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.