7.148	Fatal	Collision with Fixed Object / Earth Embankment / Rock Cut / Ditch	Ran Off Roadway (1 Vehicle with Earth Embankment / Ditch)	Straight & Level	Dry

Table 16: Hickman County Employment by Major Industry (2000)

Hickman County	Employment	Percent
Agriculture, Forestry & Fishing	10	0.8
Contract Construction	46	3.5
Manufacturing	382	28.9
Transportation and Public Utilities	78	5.9
Wholesale Trade	96	7.3
Retail Trade	139	10.5
Finance, Insurance and Real Estate	66	5.0
Services	234	17.7
State and Local Government	0	0.0
All Industries	**1,320**	**100.0**

Source: Kentucky Economic Development Information System

Table 17: Clinton Area Major Manufacturers

Firm	Product(s)	Employees	Year Est.
Cornerstone Building Materials	Hardwood, softwood, veneer, dimension & grade lumber cutting & sawing	6	1938
Dale Machine & Manufacturing	Machine shop: garment cutting presses, precision machining, prototypes; arc, gas, MIG, TIG, heliarc, powder welding; drilling & boring; lathe & mill	6	N/A
Harper's Country Hams Inc	Smoked ham, bacon & sausage	100	1952
Jakel Inc. (Closed in June 2003)	Sub-fractional horsepower motors	150	1989
Lewis Publishing Inc	Newspaper publishing	3	1850
Reita's Country Corner	Portable wooden buildings	2	1992

Source: Kentucky Economic Development Information System

Table 18: Hickman County Commuting Patterns

	2000	%
Residents of Hickman County		
Working and Residing In County	1,043	48.2
Commuting Out of County	1,121	51.8
Total Residents	2,164	100
Employees in Hickman County		
Working and Residing In County	1,043	64.2
Commuting Into County	582	35.8
Total Employees	1,625	100

Source: Kentucky State Data Center

Table 19: Cultural Historic Overview Survey

Site Number	KHC Number	Description	Potentially Eligible for NRHP
1		1.5 story, 5-bay, eave-oriented house, weatherboard siding, 4/4 windows	N
2		3-bay Southern Bungalow concrete block construction	N
3	HIC7	Hickmandale	N
4		2-story hip-roof American Foursquare, new windows	N
5		1.5-story American Bungalow, large side addition	N
6		1-story, 4-bay L-plan house, asbestos siding	N
7		American Bungalow- vinyl siding, replacement 1/1 windows	N
8		1.5-story T-plan, new 6/6 windows	N
9		Hickman County Health Center (1949)	N
10		1.5-story brick Tudor style house	N
11		1.5-story brick Tudor style house, new vinyl windows	N
12		3-bay Southern Bungalow- replacement 1/1 windows	N
13		1.5-story, irregular massed Victorian house, weatherboard and vinyl siding	N
14		1.5-story Southern Cube, vinyl siding, non-historic addition	N
15		1.5-story, 3-bay minimal traditional house, asbestos siding	N
16		1.5-story, 3-bay Craftsman, new porch columns	N
17		1-story, T-plan house, garage cut into façade	N
18		1.5-story, T-plan house, replacement and blocked windows	N
19		2.5-story, hip-roof house, original metal roof, diamond pane windows	YES
20		3-bay American Bungalow, weatherboards, knee braces	YES
21		1.5-story T-plan house-large addition	N
22		1.5-story, 3-bay, hip-roof frame house, wrap-around porch	N
23		3-bay American Bungalow- vinyl siding, knee braces	N
24		Clinton Bungalow with shed-roof dormer, weatherboards, knee braces	YES
25		2-story Queen Anne, vinyl siding replacement porch	N
26		1.5-story, 3-bay brick Cape Cod	YES
27		1.5-story Victorian house with Craftsman top	N
28	HIC12	2-story Queen Anne, weatherboard siding, exterior brick chimney	N
29	HIC9	First United Methodist Church	YES
30		1.5-story, 2-bay gable-oriented house with jerkin-head porch	N
31		1-story, 3-bay commercial building	N
32	HIC5	Hickman County Courthouse	LISTED
33	HIC15	Clinton Bank, attached 2 and 1-story brick commercial buildings	N
34	HIC15	7 2-story brick commercial buildings (1 block)	N

Site Number	KHC Number	Description	Potentially Eligible for NRHP
35	HIC15	2 1and 2-story brick commercial buildings	N
36	HIC15	2 1-story brick commercial buildings	N
37	HIC15	2 2-story brick commercial buildings	N
38		2-story stucco building	N
39		Early 20th C. gas station- new porte cochere	N
40		First Christian Church	YES
41		1-story, 3-bay Southern Bungalow- side addition	N
42		4-bay, dual entry, vinyl clad Clinton Bungalow	N
43		1-story, 5-bay house with large rear addition	N
44		2-story, 3-bay T-plan house, vinyl siding, 2 gable roof dormers	N
45		1.5-story, 3-bay T-plan, vinyl siding, new windows	N
46		1.5-story, 5-bay hip-roof house, rear-ell, 4/4 windows	N
47		3-bay Craftsman house with new brick veneer and new porch	N
48		Southern Cube- vinyl siding and replacement 1/1 windows	N
49		Southern Bungalow- vinyl siding, gable window covered over	N
50		1.5-story, 4-bay Tudor revival house- large stone chimney	YES
51		Town Branch Bridge-concrete	N
52		Brick gas station with 3 gables	N
53		1-story, 3-bay Southern Bungalow with vinyl siding and 6/6 windows	N
54		4-bay eave-oriented house, vinyl siding and Craftsman porch	N
55		1.5-story, Craftsman house with vinyl siding, diamond pane windows	YES
56	HIC2	Marvin College's President's House	LISTED
57		1.5-story, 3-bay Tudor house	N
58	HIC2	Marvin College	LISTED
59		Single span concrete bridge	N
60		2-story, 4-bay American Foursquare, Tudor gable projection	N
61		Clinton Bungalow duplex- new doors, covered windows, vinyl siding	N
62		2-story hip-roof American Foursquare, new windows	N
63		1.5-story, 7-bay eave-oriented house	N
64		1.5-story, 5-bay eave-oriented house new 1/1 windows, vinyl siding	N
65		1.5-story, 3-bay Minimal Traditional house, new windows	N
66		1-story, 3-bay house, 1/1 windows, new rear addition	N
67		1.5-story, 3-bay hip-roof house-new siding	N
68		3-bay Clinton Bungalow	N
69		1.5-story T-plan common bond brick house with Craftsman porch	YES

Site Number	KHC Number	Description	Potentially Eligible for NRHP
70		1-story, 5-bay eave-oriented house, Craftsman porch	N
71		1-story T-plan house, new porch	N
72		1-story, 5-bay eave-oriented house with vinyl siding, new porch	N
73		1-story, 6-bay brick commercial building- new windows	N
74		3-bay Southern Bungalow- new door and window openings	N
75		1.5-story, 6-bay dual entry house-new 1/1 windows and openings	N
76		2.5-story, 3-bay American Foursquare-new windows	N
77		1.5-story, 3-bay Clinton Bungalow- new windows	N
78		2-story, 4-bay gable-oriented house, new and missing windows	N
79		3-bay American Foursquare, enclosed windows, aluminum siding	N
80		1.5-story, 5-bay cross-gable house- replacement 1/1 windows	N
81		1.5-story, 3-bay Creole house	YES
82		4 1 and 2-story connected brick commercial buildings	N
83		Garan Inc. Factory (3 Quonset huts)	N
84		1.5-story, 9-bay brick “Old School”	YES
85		1.5-story, 3-bay gable-oriented house with wraparound porch	N
86		3-bay Southern Cube-new windows, aluminum siding	N
87		1-story, 5-bay house-vinyl siding, missing chimney	N
88		1-story, 3-bay eave-oriented house-vinyl siding, large carport	N
89		1-story, 4-bay house, asbestos siding, large side addition	N
90		1-story, 5-bay, eave-oriented house-ruins	N
91		1.5-story, 3-bay brick house, 3 hip-roof dormers	N
92		3-bay American Bungalow, aluminum siding, full length porch	N
93		2-story, 6-bay brick “Old Hotel”	YES
94		1-story, 3-bay house-new porch and windows	N
95		3-bay Southern Bungalow- new porch	N
96		2-bay Shotgun house-vinyl siding	N
97		3-bay Minimal Traditional house	N
98		1.5-story, 4-bay dual entry house	N
99		1.5-story, 4-bay dual entry house-vinyl siding, new windows	N
100		1.5-story, 4-bay eave-oriented house-new windows and porch	N
101		1-story, 5-bay eave-oriented house with rear-ell	N
102		5-bay brick commercial building-stepped false front	N
103		2-story, 5-bay commercial building- new windows and openings 1st floor	N
104		1.5-story brick veneer Clinton Bungalow	YES
105		1.5-story, 3-bay house-large addition	N

Site Number	KHC Number	Description	Potentially Eligible for NRHP
106		1.5-story, 5-bay house- asbestos siding, large screened in addition	N
107		1.5-story, 3-bay house- ashlar veneer	N
108		1-story, 3-bay house- aluminum siding, new windows	N
109		3-bay Southern Cube- aluminum siding	N
110		3-bay Southern Bungalow-large rear addition, missing chimney	N
111		3-bay Southern Bungalow- incised porch	N
112		1-story, 3-bay eave-oriented house- new windows, vinyl siding	N
113		1-story, 3-bay eave-oriented house- new windows and openings	N
114		3-bay Southern Cube	N
115		1-story, 3-bay gable-oriented house- new windows, vinyl siding	N
116		Clinton Cemetery (3 sections)	N
117		New Obion Baptist Church- concrete block building	N
118		1.5-story, 3-bay eave-oriented house with large non-historic rear addition	N
119		1.5-story, 3-bay Southern Bungalow- vinyl siding, new windows	N
120		2-story brick T-plan house- triangle attic window, missing porch	YES
121		2-story American Foursquare- aluminum siding, front extension	N
122		1.5-story, 4-bay eave-oriented house- large non-historic addition	N
123		1.5-story, 4-bay house- new windows, gable-roof porch	N
124	HIC3	2-story frame house- wrap around porch, bargeboard trim	YES
125		2-story American Foursquare	N
126		Metal train-trestle	N
127		3-bay Southern Bungalow- large non-historic rear addition	N
128		Flour factory-only silos remain	N
129		Wood train trestle	N

Table 20: Threatened or Endangered Species

Common Name	Scientific Name	Status
Interior least tern	*Sterna antillarum athalassos*	Federally endangered, state endangered
Cypress darter	*Etheostoma proeliare*	State threatened
Cypress minnow	*Hybognathus hayi*	State endangered
Dollar sunfish	*Lepomis marginatus*	State endangered
Bird-voiced treefrog	*Hyla avivoca Viosca*	State threatened
Hooded merganser	*Lophodytes cucullatus*	State endangered
Alabama shad	*Alosa alabamae*	State endangered
Indiana bat	*Myotis sodalist*	Federally endangered, state endangered
Starhead topminnow	*Fundulus dispar*	State endangered
Lake chubsucker	*Erimyzon sucetta*	State threatened
Pallid sturgeon	*Scaphirhynchus albus*	Federally endangered, state endangered

Source: Kentucky Fish and Wildlife Information Systems

Table 21: Level 1 Evaluation Matrix

Alt. No.	Description	Implementation / Construction Feasibility	Project Goals	Community Impacts	Environmental Impacts	Public Support	Advance to Level 2
1	No Build	Good	Poor	Fair	Good	Fair	Yes
2	Spot Improvements	Good	Fair	Good	Good	Good	Yes
3	Reconstruct Existing US 51 as two-lane highway	Poor	Good	Good	Fair	Good	Yes
4A	Western Bypass Along Railroad	Fair	Good	Fair	Poor	Good	Yes
4B	Western Bypass Through Town	Poor	Poor	Poor	Fair	Good	No
5A	Eastern Bypass Near Town	Good	Fair	Fair	Fair	Fair	Yes
5B	Eastern Bypass Near Town and Extended North	Fair	Fair	Fair	Poor	Fair	No
6A	Eastern Bypass Starting near KY 780 South	Good	Fair	Fair	Fair	Fair	Yes
6B	Eastern Bypass Starting near Edwards Trucking	Fair	Fair	Fair	Poor	Fair	No
7	Eastern Bypass Very Close to Town	Poor	Poor	Poor	Fair	Poor	No
8A	Alternative 8A – One-Way Street System Using Existing Streets	Poor	Fair	Poor	Good	Good	Yes
8B	Alternative 8B – One Way Street System Using Mainly New Highways	Fair	Poor	Fair	Poor	Good	No
8C	Alternative 8C – One Way Street System using a combination of existing and new streets	Poor	Poor	Poor	Fair	Good	No
9	Alternative 9 – Western Bypass (West of Railroad)	Fair	Good	Fair	Fair	Good	Yes

Table 22: Level 2 Traffic Operations and Environment Evaluation Matrix

Alternative	Description	Traffic Operations					Environment							
			Average Daily Traffic on US 51				Natural Environment					Human Environment		
		Traffic Benefits	2002	2030	Truck Traffic Benefits on US 51	Vehicle / Pedestrian / Bicycle Safety Benefits	No. of Streams Impacted	Wetlands Impacted (Based on NWI Mapping)	Floodplain Impacts (Acres)	Threatened and Endangered Species	Other	No. of National Register Sites or Potentially Eligible Sites that May be Impacted	Potential Agricultural District / Farmland Impacts	Potential HAZMAT Sites
Alternative 1	Do Nothing	**None**	**5,700-7,200**	**8,600-10,900**	**None (Maintain Current Volume Through Town)**	**None**	**---**	**---**	**---**	**None**	**---**	**0**	**None**	**0**
Alternative 2A Vicinity of US 51 and Cresap Street	Lower Hill, Curb and Sidewalk Reconstruction	**None**	**6,200**	**9,400**	**N/A**	**Medium (Improved Sight Distance, Reconstructed Sidewalks)**	**0**	**0**	**0**	**None Likely**	**---**	**3 Sites (2 on NRHP)**	**None**	**0-4**
Alternative 2B US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)	Reconstruct Intersection to Provide Adequate Turning Radii, Construct Sidewalk and Upgrade Traffic Signal (Ulitimate - Add NB and SB Turn Lanes)	**Medium**	**6,700**	**10,150**	**Medium (Improved Turning Radii, Wider Lanes)**	**Medium (Intersection Radii Improved, Turn Lanes, New Sidewalks, Pedestrian Signal Heads)**	**0**	**0**	**0**	**None Likely**	**---**	**1 NRHP Site in Vicinity**	**None**	**0**
Alternative 2C Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)	Repave and Restripe Northeast Corner at Intersection to Provide Adequate Turning Radii	**Medium**	**6,450**	**9,750**	**Medium (Improved Turning Radii)**	**Medium (Intersection Radii Improved)**	**0**	**0**	**0**	**None Likely**	**---**	**1 Site in Vicinity**	**None**	**1**
Alternative 2D Vicinity of US 51 and KY 780 (North)	Realign Intersection to a "T" Intersection	**None**	**5,700**	**8,600**	**N/A**	**Low (Crash Data Does not Warrant Improvement)**	**0**	**Possible Impact to 1 Farm Pond**	**0**	**None Likely**	**---**	**0**	**None**	**0**
Alternative 2E Vicinity of US 51 and Martin Road	Realign Intersection to a "T" Intersection	**None**	**3,400**	**5,000**	**N/A**	**Low (Low Side Street Volume)**	**0**	**0**	**0**	**None Likely**	**---**	**0**	**None**	**0**
Alternative 2F Vicinity of US 51 and KY 780 (South)	Realign Offset Intersections	**None**	**2,500**	**3,700**	**N/A**	**Low (Very Low Side Street Volume)**	**0**	**0**	**0**	**None Likely**	**---**	**0**	**None**	**0**
Alternative 3 Reconstruct US 51 as a Two-Lane Roadway with Turn Lane South of Town	Reconstruct US 51 North of Town South to Bayou de Chien With Turn Lane and Alternative 2 Improvements (2A, 2B, 2C)	**Medium**	**5,700-7,200**	**8,600-10,900**	**Medium (Improved Turning Radii, Wider Lanes)**	**High (See 2A-C Above, Also Turn Lane South of Town, Reconstructed Sidewalks, Bike Lanes)**	**Possible Widening of 3 Existing Stream Crossings**	**Possible Impact to 0-4 Farm Ponds**	**250' < 1 Acre**	**None Likely**	**Minor Increase to Runoff**	**11 Sites (3 on NRHP)**	**None**	**1-10**
Alternative 4A Western Bypass Along Railroad	New Two-Lane Highway West of the Current US 51 Alignment and Alternative 3 Improvements from Bypass to Bayou de Chien	**Medium**	**1,000 - Bypass 6,200 - Old US 51**	**1,700-2,000 - Bypass 8,900 - Old US 51**	**Medium (Shifts Traffic to West Edge of Town)**	**Medium - High**	**Crosses 5 Streams, Relocate 2200' Stream, Possible Widening of 1 Existing Stream Crossing**	**Possible Impact to 0-1 Farm Ponds**	**Entire Alternative, up to Alternative 3 Improvements, is in Floodplain 10600' Approx. 30 Acres**	**Potential Habitat Impacts Related to Stream, Farm Pond, and Floodplain Areas**	**Increases Runoff**	**2 Sites**	**Low**	**0-5**
Alternative 5A Near Eastern Bypass	New US 51 Highway East of Clinton and Alternative 3 Improvements from Bypass to Bayou de Chien	**High**	**900 - Bypass 6,300 - Old US 51**	**1,600-1,800 - Bypass 9,100 - Old US 51**	**Medium (Shifts Traffic to East Edge of Town)**	**High**	**Crosses 2-3 Streams (1-2 New Streams, 1 Stream on US 51 Reconstruction)**	**Possible Impacts to 2-6 Farm Ponds**	**1000' < 5 Acres**	**Impacts to Potential Bat Habitat, Potential Habitat Impacts Related to Stream, Farm Pond, and Floodplain Areas**	**Increases Runoff**	**0**	**Medium**	**0-2**
Alternative 6A Eastern Bypass	New US 51 Highway East of Clinton and Alternative 3 Improvements from Bypass to Bayou de Chien	**High**	**700 - Bypass 1,800-6,600 - Old US 51**	**1,200 - Bypass 2,700-10,000 - Old US 51**	**High (Improved Truck Operations, High Operating Speeds on Bypass, Most Trucks Removed From Town)**	**High**	**Crosses 1-4 New Streams**	**Possible Impacts to 1-4 Farm Ponds**	**Minimal**	**Impacts to Potential Bat Habitat, Potential Habitat Impacts Related to Stream and Farm Pond Areas**	**Increases Runoff**	**0**	**High**	**0-1**
Alternative 8A In-Town One-Way Street System Using Existing Streets	In-Town One-Way Street System and Alternative 3 Improvements from One-Way Streets to Bayou de Chien, Including Retaining Wall to West of Court House	**Medium**	**4,100 - SB Hwy 4,100 - NB Hwy**	**6,200 - SB Hwy 6,200 - NB Hwy**	**Low (Will Split Traffic Between Northbound and Southbound Approaches - Low Operating Speeds)**	**Medium (Driver Unfamiliarity with One-Way Streets Impacts Safety)**	**Possible Widening of 3-5 Existing Stream Crossings**	**Possible Impact to 0-8 Farm Ponds**	**500' < 1 Acre**	**None Likely**	**Minor Increase to Runoff**	**4 Sites (Plus 9 on Current US 51)**	**None**	**1-10**
Alternative 9 Western Bypass	New Bypass West of Clinton and West of the Railroad and Alternative 3 Improvements from Bypass to Bayou de Chien	**High**	**1,300-1,600 - Bypass 1,200-5,700 - Old US 51**	**2,200-2,600 - Bypass 2,100-8,700 - Old US 51**	**Medium (Improved Truck Operations, Most Trucks Removed From Town)**	**High**	**Crosses 4 New Streams, Possible Widening of 1 Existing Stream Crossing**	**Possible Impacts to 0-2 Farm Ponds**	**Approx. 1,500' <10 Acres**	**Potential Habitat Impacts Related to Stream, Farm Pond, and Floodplain Areas**	**Increases Runoff**	**0**	**Medium**	**0-6**

Table 23: Level 2 Community and Implementation / Construction Evaluation Matrix

Alternative	Description	Community					Public Support	Implementation / Construction				
		Economic Development Impacts	Buildings / Property Impacts (Homes, Businesses, Etc.)	Community Impacts	Environmental Justice	Community Character		Construction Feasibility	Construction Length (Miles)	New ROW Required (Acres)	Potential Utility Impacts	Cost Estimate* (Total)
Alternative 1	Do Nothing	**Fair for Current Businesses, Poor for New Development**	**0**	**Fair**	**None**	**Fair**	**23%**	**Good**	**N/A**	**N/A**	**Good**	**None**
Alternative 2A Vicinity of US 51 and Cresap Street	Lower Hill, Curb and Sidewalk Reconstruction	**None**	**Minor (Sliver) Property Takings**	**Good (Some Property may be Required)**	**None**	**Fair**	**32 % supported some form of spot improvements**	**Good**	**N/A**	**<1**	**Fair**	**Low**
Alternative 2B US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)	Reconstruct Intersection to Provide Adequate Turning Radii, Construct Sidewalk and Upgrade Traffic Signal (Ulitimate - Add NB and SB Turn Lanes)	**None**	**0**	**Good (Minimal Parking may be Lost)**	**None**	**Fair**		**Good**	**N/A**	**N/A**	**Good**	**Low to Medium**
Alternative 2C Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)	Repave and Restripe Northeast Corner at Intersection to Provide Adequate Turning Radii	**None**	**0**	**Good**	**None**	**Fair**		**Good**	**N/A**	**N/A**	**Fair**	**Low**
Alternative 2D Vicinity of US 51 and KY 780 (North)	Realign Intersection to a "T" Intersection	**None**	**0**	**Good**	**None**	**Fair**		**Good**	**N/A**	**<3**	**Good**	**Low to Medium**
Alternative 2E Vicinity of US 51 and Martin Road	Realign Intersection to a "T" Intersection	**None**	**0**	**Good**	**None**	**Fair**		**Good**	**N/A**	**<5**	**Good**	**Low to High**
Alternative 2F Vicinity of US 51 and KY 780 (South)	Realign Offset Intersections	**None**	**1 Home**	**Fair (Requires Property Impacts)**	**None**	**Fair**		**Good**	**N/A**	**<5**	**Good**	**Low to High**
Alternative 3 Reconstruct US 51 as a Two-Lane Roadway with Turn Lane South of Town	Reconstruct US 51 North of Town South to Bayou de Chien With Turn Lane and Alternative 2 Improvements (2A, 2B, 2C)	**Good for Current Businesses, Fair for New Development**	**<20 Acres of New NOW From Properties in Corridor**	**Fair (Minor Property Impacts; Parking Loss and Traffic Issues During Const.)**	**None**	**Good**	**27%**	**Poor**	**4.1**	**<20**	**Poor (Utilities 1' From Curb In Town)**	**Medium to High**
Alternative 4A Western Bypass Along Railroad	New Two-Lane Highway West of the Current US 51 Alignment and Alternative 3 Improvements from Bypass to Bayou de Chien	**Fair for Current Businesses, Fair for New Development**	**3 - 5 Homes 3 - 4 Sheds / Silos**	**Fair (Property Loss)**	**Environmental Justice Issues**	**Fair**	**20%**	**Fair**	**Bypass - 2.0 Total - 4.1**	**70**	**Poor (Edge of Development)**	**High**
Alternative 5A Near Eastern Bypass	New US 51 Highway East of Clinton and Alternative 3 Improvements from Bypass to Bayou de Chien	**Poor for Current Businesses, Fair for New Development**	**5 - 11 Homes 1 Storage Shed**	**Poor (Major Property Impacts, Disrupts Residential Area)**	**None**	**Fair**	**7%**	**Fair**	**Bypass - 2.8 Total - 4.1**	**80**	**Fair**	**High**
Alternative 6A Eastern Bypass	New US 51 Highway East of Clinton and Alternative 3 Improvements from Bypass to Bayou de Chien	**Poor for Current Businesses, Fair for New Development**	**0 - 1 Home 1 Large Barn**	**Fair (Limited Non-Economic Community Impacts, Property and Farmland Impacts)**	**None**	**Fair**	**5%**	**Good**	**Bypass - 3.9 Total - 4.3**	**130**	**Good**	**High**
Alternative 8A In-Town One-Way Street System Using Existing Streets	In-Town One-Way Street System and Alternative 3 Improvements from One-Way Streets to Bayou de Chien, Including Retaining Wall to West of Court House	**Fair for Current Businesses, Fair for New Development**	**1 - 4 Homes 2 - 3 Businesses**	**Poor (Parking Loss, Truck Traffic in Residential Area, Property Takes, Traffic Issues During Const.)**	**Environmental Justice Issues**	**Fair**	**21%**	**Poor**	**NB 1-Way - 1.6 SB 1-Way - 1.5 Total - 5.3**	**70**	**Poor**	**High**
Alternative 9 Western Bypass	New Bypass West of Clinton and West of the Railroad and Alternative 3 Improvements from Bypass to Bayou de Chien	**Fair for Current Businesses, Fair for New Development**	**1 Home 0 - 2 Businesses**	**Fair (Property and Farmland Impacts)**	**Possible Environmental Justice Issues**	**Fair**	**Unknown (20% favored western bypass Alt. 4A)**	**Fair**	**Bypass - 2.3 Total - 4.4**	**80**	**Fair**	**High**

*Cost estimate excludes bridges at railroad crossings, purchase or relocation of any property, environmental work, relocation of utilities

Table 24: Level 3 Traffic Operations Evaluation Matrix

Alternative	Description	Average Daily Traffic (ADT) on US 51 in Town		2030 Critical Segment LOS (South of Town)	2030 US 51 / KY 58 / KY 123 Intersection LOS	Estimated Travel Time from KY 780 (South) to KY 1728 (in minutes)	Truck Traffic Benefits	Estimated 2030 Truck Volumes (Trucks per Day)	Vehicle / Pedestrian / Bicycle Safety Benefits
		2002	2030						
Alternative 1	Do Nothing	5,700-7,200	8,600-10,900	C	E	4.8	None (Maintain Current Volume Through Town)	720	None
Alternative 2A Vicinity of US 51 and Cresap Street	Lower Hill, Curb and Sidewalk Reconstruction	6,200	9,400	N/A	N/A	N/A	N/A	720	Medium (Improved Sight Distance, Reconstructed Sidewalks)
Alternative 2B US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)	Reconstruct Intersection to Provide Adequate Turning Radii, Construct Sidewalk and Upgrade Traffic Signal (Ultimate - Add NB and SB Turn Lanes)	6,700	10,150	N/A	B	N/A	Medium (Improved Turning Radii, Wider Lanes)	720	Medium (Intersection Radii Improved, Turn Lanes, New Sidewalks, Pedestrian Signal Heads)
Alternative 2C Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)	Repave and Restripe Northeast Corner at Intersection to Provide Adequate Turning Radii	6,450	9,750	N/A	N/A	N/A	Medium (Improved Turning Radii)	720	Medium (Intersection Radii Improved, Flashing Warning Beacon)
Alternative 3 Reconstruct US 51 as a Two-Lane Roadway with Turn Lane South of Town	Reconstruct US 51 North of Town South to Bayou de Chien With Turn Lane and Alternative 2 Improvements (2A, 2B, 2C)	5,700-7,200	8,600-10,900	C (Traffic Flow Improved by Two-Way Left Turn Lane)	B	4.8	Medium (Improved Turning Radii, Wider Lanes)	720	High (See 2A-C Above, Also Turn Lane South of Town, Reconstructed Sidewalks, Bike Lanes)
Alternative 6A Eastern Bypass	New US 51 Highway East of Clinton and Alternative 3 Improvements from Bypass to Bayou de Chien	700 - Bypass 1,800-6,600 - Old US 51	1,200 - Bypass 2,700-10,000 - Old US 51	B - Bypass C - Old US 51	E	3.8	High (Improved Truck Operations, High Operating Speeds on Bypass, Most Trucks Removed From Town)	560 - Bypass 140-150 - Old US 51	High - But No Old US 51 Improvements (Bypass to Current Design Standards, Shifts Trucks to Bypass)
Alternative 9 Western Bypass	New Bypass West of Clinton and West of the Railroad and Alternative 3 Improvements from Bypass to Bayou de Chien	1,300-1,600 - Bypass 1,200-5,700 - Old US 51	2,200-2,600 - Bypass 2,100-8,700 - Old US 51	C - Bypass C - Old US 51	D	3.8	Medium (Improved Truck Operations, Most Trucks Removed From Town)	620-640 - Bypass 140-170 - Old US 51	High - But No Old US 51 Improvements (Bypass to Current Design Standards, Shifts Trucks to Bypass)

Table 25: Level 3 Environment Evaluation Matrix

Alternative	Description	Natural Environment				Human Environment		
		No. of Streams Impacted	Wetlands Impacted (Based on NWI Mapping)	Floodplain Impacts (Acres)	Threatened and Endangered Species	No. of National Register Sites or Potentially Eligible Sites that May be Impacted	Potential Agricultural District / Farmland Impacts	Potential HAZMAT Sites
Alternative 1	Do Nothing	---	---	---	None	0	None	0
Alternative 2A Vicinity of US 51 and Cresap Street	Lower Hill, Curb and Sidewalk Reconstruction	0	0	0	None Likely	Retaining Walls May be Necessary to Minimize Impacts to 3 Sites in Area (2 of the Sites on NRHP)	None	Up to 4 Sites in Area, Significant Impacts Unlikely
Alternative 2B US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)	Reconstruct Intersection to Provide Adequate Turning Radii, Construct Sidewalk and Upgrade Traffic Signal (Ultimate - Add NB and SB Turn Lanes)	0	0	0	None Likely	1 NRHP Site in Vicinity - Impact Unlikely	None	0
Alternative 2C Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)	Repave and Restripe Northeast Corner at Intersection to Provide Adequate Turning Radii	0	0	0	None Likely	1 Site in Vicinity - Impact Unlikely	None	1 Service Station
Alternative 3 Reconstruct US 51 as a Two-Lane Roadway with Turn Lane South of Town	Reconstruct US 51 North of Town South to Bayou de Chien With Turn Lane and Alternative 2 Improvements (2A, 2B, 2C)	Possible Widening of 3 Existing Stream Crossings	Possible Impacts to 0-4 Farm Ponds	250' < 1 Acre	None Likely	Retaining Walls May be Necessary to Minimize Impacts to 3 Sites (2 on NRHP) Near Cresap Street, and Sites Near Beeler Hill	None	1-10
Alternative 6A Eastern Bypass	New US 51 Highway East of Clinton and Alternative 3 Improvements from Bypass to Bayou de Chien	Crosses 1-4 New Streams	Possible Impacts to 0-8 Farm Ponds	Minimal	Impacts to Potential Bat Habitat, Potential Habitat Impacts Related to Stream and Farm Pond Areas	0	High	0-1
Alternative 9 Western Bypass	New Bypass West of Clinton and West of the Railroad and Alternative 3 Improvements from Bypass to Bayou de Chien	Crosses 4 New Streams, Possible Widening of 1 Existing Stream Crossing	Possible Impacts to 0-2 Farm Ponds	Approx. 1,500' <10 Acres	Potential Habitat Impacts Related to Stream, Farm Pond, and Floodplain Areas	0	Medium	0-6

Table 26: Level 3 Community Evaluation Matrix

Alternative	Description	Economic Development Impacts	Distance From Bypass to Center of Town (Miles)	Buildings / Property Impacts (Homes, Businesses, Etc.)	Community Impacts	Environmental Justice Issues	Community Character	Public Support		
								Comment Form Responses From Public Meeting #1		Average Alternative Rating From Public Meeting #2 (1 - 5 with 1 = Poor and 5 = Good)
Alternative 1	Do Nothing	None	N/A	0	Fair	None	No Benefit	23% of Comment Form Respondents Believed Doing Nothing Would Have No Significant Neg. Impacts; 55% Believed Doing Nothing Would Result in Negative Traffic and Safety Impacts		2.2
Alternative 2A Vicinity of US 51 and Cresap Street	Lower Hill, Curb and Sidewalk Reconstruction	None	N/A	Minor (Sliver) Property Takings	Good	None	Benefit at Vicinity of Cresap Street and US 51 Only	Alternative Recommended by Local Citizens (4% Support / No Opposition Based on Comment Forms)	Overall 32% of Local Residents Support for Some Form of Spot Improvments Based on the Comment Form Responses	3.1
Alternative 2B US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)	Reconstruct Intersection to Provide Adequate Turning Radii, Construct Sidewalk and Upgrade Traffic Signal (Ultimate - Add NB and SB Turn Lanes)	None	N/A	0	Good (Parking Eliminated Can Be Replaced Off-Street)	None	Benefit at Intersection Only	Alternative Supported by Local Citizens and Leaders (15 - 20% Support Based on Comment Forms, Some Opposition to Removing Parking)		3.4
Alternative 2C Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)	Repave and Restripe Northeast Corner at Intersection to Provide Adequate Turning Radii	None	N/A	0	Good	None	Benefit at Intersection Only	Mentioned by Some Citizens (4% Support / No Opposition Based on Comment Forms)		3.3
Alternative 3 Reconstruct US 51 as a Two-Lane Roadway with Turn Lane South of Town	Reconstruct US 51 North of Town South to Bayou de Chien With Turn Lane and Alternative 2 Improvements (2A, 2B, 2C)	Two-Way Left Turn Lane South of Town Encourages New Commercial Development Through Improved Access, No Existing Businesses Bypassed	N/A	<20 Acres of New ROW From Properties in Corridor	Fair (Minor Property Impacts; Parking Loss and Traffic Issues During Const.)	None	Enhances Aesthetics in Town Including New Sidewalks	27% Support Based on Comment Forms; Some Local Leaders in Favor of this Alternative		2.7
Alternative 6A Eastern Bypass	New US 51 Highway East of Clinton and Alternative 3 Improvements from Bypass to Bayou de Chien	All Commercial Development in Town and South of Town Bypassed	1.2	0 - 1 Homes 1 Large Barn 130 Acres of New ROW From Properties in Corridor	Fair (Limited Non-Economic Community Impacts, Property and Farmland Impacts)	None	No Benefit in Town, Removes Truck Traffic From Town	5% Support Based on Comment Forms; 32% Against a Bypasss; Supported by Some Local Leaders		2.6
Alternative 9 Western Bypass	New Bypass West of Clinton and West of the Railroad and Alternative 3 Improvements from Bypass to Bayou de Chien	Access to Commercial Development Near KY 58 / KY 123 Improved, Businesses South of Town (Supermarket, Laundry, etc.) are Not Bypassed, Businesses in Town are Bypassed	0.7	0 - 1 Homes, 0 - 2 Businesses, 80 Acres of New ROW From Properties in Corridor	Fair (Property and Farmland Impacts)	Alternative Runs Adjacent to EJ Community	No Benefit in Town, Removes Truck Traffic From Town	Unknown (20% Supported a Western Bypass in Town and 32% are Against a Bypass Based on Comment Forms)		3.8

Table 27: Level 3 Implementation / Construction Evaluation Matrix

Alternative	Description	Construction Length (Miles)*	Constructability Issues	New ROW Required (Acres)	Design Estimate	Right-of-Way Estimate	Utilities Estimate	Construction Cost Estimate**	Total Cost Estimate (including Design, ROW, Utilities, and Construction Cost)
Alternative 1	Do Nothing	N/A	None	N/A	N/A	N/A	N/A	**N/A**	**N/A**
Alternative 2A Vicinity of US 51 and Cresap Street	Lower Hill, Curb and Sidewalk Reconstruction	N/A	Constrained by Limited ROW	<1	$30,000	$100,000	$200,000	**$240,000**	**$570,000**
Alternative 2B US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)	Reconstruct Intersection to Provide Adequate Turning Radii, Construct Sidewalk and Upgrade Traffic Signal (Ultimate - Add NB and SB Turn Lanes)	N/A	Constrained by Limited ROW	N/A	$50,000	$150,000	$300,000	**$420,000**	**$920,000**
Alternative 2C Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)	Repave and Restripe Northeast Corner at Intersection to Provide Adequate Turning Radii	N/A	Constrained by Limited ROW	N/A	$1,000	$8,000	$50,000	**$40,000**	**$100,000**
Alternative 3 Reconstruct US 51 as a Two-Lane Roadway with Turn Lane South of Town	Phase (i) Spot Improvements 2A, 2B, and 2C and Reconstruct US 51 Through Town	1.5	Constrained by Limited ROW and Utilities, Traffic Maintenance Issues During Construction	<20	$300,000	$400,000	$2,100,000	**$2,400,000**	**$5,200,000**
	Phase (ii) Construct Two-Way Left Turn Lane South of Town	1.0			$200,000	$750,000	$750,000	**$1,700,000**	**$3,400,000**
	Phase (iii) Reconstruct US 51 from Turn Lane South to the Bayou de Chien	1.7			$300,000	$1,200,000	$1,500,000	**$2,300,000**	**$5,300,000**
Alternative 6A Eastern Bypass	Bypass East of Clinton	5.0	None	130	$1,400,000	$3,600,000	$1,800,000	**$11,500,000**	**$18,300,000**
	Alternative 3 Improvements from Bypass to Bayou de Chien	0.3			$50,000	$200,000	$300,000	**$400,000**	**$950,000**
Alternative 9 Western Bypass	Bypass West of Clinton	3.0	2 New Railroad Crossings Necessary	80	$1,100,000	$2,800,000	$200,000	**$8,800,000**	**$12,900,000**
	Alternative 3 Improvements from Bypass to Bayou de Chien	2.1			$400,000	$1,900,000	$2,400,000	**$3,000,000**	**$7,700,000**

* Includes crossroads.
**Construction cost only, excludes mitigation costs. Improvements to existing highways assumed to include a combination of overlay and new construction.

APPENDIX B:
FIGURES

US 51 Study at Clinton

Figure 3: Study Area Map

Figure 4: 2002 Average Daily Traffic Volumes

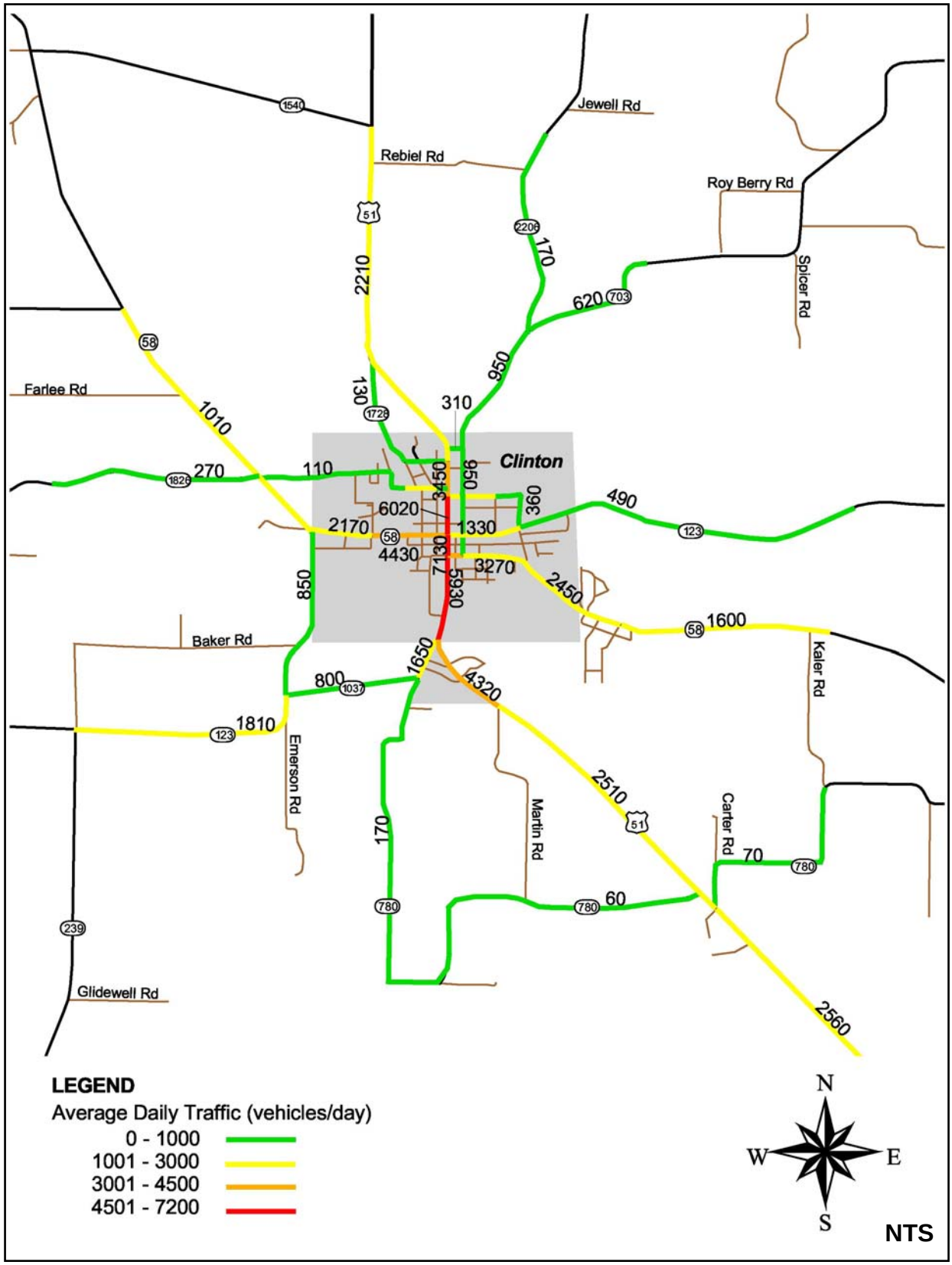
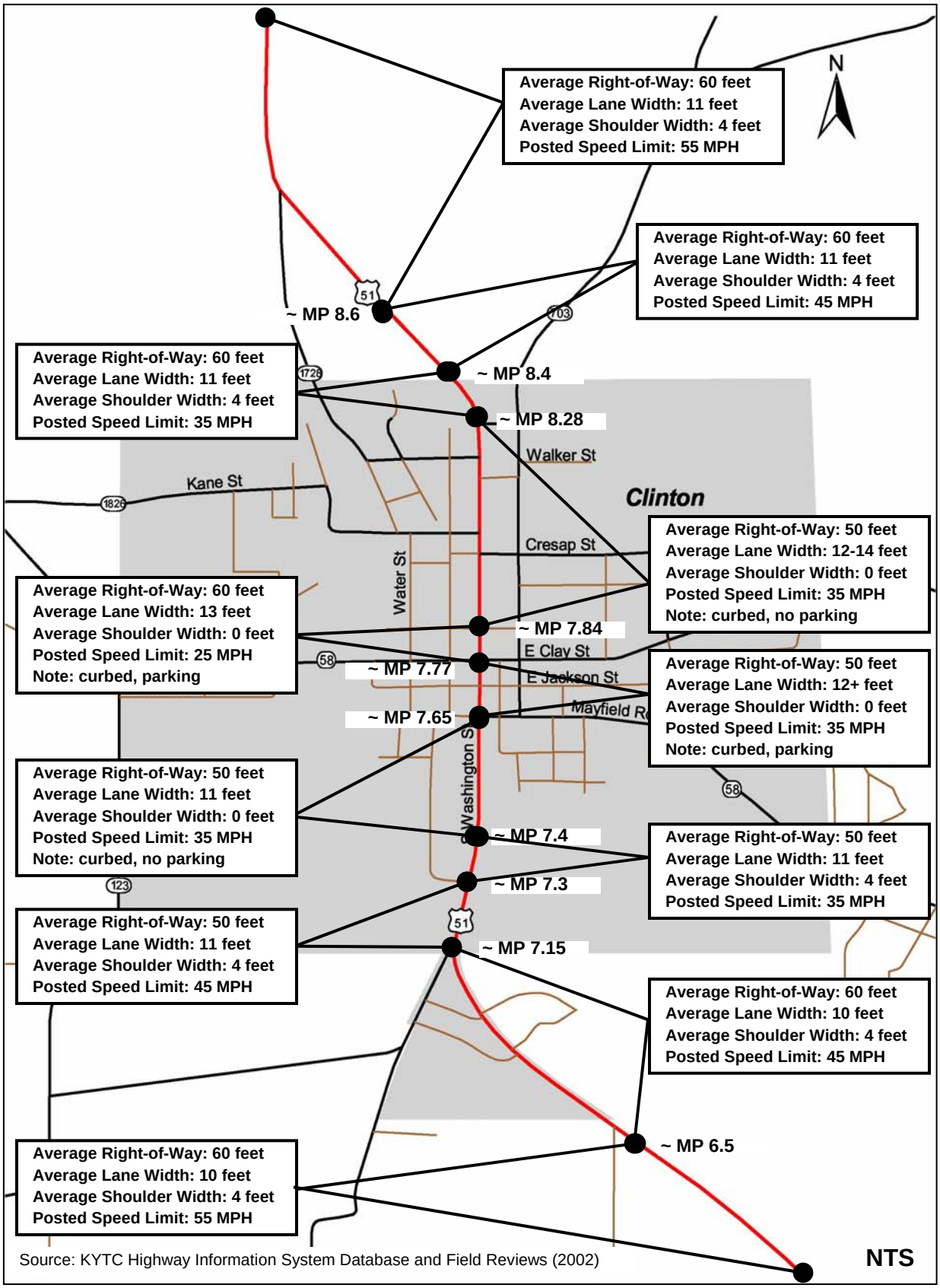


Figure 5: US 51 Highway Characteristics Summary



Source: KYTC Highway Information System Database and Field Reviews (2002)

Figure 6: Selected Study Area Pictures

Sidewalks on US 51

Utility Poles Along US 51

Intersections of US 51 and KY 58 West (Left) and KY 58 East (Right)

Figure 7: Vehicle Classification Count Locations, Posted Speed Limits, and Speed Survey Locations

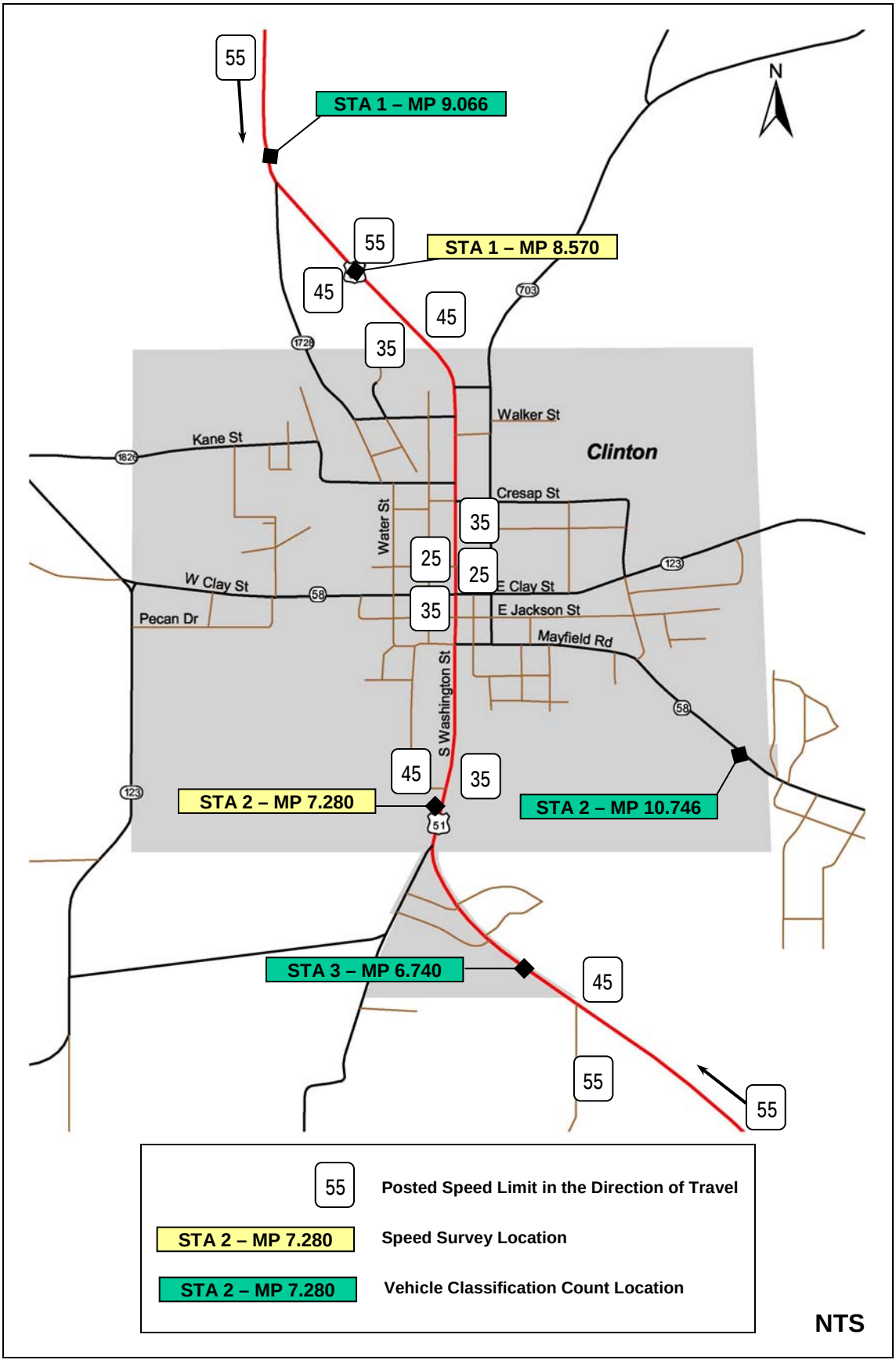


Figure 8: Intersection Controls, Geometries, and 2002 Peak Hour Volumes

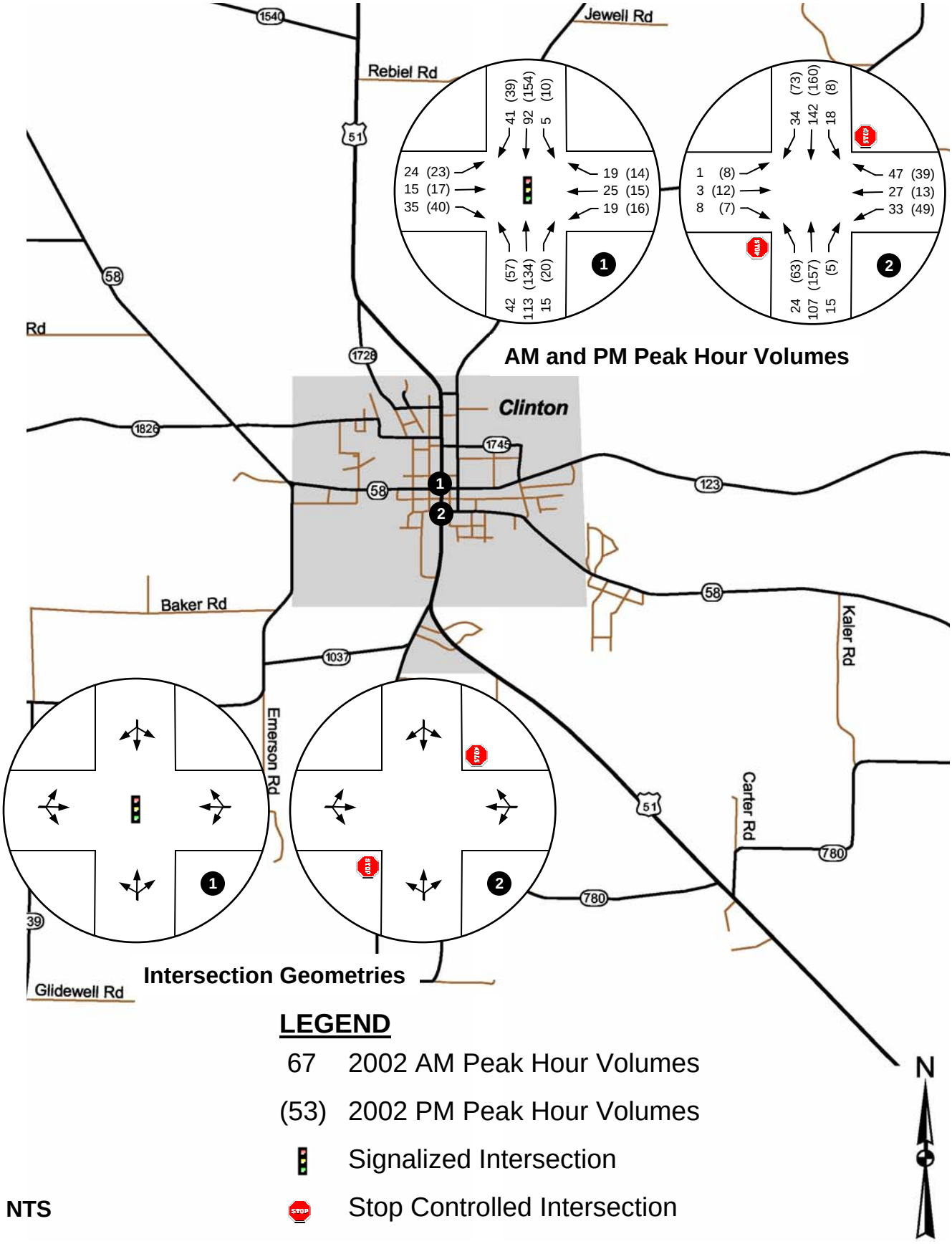


Figure 9: Intersection and Segment 2002 Peak Hour Levels of Service

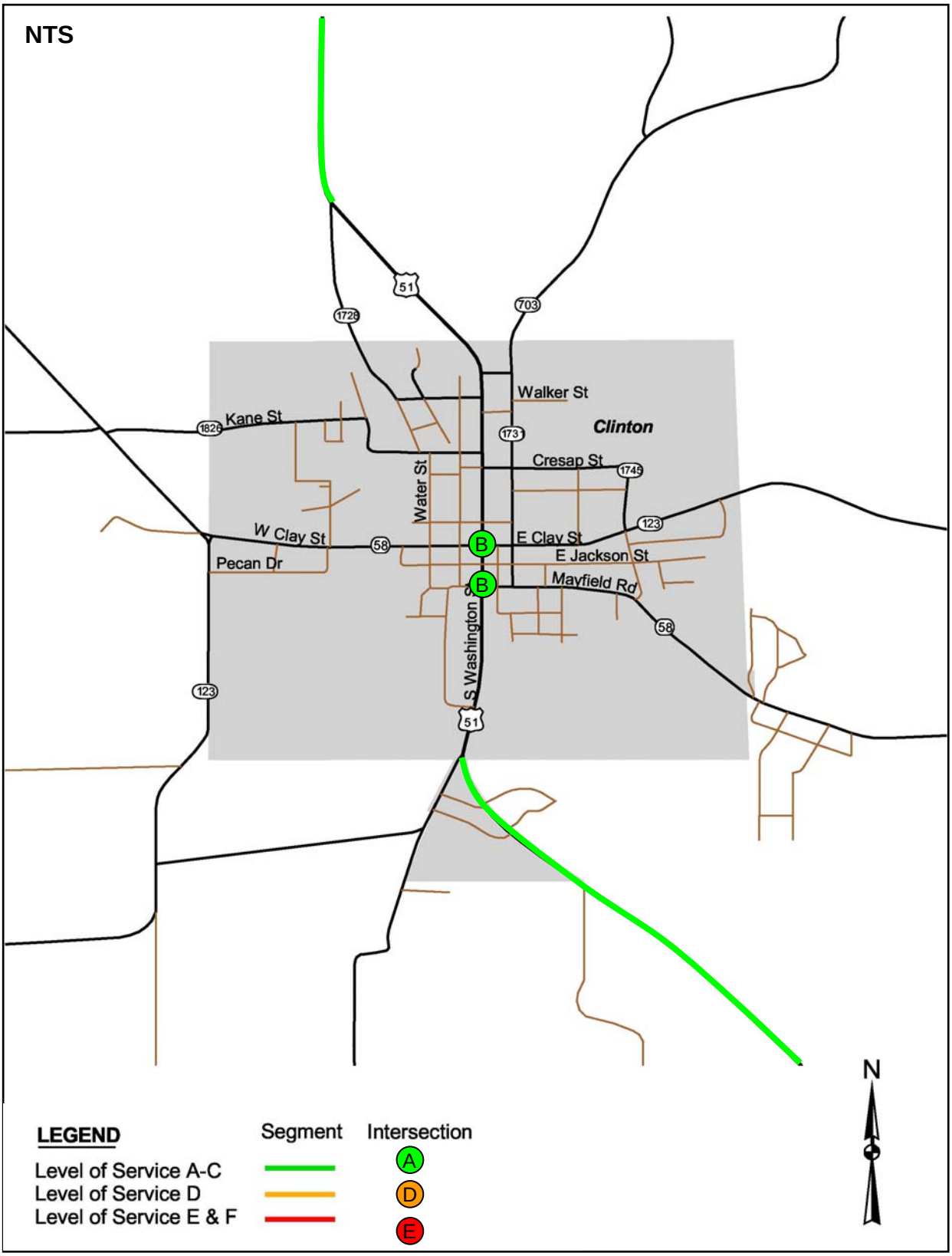


Figure 11: Existing and Future No-Build Average Daily Traffic Volumes

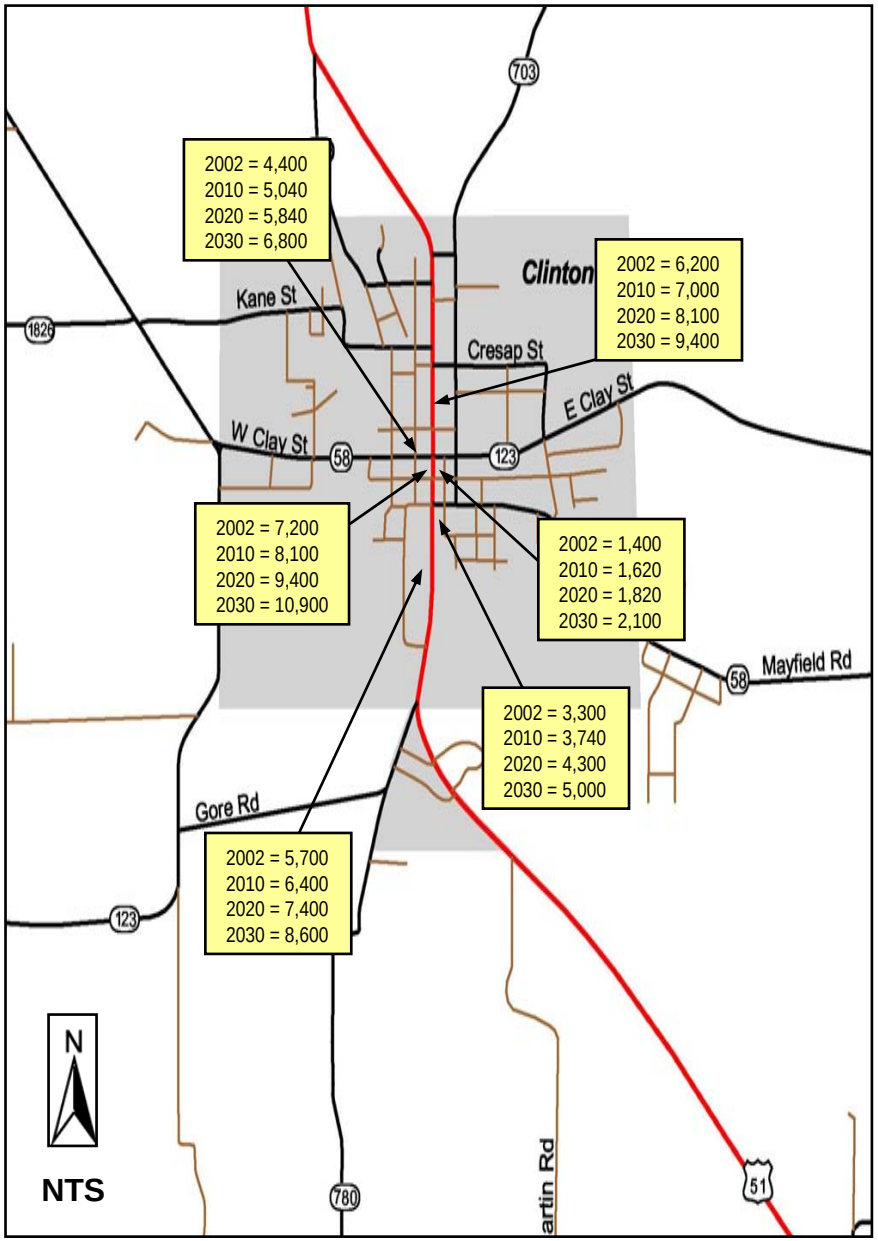


Figure 12: No-Build Intersection and Segment 2030 PM Peak Hour Levels of Service

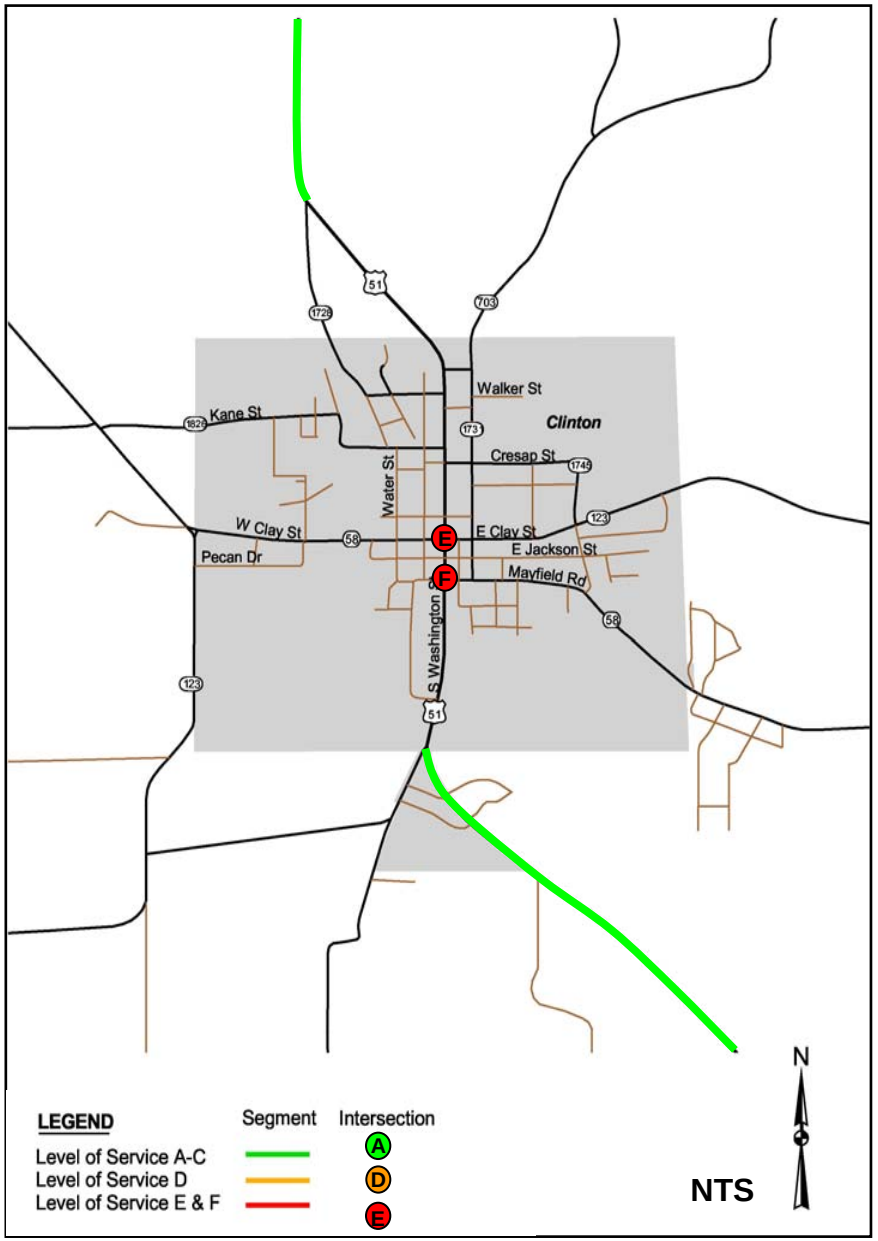
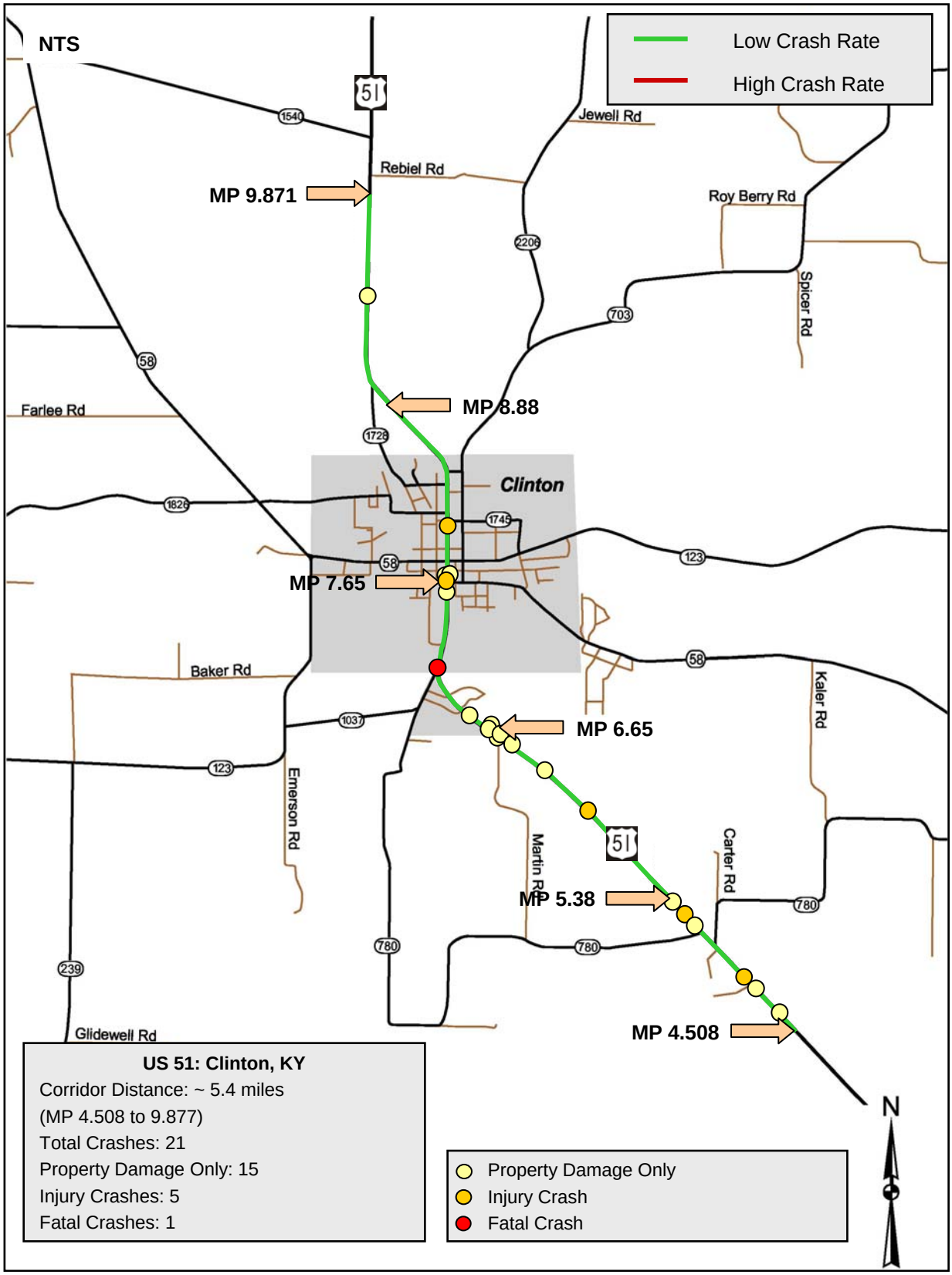


Figure 13: Crash Rates and Crash Locations by Severity
(January 1, 1998 – June 30, 2001)



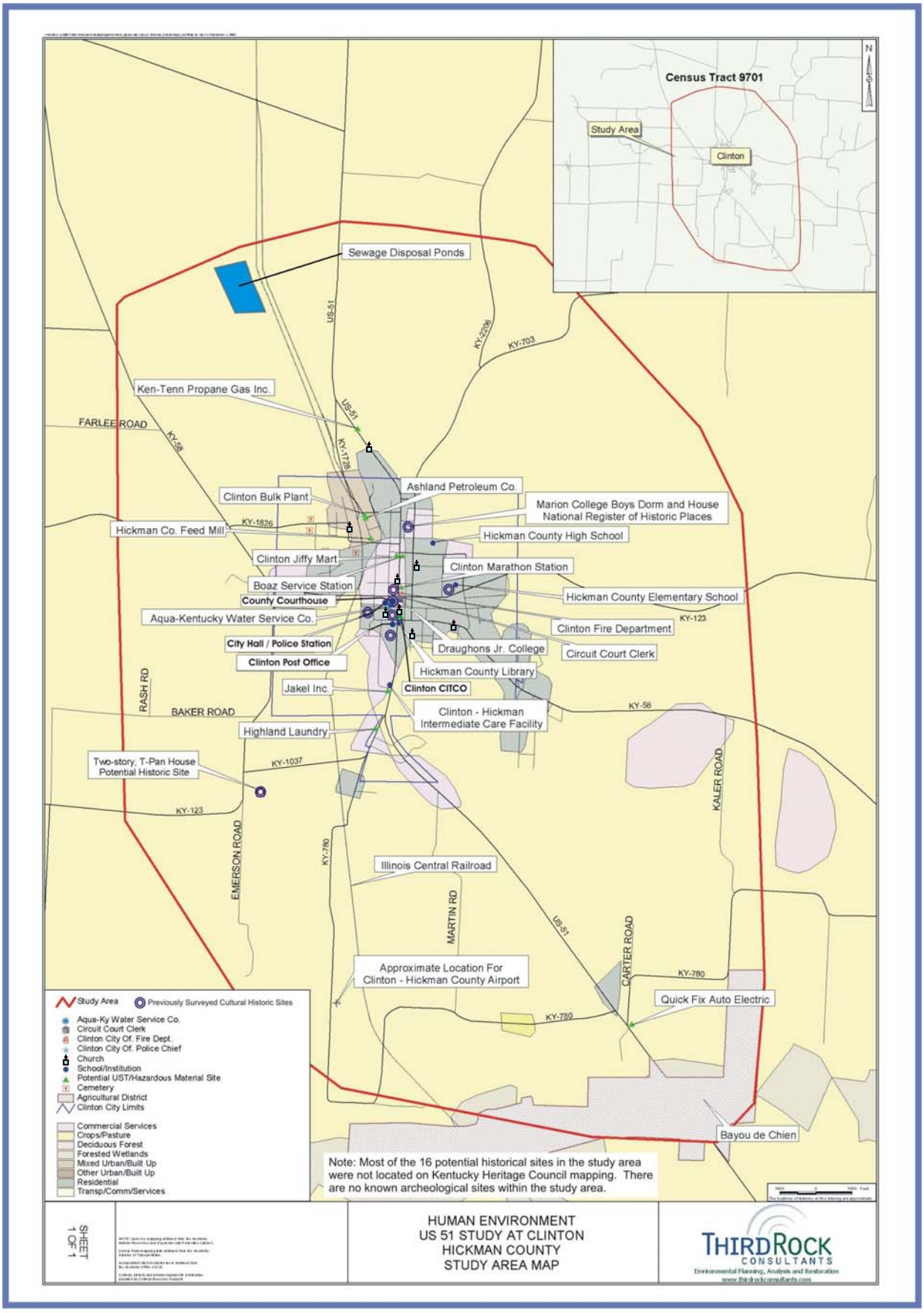
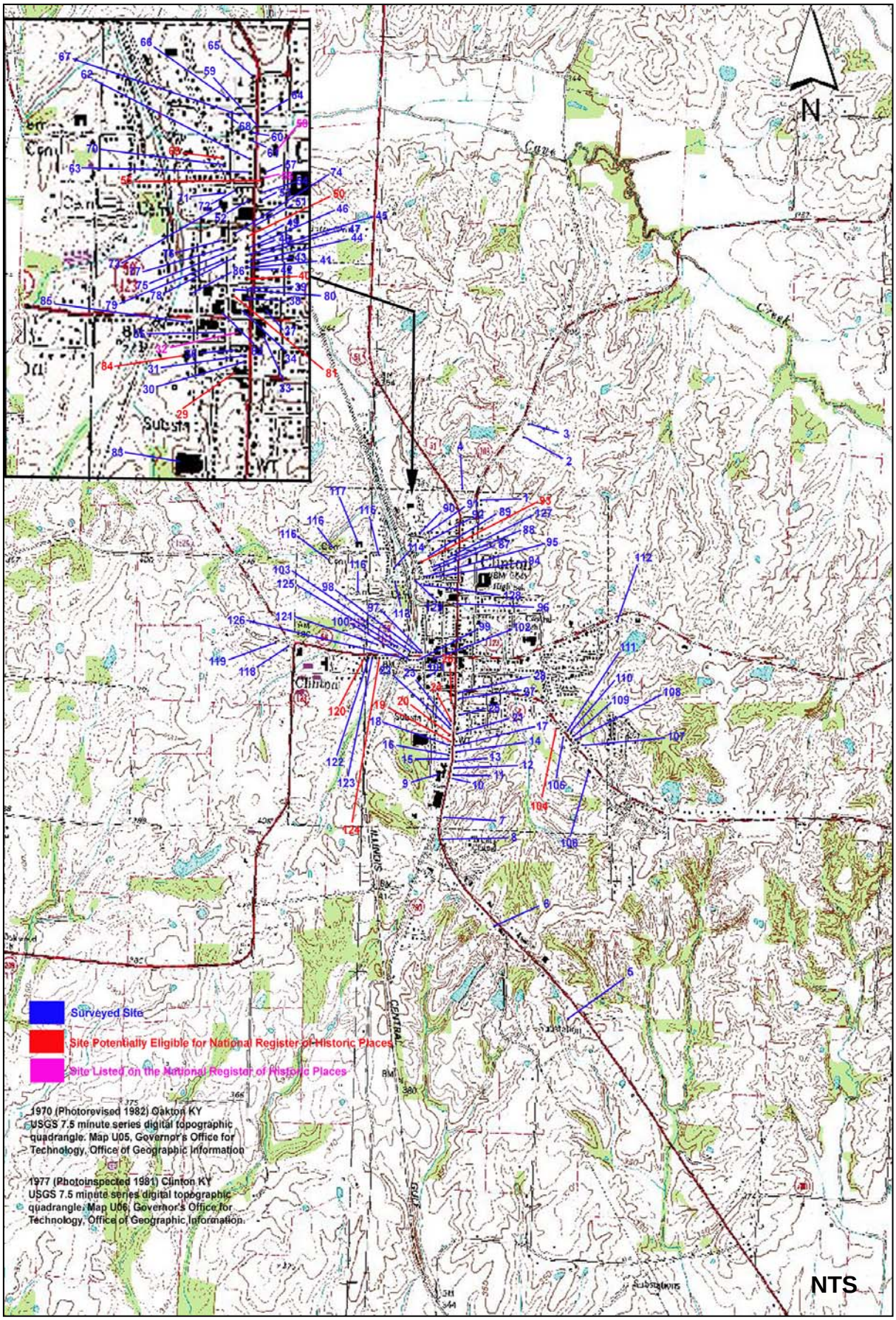


Figure 15: Human Environment Map

Figure 17: Cultural Historic Overview Survey



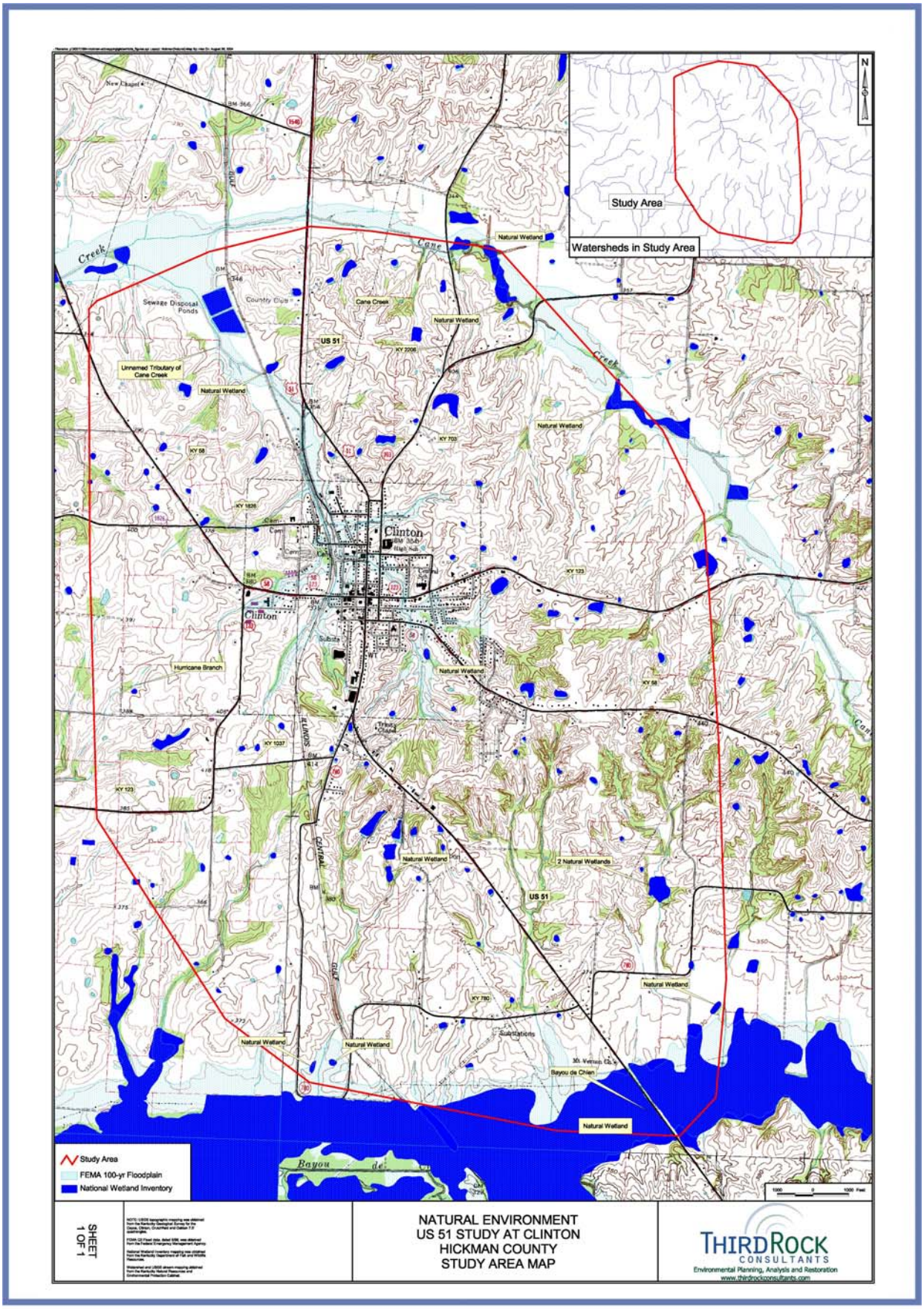
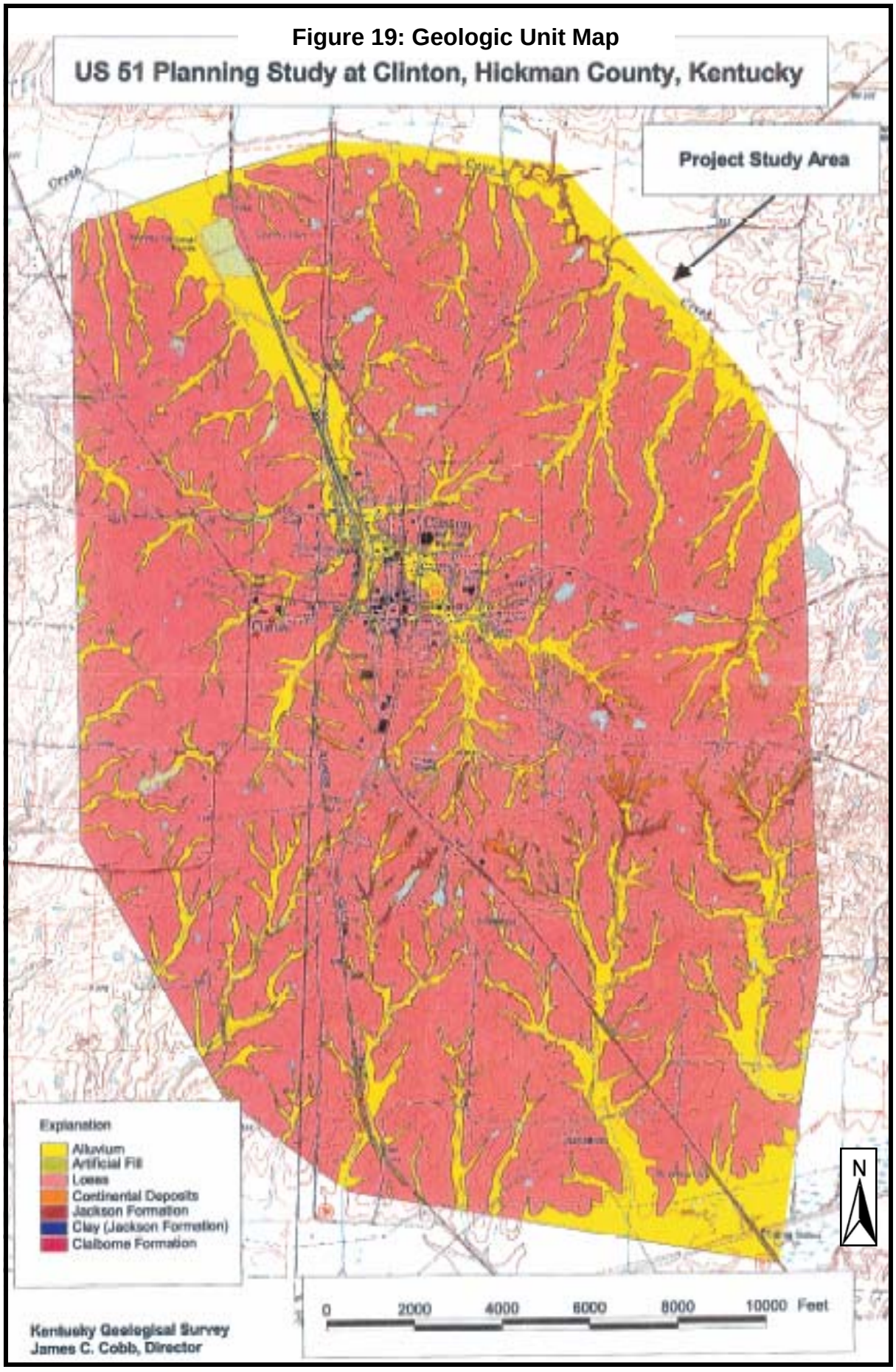
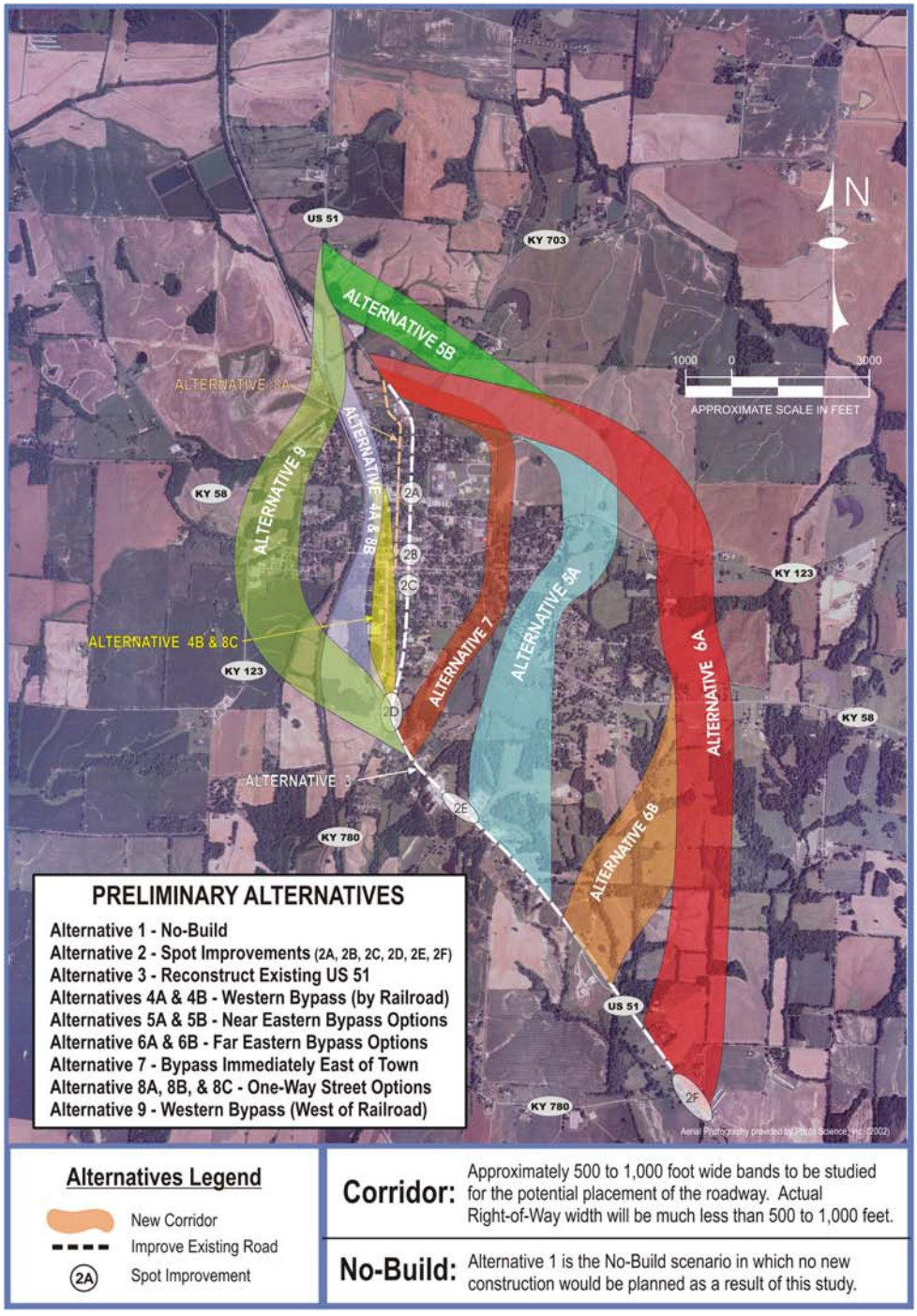


Figure 18: Natural Environment Map

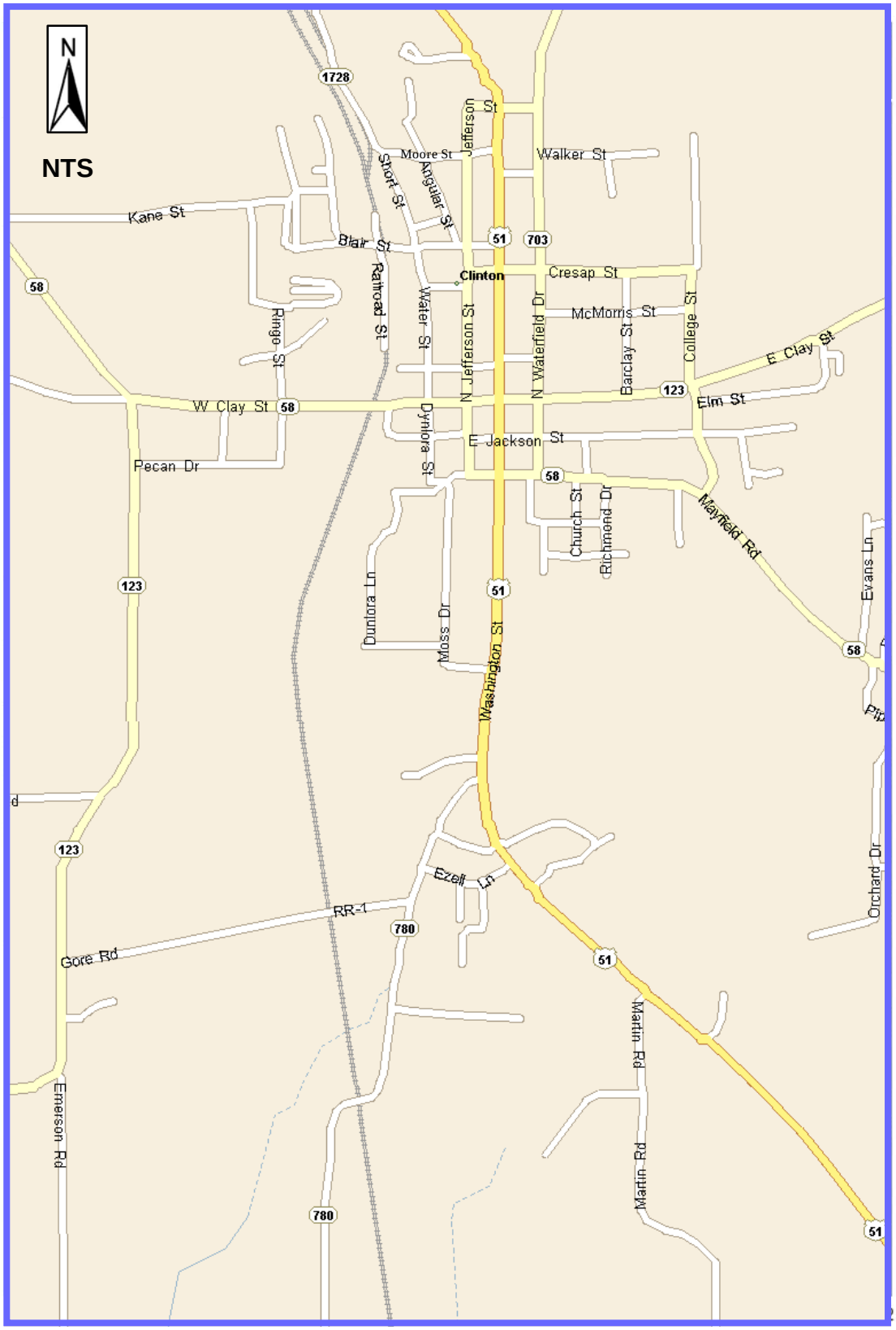
Figure 19: Geologic Unit Map





US 51 Study at Clinton

Figure 20-A: All Preliminary Alternatives



US 51 Study at Clinton

Figure 20-B: Existing Street Network

Figure 21: Conceptual Typical Sections

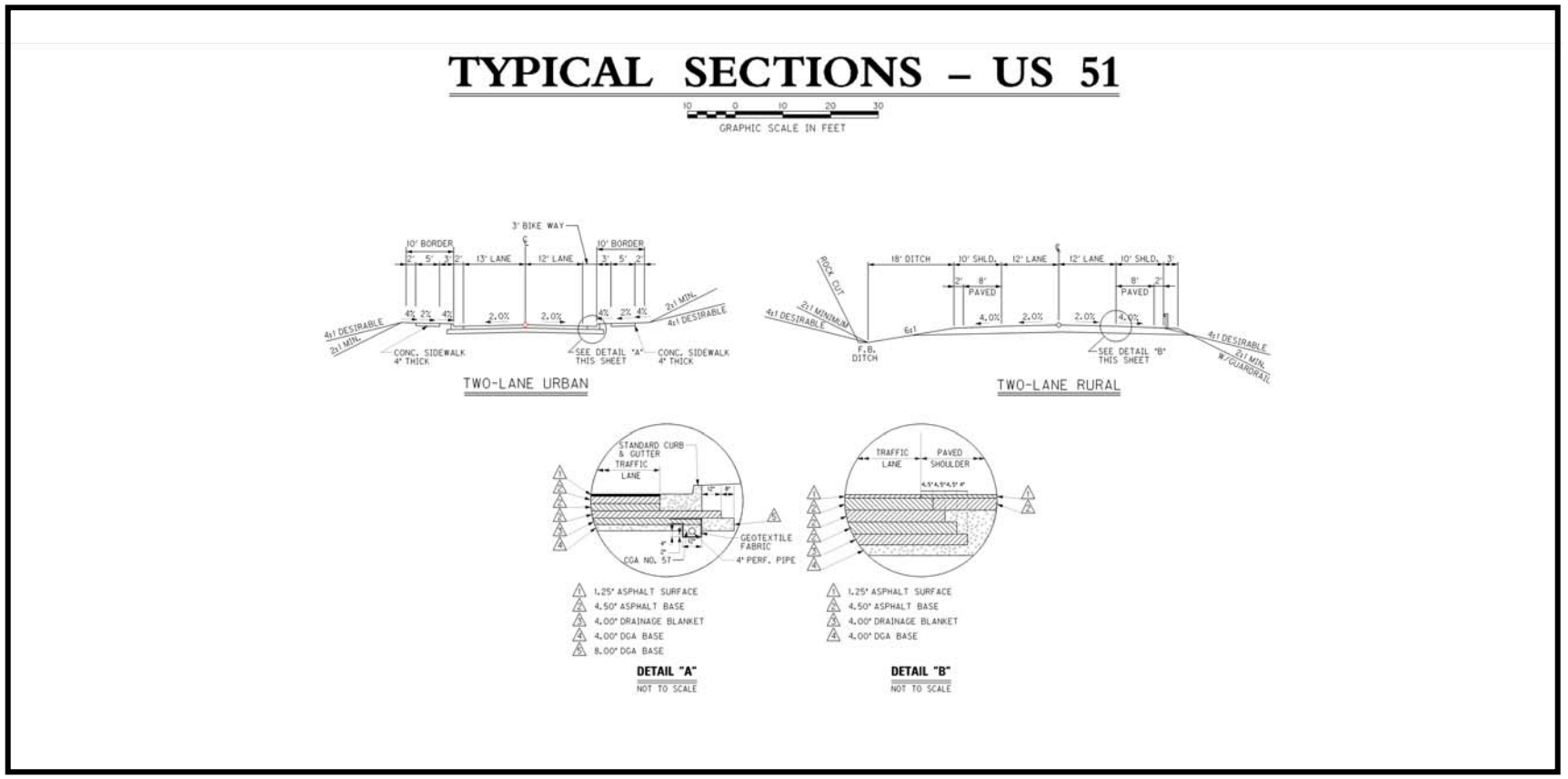


Figure 23: Alternative 2A – Vicinity of US 51 and Cresap Street

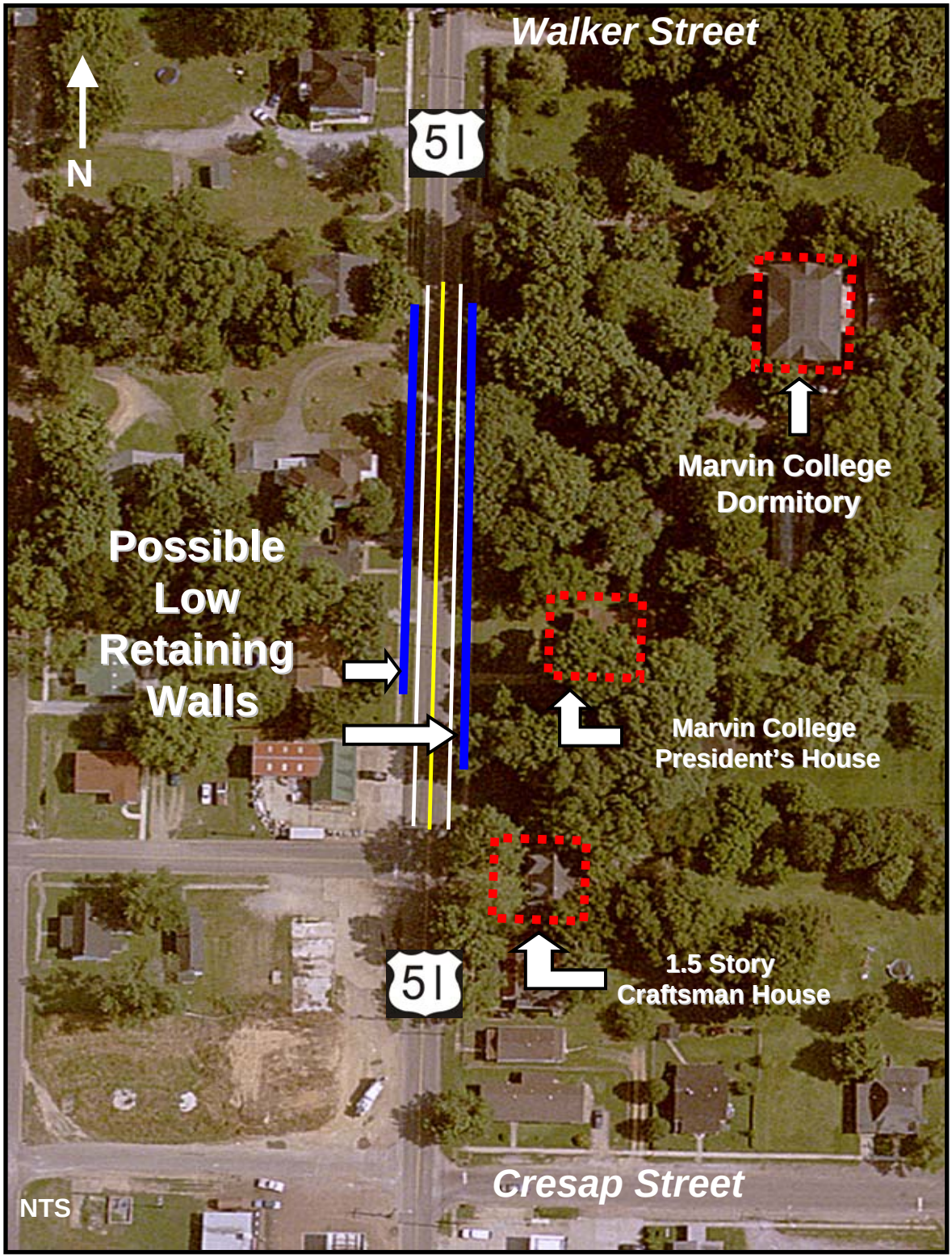


Figure 24: Alternative 2B – US 51 at KY 58 / KY 123

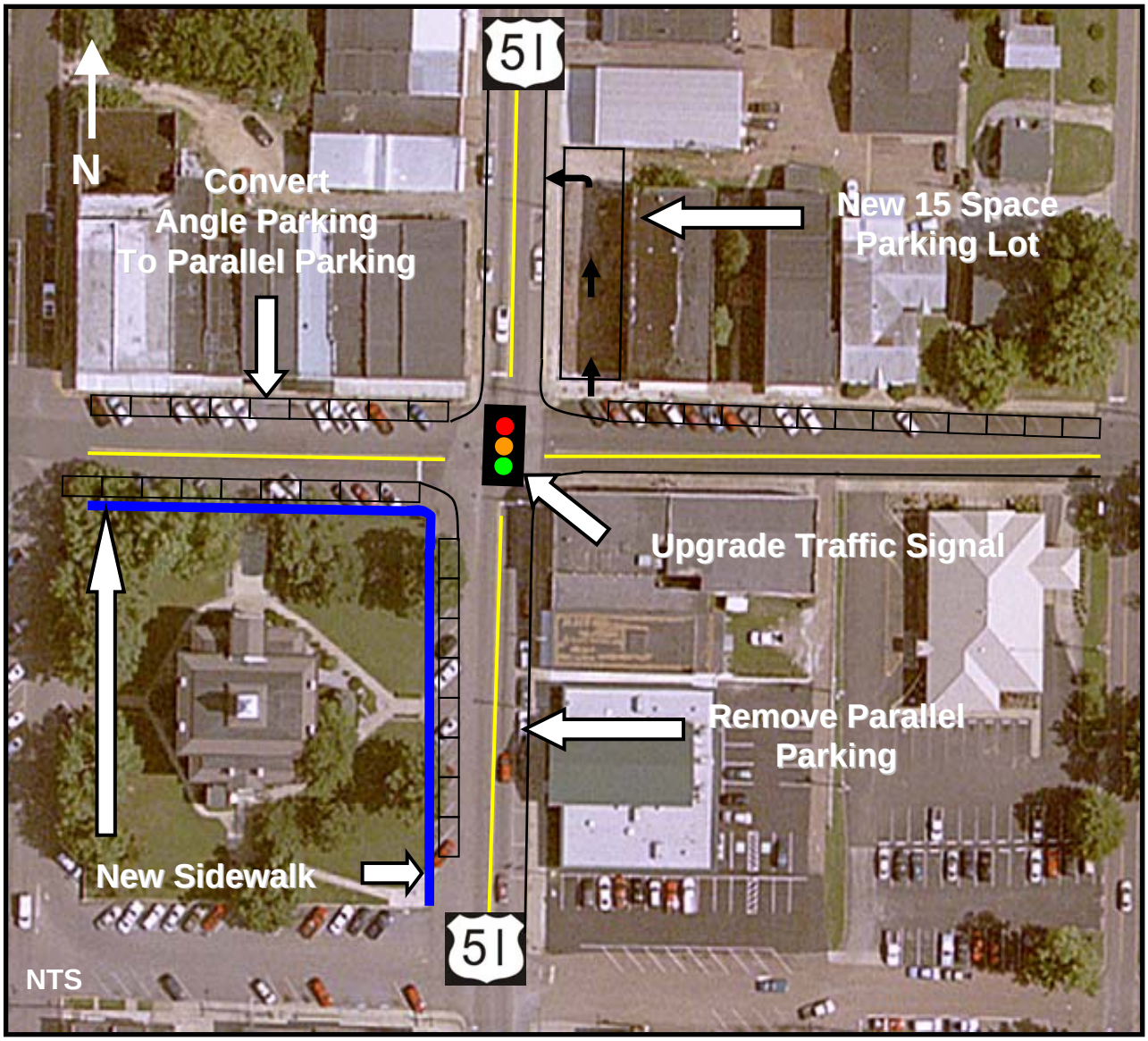


Figure 25: Alternative 2C – US 51 at KY 58

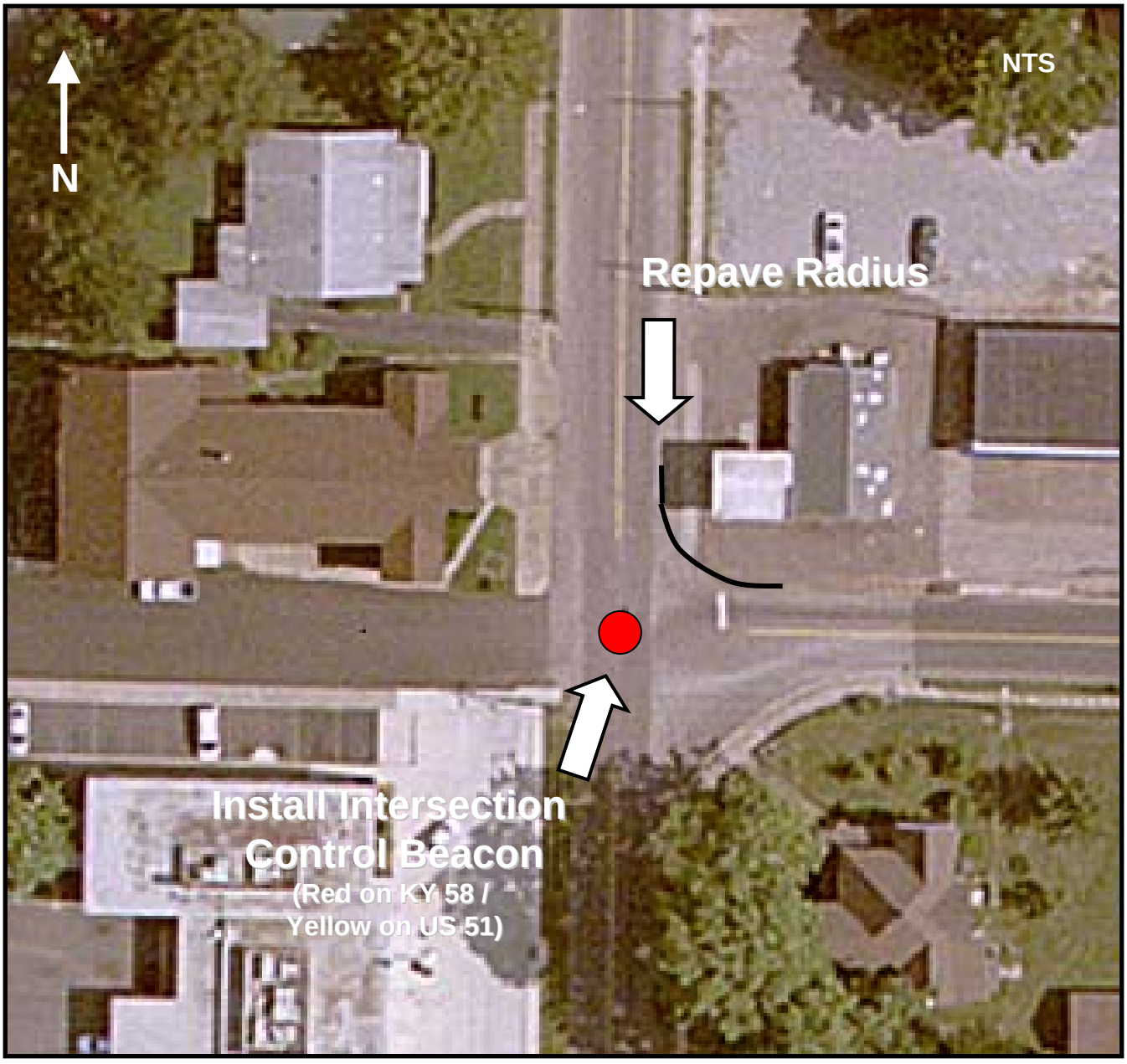


Figure 26: Alternative 3 – Reconstruct US 51

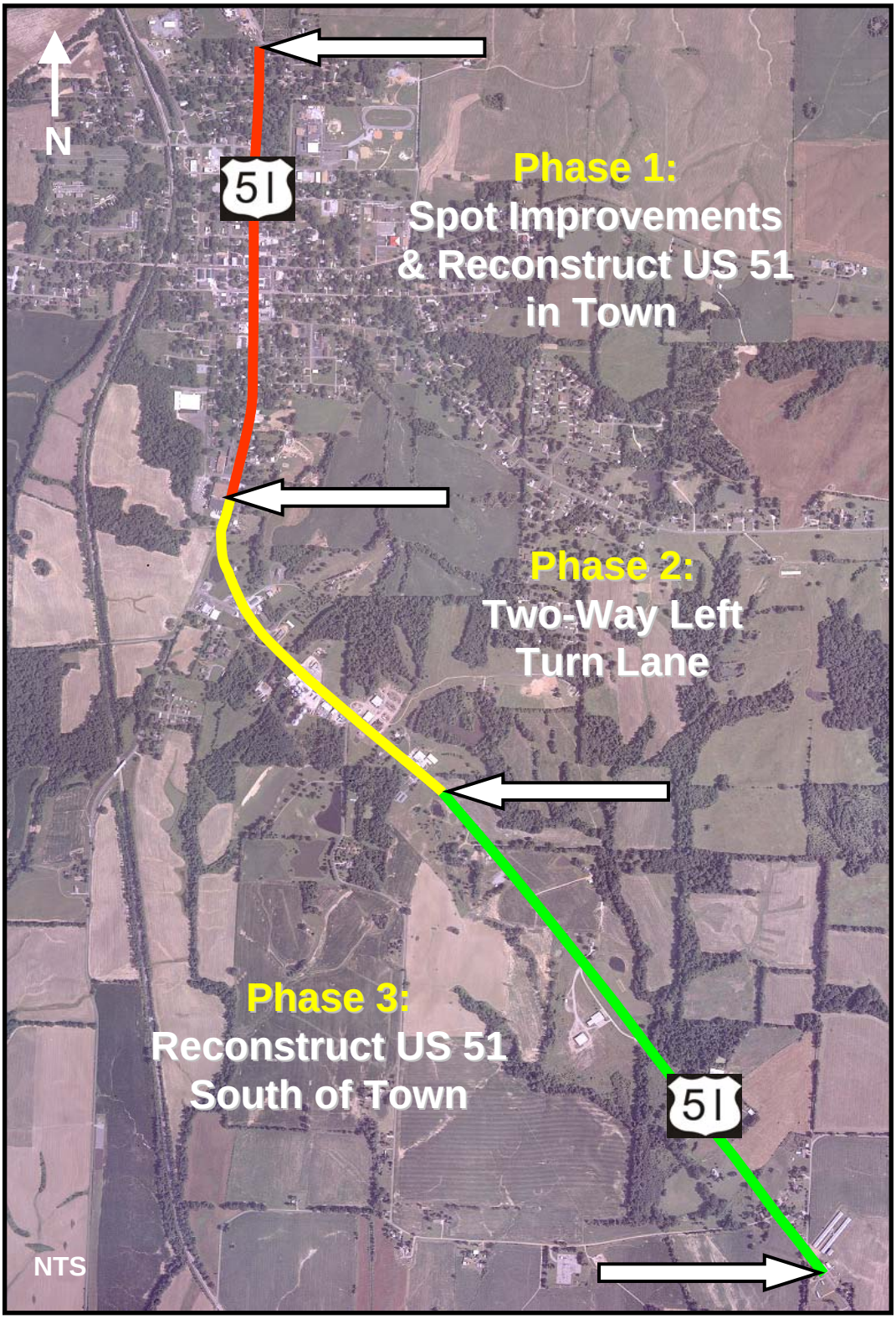


Figure 27: Alternative 6A – Eastern Bypass

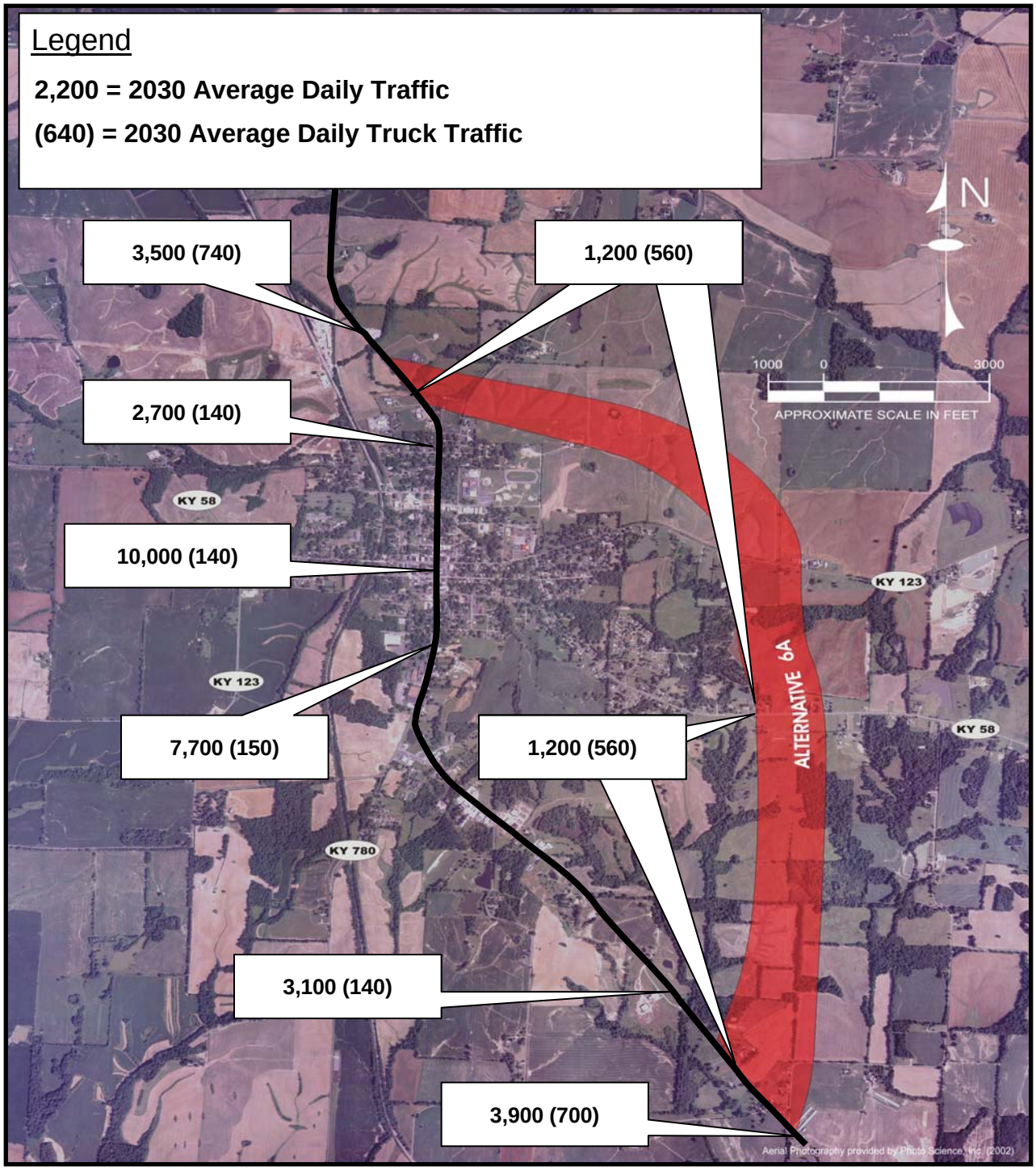
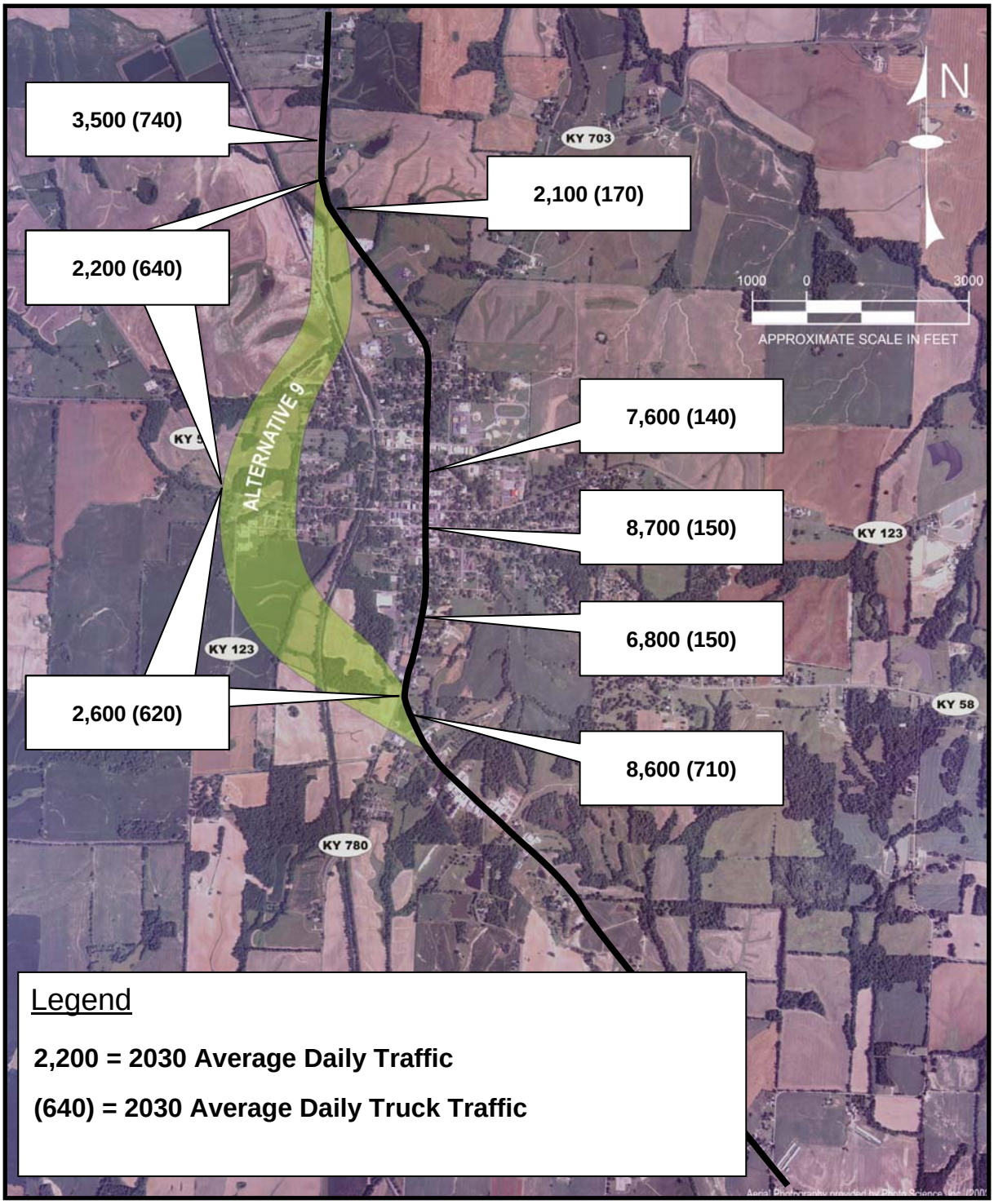


Figure 28: Alternative 9 – Western Bypass



APPENDIX C:
ENVIRONMENTAL JUSTICE REVIEW

US 51 STUDY IN CLINTON

DRAFT WORKING PAPER

ENVIRONMENTAL JUSTICE REVIEW

Prepared for

Kentucky Transportation Cabinet (KYTC) – Division of Planning

Kentucky Transportation Cabinet (KYTC) – District 1

Prepared by

Parsons Brinckerhoff Quade & Douglas, Inc.

March 17, 2003

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

1.0 INTRODUCTION

This report presents a review of community characteristics for the US 51 Project Area in the town of Clinton (Hickman County). The data used in the report comes from the U.S. Census Bureau, local officials meetings, stakeholder interviews, and field observations. The information and results are intended to assist the Kentucky Transportation Cabinet in making informed and prudent transportation decisions in the study area, especially with regard to the requirements of *Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (signed on February 11, 1994). Executive Order 12898 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…"

This report outlines the portions of the community that may be considered minority or low-income population areas. It also highlights concentrations of elderly residents.

2.0 WHAT IS ENVIRONMENTAL JUSTICE?

The U.S. Department of Transportation (DOT) outlines the three primary Environmental Justice concepts as:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Low-income is defined in U.S. DOT Order (5610.2) as "a person whose median household income is at or below the Department of Health and Human Services (HHS) poverty guidelines." A low-income population is "any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons …"

The U.S. DOT order defines minority as:

1. Black (a person having origins in any of the 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).

A minority population is “any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons …”

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 a 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.

An Environmental Justice community is therefore an identified minority or low-income population or concentration as defined above. These populations or concentrations are identified in this report as census areas exceeding a specified threshold level as outlined in the analysis section below.

Elderly populations (age 62 or above in this analysis) are not specifically recognized under the definition of an Environmental Justice community. However, the U.S. DOT specifically encourages the early examination of potential populations of the elderly, children, disabled, and other populations protected by Title VI of the Civil Rights Act of 1964 and related nondiscrimination statutes.

3.0 METHODOLOGY

Data for this study was collected from four primary sources: U.S. Census Data, meetings with local leaders, map and aerial photo reviews, and field observations. The U.S. Census Data used in the report includes:

- Census 2000 Population by Race and Hispanic Origin
- 1999 Poverty Status by Age for Census Block Groups
- Census 2000 Population by Age

The data was compiled with maps and tables to present a detailed description of the community conditions for the Clinton project area in Hickman County.

4.0 CENSUS DATA ANALYSIS

U.S. Census data is arranged according to geographic unit. For this study, data is presented at the national, state, county, town, census tract, block group, and census block levels. According to the U.S. Census Bureau, the definitions of census tracts, block groups, and census blocks are as follows:

- **Census Tract – "**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. Census tracts generally contain between 1,000 and 8,000 people. Census tract boundaries are delineated with the intention of being stable over many decades, so they generally follow relatively permanent visible features. However, they may 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 census tract. A BG consists of all tabulation blocks whose numbers begin with the same digit in a census tract. BGs generally contain between 300 and 3,000 people, with an optimum size of 1,500 people."

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

Hickman County is composed of one census tract, 9701, and six block groups. The limits of the project study area are shown in Figure 4.1, as well as the limits of the census tract and the location of the surrounding counties and tracts. As shown in Figure 4.1, the project study area is located in block groups 1, 2, 3, and 4 only. Therefore, data is presented for these four blocks along with data for the town, county, state, and nation for comparison. A more detailed view of the block groups is presented in Figure 4.2.

4.1 Minority Population Analysis

The largest minority group in the county is Black / African American alone, with nearly ten percent of the county population and twenty-seven percent of the town population falling into this category as shown in Table 4.1. The remaining minority population is mainly Hispanic, Latino, or two or more races. Overall, the percent minority population in Hickman County and Clinton exceeds the statewide average.

The minority percentages for two of the four block groups exceed both the statewide average (10.7 percent) and the countywide average (12.3 percent). Block Group 2 has the highest minority percentage at 30.1 percent. The next highest is Block Group 1 at 15.4 percent. The Block Group 2 minority percentage is close to the town and national average (30.0 and 30.9 percent respectively), but none of the block groups exceed the national average.

Figure 4.1: Location of Census Tract 9701 in Hickman County

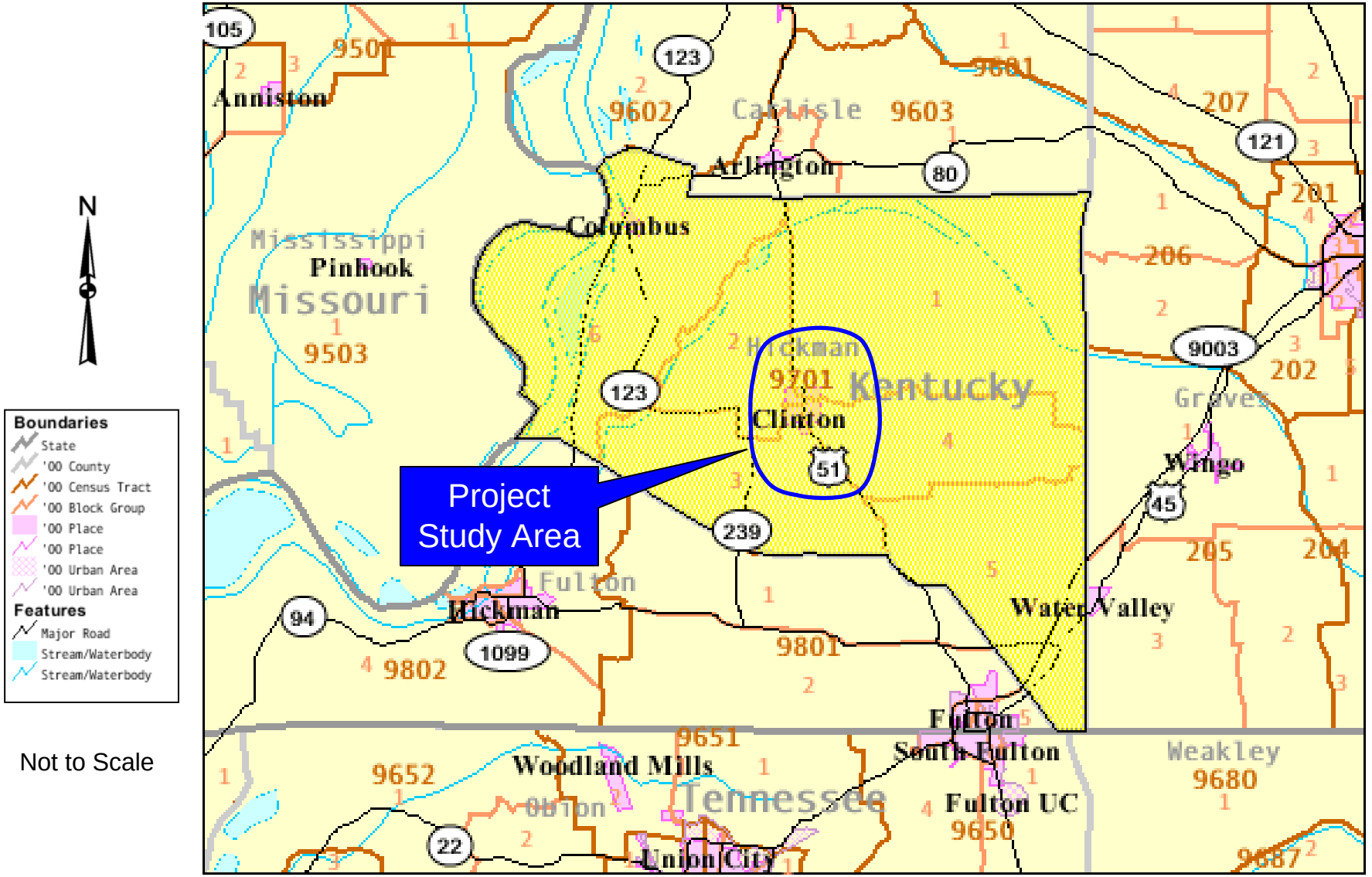
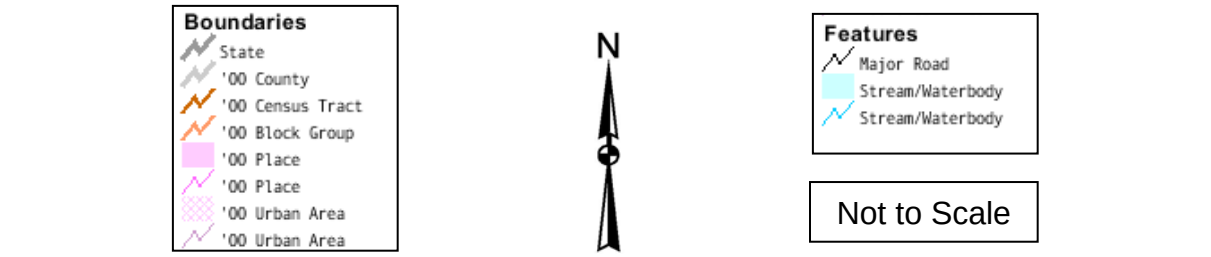
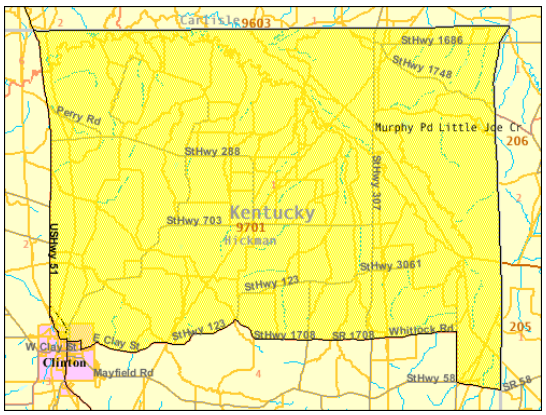
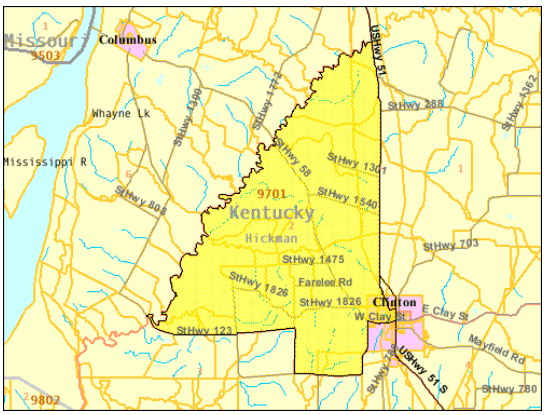


Figure 4.2: Census Tract 9701 Block Group Location

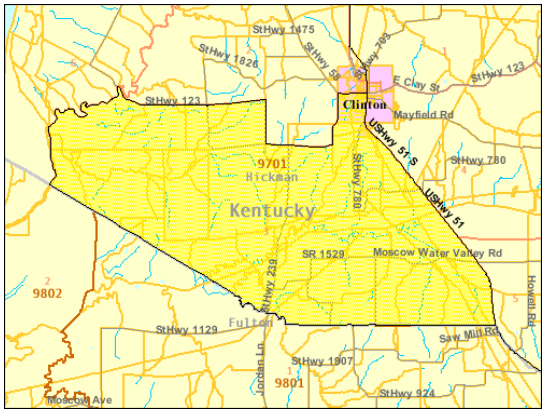




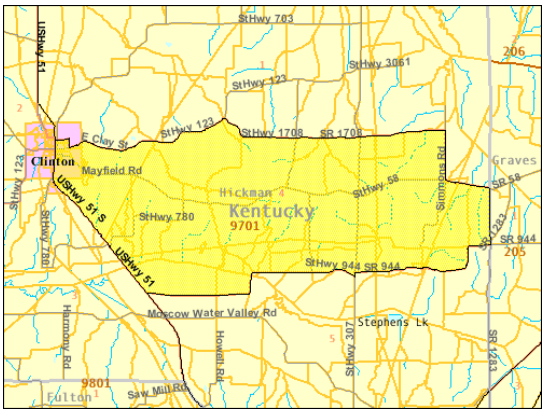
Block Group 1



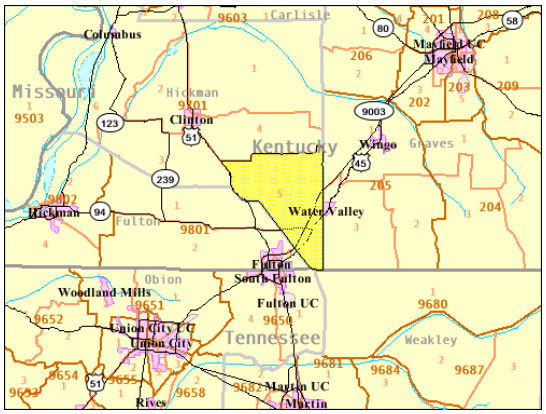
Block Group 2



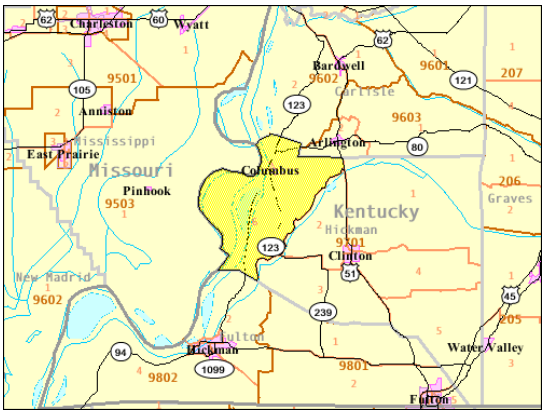
Block Group 3



Block Group 4



Block Group 5



Block Group 6

Table 4.1: 2000 Census Data by Race at Block Group Level

	United States	Kentucky	Hickman County	Clinton	Block Group 1	Block Group 2	Block Group 3	Block Group 4
Total Population	281,421,906	4,041,769	5,262	1,415	1,042	658	753	1,456
White alone	194,552,774	3,608,013	4,614	997	882	460	678	1,359
Black or African American alone	33,947,837	293,639	520	384	143	169	62	60
Hispanic or Latino	35,305,818	59,939	54	22	12	11	3	15
American Indian and Alaska Native alone	2,068,883	7,939	12	7	3	3	0	4
Asian alone	10,123,169	29,368	3	0	0	2	0	1
Native Hawaiian and Other Pacific Islander alone	353,509	1,275	0	0	0	0	0	0
Some other race alone	467,770	3,846	0	0	0	0	0	0
Two or more races	4,602,146	37,750	59	5	2	13	10	17
Total Minority Population	86,869,132	433,756	648	418	160	198	75	97
Percent Minority Population	30.9	10.7	12.3	30.0	15.4	30.1	10.0	6.7

Source: U.S. Census Bureau, Census 2000

Based on the U.S. DOT definition of minority populations it appears that there is a "readily identifiable" group of minority persons living in the north and west portions of the town of Clinton, mainly in Block Groups 1 and 2. Consultations with local officials, stakeholders, and residents along with field observations confirmed the presence of a substantial African-American community in this portion of the study area.

To establish the approximate limits of the minority community, detailed block level census data was examined giving a percent minority for each block. These percentages were evaluated using a threshold analysis, a method that provides a reasonable technique for determining an approximate minority community boundary within the study area.[1]

The first step in the threshold analysis is to set the reference threshold. This is based on either the regional or statewide average percentage of the minority population. In this case the countywide average of 12.3 percent was employed as the reference threshold. Then ranges 25 percent above and 25 percent below this reference point are defined as shown in Table 4.2.

Table 4.2: Minority Population Analysis Ranges

Analysis Range	Percent Minority
Significantly Above Threshold	> 15.4%
Just Above Threshold	12.3% – 15.4%
Reference Threshold (County Average)	**12.3%**
Just Below Threshold	9.2% – 12.3%
Significantly Below Threshold	< 9.2%

[1] Ohio Transportation EJ Guidance, Ohio Department of Transportation, August 2002, Pages 10-11.

Typically, areas with minority percentages significantly above the reference threshold (>15.4%) are included as part of the local minority community. Blocks with percentages just above the reference threshold (between the reference threshold and twenty-five percent above the reference threshold) may or may not be considered part of the target population depending on the number of residents, location, percentage, and size of the area.

For this analysis, all blocks in Block Groups 1 and 2 were compared to the threshold values of 12.3 percent and 15.4 percent. The data analysis revealed several blocks that exceeded the 15.4 percent threshold throughout the north and west portions of the town. A few additional blocks on the edge of or just outside the study area also exceeded the threshold. The blocks exceeding the 15.4% threshold are listed in Tables 4.3 and 4.4 and highlighted in Figures 4.3 and 4.4. To illustrate where the highest concentration of minority blocks are located, three levels of shading are used in Figures 4.3 and 4.4. The lightest (white) indicates no population of any race. The next darker shading indicates those blocks that are higher than the reference threshold, but lower than 50 percent. The darkest shading is used to show the blocks with a minority percentage of 50 or higher. None of the blocks in these two block groups, located within the study area, had minority percentages between the threshold values of 12.3 percent and 15.4 percent.

Table 4.3: Minority Population for Selected Blocks in Block Group 1

	Hickman County	Block 1130	Block 1132	Block 1133	Block 1134	Block 1135	Block 1136	Block 1138	Block 1139	Block 1143	Block 1163
Total Population	5,262	50	6	27	22	39	33	41	12	6	4
Total Minority Population	648	38	6	25	20	14	26	8	4	4	2
Percent Minority Population	12.31	76.0	100.0	92.6	90.9	35.9	78.8	19.5	33.3	66.7	50.0

Source: U.S. Census Bureau, Census 2000

Table 4.4: Minority Population for Selected Blocks in Block Group 2

	Hickman County	Block 2011	Block 2015	Block 2017	Block 2032	Block 2033	Block 2036	Block 2037	Block 2038	Block 2041	Block 2044	Block 2046	Block 2047	Block 2048
Total Population	5,262	9	4	5	39	9	75	84	12	12	30	3	4	10
Total Minority Population	648	2	2	1	35	8	48	43	12	12	16	3	2	4
Percent Minority Population	12.3	22.2	50.0	20.0	89.7	88.9	64.0	51.2	100.0	100.0	53.3	100.0	50.0	40.0

Source: U.S. Census Bureau, Census 2000

According to the analysis, the greatest percentage of minorities lives to the west of US 51 and to the north of KY 58 in Clinton. To ensure that the boundaries of this minority concentration are correct, surrounding blocks in Block Groups 3 and 4 were evaluated to determine if the minority percentages in those blocks exceeded either of the two threshold values (12.3% and 15.4%). Several adjacent blocks were identified as exceeding those thresholds and they are shown in Table 4.5 and on Figure 4.3.

Figure 4.3: Location of Minority Blocks in Clinton

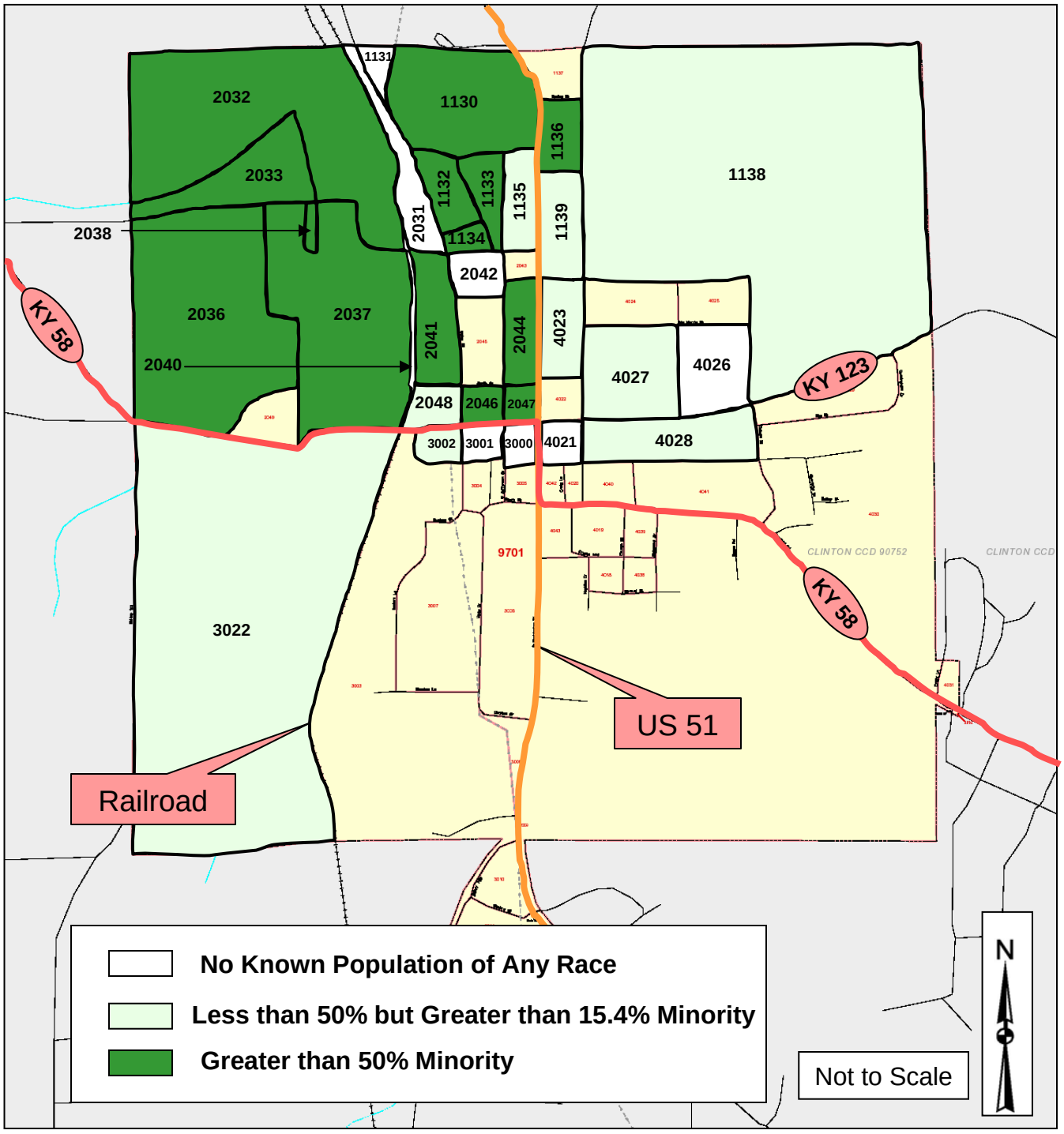


Figure 4.4: Location of Minority Blocks in Study Area Surrounding Clinton

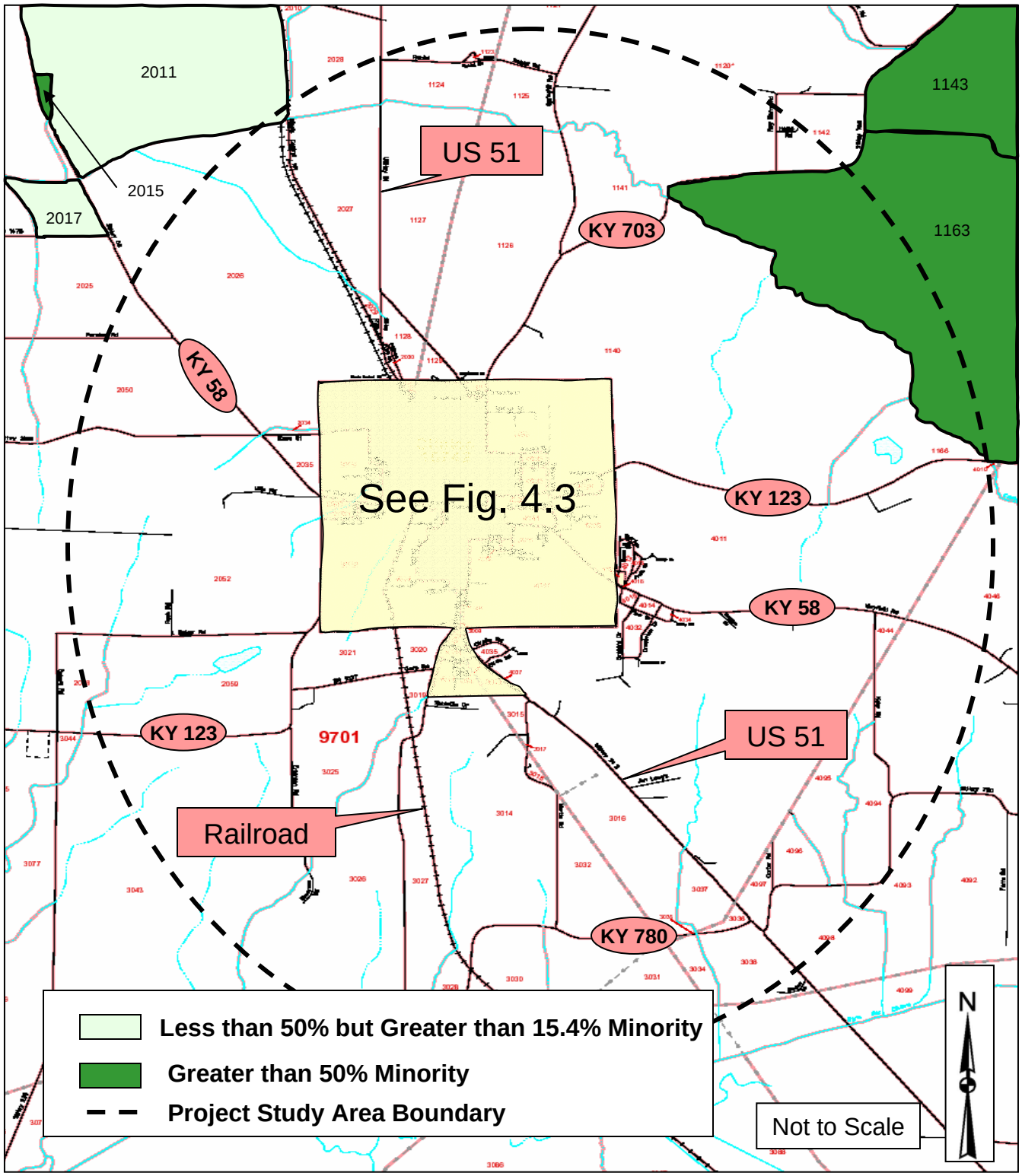


Table 4.5: Minority Population for Blocks Adjacent to Potential EJ Community

	Hickman County	Block 3002	Block 3022	Block 4023	Block 4027	Block 4028
Total Population	5,262	15	82	30	52	52
Total Minority Population	648	3	14	8	14	12
Percent Minority Population	12.3	20.0	17.1	26.7	26.9	23.1

Source: U.S. Census Bureau, Census 2000

The inclusion of these surrounding blocks indicates that the minority community within Clinton is dispersed through approximately three-quarters of the town. While this may seem like a large area, the analysis is reasonable given that some portions of the minority community area have relatively low population densities. There are also clusters of residential development. For example, most of the 39 residents of Block 2032 live in the southeast portion of the block, while the northwest portion is farmland. Also, as has been stated, the town of Clinton does have a relatively high minority percentage (30.0%) compared to the county and state percentages (12.3% and 10.7% respectively).

Overall, there is a clear minority population in the study area that should be considered in project planning and in public participation activities.

4.2 Low-Income Population Analysis

A low-income population analysis was completed for the study area using a methodology similar to that used for the minority population analysis. However, as income data is not published at the block level, the analysis was conducted at the block group level.

As shown in Table 4.6, a higher percentage of Hickman County's population lives below the poverty level (17.4%) than in the state (15.8%) or the nation (12.4%). The town of Clinton has an even higher percentage below the poverty level at 28.3%.

Table 4.6: 1999 Census Data for Poverty Levels

	United States	Kentucky	Hickman County	Clinton	Block Group 1	Block Group 2	Block Group 3	Block Group 4
Total Population	273,882,232	3,927,047	5,095	1,415	1,034	618	639	1,421
Population Below Poverty Level	33,899,812	621,096	887	401	182	200	168	166
% Population Below Poverty Level	12.4	15.8	17.4	28.3	17.6	32.4	26.3	11.7

Source: U.S. Census Bureau, Census 2000

The reference threshold set for this analysis is the county average of 17.4 percent of the population living below the poverty level as shown in table 4.7.[2] The upper threshold above which the block group would clearly be included as a low-income population is 21.8 percent.

Table 4.7: Low-Income Population Analysis Ranges

Analysis Range	Percent Low Income
Significantly Above Threshold	> 21.8%
Just Above Threshold	17.4% – 21.8%
Reference Threshold (County Average)	**17.4%**
Just Below Threshold	13.1% – 17.4%
Significantly Below Threshold	< 13.1%

As shown in Table 4.6, Block Groups 2 and 3 both have low-income population percentages in the upper range (i.e. significantly above the reference threshold). Block Group 1 has a low-income percentage just above the reference threshold at 17.6 percent. This is nearly the same as the county average. All three of these values are higher than both the statewide and national averages. Therefore, it is reasonable to assume that portions of all three block groups could include low-income populations. Referring back to Figures 4.1 and 4.2, this would indicate potential low-income populations in the north and west portions of the study area. These areas are similar geographically to some of the areas previously noted as having minority populations. Therefore, the highlighted minority population areas are Environmental Justice communities for reasons of both income and race.

4.3 Population by Age

Both the project study team as well as individuals involved in the project's public involvement program were interested in making sure that the large local elderly population was considered in the study. This was highlighted early on as a key issue. Therefore the extent and location of the elderly population was assessed as part of this analysis. For this analysis elderly is assumed to be anyone over the age of 62.

Table 4.8 shows that Hickman County has an elderly population significantly higher than both the statewide and national averages. The town of Clinton has an elderly population somewhat higher than the county, and higher than the state and nation.

[2] Note that there the poverty threshold used by the U.S. Census is different from the Health and Human Services poverty guidelines. However, the census data is detailed, readily available, and provides a good indicator for where low-income populations exist.

Table 4.8: 2000 Census Data for Age 62+

	United States	Kentucky	Hickman County	Clinton	Block Group 1	Block Group 2	Block Group 3	Block Group 4
Total Population	281,421,906	4,041,769	5,262	1,415	1,042	658	753	1,456
# Persons 62 Years and Older	41,256,029	601,762	1,159	401	193	107	249	339
% Persons 62 Years and Older	14.7	14.9	22.0	28.3	18.5	16.3	33.1	23.3

Source: U.S. Census Bureau, Census 2000

To determine if there are concentrations of elderly residents in the study area the four block groups making up the study area were examined. Again, the county average (22.0%) was used as the reference threshold as shown in Table 4.9. As shown in Table 4.8, Block Group 3 has an elderly population (33.1 percent) significantly higher than the county Average. Block Group 4 is also above the county average, but only by 1.3 percentage points. Even though Block Group 4 is only slightly above the county average, additional block level analysis was completed for both Block Groups 3 and 4.

Table 4.9: Elderly Population (62+) Analysis Ranges

Analysis Range	Percent Low Income
Significantly Above Threshold	> 27.5%
Just Above Threshold	22.0% – 27.5%
Reference Threshold (County Average)	**22.0%**
Just Below Threshold	16.5% – 22.0%
Significantly Below Threshold	< 16.5%

For Block Groups 3 and 4, additional data for the block level was obtained to determine where the highest populations occur within the block groups. The block percentages were compared to the threshold values of 22.0 percent and 27.5 percent (twenty-five percent above the reference threshold). All of the blocks that are higher than the thresholds are listed in Tables 4.10 and 4.11 and shown on Figures 4.5 and 4.6.

As shown in Figure 4.5, there is a concentration of residents age 62 or above on the south side of the town. Other blocks can be seen scattered throughout the study area in Figure 4.6, all of which are primarily located in the south. Most of the blocks are not highly populated; therefore, even though there may be a high percentage of residents 62 and older there is not necessarily a concentrated population. Two blocks in the study area that could be considered a concentrated population are Blocks 3006 (along US 51) and 3023. These blocks have elderly populations of 73 (78.5%) and 63 (96.9%) respectively. These high concentration areas should be taken into account in the project planning and any future design.

Table 4.10: 2000 Census Data for Age 62+ by Blocks for Block Group 3

	Total Population	# Persons 62 Years and Older	% Persons 62 Years and Older
Hickman County	5,262	1,159	22.0
Block 3003	15	5	33.3
Block 3004	3	1	33.3
Block 3005	3	2	66.7
Block 3006	93	73	78.5
Block 3007	8	2	25.0
Block 3014	48	11	22.9
Block 3018	8	3	37.5
Block 3021	1	1	100.0
Block 3022	82	19	23.2
Block 3023	65	63	96.9
Block 3032	1	1	100.0
Block 3037	5	3	60.0
Block 3038	11	3	27.3
Block 3043	6	2	33.3
Block 3052	16	5	31.3

Source: U.S. Census Bureau, Census 2000

Table 4.11: 2000 Census Data for Age 62+ by Blocks for Block Group 4

	Total Population	# Persons 62 Years and Older	% Persons 62 Years and Older
Hickman County	5,262	1,159	22.0
Block 4012	22	7	31.8
Block 4013	15	4	26.7
Block 4014	17	6	35.3
Block 4015	9	2	22.2
Block 4017	103	23	22.3
Block 4018	15	5	33.3
Block 4019	11	5	45.5
Block 4025	7	4	57.1
Block 4027	52	16	30.8
Block 4028	52	16	30.8
Block 4029	31	10	32.3
Block 4030	125	45	36.0
Block 4033	70	21	30.0
Block 4034	12	3	25.0
Block 4040	16	5	31.3
Block 4042	1	1	100.0
Block 4093	2	2	100.0
Block 4098	5	4	80.0

Source: U.S. Census Bureau, Census 2000

Figure 4.5: Location of Concentrated Elderly Population Blocks in Clinton

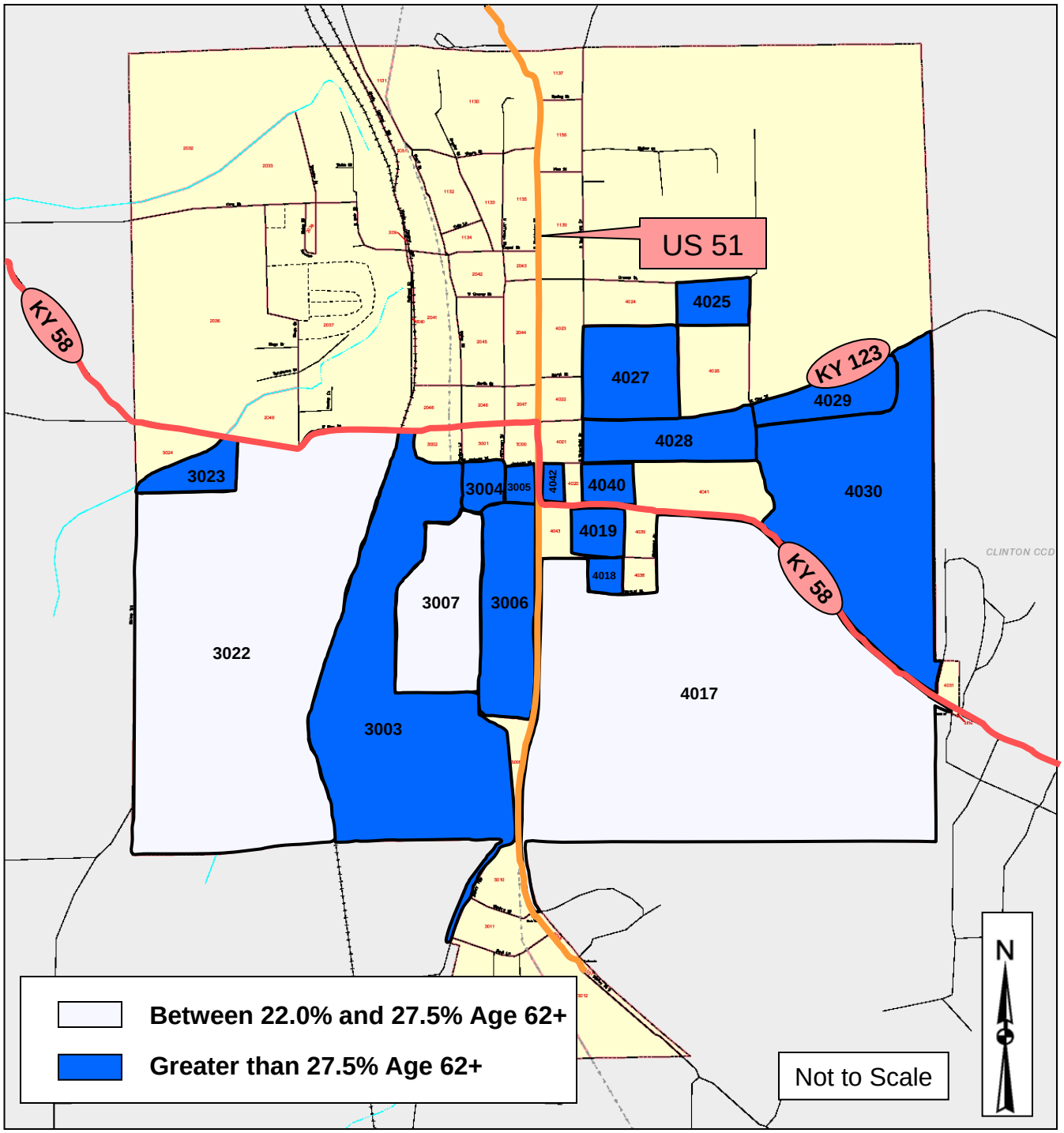
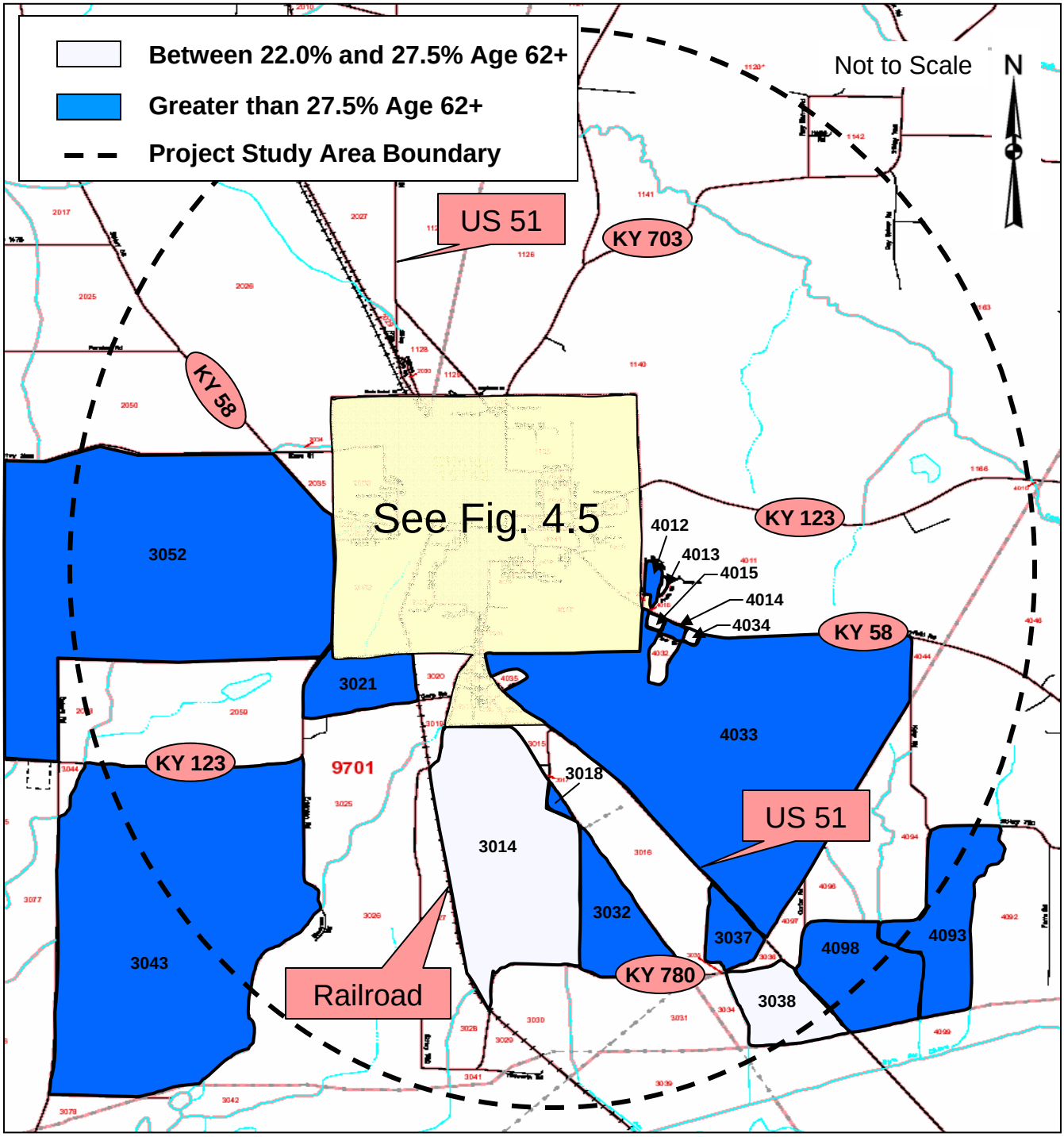


Figure 4.6: Location of Concentrated Elderly Population Blocks in Study Area Surrounding Clinton



5.0 CONCLUSIONS

Based on data obtained from the U.S. Census Bureau and input from the community of Clinton, an Environmental Justice community does exist within the study area. The primary focus of the community is the northwest section of town with portions of the community located just to the east and south. This is based primarily on the minority distribution obtained at the block level for Clinton in Hickman County. Poverty levels are higher than average in Block Groups 2 and 3, indicating an Environmental Justice community west of US 51 based on income. Also, based on the age distribution in the study area, there is a concentration of residents 62 years or older in Block Groups 3 and 4, particularly in the southern portion of the study area.

All three of these populations should be given full consideration in the planning process to achieve the goals put forth by the U.S. Department of Transportation (DOT).

Specifically, the project planning should "avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects" on these populations. This can be accomplished by identifying potential impacts to the populations that would result from a particular project alternative. Then the impacts can be assessed to determine if one of the populations would experience a disproportionate negative impact compared to the rest of the community.

The project planning has and should continue to "ensure the full and fair participation by all potentially affected communities in the transportation decision-making process." Special meetings and outreach efforts have been included as part of the planning process in Clinton. Efforts have been made to reach out, and will continue to be made to reach out to the minority and low-income communities.

Finally, the project planning effort should "prevent the denial of, reduction in, or significant delay in the receipt of benefits" by the Environmental Justice populations. Again, the potential benefits of the alternatives can be assessed and a determination can be made regarding whether an alternative benefits the community equally or if the benefits fall disproportionately to one portion of the community.

Each of these actions is currently being completed as part of the ongoing study process, with the goal of ensuring Environmental Justice both in the project planning phase as well as in any future project implementation. The alternatives analysis with respect to the presence of Environmental Justice populations is addressed in the alternatives evaluation reports for the project.

APPENDIX D:
ENVIRONMENTAL OVERVIEW AND AGENCY CORRESPONDENCE

NATURAL ENVIRONMENT BASELINE

Aquatic Ecosystems

Surface Water

The study area for Clinton covers 8,648 acres and is located within the major water basin Hatchie-Obion. Three smaller watersheds cover the study area; they are Cane Creek, Bayou de Chien, and Hurricane Branch. Cane Creek covers nearly all of the northern half of the study area including Clinton. Bayou de Chien covers the southern half of the study area south of Clinton, while Hurricane Branch covers a small portion of the study area west of KY 123 (United States Geological Survey [USGS] 1983).

All streams in the study area flow short distances into tributaries of the Mississippi River system; the Mississippi River is less than two miles west of Hickman. Most blueline streams and tributaries flow north in the study area. However, at least five intermittent blueline streams flow laterally near downtown Clinton. Creeks and tributaries in the study area are unnamed with the exception of Cane Creek in the northeast corner and Hurricane Branch on the western edge of the study area. Cane Creek runs laterally along a portion of the northeast perimeter of the study area, and Hurricane Branch runs laterally in the Hurricane Branch watershed on the western edge of the study area.

Wetlands and Ponds

National Wetland Inventory (NWI) mapping was reviewed for the presence of wetlands within the project corridor. A total of 115 wetlands spread throughout the study area were indicated on NWI mapping. A limited site visit of the study area was conducted April 19, 2002. Wetlands were observed throughout the study area as indicated on NWI mapping; most appeared to be farm ponds.

Of the 115 wetlands, 22 appear to be natural in origin according to wetland type and therefore may be considered jurisdictional by the US Army Corps of Engineers (USACE). Most of these natural wetlands are located in the eastern and southern sections of the study area. The jurisdictional status of 93 wetlands, including 60 ponds that are impounded or diked areas as a result of farming operations and another 33 wetlands that are the result of mining activities, would need to be determined in consultation with USACE. Attachment A includes a summary of the types and members of NWI wetlands within the study area.

Although NWI mapping indicates wetlands are found throughout the study area, a few places in the study area demonstrate a higher concentration of wetlands or sizable wetlands. For example, two large sewage disposal ponds are located near the northern end of the study area; together they cover about 17 acres. Another five sizable wetlands are located between KY 123 and KY 58 to the east of Clinton. Three other wetlands of significant size are located south of the intersection of US 51 and KY 780. These eight wetlands range in size from approximately one to seven acres. Finally, the largest wetland in the study area is Bayou de Chien, which is located in the southeast quadrant of the study area. Bayou de Chien, in the study area, is actually a complex of 10 interlinked (natural) wetlands found in and adjacent to the study area. The 10 wetlands cover over 600 acres. Bayou de Chien covers nearly 4,500 acres in Hickman County.

Hydric soils are also found in the study area and suggest the presence of other wetlands in the study area. The soil survey for Carlisle and Hickman Counties, Kentucky (United States Department of Agriculture [USDA] 1997) shows that 13 hydric soils have been identified within Hickman County. Of these 13, four potential hydric soils are found within the study area: Convent-Mhoon silt loams, Routon-Center silt loams (rarely flooded), Mhoon silt loam, and the most frequent hydric soil in the study area, Convent-Adler

silt loams. Convent-Mhoon silt loams and Rhouton-Center silt loams are hydric only in low-lying areas. The low-lying areas within the study boundaries and with potential for these soils are in the alluvial bottoms (along creek valleys).

Floodplains

Three 100-year floodplains cover 8.4 percent of the study area (728 acres), the largest floodplain being the Bayou de Chien (343 acres) (Federal Emergency Management Agency [FEMA] 1998). This floodplain borders Bayou de Chien and covers the southeast perimeter of the study area. The other two floodplains are from unnamed tributaries of Cane Creek, one covering 287 acres, the other covering 98 acres. The larger floodplain starts from the northwest quadrant of the study area near the sewage and disposal ponds south through downtown Clinton parallel to US 51. The smaller floodplain covers the perimeter of the northeast quadrant of the study area.

Terrestrial Ecosystems

Threatened and Endangered Species

Correspondence with the US Fish and Wildlife Service (USFWS), Kentucky Department of Fish and Wildlfie Resources (KDFWR) and the Kentucky State Nature Preserves Commission (KSNPC) along with a review of KDFWR's online database indicated 16 species listed as potentially occurring in or near the study area. These species and their status are shown in Table 1. Copies of correspondence with agencies are included at the back of this appendix.

TABLE 1 – THREATENED, ENDANGERED, OR SPECIAL CONCERN SPECIES

Common Name	Scientific Name	Status
Relict darter	*Etheostoma chienense*	Federally endangered, state endangered
Interior least tern	*Sterna antillarum athalassos*	Federally endangered, state endangered
Indiana bat	*Myotis sodalis*	Federally endangered, state endangered
Pallid sturgeon	*Scaphirhynchus albus*	Federally endangered, state endangered
Cypress minnow	*Hybognathus hayi*	State endangered
Dollar sunfish	*Lepomis marginatus*	State endangered
Hooded merganser	*Lophodytes cucullatus*	State endangered
Alabama shad	*Alosa alabamae*	State endangered
Starhead topminnow	*Fundulus dispar*	State endangered
Bird-voiced treefrog	*Hyla avivoca Viosca*	State threatened
Cypress darter	*Etheostoma proeliare*	State threatened
Lake chubsucker	*Erimyzon sucetta*	State threatened
Blacktail shiner	*Cyprinella venusta*	KSNPC special concern
Green treefrog	*Hyla Cinerea*	KSNPC special concern
Southern painted turtle	*Chrysemys picta dorsalis*	KSNPC special concern
Eastern ribbon snake	*Thamnophis sauritus sauritus*	KSNPC special concern

Available habitat indicates whether these 16 species are likely to occur in the study area. Three species are not likely to be found in the study area; these are the Alabama shad, pallid sturgeon, and interior least tern, all of which are associated with the Mississippi River. All other species may occur or have been known to occur in the study area. These species are usually associated with one of three types of habitat found within the study area: Bayou de Chien; streams, ponds, and lakes; and mature forests with nearby streams.

Bayou de Chien is an important habitat for 11 of these species including the relict darter, bird-voiced treefrog, starhead topminnow, cypress darter, cypress minnow, dollar sunfish, lake chubsucker, green treefrog, black tail shiner, southern painted turtle, and the eastern ribbon snake. KSNPC, in fact,

notes that Bayou de Chien supports the only known relict darter population in the world.

Other streams, ponds, and lakes found throughout the study area are important habitats for some of these same species. The black tail shiner, cypress darter, cypress minnow, dollar sunfish, southern painted turtle, and eastern ribbon snake find suitable habitat in or near streams, ponds, and lakes.

Finally, mature forested areas with nearby streams may be suitable as maternity (summer) Indiana bat habitat and as habitat for the hooded merganser. Small, scattered blocks of this type of potential habitat occur in a wedge-shaped block of land from the city limits of Clinton to the study area boundary on the east. This area has woods on slopes and permanent and intermittent streams at the bottoms of wooded slopes. Another area of potential habitat is located just south of Clinton and parallel to the Illinois Central railroad; this area contains a slope, wooded area with an intermittent stream.

Floral Communities

Primary plant communities existing in the study area include lawns, roadsides, croplands (soybean, corn, hayfields, wheat, and milo), pasture, and wetlands (Kentucky Natural Resources and Environmental Protection Cabinet [KNREPC]). Such highly disturbed habitats as these areas provide ideal habitat for weeds, exotics, naturalized and introduced species to thrive. In addition, one forested area exists in the study area. The forested block is located near the eastern edge of the study area, south of KY 58 and north of US 51.

A review of *Kentucky's Big Trees* (Kentucky Division of Forestry 1995) indicated no national or state champion trees within the study area.

Faunal Communities

Common mammals that are abundant statewide or have large home ranges are likely to be found in the study area. These include whitetail deer, opossum, raccoon, skunk, gray and fox squirrel, and chipmunk. Other species such as the short-tailed shrew and southeastern shrew are likely to inhabit the forested area of the study area. Southern bog lemming, muskrat, and swamp rabbit prefer wetland type habitats that are found throughout the study area.

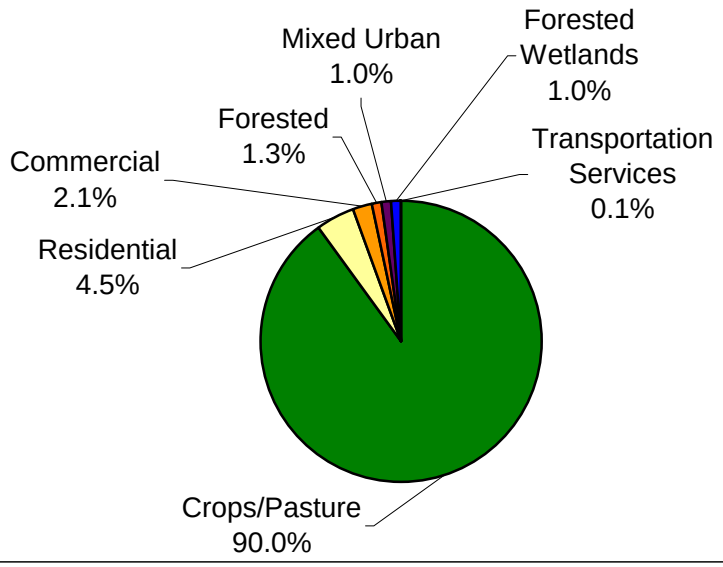
Wetlands in the study area provide habitat for amphibian species such as green frog, bullfrog, spotted salamander, smallmouth salamander, and mole salamander. Midland water snake and yellowbelly water snake will likely be found in the creeks. The early successional fields (found near croplands) and forested areas provide habitat for rat snake, kingsnake, black racer, and several species of lizard. Box turtles are found statewide and would be expected in the study area. Common birds, such as robin, cardinal, starling, and mourning dove, are also likely to be found throughout the study area.

HUMAN ENVIRONMENT BASELINE

Land Use

The study area covers 8,648 acres. Seven types of land use are found within the study area: commercial, crops/pasture, forest, mixed urban, residential, transportation/communication services, and forested wetlands. Crops/pasture cover 7,774 acres. Residential areas occupy 389 acres while commercial land use represents 180 acres. Forested land represents 112 acres. Mixed urban use is fifth in total acres (93 acres); forested wetlands comprise 87 acres. Finally, transportation and communication services account for 11 acres (KNREPC). Figure 1 shows land use categories in terms of percentages of coverage in the study area.

Figure 1: Land Use



The site visit verified these findings; the study area was comprised primarily of large fields of row crops and pasture. Ribbons of forests separated large crops and lined a few of the streams. Clinton is a small city with 1,415 people in 2000 (U.S. Census), and the city is surrounded almost entirely by crops/pasture. Residential homes were primarily located in the center of the

study area, in downtown Clinton (note that much of Clinton is within the 100-year floodplain); however, homes on farms and other rural houses were seen frequently throughout the study area.

Transportation

Several connecting roadways branch out beyond Clinton. US 51, which traverses the study area from the north to the southeast, is a rural, principal arterial roadway. US 51 is a two-lane, undivided "AAA"-rated roadway. Main east/west routes in the Clinton Study area include KY 58 and KY 123. KY 780 runs north to south for much of the southern section of the study area before turning east to intersect with US 51 south of Clinton. KY 703 runs northeast of Clinton. Other roadways to the east of Clinton include local roads Kaler Road and Carter Road. Roadways to the west of US 51 are KY 1037, KY 1826, KY 1728, Emerson Road, Baker Road, Rash Road, and Farlee Road.

Tracks for the Illinois Central Gulf railroad run north to south across the Clinton study area. The tracks run in a path similar to that of US 51 for most of the study area. The tracks are west of US 51 for the entire study area and run through the western edge of Clinton (USGS 1983).

During the site visit, a grass landing strip was seen running parallel to KY 780. The airport is the Clinton-Hickman County Airport and is publicly owned by the two counties. The airport is located two miles south of Clinton. (AirNav 2002).

Total Population, Minority and Low-Income Populations

For Census 2000, the population of Hickman County was 5,262; Clinton had a population of 1,415. Population projections for Hickman County anticipate a decline; 2030 projections show the population at 4,360, a decline of 17.1 percent from 2000.

The study area, located in Census Tract 9701, has a minority population of 11.8 percent. This percentage is similar or lower than percentages for Kentucky, Hickman County, and Clinton (9.9, 11.8, and 30.1, respectively). However, census tract 9701 is the entire county of Hickman and may not adequately represent the study area. For example, Clinton has a high number of minorities (30.1 percent) relative to county and state percentages. In an informal interview with Gregory D. Pruitt, Hickman County Judge Executive, Mr. Pruitt mentioned a relatively high concentration of minority populations in the northwest quadrant of Clinton.

As noted, Hickman County contains one census tract, 9701. For this reason, data in the following table for Census Tract 9701 are the same as data for Hickman County. The racial composition for the state, town, and census tract as released for the 2000 Census is shown in Table 2.

TABLE 2 – RACIAL COMPOSITION OF STATE, COUNTY, TOWN, AND CENSUS TRACT

	Kentucky	Clinton City	Census Tract 9701
One Race:			
White	3,640,889	997	4,649
African American	295,994	384	521
Native American	8,616	7	15
Asian	29,744	0	3
Native Pacific Islander	1,460	0	0
Other Race	22,623	0	9
Two or more races	42,443	27	65
Hispanic Origin*	59,939	22	54
Total Minorities**	400,880	418	613
Percent Minority	9.9	30.1	11.8

**Hispanic Origin is not considered a separate race. The number shown is counted twice, once as Hispanic Origin and once as one of the other four racial groups listed above.*
***This number does not include Hispanic Origin in order to avoid duplication.*
Source: 2000 U.S. Census

Census 2000 information for income and poverty status is not currently available. The income and poverty status of the state, county, city, and census tract 9701 for 1990 are shown in Table 3 (for the 1990 Census,

Hickman County was divided into two census tracts; the study area was in census tract 9701).

TABLE 3 – INCOME AND POVERTY STATUS

Region	Median Household Income	Median Family Income	Persons Below Poverty Level	
			Number	Percent
Kentucky	$22,534	$27,028	681,827	16.9
Hickman County	$20,347	$24,647	1,087	19.5
Clinton	$13,672	$18,529	449	29.2
Census Tract 9701	$20,574	$24,600	1,005	20.1

Source: 1990 U.S. Census

Data indicate that low-income populations are more likely in Clinton than for other portions of the study area. Of the geographic areas, Clinton demonstrates the greatest levels of poverty at just over 9 percent higher than the other areas. The census tract is similar to the county and state.

Additional demographic data for the study area are provided in Attachment B. Tables include those for household types, housing units available, populations by selected age groups, and commuting patterns.

Local Economy

Hickman County's unemployment rate was 6.2 percent in 2001. This percentage is higher than Kentucky and U.S. percentages of 5.5 and 4.8, respectively, for the same year. The county's 2001 percentage was up from its 2000 low of 3.8 percent. The highest unemployment rate for the county since 1990 was reported in 1996 at 7.3 percent.

Employment by major industry by place of work for Hickman County for the year 2000 is shown in Table 4.

TABLE 4 - EMPLOYMENT BY MAJOR INDUSTRY

Hickman County	Employment	Percent
All Industries	1,320	100.0
Agriculture, Forestry & Fishing	10	0.8
Contract Construction	46	3.5
Manufacturing	382	28.9
Transportation and Public Utilities	78	5.9
Wholesale Trade	96	7.3
Retail Trade	139	10.5
Finance, Insurance and Real Estate	66	5.0
Services	234	17.7
State and Local Government	0	0.0

Source: Kentucky Economic Development Information System

The major manufacturers for Clinton as released by the Kentucky Cabinet for Economic Development for the year 2002 are shown in Table 5.

TABLE 5 - MAJOR MANUFACTURERS

Firm	Product(s)	Employees	Year Established
Cornerstone Building Materials	Hardwood, softwood, veneer, dimension & grade lumber cutting & sawing	6	1938
Dale Machine & Manufacturing	Machine shop: garment cutting presses, precision machining, prototypes; arc, gas, MIG, TIG, heliarc, powder welding; drilling & boring; lathe & mill	6	N/A
Harper's Country Hams Inc	Smoked ham, bacon & sausage	100	1952
Jakel Inc	Sub-fractional horsepower motors	150	1989
Lewis Publishing Inc	Newspaper publishing	3	1850
Reita's Country Corner	Portable wooden buildings	2	1992

Source: Kentucky Economic Development Information System

Communities and Community Facilities

Typical community facilities are located within Clinton, *e.g.*, a courthouse, a health department, etc. Based on the addresses, ten churches exist in Clinton; most appear to be located on side streets in Clinton. Beyond the

town, a limited number of churches were observed scattered throughout the study area.

Other than the town of Clinton, there are no named subdivisions or communities in the study area.

Locations of seven community facilities were identified in the study area. These community facilities and their locations are:

- Clinton County Fairgrounds - 50 US 51 South,
- Hickman County Elementary School - 416 McMorris Street,
- Hickman County High School - Cresap Street,
- Headstart Preschool - 415 East Clay Street,
- Draughon's Junior College - 101 South Washington Street,
- Hickman County Library - 209 Mayfield Road, and
- Clinton-Hickman County Intermediate Care Facility - 366 South Washington Street.

Agricultural Activity and Prime and Unique Farmland

As noted under Land Use, agriculture use is predominant throughout the study area outside of Clinton. Substantial farming operations with significant on-farm investments are evident throughout the study area and are not limited to any one portion of the study area.

Data from the 1997 Census of Agriculture also demonstrate the magnitude of agricultural activities in the county. For example, the average farm in Hickman County covers 390 acres compared to the state average of 162 acres. Seventeen farms in the county cover between 1,000 and 1,999 acres; 13 farms have more than 2,000 acres each. In 1998, the county ranked 11th in production of corn for grain, 9th for winter wheat, 8th for sorghum, and 6th for dark fired tobacco.

The prevalence of agricultural activity in the county and subsequently the study area may be in part attributable to the availability of fertile soils. In

Hickman County, over half (58.7 percent or 95,120 acres) of the 161,926 acres are considered prime and unique farmland. Many of these soils fall in the study area (USDA 1997).

Charles McIntire, Hickman County District Conservationist, indicated one agricultural district is located partially within the study area boundaries. The agricultural district is located in the southernmost portion of the study area along Bayou de Chien and covers approximately 475 acres. Of the total acres, approximately 275 acres are within the study area boundary.

Undergound Storage Tanks/Hazardous Materials

Environmental Data Resources, Inc. (EDR) was contacted to provide a review of their environmental databases. Twenty-six environmental databases were researched covering a 3-mile radius including the project area. The databases revealed 14 sites, one of which was evidently mapped in an incorrect location (the city was listed as Covington rather than Clinton).

Sites listed include three from the Resource Conservation and Recovery Information System (RCRIS) Small Quantity Generators database, three sites from the Emergency Response Notification System (ERNS), five sites from the Facility Index System/Facility Identification Initiative Program Summary Report (FINDS) database, and six from the Underground Storage Tank (UST) database. Information regarding the remaining 13 sites is summarized on the next page.

Site Address	Name	Database
512 Pecan Drive	Pictures and More	RCRIS, FINDS
Moore & Short Streets	Ashland Petroleum Co. #188-000	RCRIS, FINDS
204 S Jefferson Street	J J Cleaners	RCRIS, FINDS
374 S Washington	Jakel, Inc	FINDS
411 Short Street	Hickman County Feed Mill	FINDS
411 N Jefferson Street*	N/A	ERNS
411 N Jefferson Street*	N/A	ERNS
1272 W Broadway	Clinton CITGO	UST
S Jefferson Street	Kentucky Utilities Company Storeroom	UST
224 N Washington Street	Boaz Service Station (Waycaster)	UST
224 N Washington Street	Clinton Marathon Station (Clarks Ashland)	UST
225 N Washington Street	Clinton Jiffy Mart	UST
498 Short Street	Clinton Bulk Plant	UST

Note: The ERNS database included the one site incorrectly mapped.
**ERNS listings at 411 North Jefferson Street appear to be duplicate entries. National Response Center data indicates only one incident involving a natural gas release due to a pipeline being struck by a lawn mower.*

In addition to the 13 sites, 21 unmapped orphan sites with inadequate address information were listed; of these, seven could be eliminated based on zip code or listed city. Detailed site reconnaissance will be required to locate the remaining orphan sites.

A limited site reconnaissance was conducted in conjunction with the social and economic concerns identification. Three other sites outside the central portion of Clinton were noted. These include Quick Fix Auto Electric near the southernmost US 51/KY 780 intersection, Highland Laundry at the northernmost intersection of US 51 and KY 780, and Ken-Tenn Propane Gas, Inc. at 450 US 51 North. Other sites outside central portions of Clinton include hazardous materials potentially related to agricultural activities. Large-scale farming operations often store fuel and oil on-site.

REFERENCES

Airnav.com. *A Pilots View Into A World of Aviation Information.* 1996-2002 Paulo Santos. June 13, 2002. http://www.airnav.com/. Clinton, KY Information.

Burr, B.M. and M.L. Warren. 1986. A Distributional Atlas of Kentucky Fishes. Kentucky State Nature Preserves Commission. Science and Technology Series #4. Frankfort, Kentucky.

Environmental Data Resources, Inc. (EDR). *Bardwell Bypass US 51 Bardwell KY. Inquiry Number 763485.1s.*

Federal Emergency Management Agency (FEMA). 1998. National Flood Insurance Program, Q3 Flood Data Program. Disc 27, Kentucky.

Kentucky Department of Education. 2001-2001 Kentucky Schools Directory. June 2002. http://www.kde.state.ky.us/comm/pubinfo/kentucky_schools_directory/.

Kentucky Department of Fish and Wildlife Resources. Kentucky Fish and Wildlife Information Systems. May 2002. http://www.kfwis.state.ky.us/

Kentucky Division of Forestry. 1995. *Kentucky's Big Trees.* Kentucky Department for Natural Resources, Frankfort, Kentucky.

Kentucky Economic Development Information System. June 2002. http://www.edc.state.ky.us/kyedc/resandstat.asp. *Research and Statistics*. Kentucky Cabinet for Economic Development.

Kentucky Hospital Association. Kentucky Hospital Directory. June 2002. http://www.kyha.com/.

Kentucky Natural Resources and Environmental Protection Cabinet. May 2002. http://www.nr.state.ky.us/.

Kentucky State Nature Preserves Commission. 1999. *Endangered, Threatened Special Concern, and Historic Plants and Animals of Kentucky.* Kentucky State Nature Preserves Commission, Frankfort, Kentucky.

McIntire, Charles, Hickman County District Conservationist. Informal Interview. June 2002.

Mengel, Robert M. 1965. *The Birds of Kentucky.* American Ornithologists' Union. Ornithological Monographs, No. 3. The Allen Press, Lawrence, Kansas.

National Wetland Inventory. Kentucky GIS Office.

Pruit, Greg, Hickman County Judge Executive. Informal Interview. June 2002.

Slone, T. and T. Wethington. 1998. *Kentucky's Threatened and Endangered Species.* Kentucky Department of Fish and Wildlife Resources, Frankfort, Kentucky.

United States Census Bureau, American Factfinder 1990 and 2000. June 2002. http://www.census.gov. United States Department of Commerce.

United States Department of Agriculture (USDA). 1997. *Soil Survey of Carlisle and Hickman Counties, Kentucky.*

United States Department of Agriculture (USDA) July 2002. National Agricultural Statistics Service. 1997 Census of Agriculture.

United States Geological Survey. 1983. *Cayce, Clinton, Crutchfield, Oakton, Kentucky Quadrangles, 7.5-Minute Series (Topographic).* United States Department of the Interior, U.S. Geological Survey, Washington, D.C.

ATTACHMENT A – NATIONAL WETLAND INVENTORY WETLANDS

The following table summarizes the types and members of NWI wetlands within the study area.

TABLE A-1 – NWI WETLANDS IN STUDY AREA

Wetland Type	Number of Wetlands
PFO1A	9
POWHh	39
POWHx	28
PUBHx	5
PUBHh	16
PUBFh	3
PEM1Fh	1
PSS1Fh	1
POWH	1
PFO1C	4
PSS1C	1
PEM1F	1
PFO/SS1F	3
PSS/EM1F	1
PFO/EM1C	2
Total Wetlands	**115**

PFO1A = Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded
POWHh = Palustrine, Open Water/Unknown Bottom, Permanently Flooded, Diked/Impounded
POWHx = Palustrine, Open Water/ Unknown Bottom, Permanently Flooded, Excavated
PUBHx = Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
PUBHh = Palustrine, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded
PUBFh = Palustrine, Unconsolidated Bottom, Semi-Permanently Flooded, Diked/Impounded
PEM1Fh = Palustrine, Emergent, Persistent, Semi-Permanently Flooded, Diked/Impounded
PSS1Fh = Palustrine, Scrub/Shrub, Broad-Leaved Deciduous, Semi-permanently Flooded, Diked/Impounded
POWH = Palustrine, Open Water/ Unknown Bottom, Permanently Flooded
PFO1C = Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded
PSS1C = Palustrine, Scrub/Shrub, Broad-Leaved Deciduous, Seasonally Flooded
PEM1F = Palustrine, Emergent, Persistent, Semi-Permanently Flooded
PFO/SS1F = Palustrine, Forested/ Scrub/Shrub, Broad-Leaved Deciduous, Semi-Permanently Flooded
PSS/EM1F = Palustrine, Scrub/Shrub/ Emergent, Persistent, Semi-Permanently Flooded
PFO/EM1C = Palustrine, Forested/ Emergent, Persistent, Seasonally Flooded

ATTACHMENT B - DEMOGRAPHIC DATA

Hickman County had one census tract for the 2000 Census. Thus, census data in tables C-1 through C-3 below are the same as for Hickman County.

The household types for state, town, and census tract as released for the 2000 Census are shown in Table B-1.

TABLE B-1 – HOUSEHOLD TYPES

	Percent Total Households				
	Family Households			Non-family Households	
	Total	Married	Female Head, No Husband	Total	Householder Living Alone
Kentucky	69.4	53.9	11.8	30.6	26.0
Clinton	61.3	38.9	19.5	38.7	36.1
Census Tract 9701	70.5	56.5	10.8	29.5	27.6

Source: 2000 U.S. Census

The numbers of housing units available for state, town, and census tract are shown in Table B-2.

TABLE B-2 – HOUSING UNITS AVAILABLE

	Total Housing Units	Occupied Housing Units	Vacant Units	Percent	
				Vacant – For Sale	Vacant – For Rent
Kentucky	1,750,927	1,590,647	160,280	12.9	27.6
Clinton	668	579	89	20.2	25.8
Census Tract 9701	2,436	2,188	248	12.9	11.7

Source: 2000 U.S. Census

The population by selected age groups is shown in Table B-3.

TABLE B-3 – POPULATION BY SELECTED AGE GROUPS (2000)

	Total Population	Percent of Total Population				
		Under 18 years	18 to 24 years	25 to 44 years	45 to 64 years	65 years and over
Kentucky	4,041,769	24.6	9.9	30.0	23.0	12.5
Clinton	1,415	22.8	5.8	24.6	21.8	24.9
Census Tract 9701*	5262	22.1	6.9	26.7	25.9	18.5

Source: U.S. Department of Commerce, Bureau of the Census, and Kentucky Cabinet for Economic Development.
** Hickman County has one census tract: census tract 9701; data are the same for the county as the tract.*

The commuting patterns for Hickman County in 1990 are shown in Table B-4.

TABLE B-4 – COMMUTING PATTERNS (1990)

	1990	Percent
Residents of Hickman County		
Working and Residing In County	1,187	54.2
Commuting Out of County	1,002	45.8
Total Residents	2,189	100.0
Employees in Hickman County		
Working and Residing In County	1,187	65.0
Commuting Into County	640	35.0
Total Employees	1,827	100.0

Source: Kentucky Economic Development Information System

Robert Frazier

Commonwealth of Kentucky
Transportation Cabinet
Frankfort, Kentucky 40622

December 13, 2002

James C. Codell, III
Secretary of Transportation

Clifford C. Linkes, P.E.
Deputy Secretary

Paul E. Patton
Governor

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

Dear «Letter_Title» «Last_Name»:

SUBJECT: Planning Study
Hickman County
Improvements to US 51 in Clinton
Item No. 1-182.00

We are requesting your agency's input and comments on a planning study to determine the need and potential impacts for a proposed highway project. The Kentucky Transportation Cabinet has assembled a study team to evaluate potential improvements to US 51 in Clinton, Hickman County. The study is currently in the initial data-gathering stage.

We ask that you identify specific issues or concerns of your agency that could affect the development of the project. This planning study will include a scoping process for the 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 January 30, 2003, 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. The Federal Highway Administration is partnering with us in these efforts. A copy of a public notice placed in state in local newspapers concerning this project is attached.

EDUCATION PAYS

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:

- Fact Sheet and Attachment Summary
- Study Area Map
- Preliminary Alternatives Map
- 2002 Average Daily Traffic Volumes
- 2002 Levels of Service
- Crash Data by Severity
- Preliminary Natural Environment Map
- Preliminary Human Environment Map

We appreciate any input you can provide concerning this project. Please direct any comments, questions, or requests for additional information to David Martin of the Division of Planning at 502/564-7183 or at charles.martin@mail.state.ky.us. Please address all written correspondence to Annette Coffey, P.E., Director, Division of Planning, Kentucky Transportation Cabinet, 125 Holmes Street, Frankfort, KY 40622.

Sincerely,

Annette Coffey, P.E.
Director
Division of Planning

AC:CDM:NH

Enclosures

c: Jose Sepulveda (w/a)
Glenn Jilek (w/a)
Barbara Michael, PB
Robert Frazier, PB
Stacey Courtney, PADD
Wayne Mosley
Tim Choate
Allen Thomas
Steve Hoefler
David Waldner
Richard Davis

ANNOUNCEMENT OF A

PUBLIC INFORMATION MEETING

TO DISCUSS THE NEED FOR IMPROVEMENTS TO US 51 IN CLINTON, HICKMAN COUNTY

MONDAY, SEPTEMBER 9, 2002
4:00 P.M. TO 7:00 P.M.
HICKMAN COUNTY HIGH SCHOOL
CRESAP STREET
CLINTON, KY

The Kentucky Transportation Cabinet has scheduled a Public Information meeting to discuss a planning study for the need for improvements of US 51 in Clinton, Hickman County. The purpose of the meeting is to inform the public of the planning study, discuss various environmental and technical issues concerning the area under consideration, and solicit ideas and opinions that will help the Cabinet make decisions about the study. Anyone having an interest in this planning study is urged to attend this meeting.

The open public meeting will have a brief presentation at 4:00 p.m. followed by an open exhibit area where officials will be prepared to answer questions and/or receive public input. The exhibits will outline the project area and describe the potential environmental and engineering impacts.

The exhibits will also be available for viewing from 8:00 a.m. to 4:30 p.m. local time for fifteen (15) days after the meeting at the Kentucky Department of Highways District 1 Office, 5501 Kentucky Dam Road, Paducah, Kentucky. The handout information can be found on the Transportation Cabinet's web site at **http://www.kytc.state.ky.us/planning/index.shtm** under the "Public Meetings" link.

Both written and oral statements will be accepted at the meeting. A recorder will be made available for those who desire to make oral statements and a comment sheet will be distributed to make it more convenient to provide written comments. Written statements will be accepted at the meeting and for a period of fifteen (15) days after the Public Information Meeting. Written statements should be addressed to Annette Coffey, P.E., Director, Division of Planning, 125 Holmes Street, Frankfort, Kentucky 40622, or returned using the postage-paid envelope provided with the comment sheet. Comments can also be emailed to **planning-webpage@mail.kytc.state.ky.us**. All recorded and written statements will become part of the official record. Once compiled, the summary of this meeting and other supporting documentation will be made available for review and copying only after an Open Records Request has been received and approved. All Open Records requests must be submitted to the Transportation Cabinet, Department of Administrative Services, State Office Building, Frankfort, Kentucky 40622.

In accordance with the "Americans With Disabilities Act," if you have a disability, for which the Transportation Cabinet needs to provide accommodations, please notify us of your requirements by August 30, 2002. This request does not have to be in writing. Please contact D. Wayne Mosley, Chief District Engineer, District 1, 5501 Kentucky Dam Road, Paducah, Kentucky 42002, 270/898-2431.

Ms. LaVerne Reid
District Manager
Airports District Office, Federal Aviation Administration
3385 Airways Blvd., Suite 302
Memphis TN 38116

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

Mr. Haynes Dent
Acting Executive Director
Delta Regional Authority
236 Sharkey Avenue, Suite 400
Clarksdale MS 38614

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

Ms. Margie Shouse
Independent Hauler Association
905 Nebo Road
P.O. Box 178
Madisonville KY 42431

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. Kelvin Combs
Kentucky Airport Zoning Commission
State Office Bldg. Anx., 3rd Floor, Mail Code A-3
125 Holmes Street
Frankfort KY 40622

Mr. Bob Arnold
Executive Director
Kentucky Association of Counties
380 King's Daughters Drive
Frankfort KY 40601

Mr. Ken Oilschlager
President
Kentucky Chamber of Commerce Executives, Inc.
464 Chenault Road
P.O. Box 817
Frankfort KY 40602

Mr. Pat Simpson
Commissioner
Kentucky Department of State Police
919 Versailles Road
Frankfort KY 40601

Kentucky Disabilities Coalition
P.O. Box 1589
Frankfort KY 40602-1589

Mr. Kenneth Frost
Director
Kentucky Division of Vehicle Enforcement
State Office Building, 8th Floor, Mail Code 8-4
Frankfort KY 40622

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. John D. Overing
Kentucky Heritage Resource Conservation & Development Council
227 Morris Drive
Harrodsburg KY 40330

Mr. Kevin Graffagnino
Director
Kentucky Historical Society
100 W. Broadway
Frankfort KY 40601

Kentucky Industrial Development Council, Inc.
109 Consumer Lane, Ste. A
Frankfort KY 40601-8489

Ms. Sylvia L. Lovely
Executive Director
Kentucky League of Cities, Inc.
101 East Vine Street, Ste. 600
Lexington KY 40507

Mr. Ned Sheehy
President
Kentucky Motor Transport Association
134 Walnut Street
Frankfort KY 40601

Ms. Vickie Bourne
Executive Director
Kentucky Office of Transportation Delivery
State Office Bldg. Anx., 3rd Floor, Mail Code A-4
125 Holmes Street
Frankfort KY 40622

Mr. Barry Barker
Executive Director
Kentucky Public Transit Association
1000 West Broadway
Louisville KY 40203

Ms. Marcheta Sparrow
President
Kentucky Tourism Council
TARC,1100 US127 S., Bldg. C
Frankfort KY 40601

Ms. Ann R. Latta
Secretary
Kentucky Tourism Development Cabinet
Capital Plaza Tower,24 Floor
500 Mero Street
Frankfort KY 40601

Mr. Steve Goodpaster
Director
Kentucky Transportation Cabinet, Division of Bridge Design
State Office Building, 7th Floor, Mail Code 7-1
Frankfort KY 40622

Mr. Dexter Newman
Director
Kentucky Transportation Cabinet, Division of Construction
State Office Building, 4th Floor, Mail Code 4-1
Frankfort KY 40622

Mr. David Waldner
Director
Kentucky Transportation Cabinet, Division of Environmental Analysis
State Office Bldg. Anx., 1st Floor, Mail Code A-1
125 Holmes Street
Frankfort KY 40622

Mr. Wesley Glass
Director
Kentucky Transportation Cabinet, Division of Materials
Frankfort KY 40622

Mr. Mike Hill
Director
Kentucky Transportation Cabinet, Division of Multimodal Programs
State Office Bldg. Anx., 3rd Floor, Mail Code A-5
125 Holmes Street
Frankfort KY 40622

Mr. Chuck Knowles
Director
Kentucky Transportation Cabinet, Division of Operations
State Office Building, 7th Floor, Mail Code 7-2
Frankfort KY 40622

Mr. Simon Cornett
Director
Kentucky Transportation Cabinet, Division of Traffic
State Office Building, 1st Floor, Mail Code 1-3
Frankfort KY 40622

Ms. E. Sue Perkins
Branch Manager
Kentucky Transportation Cabinet, Permits Branch
State Office Building, 1st Floor, Mail Code 1-3
Frankfort KY 40622

Mr. Allen D. Rose
Secretary
Kentucky Workforce Development Cabinet
Capital Plaza Tower, 2nd Floor
Frankfort KY 40601

Mr. Boyce Wells
Acting State Environmental Review Officer
Natural Resources and Environmental Protection Cabinet
Frankfort Office Park
14 Reilly Road
Frankfort KY 40601

Mr. James Aldridge
Director
Nature Conservancy - Kentucky Chapter
642 West Main Street
Lexington KY 40508

Ms. Helen Cleary
President
Scenic Kentucky
P. O. Box 2646
Louisville KY 40201

Mr. Oscar Geralds
Sierra Club
259 West Short Street
Lexington KY 40507

Mr. Gary Lanthrum
Director, National Transportation Program
U. S. Dept. of Energy, Albuquerque Operations Office
P. O. Box 5400, SC-5
Albuquerque NM 87185-5400

Mr. Heinz Mueller
Attorney
U. S. Environmental Protection Agency, Region 4 Office
13th Floor, Atlanta Federal Ctr.
61 Forsyth St. SW
Atlanta GA 30303

Mr. David Sawyer
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 Health Services Division
Mail Stop F-16
4770 Buford Highway, N.E.
Atlanta GA 30341-3724

Dr. Lee A. Barclay , Ph.D.
Field Supervisor
U.S. Dept. of the Interior, Fish and Wildlife Service
446 Neal St.
Cookeville TN 38501

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. William Howard
Executive Director
Kentucky Association of Riverports, Henderson County Riverport
6200 Riverport Rd.
Henderson KY 42420

Colonel Jack V. Scherer
District Engineer
U. S. Army Corps of Engineers, Memphis District
167 N. Main Street
Memphis TN 38103-1894

The Honorable Ed Whitfield
United States Representative - District 1
U. S. House of Representatives
236 Cannon House Office Building
Washington DC 20515

Mr. John Milchick , Jr.
Kentucky State Coordinator
U.S. Department of Housing & Urban Development, Ky. State Office
601 West Broadway
Louisville KY 40202

Mr. Kevin W. Lawrence
Planning Staff Officer
U.S. Dept. of Agriculture, Forest Service, Daniel Boone Nat'l Forest
1700 Bypass Rd.
Winchester KY 40391

The Honorable Greg Pruitt
County Judge Executive
Hickman County
Hickman County Courthouse
110 E. Clay St.
Clinton KY 42031

The Honorable Tommy Kimbro
Mayor
City of Clinton
City Hall
PO Box 303
Clinton KY 42031

Mr. Tommy Roberts
Magistrate / H.C.Industrial Development Authority
Hickman County
3920 State Route 780
Clinton KY 42031

Ms. Sue Ellen Morris
PADD Transportation Committee
Roberts, Bugg, and Morris
217 East Clay Street
Clinton KY 42031

Ms. Mitzi Spraggs
Project Director
Hickman County Senior Citizens
212 East North Street
Clinton KY 42031

Mr. Tim Schwartz
Chair
Clinton Airport Board
10181 State Route 123 West
Clinton KY 42031

Mr. Charles McIntyre
District Conservationist
Hickman County Natural Resources & Soil Conservation District
302 South Washington, Suite 111
Clinton KY 42031

Ms. Phyllis Simmons
Hickman County Extension District
116 Jefferson Street
PO Box 198
Clinton KY 42031

Mr. David Kimbell
Rural Electric Board
188 US Highway 51 South
2393 State Route 58 East
Clinton KY 42031

Ms. Joanne Alexander
Western KY Allied Services
P.O. Box 193
111 West Clay St.
Clinton KY 42031

Ms. Sandra Wilson
Public Affairs Manager
Westvaco
P.O. Box 278
Wickliffe KY 42087

Mr. Steve Bayko
School Superintendent
Hickman County School District
416 Waterfield Drive
Clinton KY 42031

Ms. Susan Lemons
Chair
Clinton County Chamber of Commerce
363 S. Washington Street
Clinton KY 42031

The Honorable Charles R. Geveden
State Representative
P.O. Box 518
Wickliffe KY 42087

The Honorable Robert L. Jackson
State Senator
P.O. Box 1111
Murray KY 42071

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS TN 38103-1894

Reply to
Attention of:

January 23, 2003

Regulatory Branch

Ms. Annette Coffey, P. E.
Director, Division of Planning
Kentucky Transportation Cabinet
125 Holmes Street
Frankfort, Kentucky 40622

Dear Ms. Coffey:

This is in reference to your letter dated December 13, 2002, concerning early identification of potential environmental issues and impacts related to the project as required during the scoping process.

The Memphis District Regulatory requirements under Section 404 of the Clean Water Act requires a permit to deposit dredged or fill material into waters of the United States and wetlands. These features need to be addressed with each alternative for the US 51 study in the vicinity of Clinton, Kentucky. Within the study area numerous creeks, streams, ponds, and wetlands exist. Each alternative that crosses one of these features will need to have the impacts addressed and a Section 404 permit for that impact may be required.

The final alternative that is selected must address these issues through the sequencing process of avoidance, minimization, and/or mitigation of environmental impacts.

If you have questions, contact Randy Clark at (901) 544-0735.

Sincerely,

Larry D. Watson

Larry D. Watson
Chief
Regulatory Branch

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
and Prevention

January 22, 2003

Annette Coffey, P.E.
Director, Division of Planning
Kentucky Transportation Cabinet
125 Holmes Street
Frankfort, Kentucky 40622

Dear Ms. Coffey:

This is in response to your letter of December 13, 2002 requesting our agency's input and comments on specific issues or concerns that might affect project alternative development for Planning Studies in Hickman County, and Improvements to US 51 in Clinton. We are responding on behalf of the Department of Health and Human Services (DHHS), U.S. Public Health Service.

While we have no project specific comments to offer at this time, we do recommend that the topics listed below be considered during the NEPA process along with other necessary topics, and addressed if appropriate. Mitigation plans which are protective of the environment and public health should be described in the DEIS wherever warranted.

AREAS OF POTENTIAL PUBLIC HEALTH CONCERN:

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

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

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

IV. Non-Hazardous Solid Waste/Other Materials
- any unusual effects associated with solid waste disposal should be considered

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

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

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

VIII. Land Use and Housing
- special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services
- demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools
- consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts
- potential impacts upon vector control should be considered

IX. Environmental Justice
- federal requirements emphasize the issue of environmental justice to ensure equitable environmental protection regardless of race, ethnicity, economic status or community, so that no segment of the population bears a disproportionate share of the consequences of environmental pollution attributable to a proposed project. (Executive Order 12898)

While this is not intended to be an exhaustive list of possible impact topics, it provides a guide for typical areas of potential public health concern which may be applicable to this project. Any health related topic which may be associated with the proposed project should receive consideration when developing the draft and final EISs. Please furnish us with one copy of the draft document when it becomes available for review.

Sincerely yours,

Paul Joe

Paul Joe, DO, MPH
Medical Officer
National Center for Environmental Health (F16)
Centers for Disease Control & Prevention

Martin, David (KYTC)

From: Greer, Daryl (KYTC)
Sent: Tuesday, January 07, 2003 2:22 PM
To: Martin, Charles
Cc: Siria, Bruce; Wilson, Jimmy
Subject: FW: US 51, Item # 1-182.00

-----Original Message-----
From: Combs, Kelvin (KYTC)
Sent: Tuesday, January 07, 2003 2:02 PM
To: Greer, Daryl (KYTC)
Subject:

Daryl,
The Division of Aeronautics has reviewed the planning study for: Improvements to US 51 in Clinton (Item # 1-182.00) and we have no negative comments pertaining to this study.

Kelvin Combs
Kentucky Airport Zoning Administrator
Division of Aeronautics
(502) 564-4480

Commonwealth of Kentucky
Transportation Cabinet
Frankfort, Kentucky 40622

James C. Codell, III
Secretary of Transportation

Paul E. Patton
Governor

Clifford C. Linkes, P.E.
Deputy Secretary

MEMORANDUM

TO: Annette Coffey, P.E.
Director
Division of Planning

FROM: Edward Sue Perkins, P.E.
Branch Manager
Permits Branch

DATE: January 24, 2003

RE: Hickman County Study Team of US 51 in Clinton - Item No. 1-182.00

The Permits Branch has reviewed the data provided for subject study site and wish to offer the following.

1. We urge the Cabinet to classify this project and all new projects as partially controlled access facilities.

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.

3. When buying R/W for this and all reconstruction routes, assuming the access control is partial control, new deed 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.

ESP/elc

EDUCATION PAYS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3761 GEORGETOWN ROAD
FRANKFORT, KY 40601

January 27, 2003

Ms. Annette Coffey
Director, Division of Planning
Kentucky Transportation Cabinet
125 Holmes Avenue
Frankfort, Kentucky 40622

Re: FWS #03-0549

Dear Ms. Coffey:

Thank you for your correspondence of December 13, 2002, regarding the Kentucky Transportation Cabinet's (KTC) proposed US Highway 51 Improvements Project (Item Number 1-182.00) in Hickman County, Kentucky. The KTC proposes to improve as much as four miles of highway by considering several alternative routes as shown on the attachments to your correspondence. Fish and Wildlife Service (Service) personnel have reviewed the information submitted and the following comments are provided in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The Service is concerned that highway projects frequently accelerate erosion and sedimentation in streams, resulting in adverse effects to the aquatic environment. The use of heavy equipment to move earth and existing vegetation disrupts natural drainage patterns and exposes large areas of disturbed soil to erosion. Excessive sedimentation can clog stream channels and contribute to increased flooding. It can also increase water temperatures and cause oxygen demands which can damage or destroy fish and invertebrate populations. Deposition of sediment on the channel bottom also degrades aquatic habitat by filling in substrate cavities, burying demersal eggs, and smothering bottom organisms. In addition, turbidity, as induced by accelerated erosion and sedimentation, results in further damage to aquatic systems. Increased particulate matter suspended in the water column may drive fish from the polluted area by irritating the gills, concealing forage, and/or destroying vegetation that may be essential for spawning and cover habitat for particular species. Turbidity also degrades water quality by reducing light penetration, pH and oxygen levels, and the buffering capacity of the water. Degraded water quality may continue far downstream from the point where the erosion occurs.

Prevention of excessive sedimentation can occur only through application of Best Management Practices during daily construction activities. Rigid application of your agency's construction erosion control standards can preclude most sedimentation problems; however, in some cases additional measures will need to be taken by on-site inspectors and construction representatives.

Upon review of the proposed project, we find that the information provided is insufficient to determine if the proposed actions will require U.S. Army Corps of Engineers' permits. Since permit applications could more thoroughly reveal the extent of construction activities affecting aquatic resources, we will provide additional comments during the 404 review process should the project necessitate Corps' permits. However, we would likely have no objection to the issuance of permits if any necessary stream channel work is held to a minimum and Best Management Practices are utilized and enforced, effectively controlling erosion, sedimentation, and other potential hazards. The following conditions are specifically recommended:

1. Erosion and sediment control measures, including but not limited to the following, should be implemented on all vegetatively denuded areas:

    a. Preventive planning: A well-developed erosion control plan which entails a preliminary investigation, detailed contract plans and specifications, and final erosion and sediment control contingency measures should be formulated and made a part of the contract.

    b. Diversion channels: Channels should be constructed around the construction site to keep the work site free of flow-through water.

    c. Silt barriers: Appropriate use should be made of silt fences, hay bale and brush barriers, and silt basins in areas susceptible to erosion.

    d. Temporary seeding and mulching: All cuts and fill slopes, including those in waste sites and borrow pits, should be seeded as soon as possible.

    e. Limitation of instream activities: Instream activities, including temporary fills and equipment crossings, should be limited to those absolutely necessary.

2. Channel excavations required for pier placement should be restricted to the minimum necessary for that purpose. Overflow channel excavations should be confined to one side of the channel, leaving the opposite bank and its riparian vegetation intact.

3. All fill should be stabilized immediately upon placement.

4. Streambanks should be stabilized with riprap or other accepted bioengineering technique(s).

5. Existing transportation corridors should be used in lieu of temporary crossings where possible.

6. Good water quality should be maintained during construction.

Efficient management practices can minimize adverse impacts associated with construction. It is important that these and other measures be monitored and stringently enforced. This will aid in preserving the quality of the natural environment.

According to our records, the federally endangered Indiana bat (*Myotis sodalis*) and relict darter (*Etheostoma* (*Catonotus*) *chienense*) may occur in the project impact area. Qualified biologists should assess potential impacts and determine if the proposed project may affect these species. A finding of "may affect" could require initiation of formal consultation. The KTC should submit a copy of its assessment and findings to this office for review and concurrence.

Thank you for the opportunity to comment on this proposed action. If you have any questions regarding the information which we have provided, please contact me at 502/695-0468 (ext.221) or Wally Brines of our Cookeville, Tennessee, field office at 931/528-6481 (ext. 222).

Sincerely,

Virgil Lee Andrews, Jr.
Field Supervisor

xc: Cookeville Field Office

UNIVERSITY OF KENTUCKY

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

Summary information on geologic conditions in the vicinity of U.S. 51 planning studies at Clinton and Bardwell, Kentucky

R. A. Smath and G. A. Weisenfluh

Geologic Summary

There are seven geologic map units present at the surface in the two study areas, however only two have significant surface extent. Both extensive units are unconsolidated Quaternary deposits; Alluvium along stream drainages and loess sediment on upland surfaces. Neither unit presents severe limitations for road construction.

Areas underlain by alluvium require more extensive geotechnical evaluation because they are often sources of groundwater, sites for archeological settings, and may be susceptible to liquifaction during regional earthquakes. Alluvial valleys along major streams in the two study areas are 2000 to 3000 ft wide, a considerable span where special attention to structures is needed.

Loess sediment is susceptible to mass movement and landslides on slopes that are exposed to moisture. Vertical cuts are more stable.

Continental Deposits composed of gravel occur at the headwaters of small tributaries. These gravels may be a local source for road metal, subgrade, and base materials. They may, however, be locally cemented with iron oxide and difficult to excavate.

C-17 Geotech
Blevins

A2

MEMORANDUM

TO: Annette Coffey, P.E.
Director
Division of Planning

FROM: William Broyles P. E.
Geotechnical Engineering
Branch Manager
Division of Materials

BY: Michael Blevins P. G. MB
Geotechnical Branch

DATE: January 29, 2003

SUBJECT: Hickman County
STPR 51-1-46
FD52 053 0051 000-000 D
Improvements to US51 in Clinton
Item 01-182.0
Mars # 6976201D

At your request, the Geotechnical Branch has reviewed the project study area. There are no significant geotechnical concerns within the study area or any proposed corridor. The majority of the material in the project area that would be encountered in any cuts or fills is silt of the Peoria Loess and Roxana Silt. These silts are very susceptible to erosion in cut sections. Slope protection may be needed to prevent erosion of the cut slope face in cut sections. Cuts with high water table may require 3:1 cut slopes and additional right-of-way.

Embankments over alluvium deposits may require fabric and rock to be placed as a working platform. Embankments constructed from rock and geotextile fabric may be required up to the high water elevation and should be stable on 2:1 slopes. Embankments over known wetlands may require waiting periods for foundation consolidation. It is preferred to avoid wetlands if possible.

If there are any questions, please advise.

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

File Code: 1950-5
Date: FEB. 3 2003

Annette Coffey, P.E.
Director
Division of Planning
125 Holmes Street
Frankfort, KY 40622

Dear Ms. Coffey:

I am writing in regards to your letter of December 13, 2002, in which you asked for our input on a planning study to determine the need and potential impacts for a proposed highway project on US 51 in Clinton, Hickman County.

You asked us to notify you of specific issues or concerns that we may have that could affect the development of the project described in the information enclosed with the letter.

Because this project is located in the western part of Kentucky, it is well outside the proclamation boundary for the Daniel Boone National Forest. It is also not located upstream from the National Forest in any watersheds that drain into or through the National Forest. For these reasons we have no issues or concerns specific to this project.

Thank you for providing this information and giving us the opportunity to comment on your proposed project.

Sincerely,

Kevin W Lawrence

KEVIN W LAWRENCE
Planning Staff Officer

DIV OF PLANNING
2003 FEB -4 A 10:18

Commonwealth of Kentucky
Transportation Cabinet
Frankfort, Kentucky 40622

James C. Codell, III
Secretary of Transportation

Clifford C. Linkes, P.E.
Deputy Secretary

Paul E. Patton
Governor

MEMORANDUM

TO: Annette Coffey, Director
Division of Planning

FROM: Michael L. Hill, Director
Division of Multimodal Programs

DATE: February 3, 2003

SUBJECT: Item No. 01-182.00
US 51 improvements
Hickman County

Thank you for the opportunity to comment on the proposed improvements to US 51 in Hickman County. The project limits are neither within nor contiguous to a Metropolitan Planning Organization (MPO) or a Small Urban Area (SUA). Therefore, this Division's Urban Planning Branch does not have any valuable comments regarding this project.

The coordination and connectivity of bicycle and pedestrian facilities is important in the early planning and design stages of projects. Design Guidance from the United States Department of Transportation released in February, 2000, states "bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist."

One of the project goals is to enhance vehicle and pedestrian safety along US 51 in the study area. If any preliminary alternative other than Alternatives 1, 6A, and 6B is selected, pedestrian and bicycle facilities must be considered. The high concentration of facilities including schools, college, post office, courthouse, as well as an intermediate care facility, affected by these alternatives make pedestrian facilities imperative. Bicycle facilities such as bike lanes or shoulder bikeways, should also be considered.

If Alternatives 6A or 6B, the Far Eastern Bypass options, are selected, care must be taken to procure sufficient right-of-way to build a shoulder bikeway (5' paved shoulder) and to include a sidewalk if warranted by future development. Depending on the number and width of lanes, the bypass cross-section should include pedestrian islands at intersections.

EDUCATION PAYS

Please contact Paula Nye of this Division for any questions about bicycle and pedestrian concerns.

We look forward to working with your Division to facilitate your study efforts in our SUA and MPO areas, and by increasing awareness of bicycle and pedestrian issues.

MLH/LJS/PEN/AJT

PAUL E. PATTON
GOVERNOR

CABINET FOR WORKFORCE DEVELOPMENT
OFFICE OF THE SECRETARY
CAPITAL PLAZA TOWER, 2nd FLOOR
500 MERO STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-6606 FAX (502) 564-7967

ALLEN D. ROSE
SECRETARY

March 18, 2003
Ms. Annette Coffey, P.E.
Director
Division of Planning
Kentucky Transportation Cabinet
125 Holmes Street
Frankfort, Kentucky 40601

Dear Ms. Coffey:

The Cabinet for Workforce Development appreciates the opportunity to comment on:

- planning studies for Hickman County (improvements to US 51 in Clinton) and Carlisle County (improvements to US 51 in Bardwell)
- planning study regarding possible construction of I-66 from 1-24 in Marshall or McCracken Counties in Missouri
- widening/relocation of KY 7 in Elliott and Morgan Counties from KY 711 in Morgan County to KY 32 in Elliott County

At this time, the proposed projects do not affect the Cabinet and its agencies.

Again, thank you for the opportunity to comment.

Sincerely,

Allen D. Rose
Secretary

ADR/SGS

Greg Pruitt
County Judge/Executive
Hickman County, Kentucky
110 E. Clay Street, Clinton, KY 42031
(270) 653-4369 • FAX (270) 653-4360

December 18, 2002

Annette Coffey, P.E.
Director, Division of Planning
Commonwealth of Kentucky
Kentucky Transportation Cabinet
125 Holmes Street
Frankfort, KY 40622

Dear Ms. Coffey,

Thank you for your letter of December 13, inviting my input into the planning study being conducted in regard to improvements to US 51 in Clinton. I have attended and participated in all the public meetings in the county in regard to this project. I look forward to continuing to be involved in this process in order to facilitate an appropriate conclusion to this study effort. I have felt free to give my opinions and concerns. We have appreciated the efforts of those involved with conducting this study.

Again, thank you for the opportunity to be involved in this process. We look forward to working with you and all those involved in reaching a successful conclusion, good for Clinton and Hickman County!

Very truly yours,

Greg Pruitt

GP/klr

Tommy Kimbro
Mayor

City of Clinton

P.O. Box 303
112 South Jefferson
Clinton, Kentucky 42031
(270) 653-6419

Francis Turner
City Clerk/Treasurer

Donna Bryan
Asst. City Clerk

14 JANUARY 2003

ANNETTE COFFEY, DIRECTOR
DIVISION OF PLANNING
KENTUCKY TRANSPORTATION CABINET
125 HOLMES ST
FRANKFORT KY 40622

DEAR ANNETTE,

IN REGARD TO COMMENTS REQUESTED, BY YOU, REGARDING PLANNING STUDY OF IMPROVEMENTS TO U.S. 51, ITEM 1-182.00, I AM OFFERING MY FEELINGS AS TO THE PROPOSED ALTERNATIVES,ETC., FOR THE CITY OF CLINTON.

I DO NOT FEEL THAT ALTERNATIVES 2 OR 3 WILL BE VIABLE CHOICES AS THERE WOULD BE MAJOR IMPACT DUE TO LIMITED FOOTAGE FOR THE REBUILDING OF THE HIGHWAY, OR PORTIONS THEREOF, CAUSING A GREAT HARDSHIP ON THE PROPERTY OWNERS ABUTTING U.S. 51.

ALTERNATIVES 4A OR 4B WILL BE IMPACTED BY THESE ROUTES, ALMOST ENTIRELY, RUNNING THROUGH NATURAL WETLAND & FLOODPLAIN AREAS.

ALTERNATIVES 5 AND 7 WILL GREATLY IMPACT RESIDENTIAL AREAS AND WILL BE DETRIMENTAL TO THE CITY REGARDING FUTURE DEVELOPMENT.

ALTERNATIVES 6A AND 6B ARE, IN MY OPINION, THE LEAST COSTLY AND MOST DESIREABLE OPTIONS REGARDING THE U.S. 51 IMPROVEMENTS AS IT RELATES TO THE CITY OF CLINTON.

SINCERELY,

TOMMY KIMBRO, MAYOR

MeadWestvaco Corporation
1724 Westvaco Road
P O Box 278
Wickliffe, KY 42087
tel 270 335 4000
fax 270 335 4110

MeadWestvaco

January 27, 2003

Annette Coffey, P.E.
Director, Division of Planning
Kentucky Transportation Cabinet
125 Holmes St.
Frankfort, KY 40622

SUBJECT: Planning Study
Carlisle County
Improvements to US 51
in Bardwell
Item No. 1-183.00

Planning Study
Hickman County
Improvements to US 51
in Clinton
Item No. 1-182.00

Dear Ms. Coffey:

This letter is in response to your agency's request for input on planning studies of the two projects listed above. With regard to possible improvements to US 51 at Bardwell and at Clinton, our first concern is for the safety of the communities and the safety for trucks that pass through them delivering wood fiber to the MeadWestvaco paper mill in Wickliffe. We promote safety among our wood suppliers and require compliance with the laws and company rules that apply to safety when suppliers are on our property. We are not in a position to enforce the laws on the highway, but have always cooperated with the authorities in applying the law and punishing offenders.

In both towns in the planning study, the crux of the decision to be made seems to center on whether to make improvements to the existing roadway through town, or to construct some alternative bypass around the town. Again, in both cases our main concern is safety. The local citizens in these towns are most effected by this project and should decide themselves which alternative provides them with the desired balance of safety and business providing traffic for their downtowns. Bypasses would provide some benefits to our wood fiber haulers in terms of speed and time, but at the distances from which most of our fiber comes, the time savings are not very significant.

Traffic counts that are part of this study will show considerable truck traffic hauling wood products through both towns. However, Bardwell will probably show several times the wood hauling traffic than through Clinton. Many of our wood haulers heading west to the mill on US 62 from woodyards and timber tracts in Kentucky stay on US 62 all the way to Bardwell to avoid the narrow roadway on KY 286 and to avoid going through

January 27, 2003
Annette Coffey, P.E.

Wickliffe on KY 121. Most of the trucks from woodyards in Tennessee go through Mayfield and west on KY 121. Much of this traffic also takes US 62 through Bardwell and up US 51 to the mill to avoid going through Wickliffe. The distance is also about the same. Our concern is that all of this traffic has to stop and make a right turn in Bardwell at the intersection of US 62 and US 51. We would lend our support to proposed improvements to this intersection or possibly to that portion of Alternative 5A that bypasses this intersection and provides a connection from US 62 to US 51 north of Bardwell.

Thank you for the opportunity to comment on these studies.

Sincerely,

Sandra Wilson

Sandra S. Wilson
Public Affairs Manager

SSW:pje

U.S. Department
of Transportation
**United States
Coast Guard**

Commander (obr)
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: obr
Phone: (314)539-3900 x4
FAX: (314)539-3755

16591.6/KY
January 9, 2003

Ms. Annette Coffey, P.E.
Director
Division of Planning
Kentucky Transportation Cabinet
Frankfort, KY 40622

Subj: PLANNING STUDY, HICKMAN COUNTY, IMPROVEMENTS TO US 51 IN CLINTON, ITEM NO. 1-182.00

Dear Ms. Coffey:

We have reviewed the information provided in your letter of December 13, 2002, and determined that the subject project will not involve bridges over navigable waters of the United States. Therefore, a Coast Guard bridge permit is not required for this project.

We appreciate the opportunity to comment on the project.

Sincerely,

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

United States Department of the Interior

NATIONAL PARK SERVICE
Long Distance Trails Group Office - Santa Fe
P.O. Box 728
Santa Fe, New Mexico 87504-0728

IN REPLY REFER TO:

D18(TRTE)

January 6, 2002

Ms. Annette Coffey
Division of Planning (A-2)
Kentucky Transportation Cabinet
125 Holmes St.
Frankfort, KY 40622

Dear Ms. Coffey:

Thank you for your letter of January 25, 2002, regarding the initiation of a planning study for the proposed Interstate 66 Highway project from McCracken County, Kentucky to Mississippi County, Missouri (KYTC Item #1-23.00). As the National Park Service office responsible for the administration of the Trail of Tears National Historic Trail, we are grateful to the Kentucky Transportation Cabinet for taking into consideration the potential impacts that this highway project might have on the historic trail and its associated resources.

Two variant routes traveled by the Cherokee during their forced migration in 1838-1839 have been designated as the Trail of Tears National Historic Trail. The first, the Water Route, follows the course of the Tennessee River from the Chattanooga area to its confluence with the Ohio River, down that river to the course of the Mississippi River, and then up the Arkansas River to Fort Smith. The second variant, known as the Northern Route, began at the Cherokee Agency, near present day Charleston, Tennessee. This was an overland course that passed through the cities of Nashville, Tennessee; Hopkinsville, Kentucky; Jonesboro, Illinois; Rolla and Springfield, Missouri; Fayetteville, Arkansas; and Tahlequah, Oklahoma. The Trail of Tears National Historic Trail Auto Tour Route closely follows the Northern Route. In addition to these two primary routes, there are several variants that are currently under study for possible designation as part of the National Historic Trail. Among these is a unique route traveled by the John Benge detachment, which left the Wills Valley near Ft. Payne, Alabama, and ran south of the Northern Route, passing through Tennessee, far southwestern Kentucky, southern Missouri, northern Arkansas, and ending near Tahlequah. To assist in your planning process, we've included maps that will give you a better understanding of the route variants through Kentucky.

The proposed Highway project is in the general area of the three trail variants mentioned above. The Water Route follows the main channel of the Mississippi River in western Kentucky. Currently, we are working with the U.S. Army Corps of Engineers to identify the historic river channel, which is likely marked today by old river remnants or oxbow lakes that may be eligible for the National Register of Historic Places based on their association to the Trail of Tears. It appears that the Northern Route is not within the 50-mile corridor you've identified in the Public Notice. Nonetheless, there are several key resources along the route in Kentucky that have either been certified by the National Park Service as a trail component, such as the Whitepath and Fly Smith Graves in Hopkinsville, or may be eligible for the National Register, such as Mantle Rock in Livingston County. The route traveled by the John Benge detachment may enter the 50-mile project corridor. This route is still under study but we have identified it tentatively as crossing Fulton, Hickman, and Carlisle Counties before crossing the Mississippi River at the Iron Banks near Columbus, and traversing Mississippi County, Missouri. Although we have not surveyed this section of the trail, our experience leads us to believe that there are probably extant trail segments in this part of Kentucky that are eligible for the National Register. There is strong public interest in support of adding the Benge Route to the National Historic Trail.

Our principle concerns are directed towards preserving and protecting all historic resources associated with the Trail of Tears, and creating appropriate public recreation and education opportunities along the trail. At this early stage in your planning process, it is impossible to say if and how trail resources will be impacted by this project, but we request that you continue to consider us an interested party as you proceed. We also would like to review any cultural resource reports that are produced associated with this project, and that any archeological testing or historical investigations account for the possibility of Trail of Tears-associated resources.

Feel free to direct any questions or requests for additional information to NPS Historian Aaron Mahr in this office at (505) 988-6736, or at aaron_mahr@nps.gov.

Sincerely,

David M. Gaines
Superintendent

Enclosures

THIRDROCK
CONSULTANTS

2514 Regency Road, Suite 104
Lexington, Kentucky 40503

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

June 18, 2002

James S. Lane Jr.
Wildlife Biologist II
Kentucky Department of Fish & Wildlife Resources
Environmental Section
#1 Game Farm Road
Frankfort, Kentucky 40601

Re: *US 51 Studies at Clinton & Bardwell*
Hickman & Carlisle Counties
KYTC Item No's 1-182.00/1-183.00

Dear Mr. Lane:

We are gathering data for an environmental overview for the above-referenced project. The project consists of an evaluation of potential improvements to US 51, including possible new roadway alignments, in the vicinity of Clinton, Kentucky (Hickman County) and Bardwell, Kentucky (Carlisle County). At this point, we are interested in obtaining information regarding the following:

- identified natural areas and unique, sensitive, or critical wildlife habitats in the study areas
- any federal or state endangered, threatened, or rare species listed for the study areas

Please note that the Kentucky Transportation Cabinet will contact you in the near future regarding your agency's specific issues and concerns related to the project.

The study area lies within multiple USGS 7.5-minute quadrangles (Cayce, Clinton, Cruthfield, Oakton, Arlington, Blandville, Milburn, and Wickliffe); a map of each study area is enclosed. Thank you for your help.

Sincerely,

Michael A. Floyd, PhD
mfloyd@thirdrockconsultants.com

Enclosures (2)

pc: David Martin, Kentucky Transportation Cabinet
Barbara Michael, Parsons Brinckerhoff Quade & Douglas, Inc.
Robert Frazier, Parsons Brinckerhoff Quade & Douglas, Inc.

1664

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF FISH AND WILDLIFE RESOURCES
C. THOMAS BENNETT, COMMISSIONER

June 24, 2002

Dr. Michael A. Floyd, Ph.D.
ThirdRock Consultants
2514 Regency Road, Suite 104
Lexington, KY 40503

RE: US 51 Studies at Clinton & Bardwell
Hickman & Carlisle Counties
KYTC Item No's 1-182.00/1-183.00

Dear Dr. Floyd:

I have reviewed the information that was provided on the above-referenced projects. Accordingly, I offer the following information.

Please find attached a list of rare and/or endangered species known to occur from the USGS topographic quadrangles listed in your letter. This list is from our Kentucky Fish and Wildlife Information System (KFWIS) and is located on the web at www.kfwis.state.ky.us. The information provided is the current information known. Changes to this system are made periodically so this information should be updated from time to time.

One other species that is not on these lists but that is known from the area is the Indiana bat (*Myotis sodalis*), a federally endangered species. This area of western Kentucky is known to harbor summer maternity colonies of this species under the loose bark of trees along or adjacent to streams and rivers. Any project should examine the impact on this species.

Finally, there is a great potential for impact to wetlands by both of these projects. The National Wetland Inventory maps should be consulted for preliminary locations and then field studies should be conducted to determine if any alignment would impact this important habitat type.

If you or anyone in your office should have any questions regarding my comments, please feel free to contact me at 502/564-7109, ext. 365.

Sincerely,

Wayne L. Davis
Environmental Section Chief

cc: Environmental Section Files

Kentucky Threatened & Endangered Species Reported from CAYCE Quadrangle

Common Name	Scientific Name	Status Code	Reference
cypress darter	Etheostoma proeliare (Hay, 1881)	223,302,602,999	Reference

KFWIS HOME

Kentucky Threatened & Endangered Species Reported from CRUTCHFIELD Quadrangle

Common Name	Scientific Name	Status Code	Reference
yellow-crowned night-heron	Nyctanassa violaceus (undescribed)	223,121,602	Reference

KFWIS HOME

Kentucky Threatened & Endangered Species Reported from ARLINGTON Quadrangle

Common Name	Scientific Name	Status Code	Reference
hooded merganser	Lophodytes cucullatus (Linnaeus, 1758)	121,601,221	Reference

KFWIS HOME

Kentucky Threatened & Endangered Species Reported from OAKTON Quadrangle

Common Name	Scientific Name	Status Code	Reference
hooded merganser	Lophodytes cucullatus (Linnaeus, 1758)	121,601,221	Reference

KFWIS HOME

Kentucky Threatened & Endangered Species Reported from MILBURN Quadrangle

Common Name	Scientific Name	Status Code	Reference
spotted sandpiper	Actitis macularia (Linnaeus, 1766)	223,121,601	Reference

KFWIS HOME

Kentucky Threatened & Endangered Species Reported from WICKLIFFE Quadrangle

Common Name	Scientific Name	Status Code	Reference
yellow-crowned night-heron	Nyctanassa violaceus (undescribed)	223,121,602	Reference
interior least tern	Sterna antillarum athalassos (undescribed)	223,101,121,601	Reference

KFWIS HOME

THIRDROCK
CONSULTANTS

2514 Regency Road, Suite 104
Lexington, Kentucky 40503

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

June 18, 2002

Jeff Pratt
Kentucky Division of Water
Ecological Support Section
Water Quality Branch
18 Reilly Road
Frankfort, Kentucky 40601

Re: *US 51 Studies at Clinton & Bardwell*
Hickman & Carlisle Counties
KYTC Item No's 1-182.00/1-183.00

Dear Mr. Pratt:

We are gathering data for an environmental overview for the above-referenced project. The project consists of an evaluation of potential improvements to US 51, including possible new roadway alignments, in the vicinity of Clinton, Kentucky (Hickman County) and Bardwell, Kentucky (Carlisle County). At this point, we are interested in obtaining information regarding the following:

- outstanding resource waters, wild rivers, or wetlands in the study areas
- results of previous biological (macroinvertebrates or fish) and physiochemical sampling from streams within the study areas

Please note that the Kentucky Transportation Cabinet will contact you in the near future regarding your agency's specific issues and concerns related to the project.

The study area lies within multiple USGS 7.5-minute quadrangles (Cayce, Clinton, Cruthfield, Oakton, Arlington, Blandville, Milburn, and Wickliffe); a map of each study area is enclosed. Thank you for your help.

Sincerely,

Michael A. Floyd, PhD
mfloyd@thirdrockconsultants.com

Enclosures (2)

pc: David Martin, Kentucky Transportation Cabinet
Barbara Michael, Parsons Brinckerhoff Quade & Douglas, Inc.
Robert Frazier, Parsons Brinckerhoff Quade & Douglas, Inc.

P:\2001\1664-Hickman-EO\Corresp\Agency Letters\Pratt Ltr.doc

16664

JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
14 REILLY RD
FRANKFORT KY 40601

June 24, 2002

Michael A. Floyd, Ph.D.
Third Rock Consultants, LLC
2514 Regency Road, Suite 104
Lexington, Kentucky 40503

RE: US 51 Studies at Clinton and Bardwell
Hickman and Carlisle counties
KYTC Item Nos. 1-182.00 and 1-183.00

Dear Dr. Floyd:

The Water Quality Branch has reviewed your request for information about the referenced area. There are no Outstanding Resource Waters or Wild Rivers within the proposed corridor. Biological data for both Clinton and Hickman counties are available, but none from within the study boundaries. Physiochemical data is probably not extant, since no major streams occur in the corridor. There are numerous wetlands within the study areas. Detailed wetland maps should be consulted when determining highway alignments.

For future reference, information on Special Use Waters can be found on the Division of Water web site (http://water.nr.state.ky.us/dow/dwhome.htm). Click on Topics and Programs within the Division, then scroll down and click on Special Use Waters. This list is frequently updated as new streams are added.

If you have any questions or need further information on biological communities, ORWs or wetlands, please contact me by phone (502/564-3410) or e-mail (mike.mills@mail.state.ky.us).

Sincerely,

Michael R. Mills

Michael R. Mills, Supervisor
Ecological Support Section

c: File

THIRD ROCK CONSULTANTS

2514 Regency Road, Suite 104
Lexington, Kentucky 40503

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

June 18, 2002

Sara Hines
Data Manager
Kentucky State Nature Preserves Commission
801 Schenkel Lane
Frankfort, Kentucky 40601-1403

Re: *US 51 Studies at Clinton & Bardwell*
Hickman & Carlisle Counties
KYTC Item No's 1-182.00/1-183.00

Dear Ms. Hines:

We are gathering data for an environmental overview for the above-referenced project. The project consists of an evaluation of potential improvements to US 51, including possible new roadway alignments, in the vicinity of Clinton, Kentucky (Hickman County) and Bardwell, Kentucky (Carlisle County). At this point, we are interested in obtaining information concerning endangered, threatened, or special concern plants and animals and exemplary natural communities that may exist in the project areas. Please note that the Kentucky Transportation Cabinet will contact you in the near future regarding your agency's specific issues and concerns related to the project.

The study area lies within multiple USGS 7.5-minute quadrangles (Cayce, Clinton, Cruthfield, Oakton, Arlington, Blandville, Milburn, and Wickliffe); a map of each study area and a completed data license are enclosed. Thank you for your help.

Sincerely,

Michael A. Floyd, PhD
mfloyd@thirdrockconsultants.com

Enclosures (3)

pc: David Martin, Kentucky Transportation Cabinet
Barbara Michael, Parsons Brinckerhoff Quade & Douglas, Inc.
Robert Frazier, Parsons Brinckerhoff Quade & Douglas, Inc.

P:\2001\1664-Hickman-EO\Corresp\Agency Letters\Hines Ltr.doc

1664

DONALD S. DOTT, JR.
DIRECTOR

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
KENTUCKY STATE NATURE PRESERVES COMMISSION
801 SCHENKEL LANE
FRANKFORT, KENTUCKY 40601-1403
(502) 573-2886 VOICE
(502) 573-2355 FAX

July 8, 2002

Michael A. Floyd
Third Rock Consultants, LLC
2514 Regency Road
Lexington, KY 40503

Data Request **02-204**

Dear Mr. Floyd:

This letter is in response to your data request of June 19, 2002 for the US-51 Studies at Clinton and Bardwell project. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Kentucky State Nature Preserves Commission occur in the areas shown on the map provided. Based on our most current information, we have determined that five occurrences of the plants or animals and no occurrences of the exemplary natural communities that are monitored by KSNPC are reported as occurring in the Clinton project area. There were no occurrences of plants, animals, or communities that are monitored by KSNPC in the Bardwell project area.

The Bayou de Chien drainage supports the only known relict darter (*Etheostoma chienense)* population in the world. Consequently, we recommend that stream alterations or disturbances be avoided or held to a minimum. All construction activities should be completed during periods of low flow. A written erosion control plan should be developed and implemented that includes stringent erosion control methods (e.g., (?) [i.e.,] straw bales, silt fences and erosion mats, immediate seeding and mulching of disturbed areas) which are placed in a staggered manner to provide several stages of control. All erosion control measures should be monitored periodically to ensure that they are functioning as planned. Heavy equipment should not be used in Bayou de Chien or any of its tributaries. We recommend that you consult the United States Fish and Wildlife Service, Cookeville, Tennessee, field office for additional information.

EDUCATION PAYS

I would like to take this opportunity to remind you of the terms of the data request license, which you agreed upon in order to submit your request over the Internet. The license agreement states "Data and data products received from the Kentucky State Nature Preserves Commission, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Kentucky State Nature Preserves Commission." The exact location of plants, animals, and natural communities, if released by the Kentucky State Nature Preserves Commission, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Kentucky State Nature Preserves Commission's Data Manager (801 Schenkel Lane, Frankfort, KY, 40601. Phone: (502) 573-2886).

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 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. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

If you have any questions or if I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Sara Hines

Sara Hines
Data Manager

smf/SGH

Enclosures: Data Report and Interpretation Key

THIRD ROCK
CONSULTANTS

2514 Regency Road, Suite 104
Lexington, Kentucky 40503

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

June 18, 2002

Dr. Lee A. Barclay
Department of the Interior
Fish & Wildlife Service
446 Neal Street
Cookeville, Tennessee 38501

Re: *US 51 Studies at Clinton & Bardwell*
Hickman & Carlisle Counties
KYTC Item No's 1-182.00/1-183.00

Dear Dr. Barclay:

We are gathering data for an environmental overview for the above-referenced project. The project consists of an evaluation of potential improvements to US 51, including possible new alignments, in the vicinity of Clinton, Kentucky (Hickman County) and Bardwell, Kentucky (Carlisle County). At this point, we are interested in obtaining information concerning federally endangered and threatened species that may exist in the study areas. Please note that the Kentucky Transportation Cabinet will contact you in the near future regarding your agency's specific issues and concerns related to the project.

The study area lies within multiple USGS 7.5-minute quadrangles (Cayce, Clinton, Cruthfield, Oakton, Arlington, Blandville, Milburn, and Wickliffe); a map of each area is enclosed. Thank you for your help.

Sincerely,

Michael A. Floyd, PhD
mfloyd@thirdrockconsultants.com

Enclosures (2)

pc: David Martin, Kentucky Transportation Cabinet
Barbara Michael, Parsons Brinckerhoff Quade & Douglas, Inc.
Robert Frazier, Parsons Brinckerhoff Quade & Douglas, Inc.

FILE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

July 23, 2002

Dr. Michael A. Floyd
Third Rock Consultants
2514 Regency Road, Suite 104
Lexington, Kentucky 40503

Re: FWS# 02-2097

Dear Dr. Floyd:

Thank you for your letter and enclosures of June 18, 2002, concerning the environmental studies for the reconstruction of U.S. 51 (including potential bypasses around Clinton and Bardwell) in Hickman and Carlisle Counties, Kentucky. Fish and Wildlife Service (Service) personnel have reviewed the information submitted and we provide the following comments in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

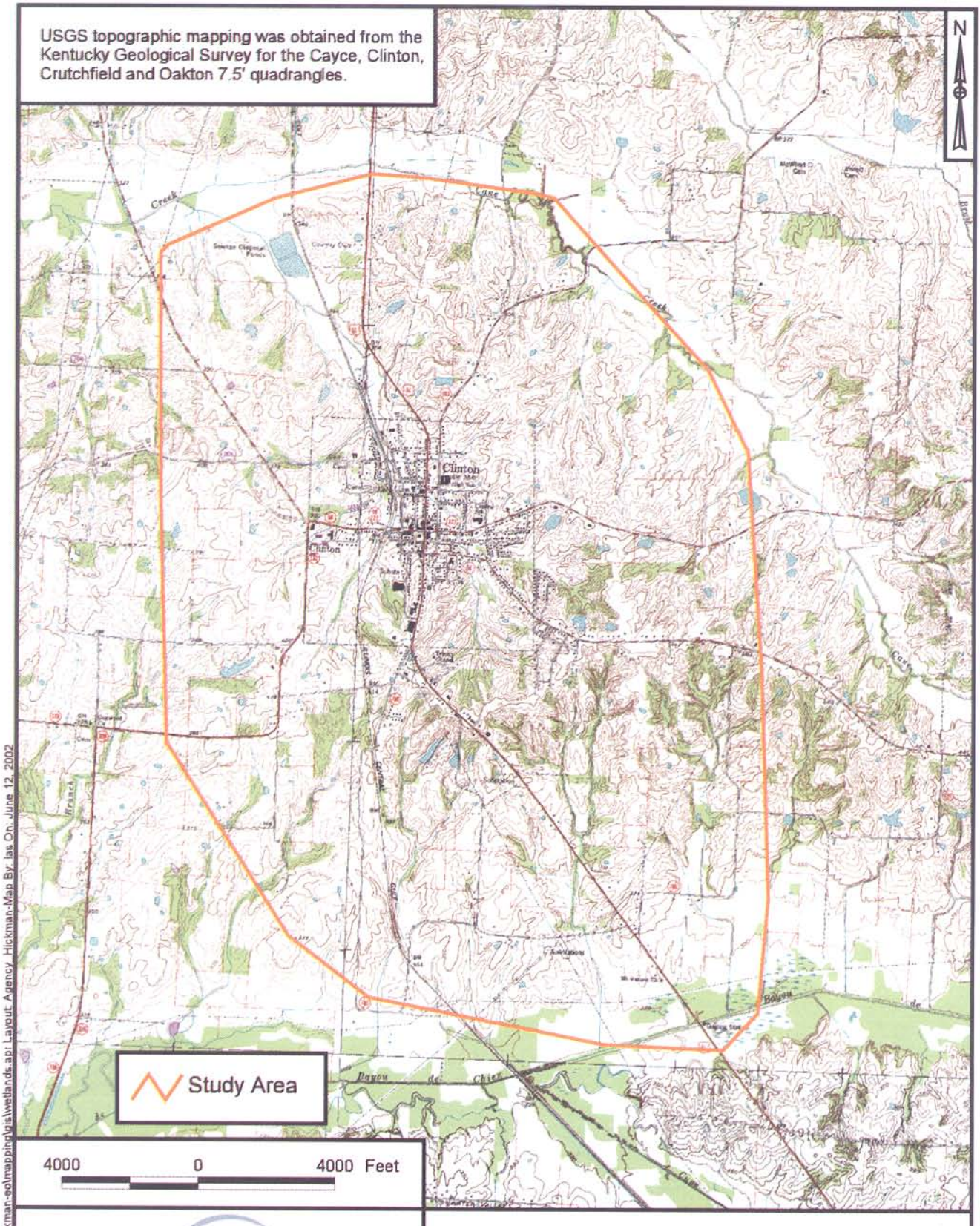
The federally endangered Indiana bat (*Myotis sodalis*) and relict darter (*Etheostoma chienense*) potentially occur in the project impact area. You should assess potential impacts and determine if the proposed project may affect these species. A finding of "may affect" could require initiation of formal consultation. We recommend that you submit a copy of your assessment and finding to this office for review and concurrence.

Thank you for providing us an opportunity to comment on this action. If you have any questions, please contact Rob Tawes of my staff at 931/528-6481, ext. 213.

Sincerely,

Lee A. Barclay, Ph.D.
Field Supervisor

xc: Wayne Davis, KDFWR, Frankfort, KY



THIRD ROCK CONSULTANTS
Environmental Planning, Analysis and Restoration
www.thirdrockconsultants.com

US 51 STUDY AT CLINTON
HICKMAN COUNTY
STUDY AREA MAP

- Filename: p:\2001\11664-hickman-eol\mapping\gis\wetlands.apr Layout: Agency Hickman-Map By: las On: June 12, 2002

APPENDIX E:
MEETING MINUTES
(Project Team Meetings, Stakeholder and Other Meetings, Project Work Group Meetings, and Public Meetings)

Meeting Minutes

PROJECT: US 51 STUDY AT CLINTON

MEETING: Project Team Meeting No.1 and Field Views

DATE & TIME: February 7, 2002 - 7:30 AM (CST)

LOCATION: KYTC District 1 Conference Room - Paducah, Kentucky

ATTENDEES:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
Carl Dixon	KYTC - Central Office Planning	carl.dixon@mail.state.ky.us
Bruce Siria	KYTC - Central Office Planning	bruce.siria@mail.state.ky.us
David Martin	KYTC – Central Office Planning	charles.martin@mail.state.ky.us
Bryan Stewart	KYTC - District 1 Planning	bryan.stewart@mail.state.ky.us
Tim Choate	KYTC – District 1 Pre-Construction	tim.choate@mail.state.ky.us
Stephen Hoefler	KYTC - Central Office Highway Design	steve.hoefler@mail.state.ky.us
Mary Murray	FHWA – Planning and Environment	mary.murray@fhwa.dot.gov
Stacey Courtney	Purchase Area Development District	stacey.courtney@mail.state.ky.us
Glenn Anderson	KYTC - Intelligent Transportation Sys.	glenn.anderson@mail.state.ky.us
Charles Cunningham	KYTC - Intelligent Transportation Sys.	charles.cunningham@mail.state.ky.us
Barbara Michael	Parsons Brinckerhoff, Inc.	michael@pbworld.com
Steve Slade	Parsons Brinckerhoff, Inc.	slade@pbworld.com
Robert Frazier	Parsons Brinckerhoff, Inc.	frazierr@pbworld.com
Stuart Kearns	Jordan Jones, & Goulding	skearns@jjg.com

NOTE ON JOINT MEETING:

The Kentucky Transportation Cabinet (KYTC) is conducting two separate studies along US 51 in Western, Kentucky: the US 51 Study at Clinton and the US 51 Study at Bardwell. The Parsons Brinckerhoff Team is providing consultant services for both studies.

Joint Project Team Meetings were held for the two studies on the above date. However, because the studies are independent, meeting minutes have been prepared for each study. This is to provide the documentation necessary to maintain separate project records. For information on the Bardwell study, please refer to the corresponding meeting minutes.

MEETING SUMMARY:

Introductions

Those present introduced themselves and their roles on the project. After introductions, Bruce Siria stated that while one consulting team was selected for both the US 51 Study at Clinton and the US 51 Study at Bardwell, the two studies would be treated separately.

Bruce also stated that there is not a predetermined solution for these two studies. Specifically, the studies will emphasize looking at all alternatives ranging from doing nothing to upgrading existing facilities to new construction including bypasses.

David Martin with the Kentucky Transportation Cabinet (KYTC) Central Office Planning will be the new project manager for KYTC on both studies.

Study Scope/Schedule and 1995 Planning Study

Barbara Michael reviewed the major scope elements (including purpose and need, existing conditions analysis, development of a full range of alternatives, evaluation of the alternatives, and recommendations) and the proposed 12-month study schedule.

Carl Dixon and Bruce Siria discussed the previous scoping study completed in 1995. The 1995 study recommended the "Do Nothing" alternative for rebuilding or widening all of US 51 through Hickman and Carlisle Counties between Fulton and Wickliffe. However, it recommended consideration of bypasses around both Clinton and Bardwell.

Traffic and Highway Data for the Clinton Study Area

Robert Frazier presented the proposed Clinton study area as well as traffic, crash, truck percentage, highway facility characteristics, and population data.

Traffic volumes on US 51 in the Clinton study area range from 2,210 to 7,130 vehicles per day with truck percentages as high as 21 percent. The KYTC Highway Information System (HIS) data was discussed, including functional classification, right-of-way, lane width, shoulder width, speed limits, and other key data elements (please refer to the handout for details).

Historic traffic data for Clinton indicates that traffic volumes have been fairly steady at around 2,000 to 3,000 vehicles per day north and south of the town over the last 20 years. There has been a slight upward trend in the town center during this time period.

The crash data shows crash clusters in downtown Clinton, near US 51 / KY 780, and near US 51 / Martin Road.

The current population of Clinton is approximately 1,400 and the population of Hickman County is just over 5,000. The County population has remained fairly stable over the last 30 years.

Further Discussion

Bruce Siria stated that based on an initial review of the historic data, traffic volumes have not increased substantially in the Clinton study area, but that truck percentages have increased.

The possible need for origin / destination information for trucks was discussed. The truck weigh stations at Wickliffe and Fulton may be able to provide some of that data. US 51 is not on the National Highway System.

Study Issues

There was general discussion regarding a range of issues in the Clinton study area. (These are presented below.)

Clinton Study Area	The study area was initially defined using environmental and physical considerations including Cane Creek to the north and Bayou de Chien on the south. There were discussions regarding making the study area smaller; however, the general consensus was that the proposed study area boundary should be maintained until the study is further along. [Subsequently, the field view indicated that the southern boundary on US 51 should be extended approximately 2,000 feet to meet the construction limit for the current US 51 improvement project south of Clinton.]
Roadway Facilities and Safety	There are a number of roadway deficiencies on US 51 through the Clinton study area, including poor lines of sight, narrow lanes, narrow shoulders, steep grades, curves, and angled intersections. The poor condition of many curbs and sidewalks was also discussed. Potential high accident locations were discussed.
Truck Traffic	Truck traffic is an issue in Clinton. Truck percentages are high and include trucks carrying full loads of logs headed to Westvaco, north of Bardwell. One potential reason for the high truck volumes is that the next major river crossing to the south is near Dyersburg, TN (I-155) and Union City in Northwest TN is a major generator of truck traffic. This traffic likely does not backtrack to Dyersburg but heads north on US 51 to cross at Wickliffe. Truck traffic on KY 58 was also discussed.
School Access	School access was deemed an important issue for local roadway planning. The Hickman County schools are located in downtown Clinton.
Regional Access / Economic Linkages	A key issue may be improved access to the south toward Fulton and to the Julian M. Carroll (Purchase) Parkway to the east. Many Clinton leaders and residents seem to view this as a key economic connection and would like to have the existing US 51 improved toward the south and/or KY 58 improved to the east. (There is an ongoing US 51 improvement project just south of the proposed study area.)
Railroad	The railroad and railroad crossings present important physical constraint and safety issues. The railroad line is the Illinois Central Railroad.

	Amtrak provides service over this line.
Traffic Operations	Improving travel times through the study areas on US 51 was mentioned as an important issue.
Emergency Access	Emergency access could be an issue as there is no 24-hour emergency medical care center in Clinton, therefore good high-speed medical emergency access is needed to facilities in nearby communities such as Lourdes Hospital and Western Baptist Hospital in Paducah and Jackson Purchase Medical Center in Mayfield.
Land Use / Zoning / Future Development	Hickman County does not have local zoning. There are a number of large existing uses that should be avoided as far as practical such as the golf course north of Clinton.
Cultural Resources	Cultural resource issues may be significant in Clinton. There are many potentially historic properties. Examples include Beeler Hill, Waterfield Estate, and the Marion College site. The PB Team will document potentially historic districts and properties as part of the study. It was also noted that the area is part of the Mississippi Delta region.
Community Issues	In addition to cultural and historic issues, the presence of significant minority, low income, and senior populations were discussed. PB was requested to provide a demographic analysis. This is part of the current scope of work.
Previous Studies	The 1995 KYTC study was mentioned previously.
Pedestrians	Pedestrian safety is a possible issue in downtown Clinton, especially near the Court House.
Other Facilities	The potential need for improvements related to US 51 on KY 58, KY 123, KY 780, Martin Road, and other roadways was discussed.

Public Participation

Barbara Michael discussed the proposed public involvement plan, which will include public officials meetings, project work group meetings, public meetings, and other stakeholder meetings. Four project work group meetings and four public meetings are currently planned. The public officials meetings will be held first to brief the County Judge, Mayor, and possibly the State Representative and State Senator for the area. The Project Work Group will be asked to provide input on the public participation program. The members of the Project Work Group should include a range of individuals representing the following: residents, political leaders, agriculture, trucking, other businesses, social organizations, development agencies, schools, emergency services, and others.

Clinton has a number of civic, social, and business groups that will be included in the public participation program (representatives of some of these may serve on the Project Work Group). PB was asked to look at the demographics of the study area. Barbara Michael indicated that this would be part of the socioeconomic review.

Other Items Discussed

Tad Long of the Kentucky League of Cities has offered to serve as a resource for the Project Work Group. The Kentucky League of Cities is interested in helping towns and cities maintain their community character. Specifically, they would like to work with communities where new bypass projects are planned.

There was also discussion of the use and enforcement of truck routes and ITS applications for the study including the use of vehicle surveillance for determining when trucks route through the town.

FOLLOW UP ACTIONS:

1. KYTC and Purchase Area Development District (PADD) staff will schedule a meeting with local officials (i.e., County Judge, Mayor, and maybe the State Representative or Senator) to brief them on the study. [Subsequently, Stacey Courtney of the Purchase Area Development District scheduled a meeting for February 21, 2002.]
2. A draft list of Project Work Group members will be developed. Input for these lists from KYTC District 1 and PADD staff should be sent to Robert Frazier at frazierR@pbworld.com or fax# (502) 456-1323.
3. Upon finalization of the project contract, the PB Team will advance the existing conditions data collection effort (i.e., traffic, environment, and other key subject areas).
4. The PB Team will begin drafting a Preliminary Statement of Project Purpose and Need.
5. KYTC Central Office Planning will determine how to proceed with the agency coordination effort.
6. KYTC Central Office Planning will issue the public notice for initiation of the National Environmental Policy Act (NEPA) process.
7. KYTC Central Office Planning will follow-up on whether US 51 is part of the National Truck Network.

FIELD VIEWS:

Following the meeting at District 1, the meeting attendees (with the exception of the KYTC Central Office ITS staff) drove to Clinton for a field view. The field view confirmed many of the items presented above in the issues discussion.

US 51 Scoping Study
Local Officials Meeting Minutes
Clinton, Kentucky
02-22-02

Attendees:

Gregg Pruitt	Hickman County Judge Executive
Carl Dixon	KYTC (Planning)
Bruce Siria	KYTC (Planning)
Jeff Thompson	KYTC (Planning, District 1)
Bryan Stewart	KYTC (Planning, District 1)
Linda Boatwright	KYTC (Public Relations, District 1)
Stacey Courtney	Purchase ADD
Shawn Dikes	Parsons Brinckerhoff
Robert Frazier	Parsons Brinckerhoff
Barbara Michael	Parsons Brinckerhoff

Meeting Summary:

Carl Dixon began the meeting by making brief greetings and introductions. He stated that the US 51 corridor study done previously by the state recommended a bypass at Clinton. However, a bypass is not the only option that this study will examine.

Bruce Siria stated that project will include an active public involvement program. A variety of public involvement events are anticipated throughout the duration of the project.

Barbara Michael reiterated that a wide range of solutions will be examined. Problems with the current system need to be identified first. Input will be gathered from the public and the project work group as to the scope and nature of these problems. Similarly, the identification of other issues will also take place. The work group will help design the Public Involvement Program. The work group will also be the principal advisory body for the project.

The project should be completed within a twelve-month schedule.

Robert Frazier discussed the preliminary boundaries of the study area. The study area is rather large to accommodate all possible options within and in the immediate vicinity of Clinton. The boundaries were chosen based on past study recommendations as well as physical features.

Robert explained that the preliminary range of alternatives include:

- Do nothing (No build)
- Upgrades to existing US 51

- Bypass
- Anything in between

County Judge Greg Pruitt agreed with the preliminary study area.

Robert stated that a copy of the previous state study should be looked at so that traffic numbers can be revisited. We should make a copy available.

Carl agreed that the previous study should be a starting point.

Robert stated that the team intends to examine traffic volume data for existing conditions (current year) and for a future year, likely 2030. Physical traffic counts as well as projections will be developed. The state HIS database contains a large amount of useful information, including physical attributes of roadway, volume and accident information. For instance, US 51 traffic has been growing at a moderate pace. However, the volume and percentage of trucks has been increasing at a higher rate over the past decade. Trucks now account for between 15 and 21% of the volumes.

Preliminary issues identified by Judge Pruitt and those present included:

- 4 lanes on US 51
- Not enough traffic on US 51
- Do not divert traffic from US 51
- Agricultural traffic on US 51
- The growth of the south side of Clinton
- Improve US 51 on the south side of Clinton
- Hill on US 51 is difficult for agricultural traffic
- Flow on US 51 not at capacity
- Bypass might hurt downtown
- What are the positives of the bypass? What have other communities done?
- Turn lanes/3rd lane/truck passing lanes on US 51

Judge Pruitt stated that he would appreciate open and honest communications between all involved. He is currently “slightly against” a bypass, stating that there are no major public safety issues, crash numbers are not significant, and KYTC has already dealt with major problems. He did mention that more poultry trucks could be traveling to/from Tyson Chicken plant.

Barbara discussed membership on the Project Work Group. Judge Pruitt will help with suggesting participants. She stated that it is the initial intention of the project team (Cabinet and Consultant) to have the Project Work Group meet prior to the first public meeting.

Judge Pruitt looked at the possible Work Group members supplied by Stacey Courtney of the PADD.

He remarked that the list was a good starting point. He also made the following suggestions:

- Add David Kimball (188 US 51 South – 653-4311)
- Add Charlie McIntire
- 4H agent Michael Wilson
- School district transportation person
- Susan Lemons of the Chamber of Commerce (363 S. Washington St. 653-3422)
- Tommy Roberts of the Hickman County Industrial Development Authority (3920 SR 780 Clinton – 653-4466)
- Howard Dillard – candidate for membership to represent EJ community
- Western KY Allied Services – Joanne Alexander – EJ community rep.

Carl discussed possible environmental justice issues associated with the project. Judge Pruitt stated that the only known EJ community would be along US 51 north for a stretch of 3-5 blocks past the carwash to the City limits. This is an area of moderate to low-income housing including an African–American community.

Barbara stated that, currently, there will be four public meetings scheduled. A possible meeting location is the local senior center. The meetings should be properly publicized in order for the public to have the right expectations going into the meetings.

It was stated that the time of year and the sports season are two considerations in scheduling the meetings. Church bulletins may be a good option to publicize the meetings, considering there are 36 churches (4 large) in the area.

Other sources include:

- Paducah Sun
- Fulton Leader/Shopper
- Variable message signs (at top of hill going south)
- Notices sent home with school children

There is a business and industry banquet on April 25, 2002 and this might be a good time to briefly introduce the project.

Follow up meetings with all the Hickman County Magistrates and the Clinton City Council is planned. Judge Pruitt indicated a need to provide proper notice per the sunshine laws. The regular meeting of the Fiscal Court is the third Monday of the month at 7:00 PM. The next meeting is March 18, 2002. The City Council meets on the first Monday of the month at 7:00 PM.

In response to Judge Pruitt's concerns, Carl said that the University of Kentucky did a study on bypasses and the effects on communities business districts. This information will be shared with Judge Pruitt. Tad Long at the Kentucky League of Cities has also expressed an interest in participating and assisting the community.

Judge Pruitt stated that the downtown business district consists of local businesses that serve town and county residents and are somewhat dependent on the current traffic volumes.

Bruce stated that the business community and others might be more receptive to looking at improvements to the existing US 51 route through town. Bryan Stewart indicated that the bypass at Cadiz in Trigg County could be examined for possible applications in this setting.

Judge Pruitt requested traffic information for I-69.

A preliminary list of other issues were also discussed:

- SR 58 from Clinton to Mayfield (emergency route)
- Lodging at Columbus Belmont State Park, the activities building, additional development, and Civil War Days (2nd full week in October) that attracts up to 15,000 people. Want to market event and other attractions in the area at park and develop area.
- SR 58 from Clinton to Columbus
- The Farmer's Gin, Harper's Hams and Jakel (yAkel) are the major employers in the area. Employees coming to and from these businesses, especially at shift changes may cause localized congestion at peak times.
- Goals for the study include being open, assessing impacts and options and examining what other communities have done.

Meeting Minutes

PROJECT: US 51 STUDY AT CLINTON

MEETING: Hickman County Fiscal Court Presentation

DATE & TIME: March 18, 2002 - 7:00 PM (CST)

LOCATION: Hickman County Courthouse - Clinton, Kentucky

DATE OF MINUTES: March 19, 2002

Hickman County Judge/Executive Greg Pruitt introduced District 1 Chief Engineer Wayne Mosley and explained to the County Magistrates that the Kentucky Transportation Cabinet (KYTC) was beginning a study of US 51 in Clinton. The remaining project team members present introduced themselves (Bryan Stewart - KYTC District One, Jeff Thompson - KYTC District One, Stacey Courtney - Purchase ADD, Robert Frazier – Parsons Brinckerhoff).

Bryan Stewart (KYTC) gave a short introduction regarding the study. Wayne Mosley (KYTC) added that the Cabinet tries to keep public officials informed regarding KYTC projects so that they are able to answer their constituent's questions as they arise. This advance information benefits local officials, the public, and the KYTC. Robert Frazier (PB) then presented a brief overview of the study approach including the study area, major study tasks, potential public involvement activities, and the initial project work tasks. An outline of the presentation is attached. Mr. Frazier emphasized that the KYTC has not predetermined a recommended improvement alternative. In fact, the KYTC has not even fully determined all of the problems to be addressed by the proposed improvements. Mr. Frazier emphasized the role of public involvement in the study. He outlined a number of ways in which the public will be asked to be involved. He reviewed the concept of a project work group and requested input from the Magistrates regarding potential committee members. The Magistrates are going to give suggestions to Judge Pruitt who will forward them to KYTC District One.

Judge Pruitt asked when the first public meeting would be held. He was told that assuming all goes well with initiating the study it would be about two months (Late April or May). He was also informed that existing conditions data (such as traffic, crash, and land use data) would be presented at the first public meeting, but that proposed improvements and new alignments would not be shown at this meeting. The Magistrates were told that there would be a project work group meeting before the first public meeting. It was also emphasized to them that we want to keep them informed as the study moves forward. At least one of the Magistrates commented that they were pleased with this "no surprises" method of operation.

[NOTE: The official Fiscal Court minutes will be included in the file when available.]

Cc: Project File - 17023H

Attachments

Meeting Minutes

PROJECT: US 51 STUDY AT CLINTON

MEETING: Clinton City Council Presentation

DATE & TIME: April 1, 2002 - 6:00 PM (CST)

LOCATION: Clinton City Hall - Clinton, Kentucky

DATE OF MINUTES: April 5, 2002

During the new business portion of the City Council meeting, Mayor Kimbro introduced Bryan Stewart (KYTC District One Planning) and explained that the Kentucky Transportation Cabinet (KYTC) was going to make a presentation regarding a study of US 51 in Clinton. Bryan Stewart then introduced the project team members present (Stacey Courtney - Purchase ADD and Robert Frazier – Parsons Brinckerhoff).

Bryan Stewart (KYTC) gave a short introduction regarding the study, stating that the KYTC was initiating this study as a follow-up to a previous 1995 study of US 51 from Wickliffe to Fulton. He also indicated that one reason for this presentation is to keep them informed regarding the project so that they are able to answer their constituent's questions as they arise. Robert Frazier (PB) then presented a brief overview of the study approach including the study area, major study tasks, potential public involvement activities, and the initial project work tasks. An outline of the presentation is attached. Mr. Frazier emphasized that the KYTC has not predetermined a recommended improvement alternative. In fact, the KYTC has not even fully determined all of the problems to be addressed by the proposed improvements. Mr. Frazier emphasized the role of public involvement in the study. He outlined a number of ways in which the public will be asked to be involved. He reviewed the concept of a project work group and requested input from the Mayor and Council regarding potential committee members.

There was discussion regarding how many people will be on the workgroup and how many names the City should submit. It was decided that the Mayor would get together a short list of possibly six names for the workgroup and would send them to Stacey Courtney.

[NOTE: The official City Council minutes will be included in the file when available.]

Cc: Project File - 17023H

Attachments

PROJECT: US 51 STUDY AT CLINTON

MEETING: Project Work Group Meeting No.1

DATE & TIME: April 29, 2002 - 2:00 PM (CDT)

LOCATION: Farm Bureau Office - Clinton, Kentucky

ATTENDEES: See Attached Sign-in Sheet

MEETING SUMMARY:

Introductions

David Martin, the Kentucky Transportation Cabinet (KYTC) Project Manager, introduced the study and requested that everyone present introduce themselves and whom they represent. Mr. Martin stated that this study was a follow-up study to a 1995 KYTC study that addressed US 51 from Wickliffe to Fulton. The 1995 study indicated that future improvements would be needed in Clinton and Bardwell but widening the entire length of US 51 in Kentucky to four lanes was not warranted. Mr. Martin indicated that KYTC has selected Parsons Brinckerhoff (PB) to complete the current US 51 studies for the two towns. He introduced Barbara Michael and Robert Frazier, both with PB, to make a presentation to the work group. Barbara Michael reviewed the Work Group meeting rules and the major discussion items for the meeting.

Study Process

Barbara Michael presented the four-phase study process, showing that we are at the first phase: Definition of Project Issues and Goals. The work group will meet at critical points during the process. Public meetings will also be held at key points during the process. The study will take approximately 12 months and will be completed by next Spring. Ms. Michael also presented the KYTC's "Road Building Steps", which shows the activities involved in constructing or improving a road in Kentucky.

Public Involvement

Ms. Michael presented the important aspects and elements of a draft Public Involvement Program for the US 51 Study in Clinton. Proposed activities included: work group meetings; stakeholder meetings; public meetings; and use of an informational table or flyers. She asked for input on specific public involvement activities that should be considered for this study. Input included use of the following for publicity about meetings and events: radio (95.9 FM and 1270 AM); telephone calls; personal contacts; and newspaper (Hickman County Gazette, Fulton Shopper). It was recommended that the Project Team consider having a barbeque or some similar event to attract people to a meeting on the project. There was also discussion regarding the importance of the content that is being communicated to the public and matching the appropriate public involvement methods with the information being communicated.

Ms. Michael also discussed the role of the work group as an advisory and representative body. She stated that additional meetings will be held with stakeholders and the public at large, but the work group's role is to represent the broad interests of the community and help involve others at the appropriate times (i.e., the public meetings). The work group members present were asked to inform the Project Team if they felt that some critical portion of the community was not currently represented on the work group so that they can be contacted and involved in the future.

Study Background Information

Robert Frazier presented the proposed Clinton study area as well as preliminary traffic, crash, truck percentage, highway facility characteristics, and population data. Additionally, even more detailed data will be collected in the next few months to support the study.

Traffic volumes on US 51 in the Clinton study area range from 2,210 to 7,130 vehicles per day with truck percentages as high as 21 percent. A summary of data from the KYTC Highway Information System (HIS) database was presented including, right-of-way, lane width, shoulder width, speed limits, and other key data elements (please refer to the handout for details).

Historic traffic data for Clinton indicates that traffic volumes have been fairly steady at around 2,000 to 3,000 vehicles per day north and south of the town over the last 20 years. There has been a slight upward trend in the town center during this time period.

The crash data shows crash clusters in downtown Clinton, near US 51 / KY 780, and near US 51 / Martin Road.

The current population of Clinton is approximately 1,400 and the population of Hickman County is just over 5,000. The County population has decreased slightly over the last 30 years.

Discussion of Project Issues and Goals

Ms. Michael presented some example issues to spur discussion of the issues related to US 51 in the vicinity of Clinton. She also presented example project goals from another study to show the types of goals that might be set for this project.

Following this, the work group divided into two groups for a discussion of issues and goals. Once the two groups completed their brainstorming sessions, the work group reconvened, and a representative from each group presented that group's issues and goals.

The issues discussed by the work group are summarized below.

<u>Roadway Safety and Design Issues</u>

There are a number of roadway deficiencies on US 51 through the Clinton study area, including poor lines of sight, narrow lanes, narrow shoulders, steep grades, curves, poor drainage, lack of turn lanes, limited right-of-way, and angled intersections. Specific intersections mentioned as safety concerns included US 51 / KY 780 and US 51 / KY 703. Locations near Spring St. (curve), Cresap St., and US 51 / KY 58 were also mentioned as locations that should be investigated for potential improvements.

Pedestrian Safety

There are sidewalk and crosswalk deficiencies at locations along US 51, including Beeler Hill and north of town.

Truck Traffic

Truck traffic was presented both as a potential problem and as an important part of economic stability and growth. Many people are accustomed to the truck traffic. However, there are noise impacts to residents along US 51. There are also truck turning radius issues at the intersection of US 51 and KY 123. Truck weight limits are another related issue to be considered in the study.

School Traffic

School traffic was deemed an important issue for local roadway planning. The schools cause traffic peaking around 7:30 – 8:00 a.m. in the morning and around 3:00 p.m. in the afternoon.

Economic Development

The relationship between US 51 and local economic development is a critical issue for this study. Promotion of economic development is very important to both the City of Clinton and Hickman County. The recent closure of a large local business caused the loss of approximately 100 local jobs. Local economic decline has also caused a loss of local tax base. There is a need for new base industry as well as small businesses. A school is retraining the employees who lost their jobs, but these people may not find jobs locally and may have to relocate. The Hickman County Industrial Development Agency promotes local economic development and makes loans to local businesses.

Traffic Flow and Traffic Operations

Improving travel times and limiting congestion through the study area on US 51 was mentioned as an important issue. Traffic flow improvements were seen as beneficial to economic development efforts. The peak traffic times are around 7:30-8:00 a.m. in the morning and around 3:00 p.m. in the afternoon. The Draughun's business school in Clinton has increased traffic and parking demands in the town. Traffic signals were discussed, including the possibility of upgrading or eliminating the current signal at US 51 and KY 123, as well as the possibility of adding another signal on US 51.

Senior Citizens and Auto Ownership

According to the Work group, there is a high population of senior citizens in the study area. (According to the socioeconomic analysis, approximately 18.5 percent of the county population, or 970 individuals, were age 65 or older in 1999.) Many of these senior citizens do not own cars and they need improved sidewalks and crosswalks.

Funding

Obtaining the necessary funding to make roadway improvements in the study area was considered an important issue for project implementation. There was discussion about the relationship between project funding and project scope / schedule.

Parking

The new business school in town has led to parking shortages in the vicinity of the school.

Historic Preservation

Preservation of the County Courthouse is an important historic preservation issue.

Regional Access / Economic Linkages

Connections both within the county, as well as from the county to other regional roadways was presented as an important issue for this study. This includes regional connections to the Purchase Parkway (which could become I-69 in the future) as well as north toward the potential new I-66 corridor.

The project goals discussed by the work group included the following:

Potential Project Goals

- Enhance vehicular and pedestrian safety on US 51 and the intersecting roadways
- Upgrade US 51 and its connections to the local transportation system network
- Improve traffic flows and travel speeds through the study area
- Promoting Economic Development in Clinton and Hickman County
- Facilitate improved regional connections to the Purchase Parkway (proposed I-69) and the proposed new I-66 in the north
- Promote safe and efficient school traffic flows (buses, cars, and students)
- Maintain and improve the community character and quality of life in Clinton and Hickman County.
- Improve (or maintain) the current parking conditions in Clinton
- Preserve historic buildings such as the Hickman County Courthouse

Vision Statement

Ms. Michael asked the work group members to put forth their vision for the community for the next 25 years. Comments included promoting growth, enhancing the quality of life, and preserving the rural character of the community. The combined draft vision statement for the community was as follows: "Preserve the rural character and quality of life, while participating in the economic vitality of the Commonwealth and the United States."

Other Items Discussed

Bruce Siria (KYTC) encouraged the work group members to encourage the other work group members to become involved and attend the next meeting as well as the upcoming public meeting.

Next Steps in the Study Process

Mr. Frazier reviewed the next steps in the study, which will include detailed data collection and analysis of the existing and future transportation conditions in the study area, environmental studies, and preparation of a draft statement of Study Issues and Study Goals. The project team will also hold additional stakeholder meetings and a public meeting over the next two months. Information from all of these activities (including the draft Issues and Goals) will be presented at the next work group meeting. The next work group meeting will also include a discussion of the full range of potential improvement alternatives, including upgrades to US 51 and potential bypass alternatives, with a goal of developing possible alternatives to be studied.

PROJECT: US 51 STUDY AT CLINTON

MEETING: Business Owners and Representatives Meeting

DATE & TIME: June 27, 2002 - 6:00 PM (CDT)

LOCATION: Farm Bureau Office - Clinton, Kentucky

DATE OF MINUTES: June 28, 2002 (Revised on July 23, 2002)

MEETING SUMMARY:

Introductions

David Martin, the Kentucky Transportation Cabinet (KYTC) Project Manager, introduced the study and requested that everyone present introduce themselves and whom they represent. Mr. Martin stated that this study was a follow-up to study to a 1995 KYTC study that addressed US 51 from Wickliffe to Fulton. The 1995 study indicated that future improvements would be needed in Clinton and Bardwell but widening the entire length of US 51 in Kentucky to four lanes was not warranted. Mr. Martin indicated that KYTC has selected Parsons Brinckerhoff (PB) to complete the current US 51 studies for the two towns. He then introduced Robert Frazier with Parsons Brinckerhoff (PB).

Mr. Frazier discussed why the meeting was being held. He discussed the findings of the 1995 study and the need to follow-up on the potential need for highway improvements in the vicinity of Clinton. He also discussed the Cabinet's new approach to scoping studies, which includes more up front involvement by the public.

Study Process and Public Involvement

Mr. Frazier presented the four-phase, 12-month study process, showing that we are nearing the end of the first phase: Definition of Study Issues and Goals (refer to Figure 1).

He discussed that a range of alternatives from simple spot improvements to new roads will be considered. He also presented the general evaluation process, noting that transportation, community, and environmental issues will be considered in the evaluation. The end result is a recommended project or set of projects.

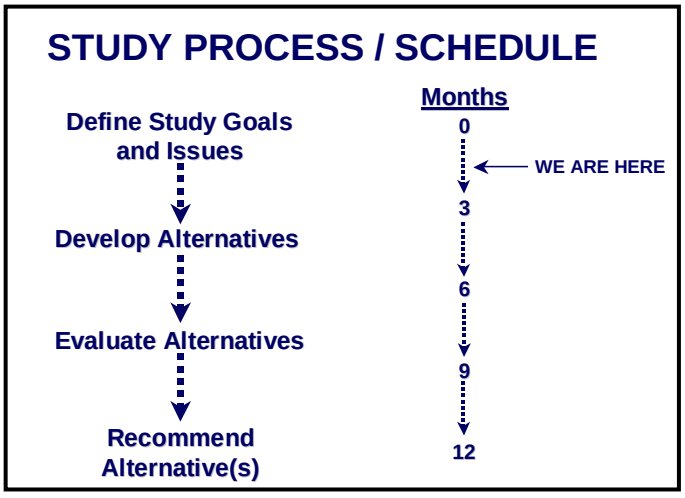


Figure 1: Study Process / Schedule

Mr. Frazier and Mr. Martin both discussed the public involvement activities, which includes an advisory, representative Project Work Group; stakeholder meetings; public meetings; and outreach activities. Mr. Frazier also explained that there are detailed technical studies (traffic safety, truck volumes, speeds, environmental studies, etc.) being conducted simultaneously with the public involvement program.

Discussion of Study Issues and Goals

The meeting then turned to a discussion of issues related to US 51 in the study area. Mr. Frazier emphasized that this was a significant opportunity for the local community. This was their chance to present and discuss any problems with US 51 in Clinton or to request improvements that they think will benefit their community.

A number of general issues developed by the Work Group were shown to the business representatives to give them a starting point, however, the group was fairly forthcoming in giving suggestions for problems to be addressed by the study. There was also some discussion of possible solutions and the positive and negative aspects of various alternatives including a bypass. The principal topics of discussion are summarized below. Issues surrounding a bypass were also discussed and this is presented below as well.

Roadway Safety and Design Issues

There are a number of potential problems on US 51 including:

- Limited clear zones (utility poles close to roadway)
- Sharp curves
- Truck turning problems at US 51 at W. Clay St.
- Pedestrian crossing issues at Cresap St. (including school children crossing)
- Lack of sidewalks in certain locations along US 51
- Stormwater drainage problems in various areas – need better drainage
- Flooding problems on US 51 near the Bayou De Chien (possibly also north of town)
- Limited Right-of-Way was also mentioned as a concern – some people feel that US 51 is wide enough and should not be widened as it will impact property along US 51
- Sidewalk and streetscape improvements were desired by some present

Some of these are discussed further below.

Traffic Flow and Traffic Operations

Current traffic operations were discussed, including the current traffic signal in town. No substantial traffic capacity problems were mentioned. The perception is that traffic used to be higher before the interstates were constructed. A question was raised regarding how many towns with one signal have a bypass? The comment was also made that US 51 is wide enough and should not be made wider as it will impact properties along the highway.

Pedestrian Safety

There are sidewalk and crosswalk deficiencies at locations along US 51 including the area near Cresap Street and the market at that location. More sidewalks are needed and an improved school crossing location on US 51 (near Cresap St.).

Truck Traffic

Truck traffic was discussed as an issue. It was viewed both positively as well as negatively by participants. Truck speeds were mentioned as a problem. There are also truck turning radius issues such at US 51 and W. Clay St. The truck drivers do not like the traffic signal in town. Trucks and the trucking industry were mentioned as an important part of the historical and current economy in the area. According to long time residents, there used to be much more traffic including truck traffic. The concept of trying to remove the trucks from US 51 was discussed. Some viewed this as a possible benefit, while others viewed it as bad for local businesses.

School Traffic

School traffic was deemed an important issue for local roadway planning, especially in regards to vehicle and pedestrian conflicts on US 51 at the start and end of the school day (in the vicinity of Cresap St. in particular). The need for improvements in this area was discussed.

Utilities

There are utility poles very close to the roadway edge in roadway sections with limited shoulders and/or narrow lanes (such as on the hill north of town). According to those present they pose a traffic safety hazard. There was discussion regarding who would pay for utility relocation. Stormwater drainage issues were also discussed.

Funding

Obtaining the necessary funding to make roadway improvements in the study area was an important issue. There was also discussion about whether funding for one alternative (possibly a bypass) would mean less funding for upgrades to US 51 in town. It was emphasized that limited funding is an issue and it is not possible to do every project.

Economic Development

Economic development was listed as an important issue for the study and for the community. Many jobs have been lost and if highway improvements can help bring new jobs and economic development then that would be beneficial. (Jobs and development were discussed at length in relation to a possible new bypass.)

Historic Preservation and Property Impacts

Preservation of the County Courthouse and other historic buildings (churches and residences) along US 51 is important. First Christian Church, a 100-year old church, was given as an example. The potential for property impacts along US 51 was listed as a concern. (There are homes and businesses that front US 51 without a large setback.)

Parking

Parking in the courthouse area has become a problem for some. There was debate regarding the severity of the problem.

Bypass Discussion

There was discussion at the meeting regarding the benefits and drawbacks of a bypass around the town. Some at the meeting expressed concern about a bypass taking away business. Others discussed the benefits and the possibility that it will attract new development to the area (i.e. that it could be an economic stimulus) and improve traffic and pedestrian conditions in the town. The Cadiz area was discussed as an example of a City that has benefited greatly from a bypass.

A question was raised as to how much of the local business is from drive-by or through traffic and how much is from destination traffic. There was speculation that many of the local choppers are destination traffic, however, one businessman present stated that he has considerable business from both groups. There was also discussion regarding whether through traffic, and especially truck traffic stops and spends money in any local businesses.

Another question was raised regarding how people in other communities that have been bypassed feel about the bypass. It was stated that according to the UK report many local business people and community leaders feel that the bypasses have been good for the community. However, the research also showed that there could be impacts to the downtown area and especially to retail businesses. A more detailed presentation on this subject will be given at the first public meeting.

There was also discussion regarding the location of any proposed bypass, including where the 1995 study placed the bypass. It was stated that KYTC has not predetermined a solution for this study and that no alternatives have been developed to date, but the project team will be developing initial alternatives prior to the public meeting.

Conclusion

Those present were encouraged to spread the word about the study and help involve more people from the community. They were also informed that there will be a public meeting in the near future at which they will be able to provide additional input on possible improvement alternatives as well as to comment on those presented.

PROJECT: US 51 STUDY AT CLINTON

EVENT: Information Table

DATE: July 12, 2002

LOCATION: Hickman Co. Courthouse Square - 8:00 a.m. to 12:00 Noon
Greg's Supermarket - 1:00 p.m. to 5:00 p.m.

EVENT / COMMENTS SUMMARY:

Information Table Event

An information table was set up at the locations and times listed above. In the morning a tent was set up on the courthouse square, while a table was put up inside the supermarket in the afternoon. The tent was located outside the supermarket to attract attention and some staff remained outside to discuss the project and refer people in to the table. Individuals from the Kentucky Transportation Cabinet, Parsons Brinckerhoff, and the Purchase Area Development District staffed the information table.

Study fact sheets (with a study area map) and comment forms were handed out. Aerial photos and a study area map were put up on easels for display and discussion. Large signs were put up on US 51 with arrows pointing toward the location of the information table. Each organization had free items to give to members of the public who stopped by such as pencils, pads of paper, travel mugs, key chains, maps, etc… People were requested to sign-in. They were also encouraged to fill out comment forms and were informed that a drawing would be held for those who did.

Public Input

Everyone who came up to the table was engaged in discussion about the purpose and scope of the study. They were asked for their input on transportation issues related to US 51 in the study area. Often individuals engaged staff in discussion about possible improvements including potential spot improvements, highway reconstruction, highway widening, and bypasses. Staff informed the public that the study was in its initial stages and that the project team was working to define the problems before jumping to conclusions about what is the best solution. However, individuals were not prevented from expressing their opinions, but instead they were encouraged to give their early input.

In fact, everyone who signed-in at the table was encouraged to give at least one idea or concern about US 51 in Clinton. Forty-five (45) people signed in at the table and thirty-

nine (39) of them listed at least one item in this column of the sign-in sheet. The most frequent comment in this column was that the existing road should be widened or improved (approximately 11 people). The second most common comment was that a bypass should be constructed (approximately 6 people). An additional two individuals said either the road should be widened to four lanes or a bypass should be constructed. Four individuals specifically said "No-Bypass". Some of the other comments addressed intersection improvements, drainage problems, sidewalks, safety, parking, concern about property impacts on US 51, trucks, and economic development. One individual said the current road is fine. However, the overall indication was that the local community desires improvements, with one group supporting improvements to the current US 51 and a second group supporting a new bypass around the town.

In addition to the comments on the sign-in sheet, seven comment forms were completed and returned on the day of the event. The comments on these forms were similar to those on the sign-in sheet. Five of the responses discussed problems on US 51 and / or recommended improvements of some type to the current US 51 highway. One respondent discussed a bypass as a potential improvement to US 51 (for safety).

Meeting Minutes

PROJECT: US 51 STUDY AT CLINTON

MEETING: Neighborhood Meeting #1

DATE & TIME: July 12, 2002 - 6:30 PM (CDT)

LOCATION: Senior Community Center - Clinton, Kentucky

MEETING SUMMARY:

Bryan Stewart (Kentucky Transportation Cabinet, District One Planning) introduced the study. Mr. Stewart and Robert Frazier (Parsons Brinckerhoff) discussed the study history and the reasons for the current study. They also discussed changes in KYTC's approach to project implementation over the last few years, one of which is to include and listen to the public extensively during the initial planning stages. This issue actually was discussed at length toward the end of the meeting in response to questions about why KYTC was doing this study and why they wanted to meet with the public.

Mr. Frazier presented both the study process and the overall timeframe / steps necessary for KYTC to build or upgrade roads. The study elements were discussed, including the four main study phases (issues and goals, alternatives development, alternatives evaluation, and alternatives recommendation) as well as the role of the public involvement program and the ongoing detailed technical studies. Mr. Frazier also presented the study area and the range of improvements being considered in the study.

The meeting included a constructive discussion session with questions and answers back and forth between those present. The following bullets provide a summary of the discussion topics.

<u>Pedestrian Safety</u>

- Sidewalks are desired as part of upgrades to US 51
- There is concern about child safety on US 51
    - No crossing guard for school children to cross US 51
    - Children play across and even on US 51
- Concern was expressed about senior citizen safety

<u>Vehicular Safety</u>

- The following locations were mentioned as potential safety problems
    - US 51 at KY 780 (south) – hill and intersections
    - US 51 at KY 1826 – hill and intersection at Depot St.
    - Jiffy Mart intersection –cars pulling out and presence of school buses and school children
    - Curve by Greg's Supermarket (KY 780 – north)
    - Curve by the jail north of town

Clinton's Assets

- When asked what Clinton has going for it, the responses included – the courthouse, museums, schools, and maybe most importantly its laid back attitude.

US 51 Bypass Issues – Benefits and Drawbacks

- According to the citizens present, the **benefits of a bypass** include taking trucks out of town, potential to attract new industry, improve travel times and make the area more attractive for industry (both for location and as a through route). Jakel was mentioned as an existing local industry that might (or might not) benefit from a bypass
- The **drawbacks of a bypass** included impacts to local small businesses, removal of through traffic from S 51, potential removal of local businesses from downtown and from US 51(especially through traffic oriented businesses such as convenience stores and gas stations).
- The potential removal of business from US 51 in downtown Clinton would make it less convenient for local residents to purchase things. They may now have to drive out to the bypass to purchase convenience store items.
- When asked what they envisioned when they thought of a bypass the response was the bypass around Union City and the parkway around Fulton.
- Overall those present appeared to think that a bypass would be harmful to the community, though the statement was made that it **might be positive but at a cost**.

Widening US 51 to Four Lanes

- This alternative would not be viewed positively by the community due to property impacts and the perception of increased traffic flow (and possibly speeds)

Spot improvements to US 51

- This type of alternative would likely elicit two responses from the community 1) "why didn't they fix the whole thing?" and 2) "they actually did something in Western Kentucky"

Do-Nothing Scenario

- One person asked if the community wants nothing built would nothing be done? It was stated that KYTC is the final decision maker and if there are problems with the highway they may still pursue a project to address those problems. For example, KYTC is responsibility to provide safe highway facilities. However, KYTC desires to benefit the community and not hinder it if possible.

Meeting Minutes

PROJECT: US 51 STUDY AT CLINTON

MEETING: Project Work Group Meeting No. 2

DATE & TIME: August 22, 2002 - 6:30 PM

LOCATION: Farm Bureau Office - Clinton, Kentucky

MEETING SUMMARY:

Introductions and Review of Meeting Minutes for Previous Meeting

David Martin, the Kentucky Transportation Cabinet (KYTC) Project Manager, introduced the study and requested that everyone present introduce themselves and whom they represent. All attendees were also asked to sign-in. There were no comments on the minutes of the previous meeting.

Review of Work Completed to Date

Work completed to date was reviewed including: Project Work Group Meeting No. 1, Business Owners Stakeholder Meeting, Neighborhood / Minority Community Meeting at the Senior Center, Information Table at County Courthouse and Greg's Supermarket, Traffic Data Collection, Environmental Data Collection, and Other Field Work.

Existing Conditions Data

A brief summary of the existing conditions data was presented including an overview of current traffic volumes, levels of service, and crash statistics. The environmental features maps were also discussed briefly. Graphics illustrating the existing conditions findings were included in the presentation handout materials.

Review of Draft Issues and Goals

The draft issues and goals were part of the mail out to each Project Work Group participant. There were no comments on the issues portion of the write-up. Comments on the goals included adding bicycle safety to the vehicle and pedestrian safety goal and adding a reference to I-69 in the regional connections goal.

The Work Group was asked to highlight the goals they thought were most important. The non-prioritized list (1-7) was reviewed. Goals 1-4 received supporting comments. One person noted that goals 1-4 all involve safety in some way. Goal 6 appeared to receive the most supporting comments. The comment was also made that it is difficult to achieve goals 1-6 and still achieve goal 7 (minimizing property, community, and environmental impacts).

The Work Group emphasized utility impacts and the cost of utility impacts to the local community in the meeting. This issue will be addressed to extent possible in this planning level study.

Discussion of Potential Project Alternatives

The six preliminary conceptual alternatives were presented and discussed with the Work Group. They include the 1) Do-Nothing; 2) Spot Improvements; 3) Reconstruction of US 51 as a Two-Lane Highway with Turn Lanes; 4) Western Bypass Along the Railroad Right-of-Way; 5) Eastern Bypass near Town; and 6) Eastern Bypass Further from Town.

Comments on the alternatives included:

At the **US 51 / KY 58/123 intersection**, consider taking 10 feet of property from the Courthouse Square to widen the intersection, leaving the number of parking spaces alone.

US 51 south of Clinton – there is confusion with at the caution light. Trucks stop in this vicinity and park, blocking lines of sight for drivers pulling out onto US 51. There was discussion regarding restricting parking in this area or requiring vehicles to park further from the roadway.

Regarding upgrading US 51 along its current alignment, the issue of **utilities** was discussed as a major local concern. Local officials anticipate that any reconstruction of the highway with wider lanes and/or turn lanes will impact existing utilities (including municipal utilities such as sewer and water lines). There is concern that the cost of these relocations could be significant for these small utilities and for local residents who may ultimately have to bear the costs.

It was suggested that reconstructing US 51 as a two-lane highway without turn-lanes would not improve the traffic flow situation. However, it was agreed that **reconstruction options with and without turn lanes would be evaluated**.

Some of the positive and negative aspects of the bypass options were discussed. The **Western Bypass Option** (Alt. 4) offers the benefits of traveling through the town but with the potential for limited property impacts. It also might offer the opportunity to improve the railroad crossing clearances. Negative aspects include a similar travel time with the current route through town, removal of traffic from in front of businesses on US 51, potential conflicts with the railroad right-of-way, and environmental issues (wetlands, streams, floodplains).

The **Eastern Bypass** near town (Alt. 5) appeared to be the favored bypass option between the two eastern bypass options. The eastern bypass options open up new land for development. They also remove through truck traffic from US 51 in town.

Mayor Kimbro contacted a number of towns along the US 68 / KY 80 corridor with a **short survey to learn how they viewed recent bypasses** of their communities. He reported that responses from the towns were positive and they were generally pleased with the bypasses. Robert Frazier then reported on the findings of the **2001 UK study on bypasses** and his recent discussion with the lead researcher who prepared the report. The study, while not offering conclusive results, indicated the following: bypasses have limited impacts on local (countywide) economic growth; bypasses reallocate economic activity (but not the businesses themselves); bypasses often result in higher downtown vacancy rates; years after they are complete, bypasses are often viewed favorably or neutrally by local leaders (usually because of traffic related benefits); bypasses offer opportunities for growth (new development parcels) especially

in larger communities; and bypasses may provide transportation advantages in some situations (but not necessarily on US 51).

A **one-way street system** was brought up as another option that is could be considered. However, the Work Group did not support further study of that as an alternative.

Reconstruction of US 51 as a four-lane highway was not discussed extensively at the meeting and did not appear to have support from those present for further study and consideration.

Regarding **advertisements for the upcoming public meeting**, the Work Group members present thought some controversy might be helpful in getting people out to the meeting. They also recommended advertising in the Fulton Shopper, getting the maps out where people could see them, and advertising on the Live Wire.

Conclusions

All of the options presented will be presented at the public meeting. The minor comments and modifications regarding reconstruction or improvements to the existing US 51 alignment will be taken into consideration. All of the six alternatives presented will be considered for further evaluation.

Public Workshop Summary

Monday, September 9, 2002

Public Workshop #1

US 51 Planning Study in Clinton
Hickman County
Item Number 1-182.00

A Public Workshop was held on Monday, September 9, 2002. The workshop was held at Hickman County High School from 4 p.m. to 7p.m. A total of 92 citizens and seven staff members signed in at the meeting. A sign-in sheet was posted, a short presentation was given and handouts were provided. The handouts included the following information:

- Information about the Study Process, Schedule, Issues and Goals
- A fact sheet from the Kentucky Transportation Cabinet (KYTC) explaining the Planning Study and Road Building Process
- A fact sheet explaining the scope of the project
- A map of the project study area
- A map illustrating conceptual improvements options
- A fact sheet explaining each of the conceptual alternatives

The main purpose of the workshop was to 1) inform the public regarding the study; 2) obtain feedback from the public on the study goals and issues, and 3) receive input on the alternatives to be evaluated.

The workshop began with a brief introduction by Allen Thomas, Kentucky Transportation Cabinet - District One, Planning Engineer. Mr. Thomas then turned the presentation over to Barbara Michael and Robert Frazier of Parsons Brinckerhoff (PB). The presentation addressed the following topics:

- Explanation of the project study process and schedule, as well as an explanation of the project development process;
- Review of the project study area;
- Presentation of the environmental features and traffic information;
- Discussion of the project goals, issues and evaluation process;
- Overview of the initial conceptual alternatives;
- Explanation of the public role at the workshop; and
- Contact information for the study.

The remainder of the meeting was conducted in an “open house” format. The attendees were given the opportunity to view exhibits and ask questions about each of the subjects listed above. This included a set of boards regarding: 1) the

study and road building process; 2) existing traffic and environmental conditions; 3) the study objectives and project issues and goals; and 4) preliminary alternatives for improving US 51.

Regarding the preliminary alternatives, six initial alternatives were shown on aerial photos and members of the public were asked to both comment on those shown and help develop other alternatives that might be appropriate for evaluation in this study. Blank maps (aerial photos and USGS maps) as well as small handout maps were available for this purpose. The members of the public were engaged to discuss issues related to the study and the possible improvement alternatives.

The attendees were each given a comment form, which they were asked to complete at the meeting. For those who did not complete the forms at the meeting, postage-paid envelopes were provided for returning them to the Division of Planning. Summaries of the public comments received are presented on the following pages.

The meeting was adjourned at 7 p.m.

US 51 Study in Clinton
Public Workshop #1
Public Comment Form Results Summary

The purpose of the first public workshop for the US 51 planning study was to gain public input on the study's goals and issues as well as possible solutions. A survey was distributed during the meeting to record this input. 71 completed surveys were received. A summary of the results is presented below.

***Question 1**: What issues do you think are important for the study to consider?* The respondents were asked to identify all that apply.

Issue	Percent of Respondents
Vehicular Safety and Highway Design	66%
Traffic Flow and Traffic Operations	63%
Truck Traffic	58%
Economic Development and Regional Access	56%
Property Impacts	44%
Pedestrian Safety	41%
Community Character and Historic Preservation	39%
Parking, Drainage and Utilities	35%
Project Implementation and Funding	20%
Highway Beautification	20%
Low-income and Senior Populations	17%
Environmental Issues	8%

***Question 2**: Of the following seven draft project goals, which three do you think are most important?*

Project Goal	Percent of Respondents
Preserve downtown business, while enhancing overall economic development opportunities	69%
Mitigate the negative impact of heavy truck traffic on US 51, while maintaining an efficient through route	46%
Avoid, minimize, and/or mitigate property takings on US 51 as well as other community and environmental impacts	38%
Enhance vehicle and pedestrian safety	37%
Maintain appropriate traffic controls and traffic flow conditions	35%
Facilitate improved regional connections to the Purchase Parkway and proposed I-66	35%
Improve highway geometry and drainage	13%

***Question 3**: What impacts (positive or negative) would result from improvements to US 51 in Clinton?*

Response	Percent of Respondents*
Bypass would negatively impact Clinton (esp. economically)	39%
Improvements would enhance safety and traffic flow	25%
Improving existing US 51 would benefit safety and/or traffic flow	16%
Limited benefits - Traffic doesn't warrant a new roadway	14%
Bypass could contribute to economic growth / revitalization	14%
Bypass would reduce downtown truck traffic and improve safety, traffic flow, and access	12%
Property and/or farmland impacts with Bypass (negative impact)	7%
Western Bypass would benefit community (business, redevelopment, improved housing for low income residents)	7%
Improvements will support community / economic development	5%
Improvements would reduce parking in town	2%

* Percentages are based on the number of respondents that answered the question. 38% of respondents did not answer. The total does not add to 100% as some respondents gave multiple responses.

***Question 4**: Are there impacts (positive or negative) from doing nothing to improve the highway?*

Response	Percent of Respondents*
Doing Nothing will lead to auto/truck/pedestrian safety and/or traffic problems	55%
Doing Nothing will impact the economic vitality of Clinton	27%
Doing nothing will have no significant negative impact (few problems, doing nothing neutral or even beneficial)	23%
Doing Nothing supports local businesses in Clinton	5%
Doing Nothing maintains community quality of life	2%
Doing Nothing will lead to increased maintenance costs	2%

* Percentages are based on the number of respondents that answered the question. 38% of respondents did not answer. The total does not add to 100% as some respondents gave multiple responses.

***Question 5**: If improvements are to be made to US 51 in Clinton, do you have any suggestions for what should be done and where?*

Response	Percent of Respondents*
Alternative 2 (Spot Improvements)	32%
Improve US 51 / KY 58 (West) / KY 123 intersection and parking issues	16%
Eliminate or move courthouse square parking for improvements	11%
Improve US 51 / KY 58 (East) intersection	4%
Improve Cresap Street area	4%
Replace bridge 1/4 mile south of Edwards Trucking Bld.	4%
Improve US 51 at Martin Road	2%
Improve US 51 / KY 780 (North) intersection	2%
Improve sight distance at Harper Ham	2%
Alternative 3 (Widen/Improve Existing US 51)	27%
One-Way Street System (US 51 and existing roads or Alt. 4)	21%
Alternative 4 (Western Bypass or similar)	20%
Alternative 5 (Near Eastern Bypass)	7%
Alternative 1 (No-Build)	7%
Alternative 6 (Far Eastern Bypass)	5%
Place Utilities underground	5%
Improve sidewalks	4%
Construct walkways over US 51 or elevate US 51	4%

* Percentages are based on the number of respondents that answered the question. 21% of respondents did not answer. The total does not add to 100% as some respondents gave multiple responses.

In addition to the responses given above for Question #5, the percent of respondents supporting or opposing a bypass was recorded as shown below.

Response	Percent of Respondents*
Oppose a bypass	32%
Support a bypass (Approx. 80% of these Supported Alt. 4)	25%
Answered Question but did not take a position on a bypass	43%

* Percentages are based on the number of respondents that answered the question. 21% of respondents did not answer.

***Question 6**: Do you know of any especially sensitive environmental features in the study area of which we should be aware?*

The following responses were received.

- Preservation of built assets
- Creeks in Clinton are prehistoric sites
- Fish Ponds
- Wetlands along railroad or in bottom lands
- Minority community in town

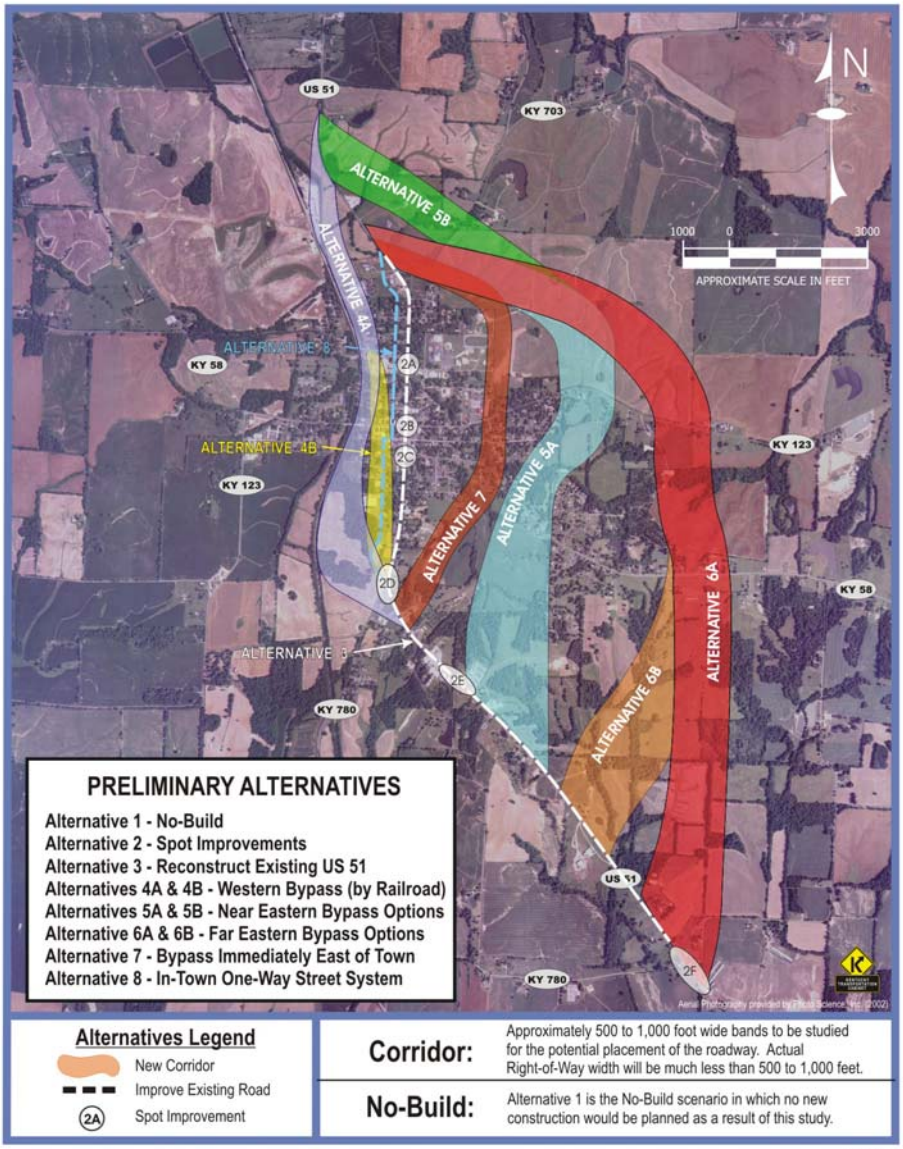
Additional Comments Received

Numerous additional comments were received. These comments are included in the full public meeting documentation. A few of the pertinent comments include:

- Nothing should be done
- The KYTC should support the entire cost of the project
- The community should be kept informed about the project
- The State should not spend carelessly
- Spot improvements offer fewer negative impacts than alternative routes
- Spot improvements seem appropriate for the community
- Alternative 6 should be extended further north
- Alternatives 5 and 6 would take too many homes and properties and hurt community character
- Farm land impacts should be minimized
- The project should help and not hurt Clinton and Hickman Co. businesses
- Water over the road on US 51 South in the wetland area (drainage issue)

New Alternatives Added by the Public

The attached map shows all of the preliminary corridors and alternatives to be studied. Alternatives 4B, 5B, 7 and 8 were put forward by members of the public for further study.



10/4/02

US 51 Study at Clinton

Figure 2: All Preliminary Alternatives

PROJECT: US 51 STUDIES IN CLINTON AND BARDWELL

MEETING: Preliminary Alternatives Evaluation Meeting

DATE & TIME: January 30, 2003 – 1:00 PM (EST)

LOCATION: State Office Building Annex, 1st Fl. Conf. Room, Frankfort KY

DATE OF MINUTES: January 31, 2003

ATTENDEES:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
Bruce Siria	KYTC - Central Office Planning	bruce.siria@mail.state.ky.us
David Martin	KYTC – Central Office Planning	charles.martin@mail.state.ky.us
Daryl Greer	KYTC – Central Office Planning	daryl.greer@mail.state.ky.us
Barbara Michael	Parsons Brinckerhoff	michael@pbworld.com
Robert Frazier	Parsons Brinckerhoff	frazierr@pbworld.com
Lindsay Walker	Parsons Brinckerhoff	walkerli@pbworld.com
Stuart Kearns	Jordan, Jones, & Goulding	skearns@jjg.com
Rebecca Colvin	Third Rock Consultants	rcolvin@thirdrockconsultants.com

MEETING SUMMARY

Introduction

Those present introduced themselves and their role on the project. Following introductions, handouts were given to the attendees regarding the study evaluation process and project goals. Barbara Michael indicated that the project is on schedule, with a target date of four to six weeks for completion of the Level 3 (final) evaluation.

Project Goals

There was a general discussion of the project goals for the two studies. Daryl Greer emphasized the need to focus the project goals around the need for the project. Specifically, he said the goals should support a future purpose and need statement that would be part of an environmental document. However, PB pointed out that the project goals for these studies were developed in close partnership with Project Work Group and the general public. The current goals reflect this public input and have been shown to the public at public meetings as a way of demonstrating that the Project Team is

listening to them and taking their concerns seriously. We agreed that in the future the goals should be tied to the need for the project, but in this case, given the nature of the studies and the communities we decided collectively that the goals could be maintained with some re-writing. Any goals not tied to the project need will be explained as being separate from the main goals supporting the purpose and need for the project. In addition, text would be added to the goals developed in response to input from, and emphasized by, local residents. There was also specific discussion of rewording the regional connectivity goal in Clinton, which mentions improving connections to I-66 (which may or may not ultimately be constructed).

Existing Conditions Reports

Overall progress in addressing the Cabinet's comments was discussed. The Existing Conditions Reports will be revised and resubmitted in the next few weeks. JJG is completing the requested spot analysis of accident clusters in both towns and the results of the analysis will be included in the revised report.

Bardwell Alternatives and Evaluation

There was a general discussion regarding the nature of the Bardwell study area issues and characteristics. PB then presented the alternatives developed for the Bardwell study area and the process by which they were developed. A total of nine alternatives were developed in Bardwell including: Do Nothing, Spot Improvements, Upgrade of Existing US 51, Southern Realignment Options (two), Eastern Bypass Options (two), Western Bypass, and a One Way Street Option.

Bardwell Level 1 Evaluation

The Level 1 evaluation matrix for the nine Bardwell alternatives was presented. This matrix included a qualitative assessment of each alternative in five evaluation categories: Implementation / Construction Feasibility, Project Goals, Community Impacts, Environmental Impacts, and Public Support. Based on the results of the evaluation PB proposed to eliminate from further consideration the western bypass, the longer of the eastern bypass options, and the one-way street option.

In the initial draft Level 1 evaluation report, PB had also proposed to drop the second eastern bypass (Alternative 5A). However, after further consideration, PB determined it would be beneficial to keep Alternative 5A for further examination in Level 2. Advancing Alternative 5A maintains one bypass option in Level 2. It will provide quantitative data for the bypass alternative to allow for more meaningful comparisons with the no-build, upgrade of existing, and realignment options. Those present agreed with keeping Alternative 5A. The Level 1 report will be modified to reflect the change.

Bardwell Level 2 Evaluation

PB then presented the draft Level 2 evaluation matrix for the Bardwell alternatives. The conclusion of the Level 2 evaluation was that the No-Build, Spot Improvement, and Upgrade of Existing US 51 alternatives should be studied in detail in Level 3. One of the realignment options (Alternative 4B) was also recommended for further study. Alternatives 4A (southern realignment near the railroad tracks) and 5A (eastern bypass) were recommend for elimination. The main reasons for eliminating Alternative 4A were potential environmental impacts and expected high costs. Alternative 4A also did not compare well to Alternative 4B, therefore it was dropped and 4B was kept for more detailed study in Level 3. The major reasons for eliminating Alternative 5A were potential environmental impacts, a high cost, strong public opposition, and modest traffic volumes.

Level 3 Evaluation and Other Issues

The issue of drainage was brought up during the course of the Bardwell discussion. The public in Bardwell raised drainage problems in town as an issue. The in-town improvement alternatives assume that the current rural cross-section will be replaced with a curb and gutter cross-section. Daryl Greer requested that the Level 3 analysis determine whether positive drainage could be obtained with a curb and gutter system in the town.

Concerns about the effectiveness of curb and gutter were noted (particularly if there was enough of a drop to get the water out of the roadway), and it was suggested that further analysis be performed to determine if curb and gutter will solve drainage issues through town.

It was also suggested that in Level 2 a spot improvement could be added to provide some quick fixes for drainage throughout the study area.

Other issues identified for Bardwell include cross sections, unmarked historic sites, and streetscape enhancements. It was determined that sidewalks through town with bike lanes on the rural sections would be appropriate cross sections of US 51 through Bardwell. The concern of an unmarked archaeological site in the north end of the study was brought up regarding Alternative 5A. At the location that 5A would connect with the existing US 51, it would go directly through this area. It was suggested that since 5A was being recommended to advance to Level 2, further analysis of the site would be warranted such as determining if the site is currently being investigated or if examination is complete. Depending on the outcome of this analysis, Alternative 5A may not be feasible. Finally, the possibility of burying overhead wires through town was discussed. While this would dramatically improve the aesthetics of town, it was determined that anything above and beyond what was necessary to perform roadway work would be an enhancement. As a result, it was determined that costs should be developed for this work and analyzed for practicality.

Aside from further suggestions for refining the existing alternatives, everyone was in agreement about the general assessment and advancement of all proposed alternatives in both Level 1 and Level 2. It was also decided that JJG would review Alternative 5A and estimate traffic volumes for this alternative. For Level 3, itemization of costs was proposed for each of the remaining alternatives.

Clinton Level 1 and 2

It was stated that the analysis of improvements for Clinton is not as straightforward as Bardwell. This town has a more traditional layout with the main street in the center of town. Concerns related to preserving the main street and in particular the Court House square were noted. However, unlike Bardwell, there was some support for a bypass, and as a result more consideration was give to keeping some bypass alternatives.

The focus of the discussion on Clinton involved gathering input regarding the advancement of 4A or 9 and 5A or 6A. Each alternative has a mix of benefits and impacts which made further discussion regarding advancement imperative to selecting the best choice(s). The discussion of 4A versus 9 yielded 9 as the preferable alternative. Alternative 4A was less desirable because of more stream relocation, almost two miles of roadway in the floodplain, and Environmental Justice issues.

For Alternatives 5A and 6A, the differences were not as distinct, and as a result, the recommendation of the preferable alternative was not as clear. While 6A is a longer route, it will have minimal non-economic community impacts. Alternative 5A will have a direct impact to residential neighborhoods on the east side of Clinton, and will in fact isolate neighborhoods with a roadway between them. It was determined that to build the roadway through the residential areas, up to eleven homes may need to be relocated. Because of these detrimental effects to the community, it was determined that 6A would be the preferable eastern bypass for advancement. However, it was mentioned by David Martin that estimated costs for construction of each of these alternatives would be helpful in confirming the final decision for advancement of Alternative 6A.

There was also some discussion related to the Spot Improvements 2D, 2E, and 2F. It was proposed by the PB team to drop these three spot improvements based on the low traffic volume of the cross streets and the anticipated high cost of intersection realignments. To further support this conclusion, it was noted that crash data would be documented in the areas of these proposed spot improvements to support eliminating them.

At the end of the presentation of the alternatives and matrices for both Level 1 and 2, everyone was in agreement regarding the alternatives that were proposed for advancement. For Level 3, itemization of costs was proposed for each of the remaining alternatives.

Upcoming Public Meetings

Bruce Siria began the discussions about scheduling upcoming public meetings by stating the requirement of six weeks notice prior to any public meetings. This is necessary to provide enough advance notice to the public to ensure maximum participation. It was determined that a meeting in both Clinton and Bardwell with the District 1 office would be necessary. This would be the first of the meetings scheduled to discuss the final recommended alternative(s). Based on an estimated completion time of Level 3 as four to six weeks from this meeting (January 30, 2003), a tentative meeting date was selected as the first week of March. It was also determined that another project work group meeting should be held in Clinton and Bardwell to provide them with a chance to comment on the final recommendation. The third week of March was selected as the tentative meeting date to allow for comments to be made and addressed by the district prior to the project work group meeting. The final public meeting for Bardwell could be scheduled the third week of March as well to reduce the number of trips to Bardwell and Clinton. To give ample time between the project work group meeting and the public meeting in Clinton, it was determined to schedule the final public meeting in Clinton in April, approximately the third week of the month (six weeks after the project work group meeting).

FOLLOW UP ACTIONS

1. Existing Conditions Report for Clinton will be finalized and submitted. The Existing Conditions Report for Bardwell will be adjusted to reflect any changes made to the Existing Conditions Report for Clinton and the draft version submitted.
2. The Level 1 Report for Bardwell will be updated and resubmitted to include Alternative 5A. Revisions will also be made to Level 1 in Clinton with the final version submitted to the Central Office Planning, District 1, and PADD.
3. Level 2 Draft Reports for both Clinton and Bardwell will be completed and submitted in approximately 1 to 2 weeks to Central Office Planning, District 1, and PADD.
4. Level 3 analyses will be completed within approximately 4 to 6 weeks with the draft version submitted within the same timeframe.
5. District 1 meetings will be scheduled in Bardwell and Clinton the first week of March. A project work group meeting in Bardwell and Clinton will be scheduled the third week of March, along with the final public meeting in Bardwell. The final public meeting in Clinton will be scheduled approximately six weeks after the project work group meeting. It was decided that Parsons Brinckerhoff would assist KYTC in preparing flyers for the upcoming public meetings.

Meeting Minutes

PROJECT: US 51 STUDIES IN CLINTON AND BARDWELL

MEETING: Historic and Community Issues Meeting

DATE & TIME: March 4, 2003 – 1:00 PM (EST)

LOCATION: State Office Building Annex, 1st Fl. Conf. Room, Frankfort KY

DATE OF MINUTES: March 5, 2003

ATTENDEES:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
Bruce Siria	KYTC - Central Office Planning	bruce.siria@mail.state.ky.us
David Martin	KYTC – Central Office Planning	charles.martin@mail.state.ky.us
?	KYTC – Central Office Planning	?
Barbara Michael	Parsons Brinckerhoff	michael@pbworld.com
Robert Frazier	Parsons Brinckerhoff	frazierr@pbworld.com
Lindsay Walker	Parsons Brinckerhoff	walkerli@pbworld.com
Steven Creasman	Cultural Resource Analysts, Inc.	creasman@crai-ky.com

MEETING SUMMARY

Introduction

Those present introduced themselves and their role on the project. Following introductions, handouts were given to the attendees regarding the location and description of sites located within the study area in Bardwell that are potentially eligible for the National Register of Historic Places.

Bardwell Historic Issues

The attendees discussed the concerns regarding historic issues within the study area for Bardwell first. Robert Frazier outlined the potential historic sites in Bardwell emphasizing the belief that most of the proposed improvements to US 51 through Bardwell should be within the existing right-of-way thereby not impacting the three northernmost potentially historic sites. There are two sites near the curve and hill in town that are likely to cause significant issues with regard to alternative selection. One site is number 36, a Tudor Revival house, and the other site is number 37, the First United Methodist Church. Specific reasons for potential eligibility are not fully known at

this time other than both sites are eligible based on age requirements, and the Tudor Revival house most likely has some form of distinct architectural style. Emphasis was placed on the belief that to perform any physical improvements to the curve and hill, one or both sites would be impacted. Alternative 2D involves realigning the curve, which would require the taking of the Tudor Revival house but would not impact the church property. The other proposed alternative, 4B, would realign the roadway to the east of the church, requiring the taking of the house as well as a mobile home located on the church property. An alternative suggestion was put forth by PB to align the roadway to the west of the church utilizing a portion of Alternative 4B to reconnect to US 51. This proposal would miss the Tudor Revival house and the church property, but would likely require the taking of several businesses and possibly some homes. At this point in the meeting, input was requested for suggestions on what to do about these potentially historic sites.

Bruce Siria stated that if the properties, the house especially, were determined to be eligible for the National Register of Historic Places, it would seem that it is not prudent or feasible to perform any structural improvements to the curve and hill. A suggestion put forth to perform an improvement in the area without physical construction would be to sign the curve as 25 mph since the speed limit is only 25 mph in town. Another potential means for improvement would be to close Front Street at US 51 and put more super elevation into the curve for trucks.

Another potential issue with regard to historic sites in Bardwell was identified by PB to be two houses located south of town. Improvements have been suggested to perform some grading to the hill. Most likely the houses would not be affected, but some right-of-way acquisition may become necessary to perform the site work. Because of property acquisition, it was noted that if the houses are eligible for the National Register of Historic Places, this would be a 4f issue. However, if no property outside the existing right-of-way was affected, then there would be no 4f issue, but potential community issues would still exist.

It was determined by those present that the next step in selecting a workable or preferable alternative would be to determine site eligibility and boundaries. In order to do so, Steven Creasman indicated that a site visit would be necessary. Most of the cost would result from travel to and from the site, therefore it was determined that rather than look at only the sites that are thought to impact alternatives, all potentially historic sites within the area should be surveyed. Once boundaries are located and inspections performed, the documentation would be presented to the State Historic Preservation Office for review which could take up to 30 business days. While this would delay the overall completion of the Bardwell study, it was deemed necessary by those present to determine the status of these sites in order to make an alternative selection. To perform the additional work in Bardwell, a scoping study for the work was requested by the KYTC from PB and CRA Inc.

Clinton Historic Issues

At the beginning of the Clinton discussion of historic issues, handouts detailing the location and description of listed and potentially eligible historic sites were distributed. Those present engaged in a general discussion regarding the impacts that alternative proposals may have with regard to these sites. Robert Frazier briefly outlined the areas of particular concern, including the Cresap Street area, the Hickman County Courthouse, and the Beeler Hill area. All buildings are believed to be set back far enough from the roadway to avoid direct impact, and it is also believed that the existing right-of-way of fifty feet should be sufficient to accommodate any of the proposed improvements. The only identified concerns are possible retaining wall construction near Cresap Street, and the exact location of site boundaries at the court house. If boundaries for the court house are shown to extend into the roadway, issues with right-of-way could occur. It was recommended by PB that the potential for impacts to historic sites in Clinton is not sufficient enough to require further study of site boundaries and eligibility. Those present agreed that no further action would be taken with regard to the historic issues in Clinton for this level of study. However, it was recognized that any selected alternative that was in the vicinity of the listed and potentially eligible sites would be subjected to a baseline study at a later date.

Clinton Environmental Justice Issues

Presented by Robert Frazier was a figure representing the distribution of minority populations in the town of Clinton. Discussion focused on the uncertainty of the definition of a minority population. From the figure, approximately three-quarters of the town of Clinton is a minority population. In order to determine the boundaries of the population, further research was proposed by PB.

Other Study Issues

For the study of US 51 in Bardwell, the status of the archeological site located in the northern section of the study area was discussed. As requested in the Preliminary Alternatives Evaluation meeting with KYTC on January 30, 2003 additional information about the site was gathered. Further analysis revealed that it was discovered by a volunteer and is apparently not disturbed. Robert Frazier then stated that any alternatives that impacted this site had been discarded from consideration, and there should be no further need for site assessment.

A discussion regarding public acceptance of parking removal in Clinton for Alternative 2B improvements also took place. The concern is that there will be significant opposition by the public if parking is removed from town. However, Robert Frazier noted that provisions have been made to provide alternate means of parking including purchasing an empty lot from the city and turning it into a parking lot. Also, it was emphasized that the community currently underutilizes the current available parking, therefore all of the

current parking options would be highlighted to make residents aware of additional parking.

FOLLOW UP ACTIONS

A scope of work and schedule will be submitted to request authorization for potentially historic site evaluations in Bardwell.

Meeting Minutes

PROJECT: US 51 STUDY IN CLINTON

MEETING: Project Team Meeting No.2

DATE & TIME: April 17, 2003 – 1:00 PM CDT

LOCATION: Crisp Center – Paducah, KY

ATTENDEES:

NAME	AGENCY/COMPANY	Telephone	E-MAIL ADDRESS
David Martin	KYTC - Central Office Planning	502-564-7183	charles.martin@mail.state.ky.us
Bruce Siria	KYTC - Central Office Planning	502-564-7183	bruce.siria@mail.state.ky.us
Wayne Mosley	KYTC – Dist. 1	270-898-2431	wayne.mosley@mail.state.ky.us
Allen W. Thomas	KYTC – Dist. 1	270-898-2431	allen.thomas@mail.state.ky.us
Tim Choate	KYTC – Dist. 1	270-898-2431	tim.choate@mail.state.ky.us
John Agee	KYTC – Dist. 1	270-898-2431	john.agee@mail.state.ky.us
Jeff Thompson	KYTC – Dist. 1	270-898-2431	jeffc.thompson@mail.state.ky.us
Chris Kuntz	KYTC – Dist. 1	270-898-2431	chris.kuntz@mail.state.ky.us
Stephen C. Hoefler	KYTC – Division of Hwy Design	502-564-3280	steve.hoefler@mail.state.ky.us
Stacey Courtney	PADD	270-251-6146	stacey.courtney@mail.state.ky.us
Barbara Michael	Parsons Brinckerhoff	502-479-9301	michael@pbworld.com
Robert Frazier	Parsons Brinckerhoff	502-479-9309	frazierR@pbworld.com
Shawn Dikes	Parsons Brinckerhoff	502-479-9312	dikes@pbworld.com
Stuart Kearns	Jordan, Jones and Goulding	859-224-7776	skearns@jjg.com
Gerry Fister	Third Rock	859-977-2000	gfister@thirdrockconsultants.com

MEETING SUMMARY:

This meeting was held immediately following the Project Team Meeting for the I-66 Corridor Study.

REVIEW OF PROJECT STUDY AREA AND GOALS

At the outset of the meeting, a brief review of the project background information was presented including a review of the study area, study objectives, and project goals.

LEVEL 1 EVALUATION – INITIAL REVIEW

The initial fourteen alternatives developed for the study were presented. During the Level 1 analysis, eight of the fourteen alternatives were advanced to Level 2 for further study. The alternatives set aside after Level 1 included Alternative 4B (Western Bypass Option A), Alternative 5B (Eastern Bypass Option B), Alternative 6B (Eastern Bypass Option B), Alternative 7 (Bypass Immediately East of Town), Alternative 8B (One-Way Street System Using Mainly New Highways), and Alternative 8C (One-Way Street System Using a Combination of Existing and New Streets). The primary reasons for not considering these alternatives further were discussed, including expected community and environmental impacts, construction complexity and cost, traffic and safety issues, minimal public support, and comparison to other alternatives that were being retained for further study.

LEVEL 2 AND 3 EVALUATIONS

Next, the eight alternatives advanced from Level 1 were presented. At this level of evaluation, the spot improvements that comprise Alternative 2 (Alternatives 2A – 2F) were analyzed separately. Alternatives 2D, 2E, and 2F were developed to address identified geometric deficiencies as the result of perceived safety issues at three intersections south of town. A review of the crash data showed that most of the crashes at these intersections were not related to intersection geometrics. The traffic volumes at these intersections are very low, and without the supporting crash data, the high improvement costs were not deemed to be warranted. Therefore these spot improvements were not considered further.

Alternatives 4A and 5A were also not considered further. Alternative 4A was not advanced to the Level 3 evaluation because of little expected travel time savings; it did not address the traffic and geometric deficiencies in town; potential impact to an Environmental Justice community; potential significant environmental impacts including stream relocation; and it has a high construction cost estimate. Furthermore, because this alternative goes through the western neighborhoods, there is the potential for property impacts, noise, and increased traffic on local streets. Alternative 5A was set aside from further consideration because the alternative did not address traffic and geometric deficiencies in town; traffic volumes on the bypass were projected to be low; it would separate a small neighborhood from the rest of town; potential property impacts; potential environmental impacts; and low public support.

Alternative 8A, the last one-way street option, was also set aside in Level 2 due to a number of drawbacks including: expected operational problems, residential community impacts, business and community impacts, potential property impacts, potential property impacts near the courthouse, safety concerns, environmental justice issues, and a high capital cost. It also appeared to be unwarranted based on the traffic volumes and out of character for the community.

Questions were raised regarding the traffic forecasts and the relationship of the project to the proposed I-66 and I-69 projects. Specifically, the Project Team wanted to know whether the forecasts included the proposed I-66 highway and if not, how I-66 would change the forecasts. It was stated that they did not include I-66. The travel time assumptions and traffic volume forecasts were also questioned. Further information will be developed in response to these questions.

The remaining alternatives proposed were briefly presented and discussed, including 1) Do-Nothing; 2) Spot Improvements (A, B and C); 3) Reconstruction of US 51 as a Two-Lane

Highway with a Center Two-Way Left Turn Lane (Includes Alternative 2 – Spot Improvements); 6A) Eastern Bypass; and 9) Western Bypass (West of the Railroad). These five are to be analyzed more in Level 3. There was general discussion of the alternatives, looking at the four primary evaluation categories: Transportation, Environment, Community, and Construction / Implementation.

Alternative 2A was a spot improvement proposed by the community to improve pedestrian safety. However, the data did not show this to be a high crash location; therefore, the potential benefits might not warrant pursuing it as a separate project. Alternative 2B directly addressed a number of key project goals including safety, traffic flow, truck traffic operations, and highway geometrics. Alternative 2C also addressed the project goals of traffic flow, level of service, safety, truck turning movements, and geometric design. The costs associated with the operational improvements (signing, striping, beacon, and signal) were modest (however the geometric improvements raised issues related to property acquisition).

Advantages and disadvantages of Alternatives 3, 6A and 9 were discussed. This included discussions of the merits of improving the existing highway compared to construction of a bypass. Traffic operations, forecast volumes, safety, economic development, and environmental impacts were discussed. The possibility of short-term and long-term recommendations was considered. Following this meeting additional work on the traffic forecasts is to be assembled. The advantages and disadvantages for each will also be examined in more detail before a recommendation is made.

FOLLOW-UP ACTIONS AND NEXT STEPS

A third (and final) Project Work Group meeting is planned for May 2003 to present the Level 3 evaluation results and request feedback regarding the preliminary findings and recommendations. Following the Project Work Group meeting, a second (and final) public workshop will be held. After gathering feedback from the public, a project team meeting will be held to finalize the recommendation(s) for improvements in Clinton.

Meeting Minutes

PROJECT: US 51 STUDY AT CLINTON

MEETING: Project Work Group Meeting No. 3

DATE & TIME: May 12, 2003 – 12:00 Noon

LOCATION: Farm Bureau Office - Clinton, Kentucky

MEETING SUMMARY:

Introductions

David Martin, the Kentucky Transportation Cabinet (KYTC) Project Manager, introduced the study. Those present introduced themselves. Attendees were asked to sign-in.

Review of Background Study Information and Existing Conditions Data

Study objectives and project goals were reviewed at the beginning of the presentation. Also highlighted were the study process / schedule and the evaluation process.

A brief summary of the existing conditions data was presented including an overview of current traffic volumes, levels of service, and crash statistics. Graphics illustrating the existing conditions findings were included in the presentation handout materials.

Level 1 and 2 Analysis Findings

Initially, fourteen alternatives were developed for study in Level 1. Of those fourteen, eight were advanced to Level 2 for further study. Those dismissed included Alternative 4B (Western Bypass Option B), Alternative 5B (Eastern Bypass Option B), Alternative 6B (Eastern Bypass Option B), Alternative 7 (Bypass Immediately East of Town), Alternative 8B (One-Way Street System Using Mainly New Highways) and Alternative 8C (One-Way Street System Using a Combination of Existing and New Streets). Primary reasons for dismissal included expected issues with implementation and construction costs, potential for significant negative community and environmental impacts, minimal expected benefit (including not meeting key project goals), and a lack of local support. Furthermore, most of the alternatives not further considered were the less desirable corridors from each pair of alternatives.

Next, the eight alternatives advanced from Level 1 were presented. The presentation focused on the three alternatives and three spot improvements that were dismissed at this level, Alternatives 4A, 5A, 8A, and Spot Improvements 2D, 2E, and 2F. Alternative 4A was not recommended for further study because of potential environmental impacts, potential disruption to western neighborhoods through property impacts, noise, and increased traffic on local streets, and potential impacts to an Environmental Justice Community in north and west portions of town. Alternative 5A was not further considered because of low forecasted traffic volume usage on the bypass, and it separates a small neighborhood from the rest of town

(potential property relocations). Alternative 8A was dismissed from further evaluation because of safety issues; it appears to be unwarranted based on the traffic volumes; and seems out of character for the community. The three spot improvements (Alternatives 2D, 2E, and 2F) were not considered further for several reasons including projected high construction costs, low side street traffic volumes, and do not seem to be justifiable based on the crash data.

Everyone present seemed to be in agreement to the dismissal of these alternatives.

Presentation / Discussion of Level 3 Analysis Findings

The five remaining alternatives were then presented and discussed with the Work Group. They include 1) Do-Nothing; 2) Spot Improvements 2A, 2B and 2C; 3) Reconstruction of US 51 as a Two-Lane Highway with a Center Two-Way Left Turn Lane; 6A) Eastern Bypass; and 9) Western Bypass. To facilitate the discussion, the major advantages and disadvantages associated with each alternative were presented. Also, detailed evaluation matrices were distributed that compared the alternatives in key areas such as Transportation, Environment, Community, and Construction / Implementation. There was general discussion on each of the alternatives.

Alternative 2A is a spot improvement proposed by the community to improve pedestrian safety in the community at this location only. Traffic analysis and crash data does not indicate any roadway deficiencies. Therefore, the expected benefits from this alternative do not seem to be in proportion to the estimated construction cost. The Work Group did not have any objections to this analysis and appeared to understand the limited benefits of recommending this alternative as a stand-alone project. However, improvements at this location may be more cost effective if implemented with Alternative 3, the reconstruction of US 51.

Alternative 2B, improvements to the intersection of US 51 and KY 58 / KY 123, was viewed as positive by the Work Group. This alternative improves traffic flow through the intersection as well as improves safety through the construction of new sidewalks. Parking in the vicinity of the intersection will likely be reduced, but alternative parking options could be a possibility to offset the reduction of parking spaces.

Alternative 2C received moderate support. It was recognized that increasing the turn radius at the northeast intersection corner of US 51 and KY 58 would benefit turning truck movements. As a result of low estimated construction cost, the Work Group generally agreed that this was a worthwhile project.

Alternative 3 is a proposal for improvements that offers the benefit of improved traffic operations and safety while preserving the integrity of Clinton. Most traffic operating deficiencies are expected to be addressed through the proposed spot improvements and the center two-way left turn lane. Environmental impacts are expected to be minimal along with minimal negative impacts to the community. The overall total cost of improvements is high, but the magnitude of cost for each phase is feasible. This alternative has received strong public support compared to the bypass alternatives.

The construction of a bypass to the east of Clinton offers new development opportunities, has minimal non-economic impacts to the community, drastically reduces the volume of truck traffic through town, and reduces travel time through Clinton by one minute. These benefits all relate directly to key project goals. Other aspects of Alternative 6A that are in conflict with key project goals include the loss of visibility of businesses through town, a possible conflict between a new highway and a potential Indiana Bat Habitat, significant farmland disruption and property

acquisition from agricultural areas, and no improvements to either the aesthetics or traffic operations on US 51 through town. In addition, public response for an eastern bypass has been minimal. Finally, traffic analysis indicates that the percentage of traffic that would be diverted to the bypass is low compared to the volume of traffic that would remain in town.

Compared to the Alternative 6A bypass, the Alternative 9 bypass is shorter, is located closer to town, is predicted to carry higher traffic volumes, does not bypass the businesses south of town but improves access to them, requires less ROW and does not impact any known threatened and endangered species. However, the Alternative 9 bypass runs adjacent to an environmental justice community, has a similar travel time as Alternative 6A despite being shorter in length, involves construction of two bridges over the railroad, and overall costs more to build. Concern was expressed in the analysis of Alternative 6A about whether the cost of the alternative was justified through the predicted usage. Traffic volumes are predicted to be slightly higher for this alternative than 6A, but do not account for a significant portion of the traffic.

Conclusions

The meeting concluded with a discussion of the potential for a short term and long term recommendation. It was generally agreed by those present that Spot Improvements 2A – 2C could be implemented in a reasonable amount of time and could be considered short term recommendations. Alternatives 3, 6A, and 9 all require more extensive construction, and therefore would be good candidates as potential long term recommendations. All of the Level 3 options presented to the Work Group will be presented at the public meeting with feedback requested as to short term and long term recommendations.

Public Workshop Summary

Monday, June 30, 2003

Public Workshop #2

US 51 Planning Study in Clinton
Hickman County
Item Number 1-182.00

A Public Workshop was held on Monday, June 30, 2003. The workshop was held at Hickman County High School from 4 p.m. to 7 p.m. A total of 31 citizens and thirteen staff members signed in at the meeting. A sign-in sheet was posted, a short presentation was given, and handouts were provided. The handouts included the following information:

- A fact sheet explaining information about the study purpose, schedule, alternatives, and how the public could give feedback on the alternatives;
- A map illustrating the refined alternatives;
- A comment form; and
- A brochure from the Kentucky Transportation Cabinet (KYTC) explaining the Road Building Process

The main purpose of the workshop was to 1) provide information about the refined project alternatives; and 2) obtain feedback from the public on the refined alternatives.

The workshop began with a brief introduction by Allen Thomas, Kentucky Transportation Cabinet - District One, Planning Engineer. Mr. Thomas then turned the presentation over to Barbara Michael of Parsons Brinckerhoff (PB). The presentation addressed the following topics:

- Review of the project study area;
- Review of the project study objectives, goals, schedule, evaluation process, and project development process;
- Review of the project traffic information;
- Presentation of the full range of project alternatives, as well as the Level 1 and Level 2 evaluation results;
- Introduction of the Level 3 alternatives;
- Explanation of the public role at the workshop; and
- Contact information for the study.

The remainder of the meeting was conducted in an “open house” format. The attendees were given the opportunity to view exhibits and ask questions about each of the subjects listed above. The exhibits included the following sets of

boards: 1) the study objectives, goals, schedule, evaluation process, and project development process; 2) existing and future traffic conditions, existing environmental conditions, and existing cultural / historic conditions; 3) the study area and the Level 1 and 2 alternatives; and 4) refined (Level 3) alternatives for improving US 51.

The six refined alternatives were displayed on boards and members of the public were engaged to discuss them. The public was also asked to comment on the alternatives using the comment forms provided.

Attendees were asked to complete the comment forms at the meeting. For those who did not complete the forms at the meeting, postage-paid envelopes were provided for returning them to the Division of Planning. Summaries of the public comments received are presented on the following pages.

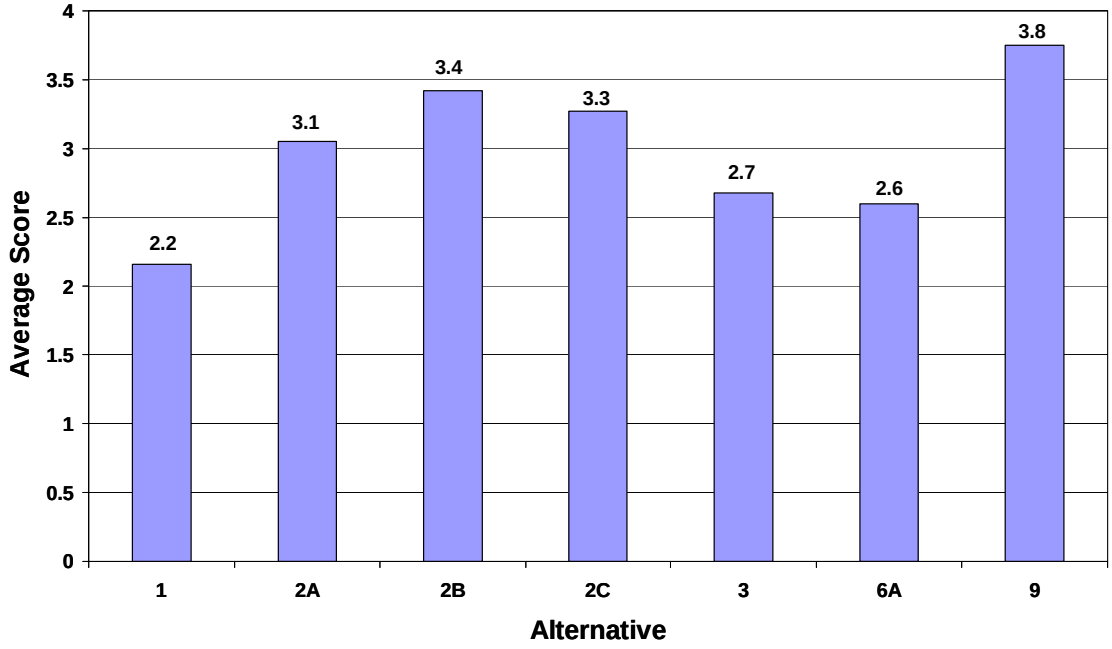
The meeting was adjourned at 7 p.m.

US 51 Study in Clinton
Public Workshop #2
Public Comment Form Results Summary

The purpose of the second public workshop for the US 51 planning study in Clinton was to gain public feedback regarding the refined project alternatives to help the Cabinet make decisions about possible future improvements. Comment forms were distributed to all attendees to provide a written record of this feedback. (Comment forms were also mailed out to all work group members not in attendance at the meeting.) A total of 26 comment forms were received back, 23 of which were complete. Two comment form respondents failed to answer any questions except for the first question. These two respondents both circled a score for Alternative 2B (which is included in the summary below). Aside from this score, the rest of the comment forms were blank. One comment form respondent failed to answer any questions except for the last question for which the respondent wrote 'yes' next to several of the listed impacts. A summary of the completed comment form results is presented below.

***Question 1**: Please score the Refined Alternatives.*
The respondents were asked to circle the appropriate number (Between 1 and 5 with 1 corresponding to a score of POOR and 5 corresponding to a score of GOOD).

Average Score of Refined Alternatives



***Question 2**: THINKING SHORT-TERM (5+ Years) – Which alternative is the best?*

The respondents were asked to circle only one.

Alternative	Number of Respondents	Percentage of Total Respondents
Alternative 1	0	0
Alternative 2A	1	5.5
Alternative 2B	3	17
Alternative 2C	1	5.5
Subtotal: Alternative 2	**5**	**28**
Alternative 3	2	11
Alternative 6A	2	11
Alternative 9	9	50
Total: All Alternatives	**18**	**100**

Note: Three respondents did not circle anything for this question, one respondent circled both Alternatives 1 and 9, and one respondent circled Alternatives 2A, 2B, and 2C.

***Question 3**: WHY is this the best short-term alternative?*
The respondents were asked to check all that apply. Only the alternatives that were circled in Question 2 are shown below (Alternative 1 was not circled).

	Alternative					
Issues	**2A**	**2B**	**2C**	**3**	**6A**	**9**
Improved Vehicle Safety	1	3	0	1	1	6
Improved Traffic Flow	0	3	0	1	2	9
Reduced Truck Traffic in Town	0	0	0	0	2	7
Economic Development and/or Opportunities for New Businesses	0	0	0	1	2	5
Least Impact on Existing Businesses	0	2	1	2	0	6
Fewest Property Impacts	0	2	1	0	0	7
Improved Pedestrian Safety	0	2	0	0	1	5
Improved Community Character	0	0	0	1	0	2
Preserves Historic Character	0	2	0	0	2	5
Minimal Utility Impacts	0	1	0	0	1	5
Travel Time Savings	0	1	0	0	1	3
Most Benefit for the Cost	0	1	1	0	0	5
Improved Highway Connections	0	1	0	0	1	5
Other*	0	0	0	0	0	1
Total Number of Respondents	***1***	***3***	***1***	***2***	***2***	***9***

Note: One respondent wrote, "Opens up new land close to the city for expansion of bus" in the 'Other' box. The respondent that circled Alternatives 2A, 2B, and 2C checked the following for this question:

- *Least Impact on Existing Businesses*
- *Fewest Property Impacts*
- *Preserves Historic Character*
- *Minimal Utility Impacts*
- *Travel Time Savings*

Alternative 2A Summary

Only one respondent selected Alternative 2A as the best short-term alternative. The reasons given are listed in the previous table.

Alternative 2B Summary

Three respondents selected Alternative 2B as the best short-term alternative. The top reasons given for the selection of Alternative 2B are:

- Improved Vehicle Safety
- Improved Traffic Flow

Alternative 2C Summary

Only one respondent selected Alternative 2C as the best short-term alternative. The reasons given are listed in the previous table.

Alternative 3 Summary

Two respondents selected Alternative 3 as the best short-term alternative. The top reason given for the selection of Alternative 3 is:

- Least Impact on Existing Businesses

Alternative 6A Summary

Two respondents selected Alternative 6A as the best short-term alternative. The top reasons given for the selection of Alternative 6A are:

- Improved Traffic Flow
- Reduced Truck Traffic in Town
- Economic Development and/or Opportunities for New Businesses
- Preserves Historic Character

Alternative 9 Summary

Nine respondents selected Alternative 9 as the best short-term alternative. The top reasons given for the selection of Alternative 9 are:

- Improved Traffic Flow
- Reduced Truck Traffic in Town
- Fewest Property Impacts

***Question 4**: THINKING LONG-TERM (20+ YEARS) – Which alternative is the best?*
The respondents were asked to circle only one.

Alternative	**Number of Respondents**	**Percentage of Total Respondents**
Alternative 1	1	4.5
Alternative 2A-C	3	14
Alternative 3	1	4.5
Alternative 6A	5	23
Alternative 9	12	54
Total: All Alternatives	**22**	**100**

Note: One respondent did not circle anything for this question.

***Question 5**: WHY is this the best long-term alternative?*
The respondents were asked to check all that apply.

	Alternative Respondents				
Issues	**1**	**2A – 2C**	**3**	**6A**	**9**
Improved Vehicle Safety	0	2	1	3	6
Improved Traffic Flow	0	2	1	5	9
Reduced Truck Traffic in Town	0	0	0	5	9
Economic Development and/or Opportunities for New Businesses	0	2	1	2	6
Least Impact on Existing Businesses	1	2	1	4	9
Fewest Property Impacts	1	1	0	3	9
Improved Pedestrian Safety	0	1	0	3	7
Improved Community Character	0	0	1	1	3
Preserves Historic Character	1	1	0	4	7
Minimal Utility Impacts	1	1	0	4	7
Travel Time Savings	1	0	0	3	4
Most Benefit for the Cost	0	2	0	3	7
Improved Highway Connections	0	1	0	4	9
Other*	0	0	0	0	2
Total Number of Respondents	***1***	***3***	***1***	***5***	***12***

Note: One respondent wrote, "Opens up new land close to the city for expansion of bus" in the 'Other' box. Another respondent wrote, "Ties Union City, TN and Fulton to a northern route" in the 'Other' box.

Alternative 1 Summary

Only one respondent selected Alternative 1 as the best long-term alternative. The reasons given are listed in the previous table.

Alternative 2A-C Summary

Three respondents selected Alternative 2A-C as the best long-term alternative. The top reasons given for the selection of Alternative 2A-C are:

- Improved Vehicle Safety
- Improved Traffic Flow
- Economic Development and/or Opportunities for New Businesses
- Least Impact on Existing Businesses
- Most Benefit for the Cost

Alternative 3 Summary

Only one respondent selected Alternative 3 as the best long-term alternative. The reasons given are listed in the previous table.

Alternative 6A Summary

Five respondents selected Alternative 6A as the best long-term alternative. The top reasons given for the selection of Alternative 6A are:

- Improved Traffic Flow
- Reduced Truck Traffic in Town

Alternative 9 Summary

Twelve respondents selected Alternative 9 as the best long-term alternative. The top reasons given for the selection of Alternative 9 are:

- Improved Traffic Flow
- Reduced Truck Traffic in Town
- Least Impact on Existing Businesses
- Fewest Property Impacts
- Improved Highway Connections

Question 6*: Which alternative is the worst (regardless of timeframe)?*
The respondents were asked to circle only one.

Alternative	**Number of Respondents**	**Percentage of Total Respondents**
Alternative 1	11	48
Alternative 2A	2	9
Alternative 2B	1	4
Alternative 2C	0	0
Alternative 3	1	4
Alternative 6A	7	31
Alternative 9	1	4
Total: All Alternatives	**23**	**100**

***Question 7**: WHY do you think it is the worst alternative?*
The respondents were asked to check all that apply. Only the alternatives that were circled in Question 6 are shown below (Alternative 2C was not circled).

	Alternative					
Issues	**1**	**2A**	**2B**	**3**	**6A**	**9**
Property Impacts	1	1	0	1	5	1
Business / Economic Impacts	3	0	1	1	4	0
Traffic Impacts	9	0	0	0	2	0
Utility Impacts	0	0	0	1	2	0
Truck Traffic Impacts	9	0	0	0	2	0
Environmental Impacts	2	0	0	1	3	0
Community Character Impacts	2	0	1	1	2	0
Other Community Impacts	0	0	0	1	1	0
Few Traffic Flow Benefits	7	0	1	0	2	0
Few Safety Benefits	7	0	1	1	2	0
Parking Impacts	5	0	0	1	0	0
Historic Property Impacts	1	0	1	1	1	0
Few Opportunities for New Businesses	4	0	1	1	6	0
High Cost / Low Benefit	0	1	1	1	5	0
Farmland Impacts	1	1	0	0	4	0
Other*	1	0	0	0	2	0
Total Number of Respondents	***11***	***2***	***1***	***1***	***7***	***1***

Note: For Alternative 6A, one respondent wrote, "Too far from town, will siphon off tourist type economic benefits" in the 'Other' box. Another respondent wrote, "Leaves Union City, TN no way to get north other than going thru Fulton" in the 'Other' box.

Alternative 1 Summary

Eleven respondents selected Alternative 1 as the worst alternative. The top reasons given for the selection of Alternative 1 are:

- Traffic Impacts
- Truck Traffic Impacts

Alternative 2A Summary

Two respondents selected Alternative 2A as the worst alternative. The top reasons given for the selection of Alternative 2A are:

- Property Impacts
- High Cost / Low Benefit
- Farmland Impacts

Alternative 2B Summary

Only one respondent selected Alternative 2B as the worst alternative. The reasons given for the selection of Alternative 2B are listed in the previous table.

Alternative 3 Summary

Only one respondent selected Alternative 3 as the worst alternative. The reasons given for the selection of Alternative 3 are listed in the previous table.

Alternative 6A Summary

Seven respondents selected Alternative 6A as the worst alternative. The top reasons given for the selection of Alternative 6A are:

- Few Opportunities for New Businesses
- Property Impacts
- High Cost / Low Benefit

Alternative 9 Summary

Only one respondent selected Alternative 9 as the worst alternative. The reasons given for the selection of Alternative 9 are listed in the previous table.

Question 8: *Additional comments on any of the alternatives?*

Numerous additional comments were received. These comments are included in the full public meeting documentation. A few of the pertinent comments include:

- Problems have been identified therefore a correct solution needs to follow to improve traffic flow with little negative impact on existing businesses.
- Left turn at red (traffic) light off of 51 is deficient and dangerous for large trucks. Short-term fix should address this. Bypass East gives greatest growth area to town.
- Alternative 9 seems best because of the impact on truck flow.
- Alt. #9 will allow the benefits of a bypass without draining off revenue from incidental type traffic – tourist, etc. It would really improve access to farmers and for the big trucks.

Parsons Brinckerhoff Quade & Douglas, Inc.

Meeting Minutes

PROJECT: US 51 STUDY IN CLINTON

MEETING: Project Team Meeting No.3

DATE & TIME: July 2, 2003 – 8:30 AM CDT (9:30 AM EDT)

LOCATION: KYTC District 1 Conference Room – Paducah, KY

ATTENDEES:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
David Martin	KYTC – Central Office Planning – Project Manager	charles.martin@mail.state.ky.us
Wayne Mosley	KYTC – District 1 Chief District Engineer	wayne.mosley@mail.state.ky.us
Allen Thomas	KYTC – District 1 Planning Branch Manager	allen.thomas@mail.state.ky.us
Tim Choate	KYTC – District 1 Pre-Construction Branch Manager	tim.choate@mail.state.ky.us
Jeff Thompson	KYTC – District 1 Planning	jeffc.thompson@mail.state.ky.us
Chris Kuntz	KYTC – District 1 Pre-Construction	chris.kuntz@mail.state.ky.us
Robert Brown	KYTC – Central Office Planning	
Stacey Courtney	Purchase Area Development District	stacey.courtney@mail.state.ky.us
Tom Creasey	Jordan, Jones and Goulding	tcreasey@jjg.com
Stuart Kearns	Jordan, Jones and Goulding	skearns@jjg.com
Barbara Michael	Parsons Brinckerhoff	michael@pbworld.com
Robert Frazier	Parsons Brinckerhoff	frazierR@pbworld.com
Lindsay Walker	Parsons Brinckerhoff	walkerli@pbworld.com

MEETING SUMMARY:

David Martin initiated the meeting, stating these were the final Project Team Meetings for the US 51 studies in Clinton and Bardwell. The Project Team discussed the Clinton project first, followed by a discussion of the Bardwell project second. As they are separate projects, there are two sets of meeting minutes. For information on the Bardwell study, please refer to the corresponding meeting minutes.

Barbara Michael stated that the purpose of the meeting was for the Project Team to review and discuss the refined project alternatives and decide on a final recommendation for the US 51 Study in Clinton.

REVIEW OF ALTERNATIVE EVALUATION LEVELS 1 AND 2

Ms. Michael briefly reviewed the Level 1 and Level 2 evaluations. A total of 14 preliminary alternatives were analyzed in the Level 1 evaluation. A qualitative analysis was used to determine which alternatives should be recommended for advancement to Level 2. Several of the 14 preliminary alternatives were variations of the same general alternative. The variations with the most benefit, with the least impact or cost were advanced to Level 2. Therefore, of the 14 preliminary alternatives, nine were advanced to the second level of evaluation.

The Level 2 analysis procedure consisted of a combination of qualitative and quantitative measures designed to reduce further the list of alternatives to the most promising alternatives. Five of the nine remaining alternatives analyzed at this level were recommended for advancement to the third and most detailed level of evaluation (Alternative 2 – Spot Improvements included three separate elements).

LEVEL 3 EVALUATION – REFINED ALTERNATIVES

Robert Frazier presented the refined alternatives to be considered for recommendation. The alternatives to be considered included:

- Alternative 1 – No-Build
- Alternative 2A – Improve sight distance on US 51 north of Cresap Street by lowering the hill
- Alternative 2B – Improve US 51 / KY 58 (Clay Street) intersection for turning trucks and upgrade traffic signal
- Alternative 2C – Repave / re-stripe corner and install flashing beacon at US 51 / KY 58 (Mayfield Road)
- Alternative 3 – Reconstruct US 51 as a two-lane highway, with a center two-way left turn lane from KY 780 (north) to the vicinity of Martin Road
- Alternative 6A – US 51 Eastern Bypass (2-lane highway)
- Alternative 9 – US 51 Western Bypass (2-lane highway)

During the presentation of each alternative, a brief description of the improvements was given as well as the advantages and disadvantages of each alternative.

FINAL RECOMMENDATIONS

Following the presentation of the refined alternatives, there was a general discussion regarding the selection of a preferred alternative or set of alternatives. The spot improvements were identified as potential short-term recommendations with Alternatives 3, 6A, and 9 as potential long-term recommendations. There was a general understanding among those present that any of the alternatives or a combination of alternatives could be recommended. The comments related to each alternative are presented below.

<u>Alternative 1</u>

The project team agreed that the No-Build Alternative was not an appropriate recommendation because it did not address the known highway deficiencies in the study area. Public input also supported implementation of improvements to the existing system.

<u>Spot Improvements</u>

Alternative 2A

During the course of the project, the community identified the need for improved sight distance at this location as a result of a perceived pedestrian safety issue. The crash analysis did not show an identifiable problem on this section of US 51 based on the crash rate and crash locations. As a result, the Project Team agreed that as a separate project, the expected benefits did not justify the estimated construction cost and impacts. Therefore, the Project Team members agreed not to consider Alternative 2A further at this time. (Implementation of Alternative 2A however, could still be pursued as part of any future upgrade to US 51 through town.)

Alternative 2B

The project team discussed various issues associated with the current configuration of the US 51 / KY / 58 / KY 123 intersection. This included deficient truck turning radii and poor design year levels of service. The safety concerns associated with the current angled parking around the courthouse was also discussed. Potential improvements called for 1) the removal or modification (angle to parallel) of parking on each of the four intersection legs; 2) upgrading the signal to an actuated signal; and 3) adding turn lanes on the north and south approaches.

Tom Creasey stated that the turn lanes are needed with or without construction of a bypass. The current parking near the intersection poses a potential safety risk for rear end crashes and pedestrian crashes. Allen Thomas stated that some members of the public had raised concerns about removing parking at this intersection. However, few if any objections were voiced at the second public meeting. Overall, it appears that the public may support the removal of parking to fix the intersection's deficiencies.

Based on the need for the turn lanes and the current difficulty for turning trucks, it was agreed that this spot improvement would be recommended. To promote public acceptance of the project, Wayne Mosley recommended that reconstruction be a gradual process. Phase one could include conversion of some of the angled parking to parallel parking. In future stages, additional parking could be converted and/or removed and other improvements made until the intersection changes are complete and the left turn lanes are in place.

Alternative 2C

The discussion of Alternative 2C was brief. It was decided that the project was reasonable and would be recommended. The beacon could be implemented in the future as traffic volumes grow on US 51. The paving and striping could be done with the next pavement overlay project or as a separate maintenance project. Ultimately a signal may be required at this location for westbound left turning traffic to provide safety and a good level of service for that movement.

Alternative 3

The reconstruction of US 51 would improve safety through wider lanes and shoulders. It would increase capacity at the US 51 / KY 58 / KY 123 intersection with left-turn lanes and south of town with a center two-way left turn lane. The two-way left turn lane would also improve access and safety south of town. However, Alternative 3 would leave the through truck traffic in town. It was also identified as offering little benefit in terms of capacity and travel time for through traffic. There was much discussion regarding whether the benefits were worth the cost. Some team members thought that construction of a new bypass would be more effective in solving the major traffic issues, including the diversion of through truck traffic around the town, while others thought that upgrading the existing highway was most appropriate given the volume of traffic on the highway and on the proposed bypasses.

Bypass Alternatives

Alternative 6A

Several Project Team members thought that there was opportunity for new development associated with construction of the Alternative 6 bypass. They indicated that the town has grown on the east side. Also, the potential for improved connections to KY 58 and KY 123 in the east were discussed and expressed as more desirable than connections to a western bypass. However, from a traffic analysis perspective, the forecasted traffic volumes were higher

for Alternative 9 than Alternative 6A. Truck traffic was identified as a significant portion of the expected traffic volumes on either bypass. The total volume of traffic forecasted for Alternative 6 was approximately 1,200 vehicles per day in 2030. The estimated travel time savings of Alternative 6 was approximately 1 minute. The construction cost was estimated to be approximately $10.6 million excluding design, right-of-way, and utilities (approximately $11.0 million total if extended south to the current US 51 project). There was little public support for this alternative, though the mayor of Clinton supported it.

Alternative 9

There was debate among the Project Team members over the anticipated benefits of a western bypass versus an eastern bypass. The public perceived Alternative 9 to be better for the community based on the proximity of the bypass to town. However, because of this proximity less undeveloped land is available for economic development in comparison to Alternative 6A. The question of preserving the existing businesses versus providing the opportunity for new businesses was a point of discussion. Alternative 9 would route traffic past a number of existing businesses, while Alternative 6A would open up a significant amount of land for new development. Furthermore, the accessibility of Alternative 9 to the surrounding land was questioned because the western bypass would require two grade-separated crossings, thereby limiting access around the railroads. The total volume of traffic forecasted for Alternative 9 was approximately 2,200 vehicles per day in 2030 and the estimated travel time savings was the same as for Alternative 6, approximately 1 minute. The construction cost was estimated to be approximately $8.2 million excluding design, right-of-way, and utilities. Extending the improvements south to the current US 51 improvement project would increase the cost to approximately $11.4 million. Of the two bypass alternatives, Alternative 9 was the preferred alternative of the public based on comments at the third project work group meeting and on comment form responses received at the second public meeting.

Conclusion

After much discussion, each member was asked to voice his or her opinion on the alternative(s) to facilitate a decision on each. Nearly everyone at the meeting agreed that Alternative 2B was a valuable project to recommend. Most of the District 4 and ADD staff supported construction of the Alternative 6A bypass. The Central Office and consultant staff tended to favor Alternative 3, reconstruction of the existing highway. As there were more team members from the District office, it was determined that the recommendation would be Alternative 2B and Alternative 6A. However, the discussion of the alternatives clearly showed a difference of opinions regarding which alternative was preferred for the study recommendation.

APPENDIX F:
EVALUATION METHODOLOGY

Level 1 Evaluation Methodology

The initial screening analysis seeks to apply a few qualitative evaluation measures to all alternatives at the top of the pyramid in order to eliminate from further consideration those alternatives that are infeasible or do not adequately address the project's goals and issues. Sometimes referred to as a "Fatal Flaw" screening, this first level of analysis relies mainly on qualitative criteria. The focus of the analysis is a matrix designed to compare the alternatives in five key areas.

- **Implementation / Construction Feasibility –** How does an alternative compare to the other alternatives with regard to expected costs and constructability?
- **Project Goals –** How does the alternative compare to the other alternatives in terms of addressing the key project goals and issues identified by the public and in the technical analysis?
- **Community Impacts –** How does the alternative compare with regard to community impacts including anticipated property impacts, business impacts, environmental justice issues, traffic impacts, community facility impacts, etc.?
- **Environmental Impacts -** How does the alternative compare to other alternatives with regard to environmental impacts (i.e. does it cross wetlands, floodplains, or other sensitive areas)?
- **Public Support -** How does the alternative compare with regard to public and political support? This includes the results of the first public meeting as well as the Project Work Group and stakeholder meetings held for the project.

In each evaluation area, a qualitative assessment was completed for each alternative. This included answering the above questions qualitatively and comparing the alternatives to each other. The result of this assessment was the assignment of a rating of "Good", "Fair", or "Poor" to each alternative for each category. A rating of "Good" indicates that the alternative is expected to have more positive impacts and/or fewer negative impacts for that evaluation criterion, especially in comparison to the other alternatives. A rating of "Fair" indicates that an alternative will be about average in that category. A "Poor" rating indicates that the alternative is expected to have more negative impacts and/or fewer positive impacts for that evaluation criterion, especially in comparison to other alternatives.

Based on an alternative's ratings across the five categories, a recommendation was made regarding the need for further study in Level 2. The No-Build was used as the benchmark rating. If on average, across the categories, an alternative rated approximately as well as, or better than, the No-Build it was recommended for further study. If, when all five categories were considered it fell below the No-Build, then it was generally not recommended for further study in Level 2.

Level 2 Evaluation Methodology

The focus of this analysis is similar to that used in Level 1 since it uses the same basic analysis categories. However, many subcategories are introduced to provide a detailed comparison of the alternatives. The evaluation categories and subcategories include:

Traffic Operations

1. *Traffic Benefits* – How does the alternative compare to other alternatives with regard to improving traffic flow and travel time (none, low, medium, high)?
2. *2002 and 2030 Average Daily Traffic (ADT)* – How many vehicles per day will use the highway?
3. *Truck Traffic Benefits* – How does an alternative compare to other alternatives with regard to providing improvements for truck traffic flow on US 51 (none, low, medium, high)?
4. *Vehicle/Pedestrian/Bicycle Safety Benefits* – How does the alternative compare to other alternatives with regard to providing safety benefits (none, low, medium, high)?

Environment

1. *Natural Environment* – How many streams, wetlands, floodplains, threatened and endangered species are potentially impacted?
2. *Human Environment* – How many potential archeological sites, historic sites, agricultural districts/farmlands, and hazardous material sites are impacted?

Community

1. *Economic Development Impacts* – How does an alternative compare to the other alternatives in affecting the businesses located on the current US 51 and how does an alternative compare with regard to opportunities for new development (good, fair, poor)?
2. *Buildings Impacted* – How many homes, businesses, or other miscellaneous outbuildings will be removed for construction?
3. *Community Impacts* – How does the alternative compare to the other alternatives with regard to potential property impacts, parking impacts, mobility, and land use disruption (good, fair, poor)?
4. *Environmental Justice* – Does the alternative impact an environmental justice community?
5. *Community Character* – How does the alternative compare to other alternatives with regard to enhancing the community such as providing walking/bicycling paths, or preserving/enhancing community character (good, fair, poor)?

Public Support

1. *Public Support* – Based on input from the first public meeting, Project Work Group meetings, and stakeholder meetings, what percentage of the community favors an alternative or type of alternative?

Implementation / Construction

1. *Construction Feasibility* – For each alternative, what is the level of difficulty for construction (good, fair, poor)?
2. *Construction Length* – What is the total estimated length of construction (in miles) for both in-town and bypass alternatives?
3. *New Right-of-Way Required* – For each alternative, how much new right-of-way (in acres) will need to be acquired?
4. *Potential Utility Impacts* – For each alternative what is the level of potential impact to the existing utilities (good – minimal impact, fair – moderate impact, poor – major impact)?
5. *Cost Estimate* – For each alternative, how does the order of magnitude cost estimate compare to the other alternatives? For this evaluation criterion, two scales are used to compare the costs. Rankings assigned to the Alternative 2 Spot Improvements are: Low < \$500,000 ≤ Medium < \$1 million ≤ High. For the rest of the alternatives, the following scale is applied: Low < \$ 5 million ≤ Medium < \$8 million ≤ High.

Level 3 Evaluation Methodology

The purpose of the Level 3 evaluation is to complete a more detailed examination of the alternatives remaining after the Level 2 evaluation, leading to the recommendation of a preferred alternative or set of alternatives. Additional data is available at this level for a more definitive comparison of the alternatives. The Level 3 analysis uses the same basic analysis categories as the Level 1 and 2 evaluations, with some further refinement of the subcategories. The detailed Level 3 evaluation criteria include:

Traffic Operations

- Average Daily Traffic (ADT) on US 51 in Town
- Level of Service (LOS)
- Estimated Travel Time from KY 780 (South) to KY 1728 (in minutes)
- Truck Traffic Benefits
- Estimated 2030 Truck Volumes in Town
- Vehicle/Pedestrian/Bicycle Safety Benefits

Environment

- Number of Streams Impacted
- Wetlands Impacted
- Floodplain Impacts
- Threatened and Endangered Species Impacts
- Number of Potentially Historic Sites that May be Impacted

- Potential Agricultural District/Farmland Impacts
- Potential Hazardous Material Sites

Community

- Economic Development Impacts
- Distance (Miles) from Bypass to Center of Town (KY 58 / KY 123 / US 51)
- Buildings / Property Impacts
- Community Impacts
- Environmental Justice Issues
- Community Character
- Public Support

Implementation / Construction

- Construction Length
- Constructability Issues
- New Right-of-Way Required
- Cost Estimate

APPENDIX G:
TRAFFIC FORECAST SUMMARY

Future Traffic Scenarios

Traffic forecasts were developed to evaluate the five alternatives that advanced beyond the Level 2 screening process. The alternatives are grouped into three traffic forecast scenarios as shown below in Table 1, because a number of them have similar alignments and functional characteristics (such as travel time and length). Even though they were grouped for forecasting purposes, the traffic operations characteristics (e.g. level of service) for each alternative were evaluated separately when applicable.

Table 1: Alternative Traffic Forecast Group

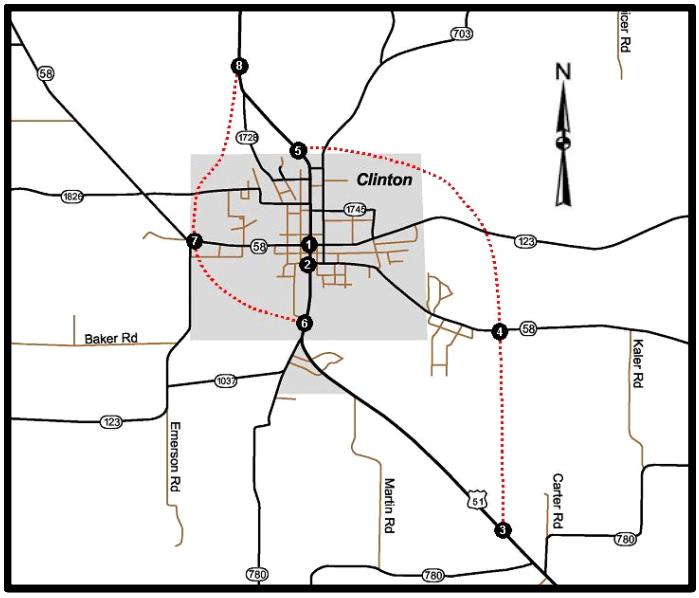
Traffic Forecast Scenario	Alternatives
Group 1	Alternative 1 – No-Build Alternative 2 – Spot Improvements Alternative 3 – Reconstruct US 51 as 2-Lane Roadway with Center Two-Way Left Turn Lane
Group 2	Alternative 6A – Eastern Bypass
Group 3	Alternative 9 – Western Bypass (West of Railroad)

For each scenario, average daily traffic (ADT) and design hourly volume (DHV) forecasts were developed for US 51 for the following years: 2002 (the base year), 2010, 2020, and 2030 (the design year). For 2002, the "forecast" is an estimation of traffic volumes assuming the conceptual alternatives were already constructed.

In addition to mainline estimates for US 51, ADT and DHV turning movement forecasts were developed for the intersections listed below and shown on Figure 1.

1. US 51 and Clay St. (KY 123)
2. US 51 and Mayfield Rd. (KY 58)
3. US 51 South and Eastern Bypass *(Alt. 6A only)*
4. KY 58 and Eastern Bypass *(Alt. 6A only)*
5. US 51 North and Eastern Bypass *(Alt. 6A only)*
6. US 51 South and Western Bypass *(Alt. 9 only)*
7. KY 58 and Western Bypass *(Alt. 9 only)*
8. US 51 North and Western Bypass *(Alt. 9 only)*

Figure 1: Intersection LOS Locations



Traffic Forecast Methodology

The traffic forecasts were developed manually, based on historic traffic volumes, growth projections, estimated origin / destination patterns, and travel times. For Alternatives 1, 2, and 3 this meant applying a growth factor to the current 2002 volumes to estimate the future volumes. For the bypass alternatives, a manual gravity diversion analysis was used to estimate the percentage of diverted traffic. Existing turning movements were estimated at major intersections to approximate origins and destinations of vehicles in the study area.

For the bypass alternatives (6A and 9), traffic volumes were diverted based on manual gravity distribution calculations, employing the California diversion curves to determine the percentage of diverted traffic. The forecasts also included a 20% increase to the initial forecasted volumes to reflect induced traffic demand on the bypass. Redevelopment of land within the bypass corridor could serve to attract more traffic on the bypass. However, economic development projections as a result of land use changes along the bypass were not part of the forecasting scope of work.

As discussed for the No-Build traffic forecasts, historic count data for the study area was analyzed to project a future traffic growth rate. Between 1983 and 2002, the annual growth rate at the eight count stations on US 51 ranged from -0.56 percent to 1.52 percent. The average growth rate for the eight stations was 0.74 percent per year. (Traffic on US 51 has actually increased in town and south of town by about 20 percent since 1983, but decreased north of town by about 10 percent since 1983. This decline in traffic volumes north of town could be due in part to traffic shifting to Interstate 55 in Missouri.) The population growth rate for Hickman County is less than the statewide average, with the town of Clinton showing a slight decline in the 2000 Census. For this reason, a conservative growth rate of 1.5 percent per year was used to forecast future traffic volumes.

For more information regarding the traffic forecast methodology, please refer to the Traffic Analysis Report for Clinton.

Future Traffic Volumes

Traffic forecasts are expected to be similar for Alternatives 1, 2, and 3 since the alignment of US 51 does not change. Therefore, the traffic forecasts for Alternative 1 shown in Figure 11 in Appendix B also apply for Alternatives 2 and 3. The traffic projections for 2030 show a peak volume of 10,900 vehicles per day on US 51 just south of KY 58 / KY 123 (Clay Street). Truck traffic percentages for the year 2030 for Alternatives 1, 2, and 3 are shown on Figure 2. Truck traffic in town is estimated at 700 vehicles per day.

For Alternatives 6A and 9, the forecasts are presented in Figures 3 and 5 respectively, with truck percentages for the year 2030 shown in Figures 4 and 6, respectively. The Alternative 6A eastern bypass is estimated to carry approximately 1,200 vehicles

Figure 2: Year 2030 No-Build and Alternatives 2 and 3
Truck Traffic Percentages

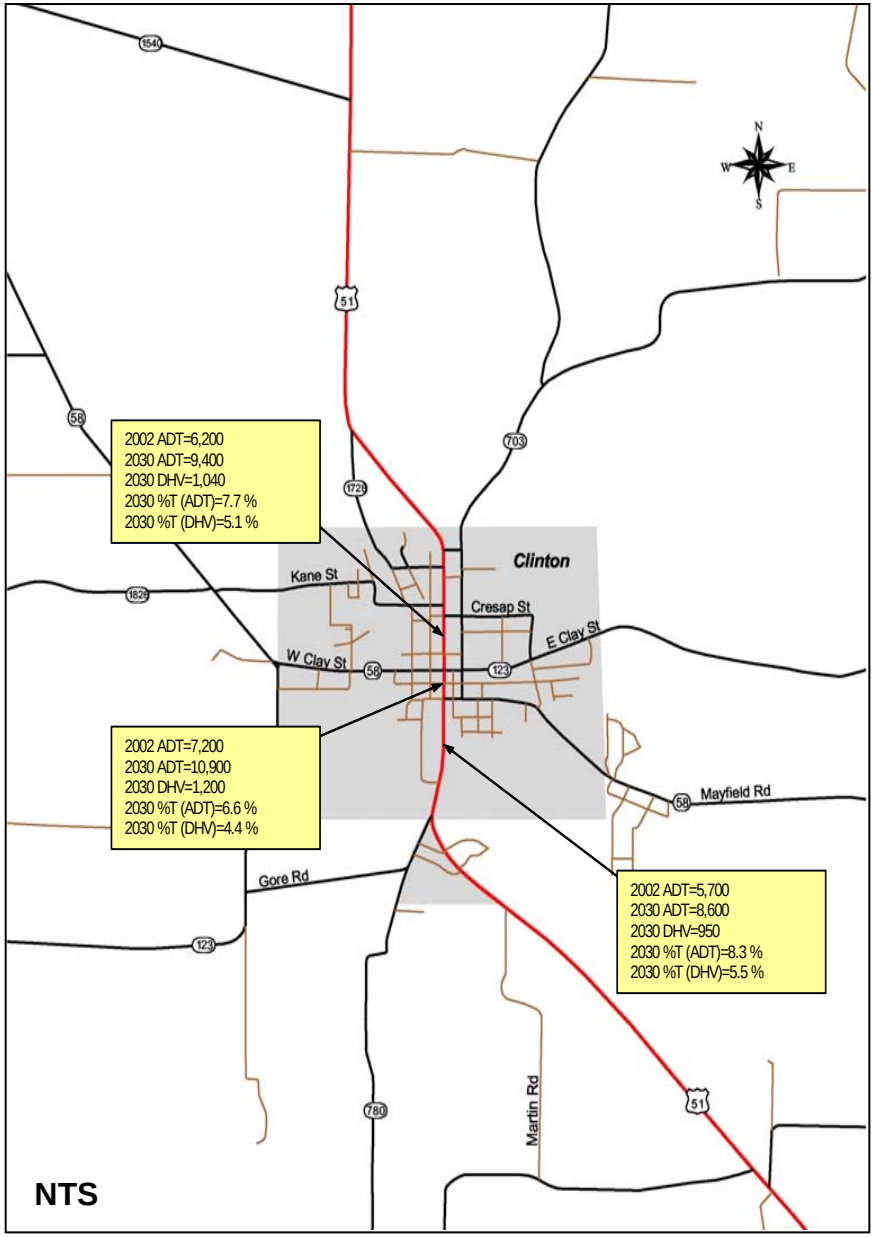


Figure 3: Alternative 6A Traffic Forecast

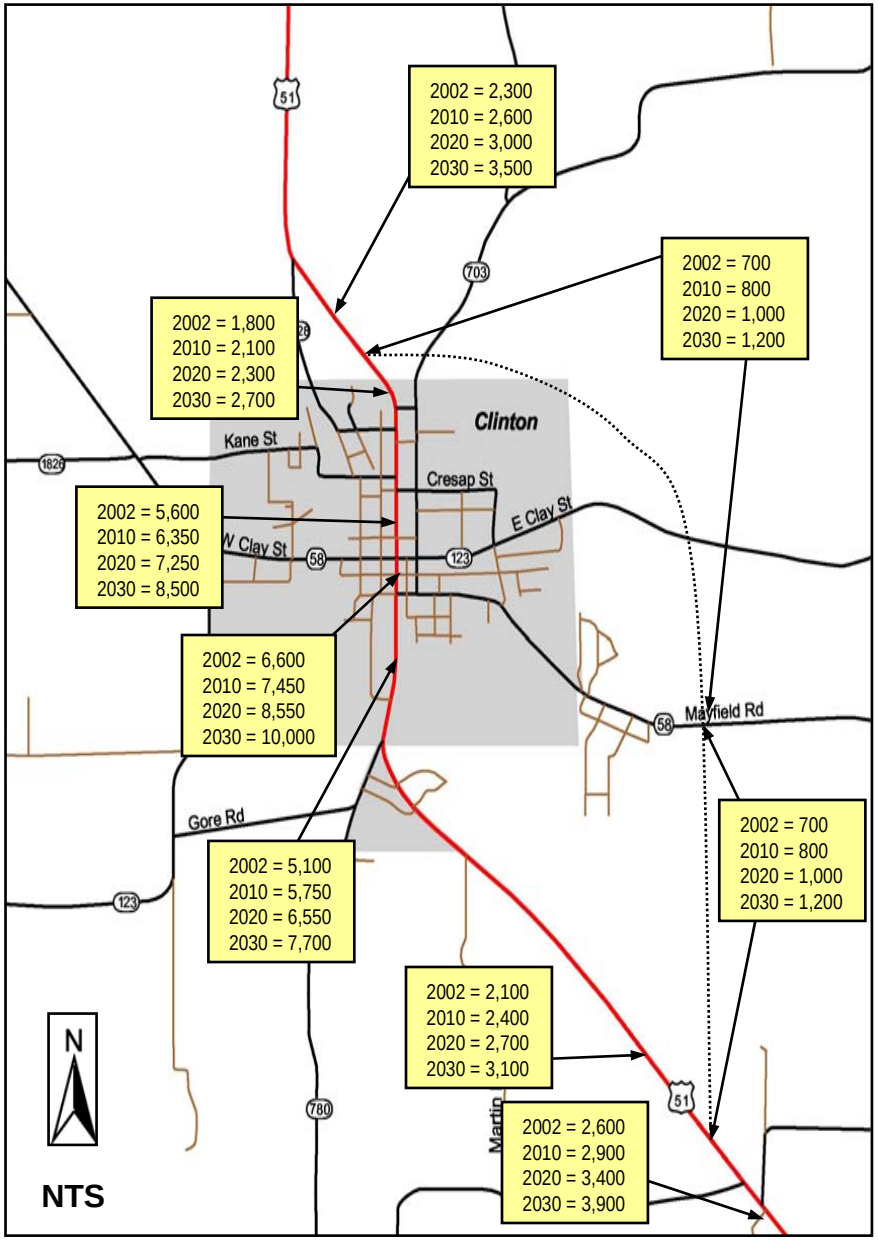


Figure 4: Year 2030 Alternative 6A Truck Traffic Percentages

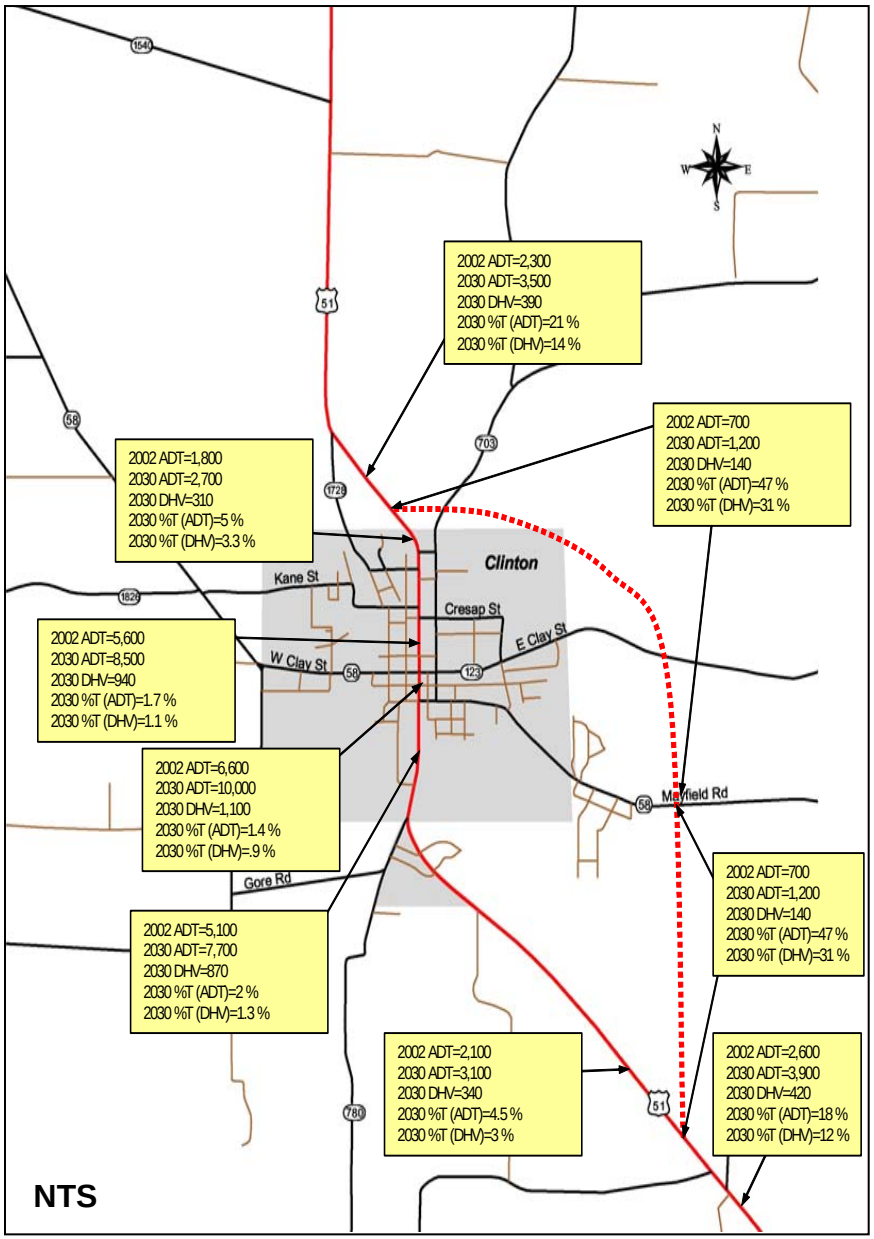


Figure 5: Alternative 9 Traffic Forecast

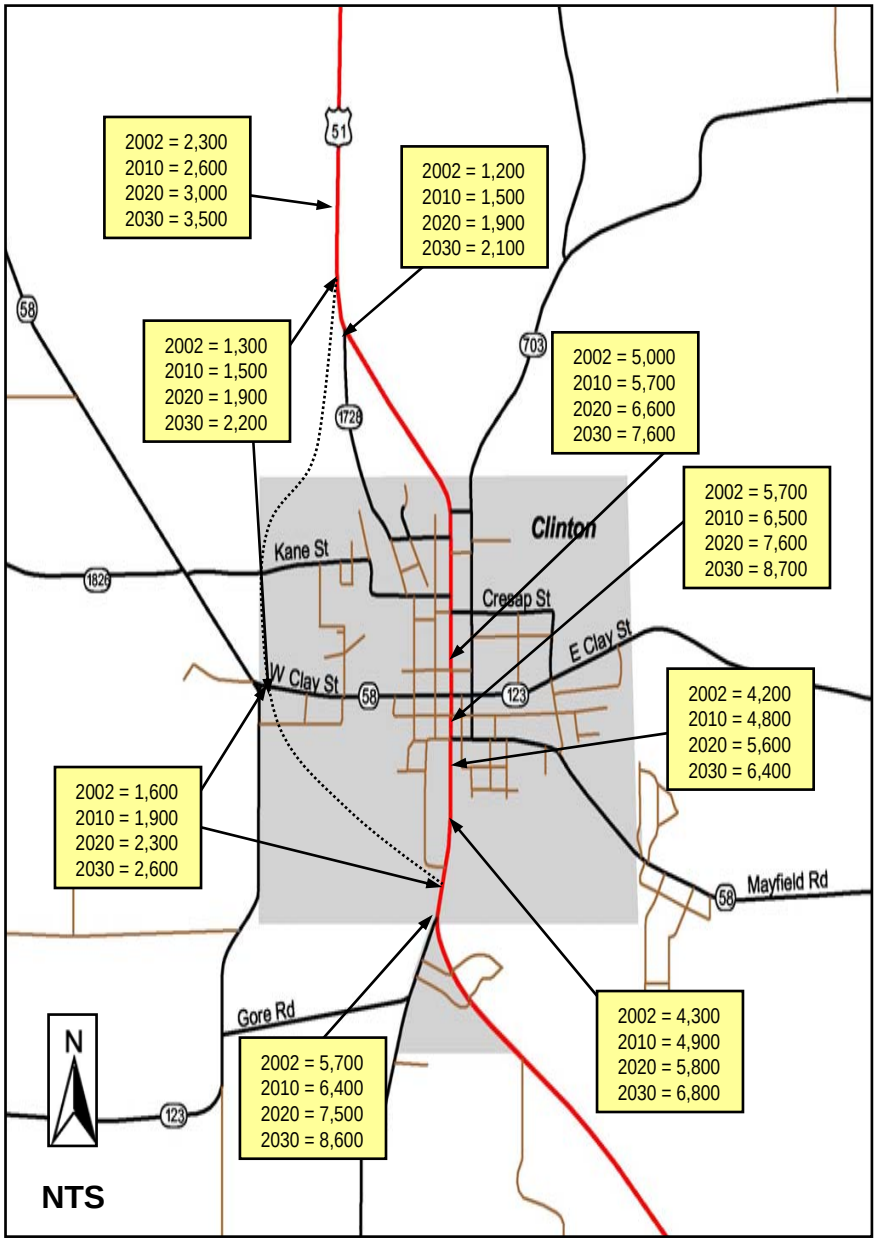
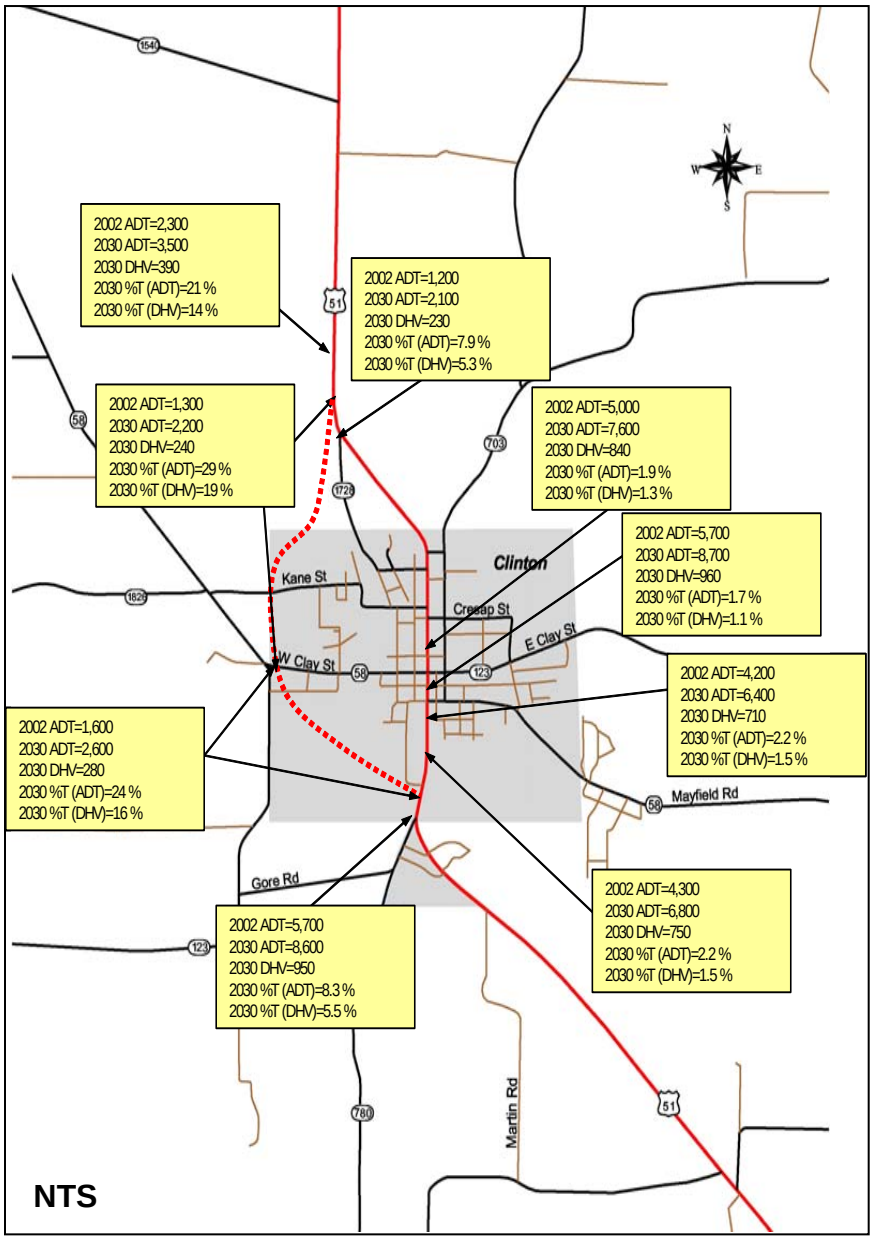


Figure 6: Year 2030 Alternative 9 Truck Traffic Percentages



per day in 2030. The 2030 traffic volumes in town range from 2,700 to 10,000 depending on location. The Alternative 9 western bypass is estimated to carry approximately 2,200 to 2,600 vehicles per day in 2030 depending on location. The 2030 traffic volumes in town range from 2,100 to 8,700 depending on location. The reason for the relatively low volume of traffic on the bypasses is due in part to a low through volume on US 51 in general.

Intersection Levels of Service

Levels of service (LOS) were evaluated for each of the two study intersections as well as the six new bypass intersections for each of the build alternatives. The analysis years were 2002 (existing conditions only), 2010, 2020, and 2030. The analysis results are shown in Table 2. The table lists the PM peak hour average delay and LOS for each movement at each intersection. Only the PM peak is shown, as it generally represents the highest peak of the day. The levels of service for the No-Build Alternative (Alternative 1) are included in this table for comparison purposes.

Alternative 2

The signalized intersection at US 51 and KY 58 / KY 123 (Clay Street) currently operates at a LOS B on all approaches. In 2010, all approaches operate at an acceptable LOS without improvements. By the year 2020, the addition of an exclusive right turn lane in the eastbound direction is necessary to continue to achieve an acceptable LOS at this intersection. For the year 2030, the addition of northbound and southbound left turn lanes on US 51 are required to achieve an acceptable LOS. The diversion of traffic from US 51 brought about by either of the bypass options (6A or 9) will not have a significant effect on LOS at this intersection.

This unsignalized intersection at US 51 and KY 58 (Mayfield Rd.) is stop-controlled on the side streets. Currently, the US 51 approaches (northbound and southbound) operate at a LOS A, and the side street approaches (eastbound and westbound) operate at LOS B. The US 51 approaches will continue operating at a high LOS through 2030, for all alternatives. By 2010, the side street approaches will drop to LOS E and will continue to degrade to a LOS F by 2030, even with construction of one of the bypass alternatives (6A and 9). To improve the LOS for the minor street approaches, a traffic signal could be installed. The intersection does not meet signal warrants at this time, but is expected to meet them in the future. For now, a do nothing approach may be appropriate since the delay is on the minor streets and US 51 operates at an acceptable LOS.

For the design year of 2030, the intersection levels of service for Alternative 2 are shown on Figure 7.

Table 2: PM Peak Hour Intersection Levels of Service

Int. #	Intersection	Type (Future)	Approach	2002		2010										2020										2030									
				Existing Conditions		ALT 1		ALT 2		ALT 3		ALT 6A		ALT 9		ALT 1		ALT 2		ALT 3		ALT 6A		ALT 9		ALT 1		ALT 2		ALT 3		ALT 6A		ALT 9	
				Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS
1	US 51 / Clay St. (KY 123)	Signal	Eastbound	13.8	B	33.7	C	33.7	C	20.9	C	28.8	C	32.3	C	62.8	E	33.8	C	21.7	C	54.5	D	35.1	D	145.5	F	23.3	C	23.3	C	118.6	F	56.6	E
			Westbound	12.9	B	20.0	C	20.0	C	18.6	B	19.1	B	20.9	C	26.0	C	29.1	C	19.0	B	23.5	C	21.0	C	33.3	C	19.7	B	19.7	B	26.4	C	24.2	C
			Northbound	17.0	B	32.1	C	32.1	C	11.5	B	32.8	C	15.5	B	53.3	D	29.3	C	14.0	B	33.6	C	23.7	C	61.5	E	18.3	B	18.3	B	75.6	E	39.6	D
			Southbound	15.9	B	16.0	B	16.0	B	12.8	B	17.4	B	11.8	B	16.7	B	12.5	B	15.8	B	14.3	B	14.3	B	15.1	B	17.8	B	17.8	B	15.5	B	17.6	B
			Intersection	15.7	B	26.6	C	26.6	C	14.6	B	26.1	C	19.1	B	41.5	D	24.7	C	16.7	B	32.0	C	23.4	C	61.6	E	19.4	B	19.4	B	64.0	E	36.9	D
2	US 51 / Mayfield Rd. (KY 58)	2-Way STOP	Eastbound	14.0	B	45.3	E	45.3	E	45.3	E	34.5	D	29.3	D	138.1	F	138.1	F	138.1	F	59.6	F	51.3	F	*	F	*	F	*	F	301.3	F	131.0	F
			Westbound	14.9	B	39.8	E	39.8	E	39.8	E	24.8	C	23.4	C	329.8	F	329.8	F	329.8	F	51.7	F	54.4	F	*	F	*	F	*	F	524.4	F	340.4	F
			Northbound	7.9	A	8.0	A	7.9	A	7.9	A	7.8	A	7.7	A	8.1	A	8.1	A	8.1	A	7.9	A	7.7	A	8.2	A	8.2	A	8.2	A	8.1	A	7.8	A
			Southbound	7.8	A	9.1	A	9.1	A	9.1	A	8.6	A	8.5	A	9.7	A	9.7	A	9.7	A	8.9	A	8.8	A	10.3	B	10.3	B	10.3	B	9.4	A	9.2	A
3	US 51S / Alt. 6A	1-Way STOP	Westbound	-	-	-	-	-	-	-	-	11.0	B	-	-	-	-	-	-	-	-	11.7	B	-	-	-	-	-	-	-	-	12.2	B	-	-
			Southbound	-	-	-	-	-	-	-	-	7.7	A	-	-	-	-	-	-	-	-	7.8	A	-	-	-	-	-	-	-	-	7.8	A	-	-
4	KY 58 / Alt. 6A	2-Way STOP	Eastbound	-	-	-	-	-	-	-	-	7.4	A	-	-	-	-	-	-	-	-	7.5	A	-	-	-	-	-	-	-	-	7.5	A	-	-
			Westbound	-	-	-	-	-	-	-	-	7.5	A	-	-	-	-	-	-	-	-	7.5	A	-	-	-	-	-	-	-	-	7.6	A	-	-
			Northbound	-	-	-	-	-	-	-	-	11.2	B	-	-	-	-	-	-	-	-	11.8	B	-	-	-	-	-	-	-	-	12.5	B	-	-
			Southbound	-	-	-	-	-	-	-	-	11.2	B	-	-	-	-	-	-	-	-	11.7	B	-	-	-	-	-	-	-	-	12.4	B	-	-
5	US 51N / Alt. 6A	1-Way STOP	Westbound	-	-	-	-	-	-	-	-	10.0	A	-	-	-	-	-	-	-	-	10.2	B	-	-	-	-	-	-	-	-	10.7	B	-	-
			Southbound	-	-	-	-	-	-	-	-	7.7	A	-	-	-	-	-	-	-	-	7.8	A	-	-	-	-	-	-	-	-	7.9	A	-	-
6	US 51S / Alt. 9	1-Way STOP	Eastbound	-	-	-	-	-	-	-	-	-	-	10.4	B	-	-	-	-	-	-	-	-	11.9	B	-	-	-	-	-	-	-	-	12.7	B
			Northbound	-	-	-	-	-	-	-	-	-	-	8.1	A	-	-	-	-	-	-	-	-	8.3	A	-	-	-	-	-	-	-	-	8.5	A
7	KY 58 / Alt. 9	2-Way STOP	Eastbound	-	-	-	-	-	-	-	-	-	-	7.5	A	-	-	-	-	-	-	-	-	7.6	A	-	-	-	-	-	-	-	-	7.6	A
			Westbound	-	-	-	-	-	-	-	-	-	-	7.5	A	-	-	-	-	-	-	-	-	7.5	A	-	-	-	-	-	-	-	-	7.6	A
			Northbound	-	-	-	-	-	-	-	-	-	-	12.4	B	-	-	-	-	-	-	-	-	14.1	B	-	-	-	-	-	-	-	-	15.6	C
			Southbound	-	-	-	-	-	-	-	-	-	-	12.0	B	-	-	-	-	-	-	-	-	13.5	B	-	-	-	-	-	-	-	-	14.8	B
8	US 51N / Alt. 9	1-Way STOP	Eastbound	-	-	-	-	-	-	-	-	-	-	10.5	B	-	-	-	-	-	-	-	-	11.1	B	-	-	-	-	-	-	-	-	11.7	B
			Northbound	-	-	-	-	-	-	-	-	-	-	7.6	A	-	-	-	-	-	-	-	-	7.6	A	-	-	-	-	-	-	-	-	7.7	A

Notes: Only the p.m. peak is shown, as it represents the higher of the two peak periods.
2002 LOS analysis employed the peak hour count data collected for the study
2010-230 LOS analysis used projected ADT with design hour and directional distribution factors
For 2010, 2020, and 2030 the signal timing plan has been optimized
Average delay is in seconds per vehicle

Alternative 3

For the intersection of US 51 and KY 58 / KY 123 (Clay Street), all levels of service reflect the construction of northbound and southbound left turn lanes as well as the addition of an exclusive right turn lane in the eastbound direction. As shown in Table 2, the level of service for the intersection becomes LOS B with construction of the additional turn lanes in 2010, and continues to operate at LOS B through the year 2030. The intersection levels of service for Alternative 3 are shown in Figure 8.

Alternative 6A

Construction of an eastern bypass will have little effect on improving intersection levels of service at the two key intersections in town. Improvements will still be necessary at these intersections to improve the level of service to a desirable level in 2030. For the new intersections created by the construction of an eastern bypass, all three intersections are expected to operate at a LOS A or B through 2030. For the design year of 2030, intersection levels of service are shown on Figure 9.

Alternative 9

Construction of a western bypass also will have little effect on improving intersection levels of service at the two key intersections in town. Improvements will still be necessary at these intersections to improve the level of service to a desirable level in 2030. For the new intersections created by the construction of a western bypass, all three intersections are expected to operate at a LOS A or B through 2030. For the design year of 2030, intersection levels of service are shown on Figure 10.

Two-Lane Level of Service

The traffic analysis also examined levels of service on US 51 north and south of town and on the proposed 6A and 9 bypasses. For two-lane highways, level of service is a measure of the average travel speed and the percent time, on average, that a driver will spend following another vehicle. The eight analysis segments were:

1. KY 1728 to KY 1540
2. KY 1540 to KY 288
3. KY 1549 to KY 780
4. Fulton Co. Line to KY 1529
5. Alternative 6A bypass from old US 51 (north) to KY 58
6. Alternative 6A bypass from KY 58 to old US 51 (south)
7. Alternative 9 bypass from old US 51 (north) to KY 58
8. Alternative 9 bypass from KY 58 to old US 51 (south)

Similar to the intersection analysis, there are similarities between many of the build alternatives. In fact, Alternatives 1, 2, and 3 have all been grouped together because they have similar traffic volumes and operating characteristics north and south of Clinton. The bypass alternatives, however, were examined separately because of the substantially different alignments. The two-lane LOS results are summarized in Table 3 and Figures 7 through 10.

Figure 7: Alternative 2 2030
Intersection and Segment LOS

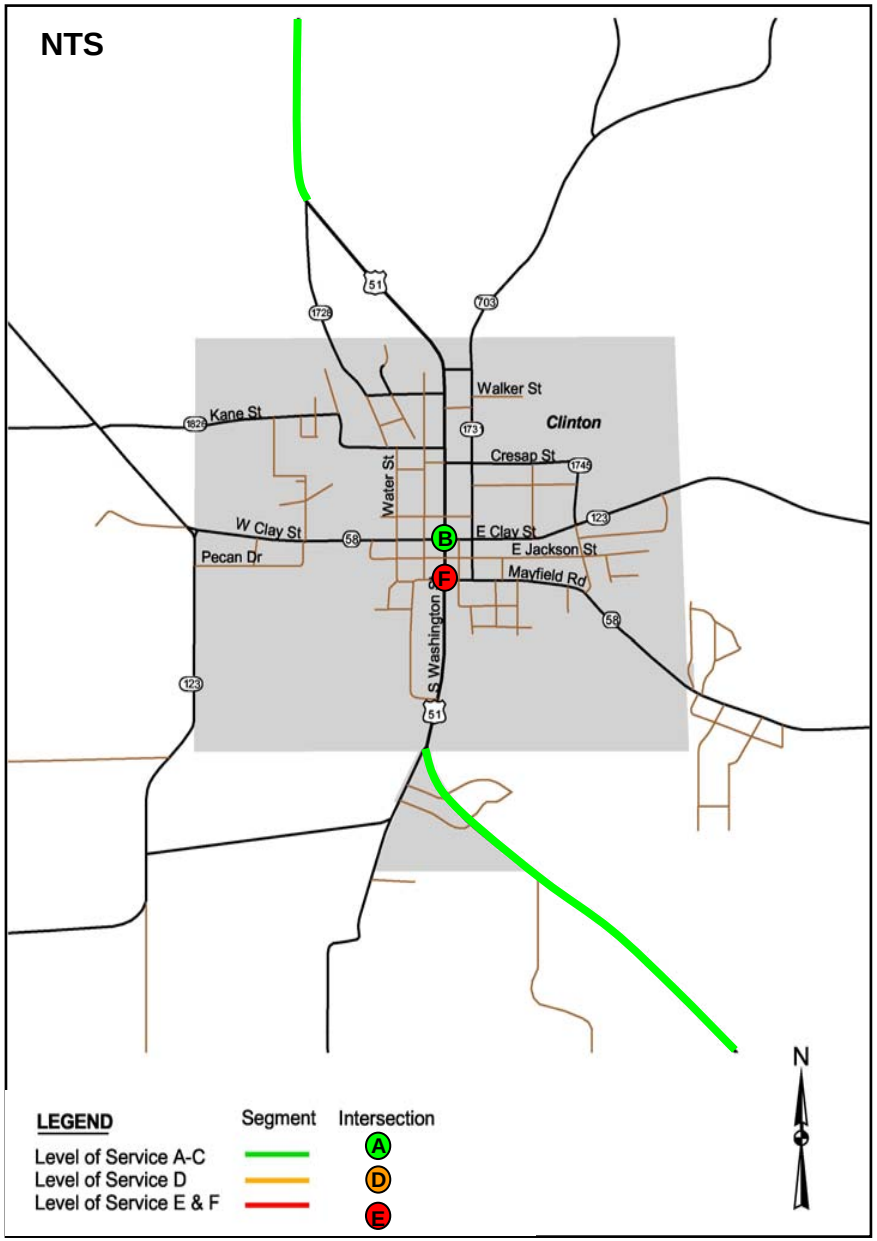


Figure 8: Alternative 3 2030
Intersection and Segment LOS

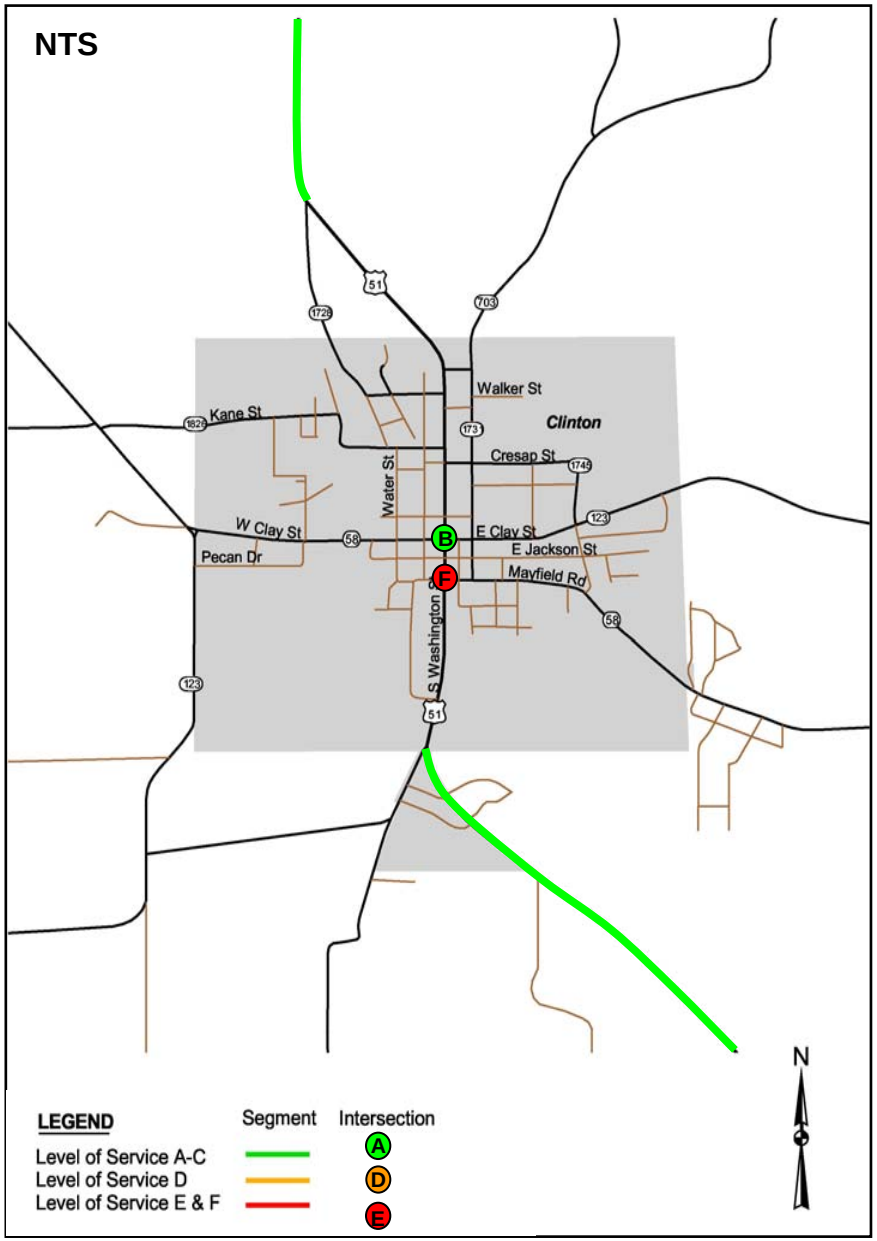


Figure 9: Alternative 6A 2030
Intersection and Segment LOS

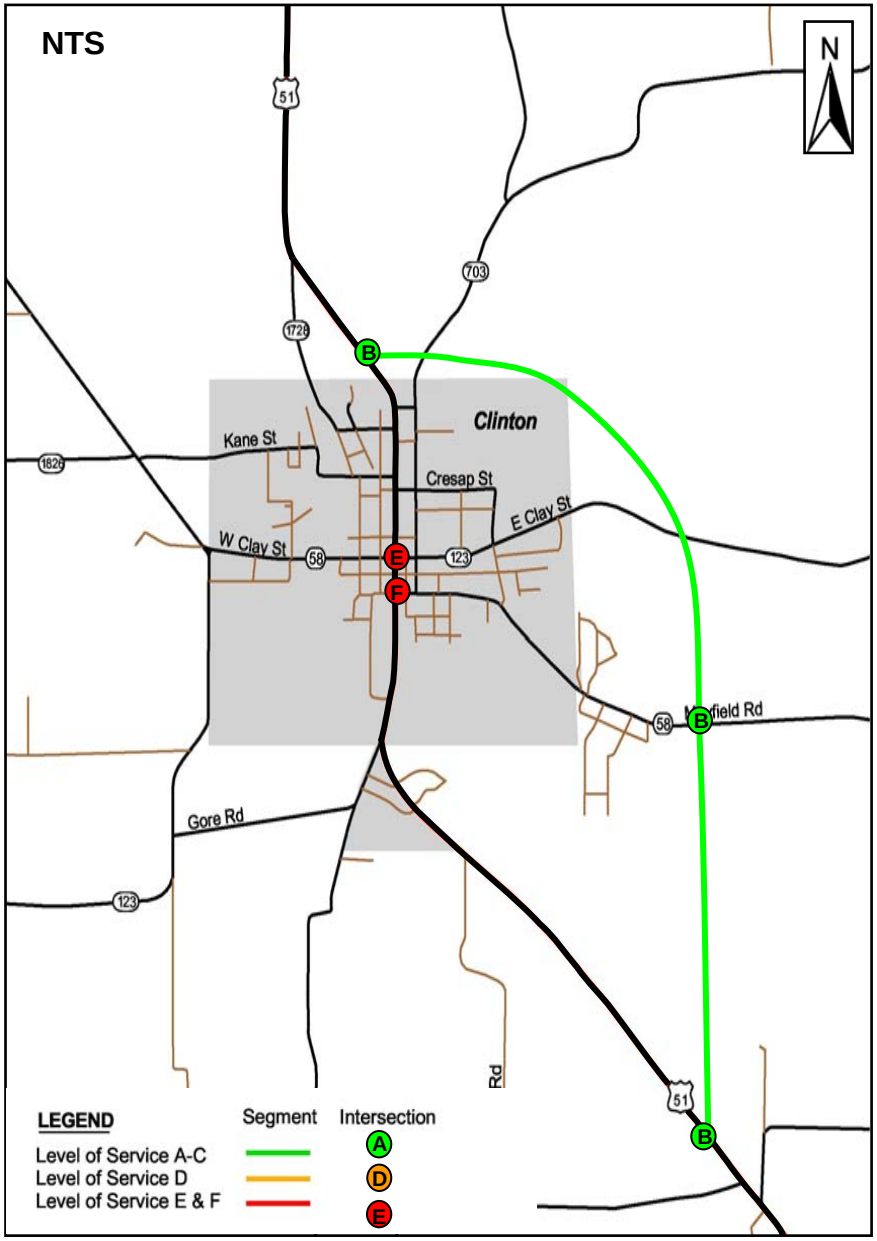


Figure 10: Alternative 9 2030
Intersection and Segment LOS

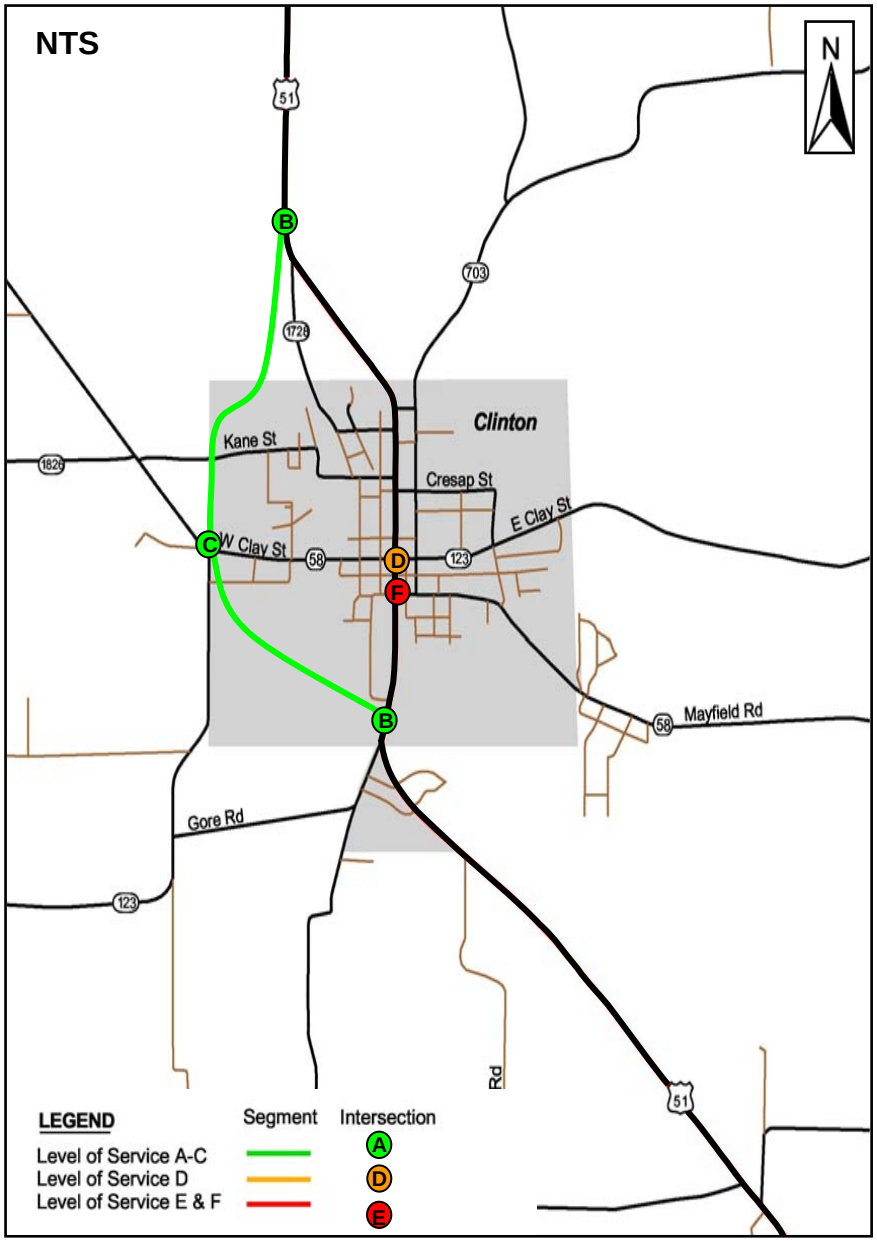


Table 3: Two-Lane Level of Service Analysis

Segment	2002			2010			2020			2030		
	Alts. 1 - 3	Alt. 6A	Alt. 9	Alts. 1 - 3	Alt. 6A	Alt. 9	Alts. 1 - 3	Alt. 6A	Alt. 9	Alts. 1 - 3	Alt. 6A	Alt. 9
KY 1728 to KY 1540	C	-	-	C	-	-	C	-	-	C	-	-
KY 1540 to KY 288	B	-	-	B	-	-	B	-	-	C	-	-
KY 1529 to KY 780	C	-	-	C	-	-	C	-	-	C	-	-
Fulton Co. Line to KY 1529	B	-	-	C	-	-	C	-	-	C	-	-
US 51 N to KY 58 (6A bypass segment)	-	B	-	-	B	-	-	B	-	-	B	-
KY 58 to US 51 S (6A bypass segment)	-	B	-	-	B	-	-	B	-	-	B	-
US 51 N to KY 58 (9 bypass segment	-	-	B	-	-	B	-	-	C	-	-	C
KY 58 to US 51 S (9 bypass segment)	-	-	B	-	-	B	-	-	C	-	-	C

The two-lane analysis showed that nearly all of the existing segments operate at LOS C or better and will continue to operate at LOS C or better through 2030 with and without improvements.

I-66 / I-69 Impacts

Due to the proximity to the study area of the proposed Interstate 66 and Interstate 69 highways, the project team investigated the possible impact of these highways on future US 51 traffic volumes. Regarding I-69 in the vicinity of the study area, the Kentucky Transportation Cabinet is considering the possibility of designating the Purchase Parkway as I-69 from the Tennessee State Line to Interstate 24. From there, I-69 will run concurrent with I-24 to the Western Kentucky Parkway.

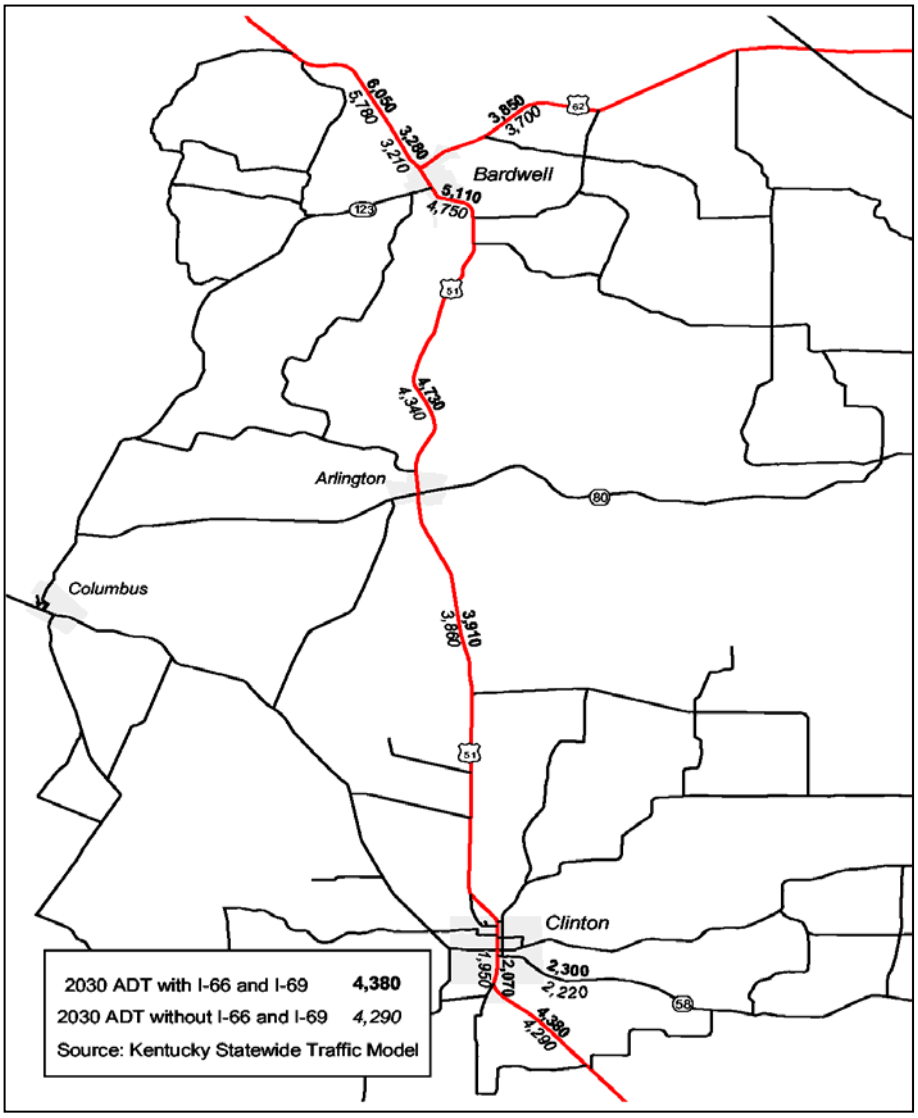
The final recommendation for I-66 in Western Kentucky is currently a no-build approach. However, the Kentucky Statewide Traffic Model (KYSTM) was reviewed to determine whether or not a proposed I-66 and I-69 highways would significantly increase traffic volumes on US 51. Year 2030 KYSTM assignments were examined both with and without the proposed new interstates in place. The results of these two runs are illustrated in Figure 11. As shown, the increase in traffic is not significant in the study area when I-66 and I-69 are added to the model. This is likely due to two factors:

1. The US 51 corridor is in a rural, sparsely populated area of the state. There are not a lot of trips in the corridor to begin with and even the addition of I-66 and I-69 will not generate enough growth in the corridor to cause a significant increase

in traffic. The KYSTM version that contains I-66 and I-69 also includes projections for population and employment growth in these corridors as a result of their construction.

2. On a system-wide level, I-55/I-57 to the west and US 45 to the east are parallel north-south alternatives to US 51, which connect population centers of considerably larger size. US 51 connects Fulton at its south end to Wickliffe and Cairo, Illinois at its northern terminus.

Figure 11: Traffic Impacts of I-66 and I-69



Traffic Forecast Summary

Traffic volumes are not expected to increase significantly by the year 2030. Furthermore, the addition of I-66 and I-69 is not expected to have a significant impact on future traffic in the area. However, even with relatively low traffic volumes, in the future, the level of service for some of the intersections will begin to break down because of poor operating conditions generally associated with the streets intersecting with US 51. The intersection operational issues can be addressed by upgrading the existing highway as proposed with Alternatives 2 and 3.

Alternatives 6A and 9 involve new alignments and therefore will result in diverted traffic from the existing US 51 alignment. Year 2030 traffic projections for both of the bypass alternatives are low – less than 3,000 vehicles per day. The projections are based on a manual diversion technique that relies on travel time savings. As proposed, the bypasses would offer little travel time savings – one minute or less – for those vehicles traveling through the Clinton area on US 51. Thus, travel time-based traffic projections are low.