

E. Avoidance Alternatives

As discussed previously, the project's Area of Potential Effect includes the following Section 4(f) historic properties:

- Haskell Agricultural Farm Property
- William Meairs Farmstead

The avoidance alternatives include the No-Action Alternative and the 42nd Street Alignment A Alternative, both of which would avoid direct impacts to historic properties within the Area of Potential Effect. However, the No-Action Alternative does not address the future growth of the area, and does not meet the purpose and need. The No-Action Alternative and the 42nd Street Alignment A Alternative may also have an indirect impact by increasing traffic on roads adjacent to the Farm Property, and by failing to prevent urban development from occurring adjacent to the Farm Property.

1. NO-ACTION ALTERNATIVE

The No-Action Alternative will have no direct impacts to the Section 4(f) historic properties identified within the project's Area of Potential Effect. However, the No-Action Alternative with a comprehensive regional public transit system has been considered and disregarded as not meeting the purpose and need for the project. A reasonable estimate of transit mode share would not reduce traffic demand enough to significantly reduce traffic congestion. The No-Action Alternative assumes that K-10 Highway will not be relocated and that the connecting link through the city of Lawrence will remain essentially unchanged for the near future. This alternative will result in worsening traffic conditions on K-10 Highway and will continue to degrade the human environment due to increasing traffic congestion, high accident rates, noise, lost time, and other traffic-related deficiencies.

The No-Action Alternative may accelerate the city of Lawrence and Douglas County's need to provide an improved major arterial connection along or in the vicinity of the existing 31st Street alignment. It should be noted that the city and county are currently studying possible improvements in the 31st Street corridor.

The No-Action Alternative does not satisfy Lawrence and Douglas County's local planning objectives, which include improvements to both local and regional transportation service and relief for congestion on 23rd Street. The No-Action Alternative will encourage Lawrence and Douglas County to widen 31st Street between Haskell Avenue and Louisiana Street to accommodate an increasing volume of local traffic on 31st Street due to congestion and delays on the K-10 Highway connecting link. Increased traffic volumes on 31st Street will increase noise and visual disturbances on the Haskell Indian Nations University (HINU) campus and in the Baker Wetlands. In addition, the No-Action alternative may have an indirect impact on the Farm Property due to the fact that growth will occur west of Louisiana Street and east of Haskell Street adjacent to the Farm Property. Also, growth south of the river will require the widening of Louisiana, Haskell, and 31st Streets.

2. 42ND STREET ALIGNMENT A ALTERNATIVE IMPACTS

a. Direct Impacts to 4(f) Properties

The 42nd Street Alignment A Alternative (see Exhibit 4f-9) does require right of way from the William Meairs Farmstead Property, however, the FHWA has determined, with concurrence of the SHPO (see letter dated March 13, 2007 in Appendix D), that this action will have a no adverse effect with vegetative screening mitigation. If this alternative were to be selected, FHWA would use this finding as a basis to make a Section 4(f) 'de minimis' use finding for this

Section 4(f) resource. This alternative does avoid a direct impact to the Haskell Agricultural Farm Property and is considered an avoidance alternative.

b. Cumulative and Indirect Adverse Impacts to 4(f) Properties

Although the 42nd Street Alignment A Alternative would have no direct impacts to the Haskell Agricultural Farm Property, it would result in greater long-term cumulative adverse impacts to the Haskell Agricultural Farm Property than an alignment traveling through the Haskell Agricultural Farm Property. These long-term adverse social and environmental impacts would result from increases in traffic along roads adjacent to the HAFP (Louisiana, Haskell and 31st Street), reasonably foreseeable development immediately adjacent to the Haskell Agricultural Farm Property, and the uncertain future financial stability of a portion of the HAFP (Baker Wetlands) if the 32nd Street Alignment B Alternative is not selected.

Growth of Traffic on Adjacent Roads to Haskell Agricultural Farm Property

Urban development in the vicinity of the Haskell Agricultural Farm Property, including areas south of the Wakarusa River, will generate significant increases in local traffic (traffic analysis was based on a time-frame from 1998 through 2025). Development in the vicinity of the Haskell Agricultural Farm Property on the north side of the Wakarusa River will be served for east/west traffic by 31st Street. Development in the vicinity of the Haskell Agricultural Farm Property on the south side of the Wakarusa River will be served for north/south traffic by both Haskell Avenue and Louisiana Street. Development in these areas will result in significant increases in local traffic and will very likely lead to expansion of 31st Street and Haskell Avenue and/or Louisiana Street from two-lane roads to four-lane roads to accommodate the growth. Currently, 31st Street is planned to be extended east, from Haskell Avenue to O'Connell Road (E 1600 Road).

The 42nd Street Alignment A Alternative is expected to accelerate development south of the Wakarusa River since development is expected to follow the new roadway into this rural setting. Development south of the river will substantially increase traffic on both Haskell Avenue and Louisiana Street since both roads are bridged over the Wakarusa River and provide primary north/south routes into Lawrence. The 42nd Street Alignment A Alternative will not provide any protection from future development and its associated traffic in the vicinity of the Haskell Agricultural Farm Property.

Development of Land Adjacent to Haskell Agricultural Farm Property

Local planning objectives are set forth in *Transportation 2025* and *Horizon 2020*, the area's long-term land use plans. The existing land uses along the 42nd Street Alignment A Alternative corridor are agricultural, very low-density residential, and open space. North 1000 Road is the primary existing east/west road in this area and is located to the south of the 42nd Street corridor.

This area is designated by *Horizon 2020* as a Service Area 4 of the Lawrence Urban Growth Area (UGA). Policies and recommendations related to Service Area 4 south of the Kansas River include the following:

- Reasonable street access shall be provided to the area. Arterial and collector roads should be extended across the Wakarusa River to serve the area to the south.
- Land that has been designated as either Floodway or 100-Year Floodway Fringe is not recommended for urban development unless the development complies with the city floodplain regulations. Floodplain areas are appropriate for agricultural uses and for green space recreational uses such as bike/walking paths and parks.

The 42nd Street Alignment A alternative would greatly increase the accessibility of this area, and it is anticipated that this alternative would add greater pressure for development for both residential and commercial uses. As indicated by the future land use map and designation of growth/service areas, Lawrence anticipates that its growth areas will be to the south and the west. *Horizon 2020* identifies a phasing plan for this growth through its Growth Management goals and policies. Placing the SLT along the 42nd Street Alignment A Alternative will create infrastructure demand south of the Wakarusa River. This is true, even though the SLT is not a local street, because the SLT will include interchanges that will enhance access. In addition, amendments have been made to the *Horizon 2020 Plan*, and the *Transportation 2025 Plan* is being revised and updated for 2030. The amended *Horizon 2020 Plan*, the *Transportation 2025 Plan*, and the preliminary *Transportation 2030* study all include the 32nd Street Alignment B Alternative and addition of the area south of the Wakarusa River in the UGA. In the preliminary *Transportation 2030* study, there have been some minor changes to the future land use plan in the area south of the river, however, most of it is still designated as low density residential.

In addition, the *Horizon 2020* plan identifies low and high-density residential growth west of Louisiana Street. The entire area between US-59 Highway and Haskell Avenue is shown as an Urban Growth area. Based on this information, a review of development trends, and discussions with local planning authorities (during the preparation of the EIS), it was determined that urban development will occur within the foreseeable future on undeveloped land located in the vicinity of the Haskell Agricultural Farm Property. A portion of the land located immediately west of the Haskell Agricultural Farm Property is platted for multi-family development and is currently owned by KDOT. The land was purchased by KDOT after it had been platted and was planned to be utilized for right-of-way and mitigation associated with construction of an alternative that is aligned through the Haskell Agricultural Farm Property. This land will most likely be returned to private ownership and will be subject to urban development if the 42nd Street Alignment A Alternative is selected.

Under the 42nd Street Alignment A Alternative, the Haskell Agricultural Farm Property will be left unprotected from adjacent development. Although such development would not be expected to encroach into the Haskell Agricultural Farm Property, it would be expected to impact developable areas east, west and south of the Haskell Agricultural Farm Property. Such development would diminish or eliminate the rural character of the land in the vicinity of the Haskell Agricultural Farm Property. Urban development in the vicinity of the Haskell Agricultural Farm Property, along with associated increases in traffic on Haskell Avenue and Louisiana Street, will lead to significant increases in noise, light, urban debris, and visual disturbances in and around the Haskell Agricultural Farm Property.

The Corps concluded that selection of the 42nd Street Alignment A Alternative will result in greater long-term cumulative adverse impacts to Baker Wetlands than the 32nd Street Alignment B Alternative with mitigation. The 32nd Street Alignment B Alternative insulates the core of the existing Baker Wetlands complex from adjacent development through creation of a 304-acre wetland mitigation buffer on the agricultural land located immediately east and west of the property, thereby preserving its rural character.

Long-Term Financial Stability of the Baker Wetlands

The Baker Wetlands within the Haskell Agricultural Farm Property is owned and managed by Baker University. Dr. Roger Boyd, Professor and Chair of Biology and Director of Natural Areas for the school, has stated in written comments responding to the Corps' Draft EIS that the financial resources available to the university for future management of Baker Wetlands are uncertain. Under the 42nd Street Alignment A Alternative, this financial uncertainty will remain because this alternative would not impact the Baker Wetlands, and therefore would not include mitigation measures pertaining to the management of the Baker Wetlands. The 32nd Street

Alignment B Alternative includes funding for management of the Baker Wetlands as a mitigation measure for impacts to the Baker Wetlands.

c. Other Environmental Impacts

Relocations and Farm Severances

The 42nd Street Alignment A Alternative would result in three residential relocations, one business relocation, and 12 farm severances.

Floodplain and Floodway Impacts

The 42nd Street Alignment A Alternative passes through approximately 1.7 miles of the Wakarusa River floodplain east of Haskell Avenue and crosses the floodway on an approximately 3,700-foot-long bridge. West of Haskell Avenue, this alignment passes through the Wakarusa River floodplain for a distance of approximately 3200 feet and connects with US-59 Highway near 35th Street. This alignment crosses both branches of the Wakarusa River floodway west of Haskell Avenue for a total distance of approximately 900 feet. The sections of roadway within the floodway will be bridged. This alignment also crosses the floodplain of a minor Wakarusa River tributary for a distance of approximately 600 feet.

In regard to riparian and floodway impacts, it was determined that the 42nd Street Alignment A Alternative would include two new crossings of the Wakarusa River and its floodways, resulting in at least 5.2 acres of riparian woodland impacts and bridging approximately 4600 feet of floodway.

Wetland Impacts

The 42nd Street Alignment A Alternative will not directly impact the Baker Wetlands, but will result in impacts to 3.07 acres of wetlands and 1.38 acres of open water in ponds along its alignment. To mitigate for the total wetland losses of 4.45 acres, a total of approximately 80 acres of wetlands will be created for a net gain of approximately 75.5 acres of wetlands.

Stream Impacts

The 42nd Street Alignment A Alternative will include eight stream crossings (five will be bridged), equating to 1100 linear feet of stream impacts.

Woodland Impacts

The 42nd Street Alignment A Alternative will impact 5.2 acres of riparian woodlands and 18.2 acres of upland woods.

Noise Impacts

The 42nd Street Alignment A alternative, was modeled without noise walls. Noise impacts are significant under this alternative due to the introduction of a highway in an area with little development and minimal traffic noise.

Visual Impacts

The 42nd Street Alignment A Alternative will have no visual impact on the HINU campus, however, 31st Street will remain with its associated visual impact on HINU's southern campus. This alignment will not have a direct visual impact on Baker Wetlands, but the mainline bridge west of the Baker Wetlands will be observable by visitors in the wetlands. In addition, this alignment will have a high degree of visual impact to the rural landscape south of the Wakarusa River, which is an area of very low density development.