
Technical Memorandum

To: Cooperating Agencies, Participating Agencies and Other Interested Stakeholders	Date: March 28, 2019
From: South Lawrence Trafficway SEIS Study Team	
Subject: SLT SEIS Initial Alternatives Descriptions	

South Lawrence Trafficway Supplemental Environmental Impact Statement Initial Alternatives Descriptions

Introduction

The purpose of this technical memorandum is to describe the initial alternatives for the South Lawrence Trafficway (SLT) Supplemental Environmental Impact Statement (SEIS). This Initial Alternatives Descriptions Technical Memorandum is one of several interim reports to be prepared for the SLT SEIS for review and concurrence by Cooperating and Participating Agencies for the project. Once reviews and comments have been incorporated, this technical memorandum will form the basis for the Alternatives Chapter of the SEIS.

Alternatives Background and History

SLT EIS

An Environmental Impact Statement (EIS) was prepared in 1990 for the overall SLT study area. The stated Purpose and Need of that EIS was to relieve congestion on existing 23rd Street and Iowa Street by diverting through and local traffic from these two existing streets and Clinton Parkway, thereby achieving an improved level of traffic service on the local street network. A No-Action alternative and three Build alternative alignments were developed to respond to this purpose and need. Those Build Alternatives each included construction of a new, four-lane divided roadway with access provide via interchanges at I-70, U.S. 40, U.S. 59, and K-10, and interchanges or at-grade intersections at other major cross streets. Three alignments were evaluated, 31st Street, 35th Street, and 38th Street, with the 31st Street alignment selected as the preferred alternative.

As an outcome of the approved 1990 EIS, two expressway lanes of the West Section (between I-70 and U.S. 59) were constructed and opened to traffic in 1996. The East Section (between U.S. 59 and K-10) was not constructed and a subsequent SEIS with a "No Action" decision was approved in 2000. A subsequent EIS, in conjunction with a USACE 404 Permit, was completed in 2002 and adopted and approved by FHWA in November 2007. The FHWA then issued a Record of Decision (ROD) in May 2008. Since the completion of the ROD, the East Section four-lane freeway was constructed and opened to traffic in 2016.

K-10 West Leg Concept Study

The *K-10 West Leg Concept Study*, conducted from 2014-2016 for the Kansas Department of Transportation, investigated the current and future needs and functions in the K-10/SLT West Section. This study considered alternatives for the future widening and upgrade of the corridor, which modified the current West Leg 2-lane expressway to a 4-lane freeway (with consideration for a 6-lane freeway) design with limited access, and either closed existing at-grade intersections or upgraded them to grade separated interchanges. During the concept study, proposed alternatives were screened to evaluate qualitative and quantitative impacts of the alternatives for the West Section improvements. The concept study and its alternatives will be used as a baseline and reference document for the SLT SEIS initial alternatives.

Overview of SLT SEIS Initial Alternatives

A Supplemental EIS (SEIS) will be prepared for the proposed project. To comply with NEPA, the SEIS study team will evaluate viable alternatives developed to satisfy the purpose and need of the proposed project that are reasonable and feasible from a technical, environmental and economic standpoint. Initial Alternatives for the project will be developed using the SLT 1990 EIS and the K-10 West Leg Concept Study as a baseline for the proposed build alternatives.

The SEIS will evaluate a 'No Action' alternative as well as a combination of potential funding options for 'Build' alternatives for the SLT study area. Roadway configuration options will be evaluated, including upgrading of the West Section as a freeway with either four or six lanes, as predicated on future need, with controlled access. Access modifications would also be evaluated at existing and potentially relocated access points along the SLT West Section and at I-70/East 600 Road/Lecompton Road and K-10/I-70/North 1800 Road. A tolled highway alternative will be evaluated as a standalone build alternative since the infrastructure necessary to collect tolls will have a physical footprint within the study area. Other funding options for the project, such as fuel, sales and property taxes, can apply to all build alternatives and do not have a physical footprint so these funding options will not be evaluated as standalone alternatives for the project.

The East Section of the SLT is included in this study because it was a part of the study area for the original 1990 EIS, and because funding options, such as tolled and toll-free options, are being evaluated for the project. Therefore, the entire SLT corridor will need to be evaluated to assess potential impacts of the funding options. It is not anticipated that there will be any physical roadway improvements or modifications that require additional right-of-way on the East Section as a result of the funding options.

The initial alternatives for the proposed project include the following:

No Action Alternative

The No Action Alternative makes no capacity improvements on the existing West Section of the SLT beyond improvements that are directly related to ongoing rehabilitation and maintenance of the facility or projects that are already committed or programmed in the State Transportation Improvement

Program (STIP) or the Lawrence - Douglas County Metropolitan Planning Organization (MPO) Long Range Transportation Plan (LRTP), designated as *Transportation 2040 (T2040)*. The No Action Alternative is not a no cost alternative. Currently, there are several committed or programmed roadway or bridge projects identified that have been included in the No Action Alternative. Those projects include:

- **6th Street/K-10 Interchange** - KDOT has developed preliminary plans to reconfigure the existing 6th Street (US-40)/K-10 Diamond Interchange to a Diverging Diamond Interchange. Further development of the plans has been suspended during the SLT SEIS and will be progressed as traffic conditions warrant.
- **E 1200 Road (Kasold Drive)/K-10 Intersection closure** – KDOT identified this intersection for closure in December 2018 after more than 28 crashes have occurred at the intersection since 2016. The expressway experienced a substantial increase of traffic with the opening of the eastern leg of the South Lawrence Trafficway.
- **31st Street Extension** – The Douglas County Long Range Transportation Plan includes improvements to 31st Street to expand the existing two-lane section between O’Connell Road and E 1750 (Noria Road) to a four-lane arterial and construct a new four-lane arterial between E 1750 (Noria Road) and E 1900 Road (Route 1057).
- **I-70 Acceleration/Deceleration Lane Improvements** – The Kansas Turnpike Authority is planning and constructing improvements to the acceleration and deceleration lanes at the Lecompton Interchange ramps where they enter and exit the I-70 Turnpike. These improvements will be constructed in fiscal year 2020.
- **Interim Safety Improvements** – KDOT has identified several interim safety improvements for SLT which include a queue warning system and intersection geometric improvements. These improvements would be planned and constructed as interim improvements until a preferred alternative to improve the SLT corridor is selected and funded.

The No Action Alternative also includes planned or programmed multimodal projects such as transit and bicycle and pedestrian facilities. Identified planned facilities within the SLT right-of-way include potential crossings at:

- N 1750 Road;
- US 40 (6th Street);
- N 1800 Road at Lecompton Road/E 600 Road;
- Along US 40; and
- Wakarusa Drive south of W 27th Street.

While several existing Lawrence or Johnson County Community College transit routes are located in close proximity to the SLT corridor, no routes currently cross, or are planned to cross, SLT.

Exhibit 1 shows the programmed and committed projects included with the No Action Alternative. The No Action Alternative is used as a baseline for comparison to the other alternatives proposed for the project.

Transportation System Management (TSM)/Transportation Demand Management (TDM) Alternative

The Transportation System Management/Transportation Demand Management (TSM/TDM) Alternative is designed to maximize the efficiency of the existing transportation system by improving capacity and reducing the effects of bottlenecks and chokepoints. These strategies are relatively low-cost, low-impact strategies geared toward enhancing mobility on the SLT without adding new travel lanes or upgrading the facility to a freeway. TSM improvements may include a wide range of strategies, including: coordinated signal timings, intelligent transportation systems (ITS), ramp metering, queue warning systems or minor intersection improvements. TDM strategies typically attempt to modify travel behaviors to benefit capacity, such as carpooling, staggered work shifts, telecommuting, and promoting transit use.

The following TSM/TDM strategies were considered appropriate for implementation in the SLT corridor and are considered the primary elements of the TSM/TDM initial alternative for the SLT SEIS. Those strategies include:

- Installation of ITS elements throughout the SLT corridor including driver information systems that convey travel times, weather advisory data, incident avoidance information, and other pertinent congestion reduction and incident management information. The KC Scout ITS system (or similar system) elements are considered the model for system implementation in the SLT corridor. K-10 Highway near the Kansas City metro area has KC Scout elements deployed and the SLT corridor will propose similar ITS elements.
- Construction of minor intersection improvements to improve safety and traffic circulation. Modifications may include adding right and left turn bays at intersections, lengthening existing turn bays, adaptive signal timings, increasing lane widths at intersections, widening shoulders, adding rumble strips, or enhanced bicycle/pedestrian crossings. In addition, minor safety and geometric improvements could be made to alternate routes such as U.S. 40 to improve overall operations on the roadway network, such as improving vertical curves, intersection sight distance or roadside grading and slopes.
- While it is difficult to implement or mandate specific TDM strategies for the proposed project, the SLT study team promotes the integration of these strategies where possible for affected commuters and businesses to help alleviate peak period congestion and improve safety and mobility within the study area.

Exhibit 2 shows the TSM/TDM strategies proposed for the SLT project and study area.

Multimodal Alternative

The Multimodal Alternative includes reasonable measures to enhance crossing of the corridor for non-motorized travel and freight and increases the effectiveness of transit options in the corridor. Elements of this alternative allows for the existing transit agencies in the state or Lawrence region to increase transit routes or enhance transit service by providing roadway improvements that allow for more efficient local and regional transit connections. Transit elements such as Bus-on-Shoulder that enhance the reliability and reduce congestion of the corridor are also included in this alternative. Bus-on-shoulder improvements may include pavement improvements and minor widening of existing shoulders on the SLT corridor to accommodate bus-on-shoulder operations. This concept would be similar to the

bus-on-shoulder provided by Kansas City Area Transportation Authority (KCATA), designated as RideKC, for the I-35 corridor in the Kansas City metro area. At the current time, no existing transit agencies have transit routes on or crossing the SLT corridor. A bus-on-shoulder concept would only be implemented if a transit agency committed to deploying transit on the SLT corridor.

Similarly, this alternative aims to preserve existing bicycle and pedestrian connections and crossings of the SLT corridor by shared-use trails and paths while also accommodating future planned shared path and trail connections. This alternative will also enhance freight service bottlenecks through intersection improvements such as increased turning radii, elongated turn bays, wider shoulders, wider lanes at intersections, improving merge distances, and optimizing signal timings.

Exhibit 3 shows the proposed multimodal improvements programmed or committed for the study area, as well as other multimodal improvements that could be accommodated by the SLT corridor, such as bus-on-shoulder, if desired in the future by existing transit agencies.

Build Alternative – Add Capacity Expressway (West Section)

This alternative will upgrade the existing two-lane undivided West Section of the SLT to a median divided expressway facility with four lanes. It will also include the reconstruction of the existing two lanes. This alternative was the approved preferred alternative from the 1990 EIS. Existing interchanges at West 6th Street/U.S. 40, Bob Billings Parkway, Clinton Parkway, and U.S. 59/Iowa Street will remain interchanges with ramp modifications to accommodate additional expressway travel lanes.

Under an expressway concept, existing at-grade intersections located along the SLT West Section, such as the West 27th Street/Wakarusa Drive signalized intersection and the I-70 interchange ramp terminals would remain in-place, but would have various intersection improvements to enhance safety and mobility. In a separate project, E 1050 Road (Wakarusa Drive) will be extended to provide connection between N 1200 Road (County Road 458) and the future SLT improvements.

Exhibit 4 shows the proposed Add Capacity Expressway Alternative.

Build Alternative – Add Capacity Freeway (West Section)

This alternative will upgrade the existing two-lane undivided West Section of the SLT to a median divided fully access-controlled freeway facility with either four or six lanes, as predicated on future need. The freeway section would be consistent with the SLT East Section to provide system continuity for travelers. Existing interchanges at West 6th Street/U.S. 40, Bob Billings Parkway, Clinton Parkway, and U.S. 59/Iowa Street will remain interchanges with ramp modifications to accommodate additional freeway travel lanes.

Under a freeway concept, existing at-grade intersections located along the SLT West Section, such as the West 27th Street/Wakarusa Drive signalized intersection, will no longer remain in-place. These at-grade intersections will be improved to modified, or new grade-separated access, to enhance safety and mobility along and across the SLT corridor, consistent with a freeway section. A system interchange with I-70 will be considered; however, new service interchanges at I-70/East 600 Road/Lecompton Road and

K-10/I-70/North 1800 Road will also be considered to provide local access. In a separate project, N 1200 Road (County Road 458) will be connected to the future SLT improvements at the selected access point.

In addition, this alternative includes the consideration of tolling concepts to close the existing toll system with the I-70 Turnpike.

Exhibit 5 shows the proposed Add Capacity Freeway Alternative.

Build Alternative – Add Capacity Tolloed Highway (East & West Sections)

This alternative is similar to the previous ‘add capacity’ build alternative, however it includes the ability to collect tolls through all-electronic tolling (AET) to fund the construction of the facility. The tolloed highway section would be consistent with the SLT East Section to provide system continuity for travelers.

The alternative will upgrade the existing two-lane undivided West Section of the SLT to a divided four or six lane fully access-controlled freeway facility. Existing interchanges at West 6th Street/U.S. 40, Bob Billings Parkway, Clinton Parkway, and U.S. 59/Iowa Street will remain interchanges with ramp modifications to accommodate the median divided freeway.

Under a tolloed highway concept, existing at-grade intersections located along the SLT West Section, such as the West 27th Street/Wakarusa Drive signalized intersection, will no longer remain in-place. These at-grade intersections will be improved to modified, or new grade-separated access, to enhance safety and mobility along and across the SLT corridor, consistent with a fully access-controlled highway section. A system interchange with I-70 will be considered; however, new interchanges at I-70/East 600 Road/Lecompton Road and K-10/I-70/North 1800 Road will also be considered to provide local access. In a separate project, N 1200 Road (County Road 458) will be connected to the future SLT improvements at the selected access point.

Under AET, no physical toll plazas to stop and pay tolls with cash would be constructed along the SLT corridor. Rather, overhead gantries will be constructed at various points throughout the corridor to collect tolls through the AET method.

The East Section of the SLT is included in this alternative because tolling the entire facility is being evaluated as part of the project. Therefore, the entire SLT corridor will need to be evaluated to assess potential impacts of the funding options and their ability to provide sustainable funds for operation, maintenance and future SLT improvements. It is not anticipated that there will be any physical roadway improvements or modifications that require additional right-of-way on the East Section as a result of the funding options.

In addition, this alternative includes the consideration of tolling concepts to close the existing toll system with the I-70 Turnpike.

Exhibit 6 shows the proposed Add Capacity Tolloed Highway Alternative and how proposed AET gantries would look and function along the SLT corridor.