

Study Introduction and Approach

History of the K-7 Corridor Study

K-7 has long been recognized as a vital north-south travel corridor in the western side of the Kansas City metropolitan area which has experienced on-going rapid development. The study area's nearly 40-mile length from 223rd Street in Miami County to K-5/Muncie in Leavenworth, links local cities in the south like Spring Hill to cities in the north like Leavenworth (refer to Figure 1 – Study Area Map in the **Limits** section). In addition, K-7 experiences statewide travelers extending as far south as Oklahoma and north to Nebraska.

A Technical Report was completed for the K-7 Corridor in 2002. It examined what the impact would be of allowing the corridor to develop as it had been with the limitation of only looking at a 20 year future time horizon. The report's focus was strictly technical to give a better idea of the magnitude of the issues along the corridor and a potential range of solutions.

Throughout the development of the 2002 Technical Report and continuing to this day, there has been a lot of pressure from development along the corridor. There was a need to provide communities with an answer on what the future of the K-7 Corridor would be. Given the development pressures and communities' need to plan their future, Secretary Miller held a workshop on November 4, 2003 to discuss the future of the K-7 Corridor. The overwhelming consensus from the workshop was that a more comprehensive corridor master plan needed to be developed immediately. As a result, Secretary Miller made a commitment to fund a more comprehensive study and asked the communities to provide staff time and assistance in support of the study.

The K-7 Corridor Management Study which began in January of 2004, has addressed more areas than just the technical elements of K-7. It has addressed local concerns and identified needed improvements well into the future. Since the beginning of the study, KDOT and the stakeholders which included Miami County, Spring Hill, Johnson County, Olathe, Lenexa, Shawnee, Bonner Springs, Unified Government, Basehor, Leavenworth County, Lansing, Leavenworth, KTA and MARC have worked together in a collaborative effort to arrive at recommendations for an achievable K-7 Corridor Master Plan. For the purposes of this study, the K-7 Corridor has been broken into segments for analysis. The three segments are defined in Figure 1.

Purpose and Objectives

The purpose of the K-7 Corridor Management Study was to identify the ultimate traffic demands that would be placed on K-7, be responsive to communities' need to plan their future, and create a mutually agreeable ultimate plan for K-7 that KDOT and the communities would embrace and implement over time. The study looked at what type of improvements would be necessary on

K-7 and the local street system to handle the amount of traffic and development projected. These elements were accomplished within minimum technical design criteria that included:

- Desired minimum level of service = D (for 2030 traffic projections)
- Desired to have a uniform facility type within logical terminus points
- Freeway interchange spacing of two-miles desired with a minimum of one-mile spacing
- Access will be controlled for a freeway facility

Unlike previous studies, this study focused on the K-7 mainline and the local street network as an integrated system; more community involvement which involved two-way listening, education, and the desire to reach a consensus; and concrete recommendations and implementation responsibilities through Memorandums of understanding. Specifically, the primary objectives of the study were as follows:

- Determine what K-7's facility type would ultimately be (freeway versus urban arterial)
- Identify where access points would be along the corridor and the local street network
- Define what the right-of-way footprint and preservation needs would be for the facility
- Determine acceptable phased implementation opportunities
- Execute memorandums of understanding

Determining the facility type required gaining a better understanding of the local land use and travel demand market. This entailed working with each community to understand their plans and to make sure that each fit into an overall plan for the corridor. It required educating each community on the relationship between land use and traffic. For example, higher land use intensity would generate more traffic and required greater capacity on the transportation network.

Once the recommendation of a freeway facility was made for all three Segments, access requirements and the local street network system needed to be developed. Each Segment team honed in on determining the specific access points which would be allowed along with a solution that included a broader examination of the street network system to support the future plans for K-7. Following the transportation network identification, the right-of-way needs along the corridor and local street system were identified. The goal was to establish a preservation footprint for the areas to allow the construction of the identified improvements in the future.

The next step was the identification of phased implementation opportunities. This entailed interim and ultimate improvements to K-7. Included with this was the establishment of the enforcement mechanisms to regulate access requirements. The challenge with the implementation plan was to recognize the funding limitations, identify the hot spots, and prioritize future efforts along the corridor.

Study Introduction and Approach

Finally, the last step was to sign a Memorandum of Understanding (MOU) between the state and the local communities which summarized the consensus reached from the study. The MOUs outline a collaborative two-way effort where there needed to be commitment, follow through, and communication. Not only would the communities need to work on a variety of guidelines with follow-up implementation, but KDOT needed to do the same. Examples of collaboration were the mutual preservation of right-of-way or working with developers to locate local access and street networks that fit the study plan. MOU's were noted as the last step of the study, but in reality they are the first step of the ongoing process to monitor development of K-7 and implement the recommendations of the study.

In summary, the K-7 Corridor Management Study was needed because:

- Planning was essential – none of the recommendations would get done immediately, because there were currently no funds for construction. Good planning and the identification of the needed improvements was the first step.
- The corridor was growing – the projected ultimate development that the communities envision for the corridor generated travel demand on K-7 that was beyond the current roadway's capacity.
- Future traffic projections – the Average Daily Traffic (ADT) that was projected for the year 2030 along the K-7 Corridor shows that there were large increases in cars and trucks along K-7. With the increase in traffic, travel times would also increase.

Limits

The study limits were from the 223rd Street interchange in Miami County north to K-5/Muncie in Leavenworth, Kansas along K-7 (refer to Figure 1). The corridor was evaluated at a regional level and individually by segments.

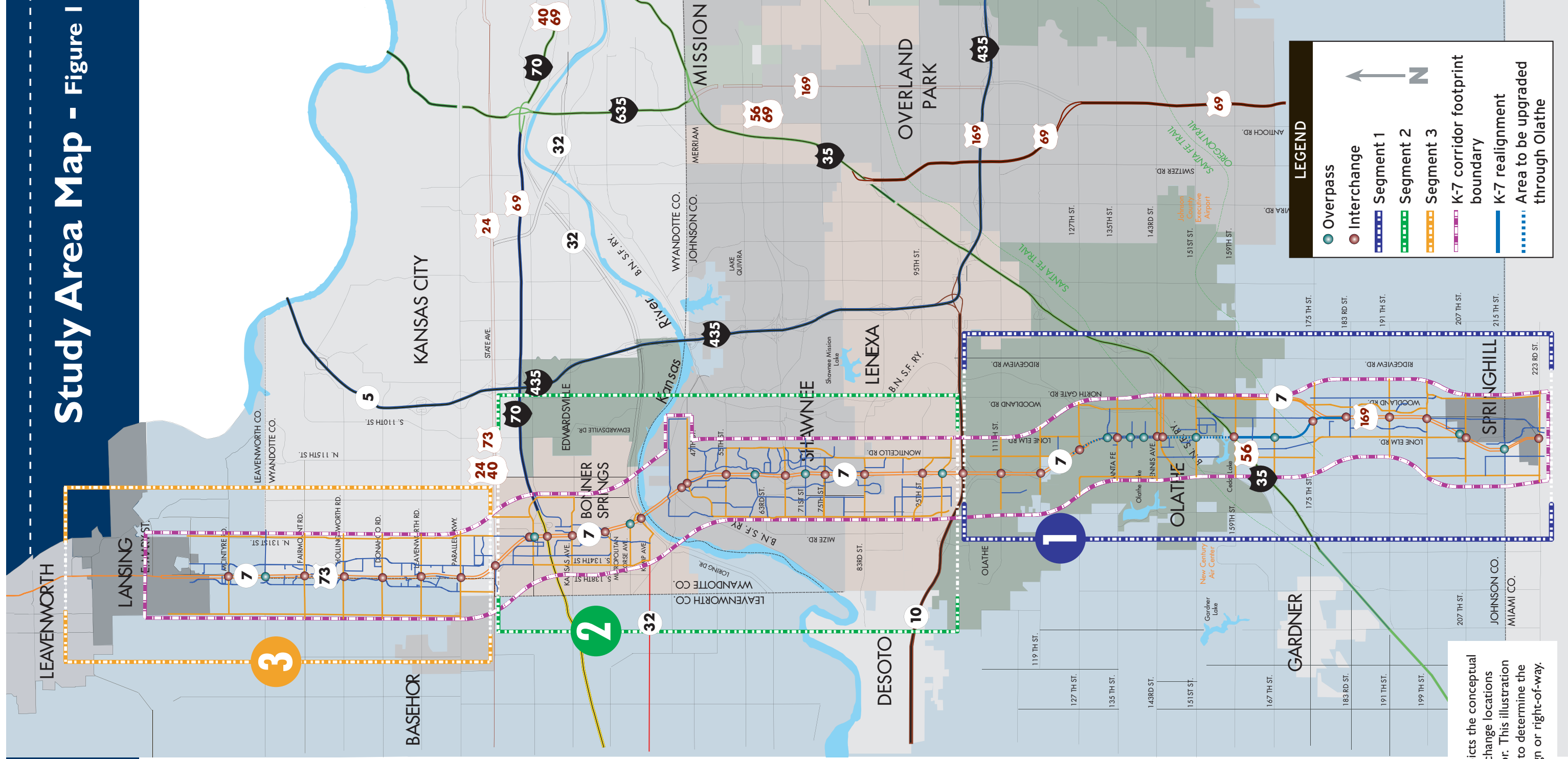
- Segment 1 was from 223rd Street north to K-10. The communities involved included Miami County, Johnson County, Olathe, and Spring Hill.
- Segment 2 was from K-10 north to State Avenue. The communities involved included Lenexa, Shawnee, Bonner Springs, as well as the KTA. The study focused on the stretch of the corridor north of Shawnee Mission Parkway to State Avenue since the section from 119th Street to Shawnee Mission Parkway was and would continue to be a freeway.
- Segment 3 was from State Avenue to K-5/Muncie in Leavenworth. The communities involved included Basehor, Lansing, the Unified Government, Leavenworth and Leavenworth County.

It should be noted that during the study process, three significant modifications to the study limits were requested and accepted by KDOT. In the first, Miami County requested that the 223rd Street interchange be added to the study due to the significant amounts of development occurring and the need for connectivity of the interchange to the local street network system to the north of the interchange that would be within the limits of the original study.

The second study limit modification came from a request by the City of Olathe to include upgrading the stretch of K-7 along the older area of Parker Street to a freeway. Originally, the area was assumed to always be an arterial street due to the existing development and impacts of converting this area to a freeway. KDOT agreed to add the area and a concept was developed with a freeway section and one-way frontage roads on each side for traffic circulation and access to existing businesses. Including this section as a freeway would also mean ultimately converting the proposed interchange at I-35 and Lone Elm Road into a system-to-system, freeway to freeway interchange with free-flow movements.

Finally, the third study limit modification came from the City of Leavenworth to include an extension of the study limits into the city. The city's request was a result of the Phase I facility type recommendation to make K-7 a freeway facility the entire corridor length. The city felt it was critical to emphasize the key linkage K-7 provided to their community, strengthen the city's pledge to assist in all ways to work toward the future vision for K-7 through the MOU commitment process, and provide an additional community in future funding and lobbying efforts. The study limit was modified to show the K-5/Muncie intersection as the end point for the study.

Study Area Map - Figure I



Disclaimer:
 This illustration depicts the conceptual alignment and interchange locations for the K-7 Corridor. This illustration should not be used to determine the exact location, design or right-of-way.

Study Introduction and Approach

Approach and Schedule

As noted previously, the K-7 Corridor Management Study went beyond the prior Technical Study to include an approach that examined the mainline and local transportation system, included more involvement with the communities, and resulted in clear conclusions with signed memorandums of understanding. The study approach is graphically shown in Figure 2.

As Figure 2 shows, the study approach was broken into two primary phases:

Phase 1 Corridor Analysis – K-7 was evaluated as a regional corridor through a series of workshops and meetings with the local communities along the entire corridor. Initial focus was on regional issues to define a reasonable transportation market by developing a corridor wide land use and traffic model. Through development of a comprehensive travel demand model and future land use plan crafted through input from each community, traffic forecast information was developed. From this information, a recommendation was made for a freeway facility type along the entire corridor. Given the communities vision for future land use, an arterial facility would ultimately be unable to accommodate the anticipated traffic resulting in significant congestion and unacceptable levels of service for the corridor. Phase 1 took approximately one year to complete.

Phase 2 Segment Analysis – K-7 and the local street network was evaluated on a segment basis through a series of meetings with local communities within each segment. During this phase, the freeway facility type recommendation from Phase 1 was used as the basis for discussion. While not every community agreed in total with the recommendation of a freeway, every community did agree that it would be prudent to preserve the right-of-way needed for a freeway with interchanges in order to not preclude the ability to build a freeway in the future. As a result, a series of meetings were held to determine the future locations of interchanges and overpasses as well as the layout of the local street system to make every effort that the total transportation system worked together in the future. Interchange configurations concepts and local street requirements were then used to establish a conceptual right-of-way footprint for the entire corridor.

It was also recognized that given the lack of funding to build the freeway today, interim improvements would be needed to accommodate the growing traffic demand. Examples of interim improvements included adding traffic signals and turn lanes at future interchange and overpass locations knowing that these would need to be converted into interchanges and overpasses in the future. Other examples of interim improvements included reducing access to K-7 and preserving important tracts of land for future improvements. Given the uncertainty of the timing of future development,

it was impossible to predict the priority and order of implementation of the interim and ultimate improvements over time. This plan's purpose was to provide guidelines for interim improvements that could occur and the expectations for what would ultimately need to occur.

Finally, Memorandums of Understanding (MOU's) were developed with each community to establish roles and responsibilities for KDOT and the local communities in implementing the K-7 Corridor Management Plan. These MOU's formalized the continued collaborative environment and created a moral framework for implementing the recommendations of the study. The MOU's also established of a K-7 Corridor Review Committee made up of representatives from KDOT and the local communities. The committee's purpose would be to meet periodically to review the corridor plan, assess development issues, and evaluate compliance with the K-7 Corridor Plan.

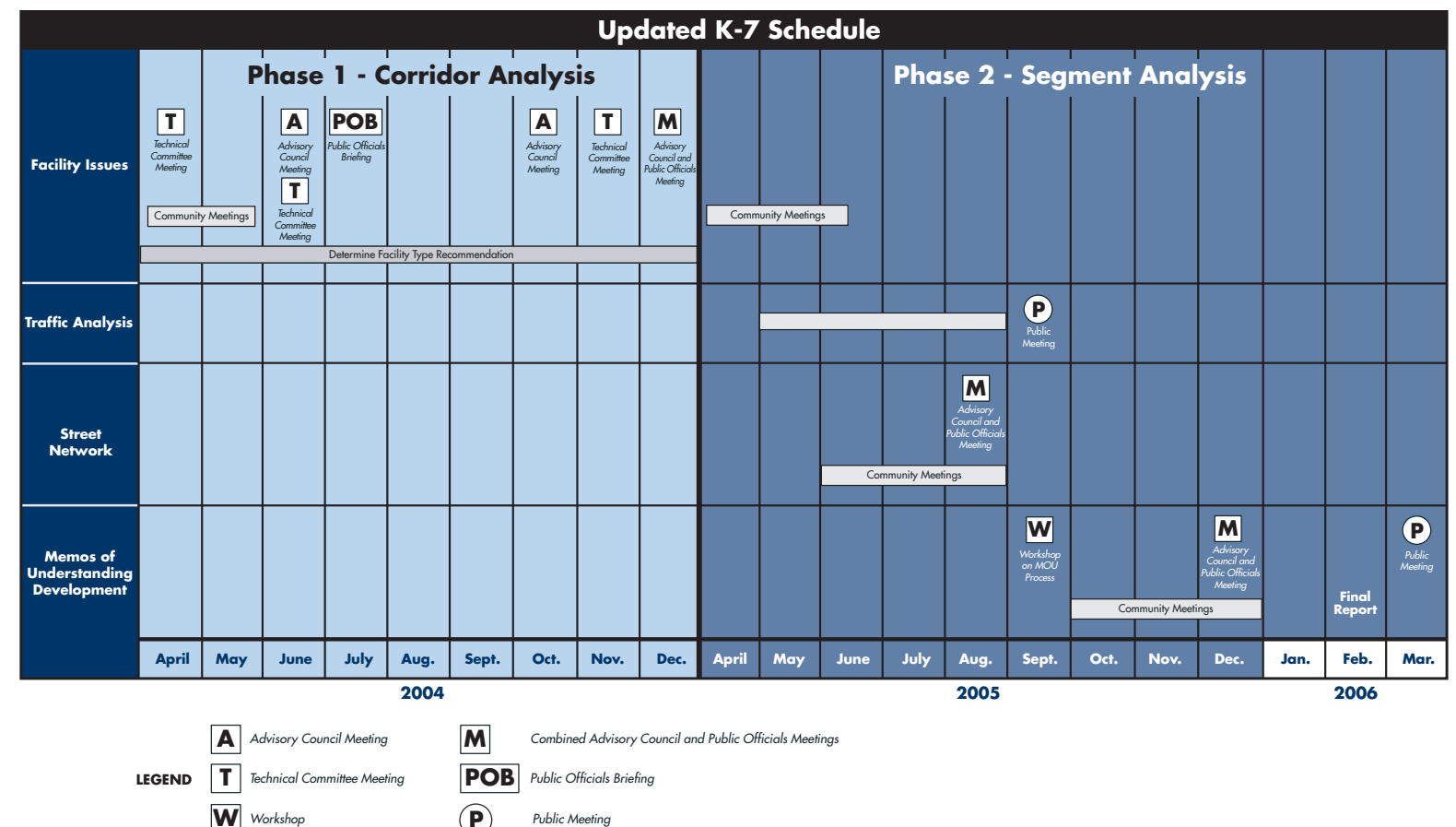


Figure 2