



APPENDIX B – ALTERNATIVES CONSIDERED BUT ELIMINATED



Appendix B – Alternatives Considered but Eliminated

Project History – Planning Study Corridors

In 2013, the Kentucky Transportation Cabinet (KYTC) conducted a planning study to identify the preferred corridor in which to construct a new US 51 Ohio River Bridge crossing. Eight options were considered during the study. All corridors considered were located north of the existing US 51 Bridge to near Mound City to the north of the City of Cairo.

The Combined Alternative 2 corridor was identified as the preferred corridor as a result of the study. This preferred corridor included study areas considered as part of study alternatives 1, 2, 2A, and 2B. All four alternative corridors were located within the area just north of the existing US 51 Bridge. This planning-level review included a location study, an environmental overview, and recommendations for a preferred corridor alternative to be considered further in the next phase of work.

The Combined Alternative 2 corridor has served as the basis of the current project development phase and is the corridor within which the current build alternatives, Alternative 1, Alternative 2, and Alternative 3, have been developed. As indicated previously, Alternative 2 has been selected as the preferred alternative. A discussion of build Alternatives 1 and 3 and reasons for their elimination from further consideration is provided below.

Alternative 1

Alternative 1 is located furthest from the existing US 51 Bridge at approximately 1,800 feet upstream. It is 2.03 miles long including the bridge structure and approaches. Beginning in KY, the proposed alignment pulls away from the existing roadway just past Minor Slough Bridge and holds the same elevation as the existing roadway. It is aligned between the protected USDA parcel and the existing bridge before curving to cross the railroad over 100 feet west of a Canadian National Railroad (CNR) bridge. It then crosses the Ohio River perpendicularly. The proposed profile provides 23 feet of clearance above the railroad and 60 feet above the Ohio River High-Water Mark for the length of the 925-foot main span. A maximum 4.4 percent grade is used to tie back to the US 60 / US 62 intersection on the IL side. The design speed is 55 mph until this intersection.

Alternative 3

Alternative 3 crosses the Ohio River closest to the existing US 51 Bridge at approximately 85 feet upstream of the existing structure. It is 1.88 miles long including the proposed bridge and approaches. As with all three proposed build alternatives, the alignment pulls away from the existing roadway just past Minor Slough Bridge and holds the same elevation as the existing roadway. To provide for a 55-mph curve, the alignment for this alternative must swing wider than others and consequently further away from the existing roadway. Because of a railroad requirement to maintain



100 feet away from the railroad bridge, the alternative crosses the existing US 51 Bridge. From there, the alignment continues and crosses the Ohio River perpendicularly. The profile for this alternative, much like Alternative 1 and the Preferred Alternative, provides 23 feet of clearance above the railroad and 60 feet above the Ohio River High-Water Mark for the length of the 925-foot main span. A maximum 4.0% grade is used to tie back to the US 60 / US 62 intersection in IL. The design speed is 55 mph until this intersection.

Because Alternative 3 would cross the existing US 51 Bridge, a temporary bridge would be constructed to minimize bridge closings . Even with a temporary bridge, however, at least a week closure of the US 51 crossing would be required to tie in the temporary bridge.

Reasons for Elimination of Alternatives 1 and 3

Alternatives 1 and 3 were eliminated from further consideration due to several considerations, either shared or individually.

- Both were more expensive than the Preferred Alternative
- Both required more fee simple right-of-way than the Preferred Alternative
- Both did not perform as well as the Preferred Alternative in navigation simulations
- Both were not identified as preferred during the most recent Community Advisory Group / Environmental Justice meeting
- Alternative 1 was considered most impactful to barge fleeting activity on the Ohio River
- Alternative 3 would require at minimum a one-week closure of the US 51 Bridge to tie in a temporary bridge, thus requiring an 80 mile or longer detour during the construction phase

The table below shows the cost comparison for the build alternatives including those considered but eliminated and the Preferred Alternative (Alternative 2).

Table 1 – Preliminary Cost Comparison of Alternatives

Alternative	Preliminary Cost Estimate Total
Alternative 1	\$290,500,000
Preferred Alternative - Alternative 2	\$280,800,000
Alternative 3	\$285,200,000