

KTA – New Topeka Interchange Concept Study Concept Memo

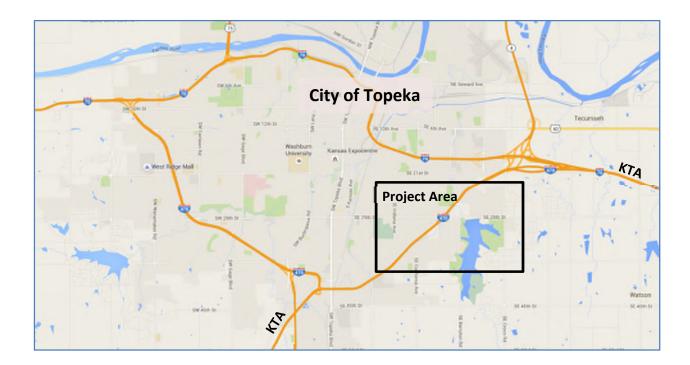
Prepared by:



Concept Study Summary

Purpose & Need

The City of Topeka is one of the largest cities located along the Kansas Turnpike. The existing turnpike system currently has two access points to the city of Topeka: the I-70/K-4 Interchange on the East side of Topeka (MM 182/183) and the I-470/I-335/Topeka Blvd. Interchange on the South side of Topeka (MM 177). Jointly, the City of Topeka and the Kansas Turnpike Authority (KTA) requested HNTB aid them in the evaluation of concepts for a third access point along the Kansas Turnpike in the eastern part of Topeka, between the two existing access points. The area evaluated for this new access point is shown in **Figure 1**.



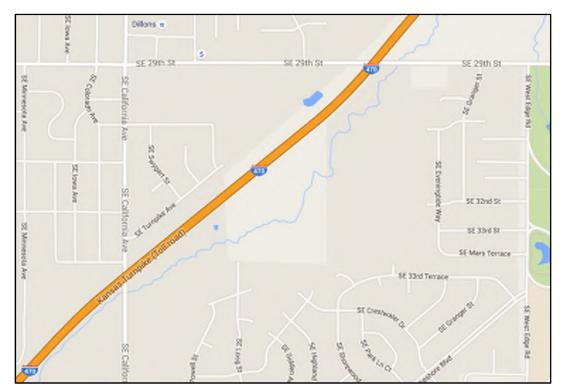


Figure 1 - Project Area

The purpose of this access point would be to provide local access to the 29th Street/California Avenue area of Topeka. The following sections provide a summary of the concepts that were considered and the conclusions that were reached with this concept study.

Considered Concepts

In order to facilitate the additional local access desired by the City, a number of concepts were evaluated at a high level. For each concept, qualitative assessments were made of the major impacts and benefits. An exhibit illustrating each concept is provided in the appendix and short summary of the qualitative analysis for each is provided below.

A-1: Concept 1 — Concept 1 utilizes a diamond interchange connection directly to 29th Street, with tolling zones provided on each ramp. This concept would provide the most direct access to 29th Street and would most likely allow for the reuse of the existing 29th Street bridge over the I-470 (KTA). Some of the challenges with this concept include:

- Significant impacts to the stream and stream crossing along the east side of I-470 and under 29th Street.
- Several residences impacted on the West side of the interchange.
- Improvements along 29th Street would be necessary to facilitate the ramp connections.

A-2: Concept 2 – Concept 2 proposed to provide a diamond interchange connection directly to California Ave. This concept would provide direct access to and from California Ave, utilizing ramp toll zones for toll collection. Some of the challenges with this concept include:

- Improvements and widening of California Ave. to facilitate turn lanes and ramp connections would be necessary at the interchange.
- The necessary improvements to California Ave. would require that the I-470 bridges over California Ave. be replaced to accommodate the improvements. Replacement of these structures may also require a raise in the profile of I-470 to achieve the desired vertical clearance.
- The stream which passes under I-470 and California Ave. and the floodplain in the southeast quadrant of the interchange would be impacted by the interchange ramp.
- The ramps on the west side of the interchange would impact several residences in the existing neighborhoods.

B-3: Concept 3 — Concept 3 presents another option for providing access directly to California Ave. The direct access would be achieved with a folded-diamond interchange, also utilizing ramp toll zones as with the previous concepts. The use of the folded-diamond avoids the stream and floodplain impacts of Concept 2. However, the other challenges discussed with Concept 2 remain, and Concept 3 has greater impacts on the surrounding residential properties.

A-4: Concept 4 – Concept 4 utilizes the undeveloped areas between 29th Street and California Ave. to provide an offset diamond with a connector road to 29th Street. The concept would provide a tolling zone on the connector road. This concept would provide less direct access to 29th Street and California Ave but would minimize impacts to the surrounding residences and businesses. This concept would also limit impacts to the stream and floodplain along the east side of I-470.

A-5: Concept 5 – Concept 5 provides an offset diamond interchange similar to Concept 4. However, Concept 5 illustrates a connection to 30th Street to provide access to California Ave. Tolling of this concept would be provided using ramp toll zones due to limited right of way along 30th St. This would require longer interchange ramps. These longer ramps result in impacts to the 29th Street and California Ave. bridges, which would likely require replacement of the structures and potentially roadway grade adjustments to provide adequate vertical clearance. The overall larger footprint of this concept impacts some of the residences along Turnpike Ave.

Recommended Concept

KTA, City of Topeka, and HNTB met to review the five concepts described above and determined that Concept 4 would be carried forward and analyzed in more detail. This analysis would include a more detailed engineering layout, evaluation of potential Right-of-Way (R/W) impacts, conceptual cost estimate, and evaluation of KTA revenue impacts.

As part of this more detailed analysis two variations of Concept 4 were evaluated (see Appendix for layouts of each). **A-6: Concept 4 – Option 1** continues with the offset diamond, connector road to 29th Street, and centralized tolling zone on the connector road. **A-7: Concept 4 – Option 2** is the same offset diamond concept with connector road to 29th Street, however the tolling zones have been moved to the interchange ramps. Option 2 also moves the 29th Street connection location further to the east. As with Concept 5 described above the implementation of ramp tolling requires lengthening of the interchange

ramps. The longer ramps of Option 2 lead to acceleration/deceleration lanes that must be carried across/through the bridges at California Ave. and 29th Street. It is expected that these bridges would need to be replaced to facilitate the acceleration/deceleration lanes. Additionally, the longer ramps and area needed for the ramp toll zones have a more significant R/W impact than that of Option 1. These impacts are illustrated by the Proposed R/W lines in the exhibits in the Appendix.

Also evaluated were two different connection points with 29th Street. The 29th Street intersection illustrated in Option 2 is shown centered on an existing R/W corridor owned by the City. Option 1 is aligned further to the west along 29th Street utilizing an area of undeveloped land. Although, the connection point of Option 1 will not leverage the City's existing R/W corridor, the impacts to the adjacent properties are greatly reduced with this option.

A high level assessment of program costs was developed for each of the Concept 4 options and a summary of the cost analysis is presented in the Appendix as exhibit A-8: Program Cost Estimates. Based on this analysis, HNTB recommends Concept 4-Option 1 as the preferred concept.

Traffic Projections and Impacts to Revenue

As part of this study, HNTB performed a high-level evaluation of the impacts of this potential interchange on the KTA's gross revenue. The first step in this evaluation was determining the anticipated traffic volume for this potential facility in a design year of 2045. The design year volume represents an estimation of the future traffic demand and volume expected on the facility accounting for 30 years of steady traffic growth. We then developed present year (2015) traffic volumes and determined the makeup of new trips vs. trips being redistributed from other existing interchanges. Lastly, we established the appropriate toll rate structure that would be implemented at this new interchange. A meeting was held between KTA, KDOT, the City of Topeka, and HNTB where these items were discussed. Below is a summary of the results of this discussion which are the basis of the revenue analysis.

Anticipated Traffic – In the summer of 2015 KDOT and the City of Topeka developed estimated design year (2045) traffic volumes for this potential interchange. These volumes were based on anticipated development in the region surrounding this potential interchange and based on toll-free conditions. These projections estimated the total volume on all interchange ramps to be approximately 10,000 vehicles per day in 2045. However, this volume should be reduced under tolled conditions to account for some potential users which will avoid using the interchange and remain on the local street network due to the toll. It was determined that this volume should be reduced to 6,000 ADT in 2045 under tolled conditions. To arrive at present day (2015) traffic, these volumes were discounted at a rate of 1.5% per year.

New vs. Redistributed Trips – In order to evaluate the impact on gross revenue, it is important to understand the number of anticipated trips at the new interchange that are new trips generated by the presence of the interchange vs. trips that would have otherwise used the adjacent interchanges at MM 183 and MM 177. The reason this is important is that the collective impact of all redistributed trips is negligible production of additional gross revenue. In the absence of more detailed data, this group assumed between 55% and 70% of the trips would be new trips for the purposes of this analysis.

Toll Rate Structure – For this analysis, the group determined to base the future tolls at this potential new interchange, on the average of similar trips terminating at MM 177 or MM 183. Current toll rate information, which was the basis of these calculations, can be found in the Appendix as A-10: Toll Schedule. In terms of the assumed distribution of electronic vs. cash customers, data from the adjacent plazas was analyzed as well. Based on that analysis, an assumption that approximately 60% of customers would be electronic customers, and the other 40% cash customers, was used for the analysis at the potential new interchange.

Gross Revenue Analysis — Using the traffic and toll rate structure information discussed above, HNTB modeled the change in gross revenue for two scenarios which represent the low and high ends of the range established for new trips vs. redistributed trips. Scenario 1 uses the high end of the range and assumes that 70% of the trips at the potential new interchange are new trips. Scenario 2 uses the low end of the range and assumes that only 55% of the trips are new trips. The table below summarizes the annual change in gross revenue for both scenarios in the present year (2015) as well as the design year (2045).

Annual Summary		20	15			20	45	
	Sc	. I	Sc	. 2	Sc	. 1	Sc	. 2
Redistributed Trips	\$	(3,821)	\$	790	\$	2,153	\$	9,360
New Trips	\$	244,322	\$	189,715	\$	382,266	\$	296,911
Total Gross Revenue		240,501	\$	190,505	\$	384,419	\$	306,271

As shown in the table above, in the present year this interchange is anticipated to produce between \$191,000 and \$241,000 of additional gross revenue and is anticipated to grow over a 30 year period to between \$306,000 and \$384,000. It is important to keep in mind that these values represent gross revenue, not net revenue, and do not account for the cost of toll collection, ongoing operations and maintenance, etc. An analysis of the change in net revenue may be of value in the future, but would require more detailed traffic information and additional analysis of the anticipated costs of toll collection and operations. Based on the traffic provided, the assumptions discussed above, and the resulting level of gross revenue generation, it is reasonable to conclude that the additional revenue may cover the costs of toll collection, and may contribute some revenue to cover operations, and maintenance. However, it will produce little, if any, excess net revenue to offset the cost of the initial capital investment. A more detailed discussion of the revenue analysis can be found in the appendix as Exhibit A-9: Memorandum – Gross Revenue Analysis.

Conclusions

Of the concepts considered, the recommended concept, Concept 4-Option 1, is the most cost-effective solution and provides relief to the local street network by transitioning some local traffic to the Turnpike. Constructing these improvements will have some environmental impacts and impacts to adjacent properties. The anticipated impacts do not appear to be extraordinary for this type of project. A better understanding of these impacts and the costs of implementation should be evaluated further if there is a desire to move forward with construction.

Based on the basic revenue analysis performed as part of this study, the anticipated gross revenue does not support the capital costs associated with initial construction. A new interchange in this area would not be financially feasible for KTA. If multiple parties are willing to share construction costs, or if economic development projections for the area change, then the feasibility of the interchange would also be different.

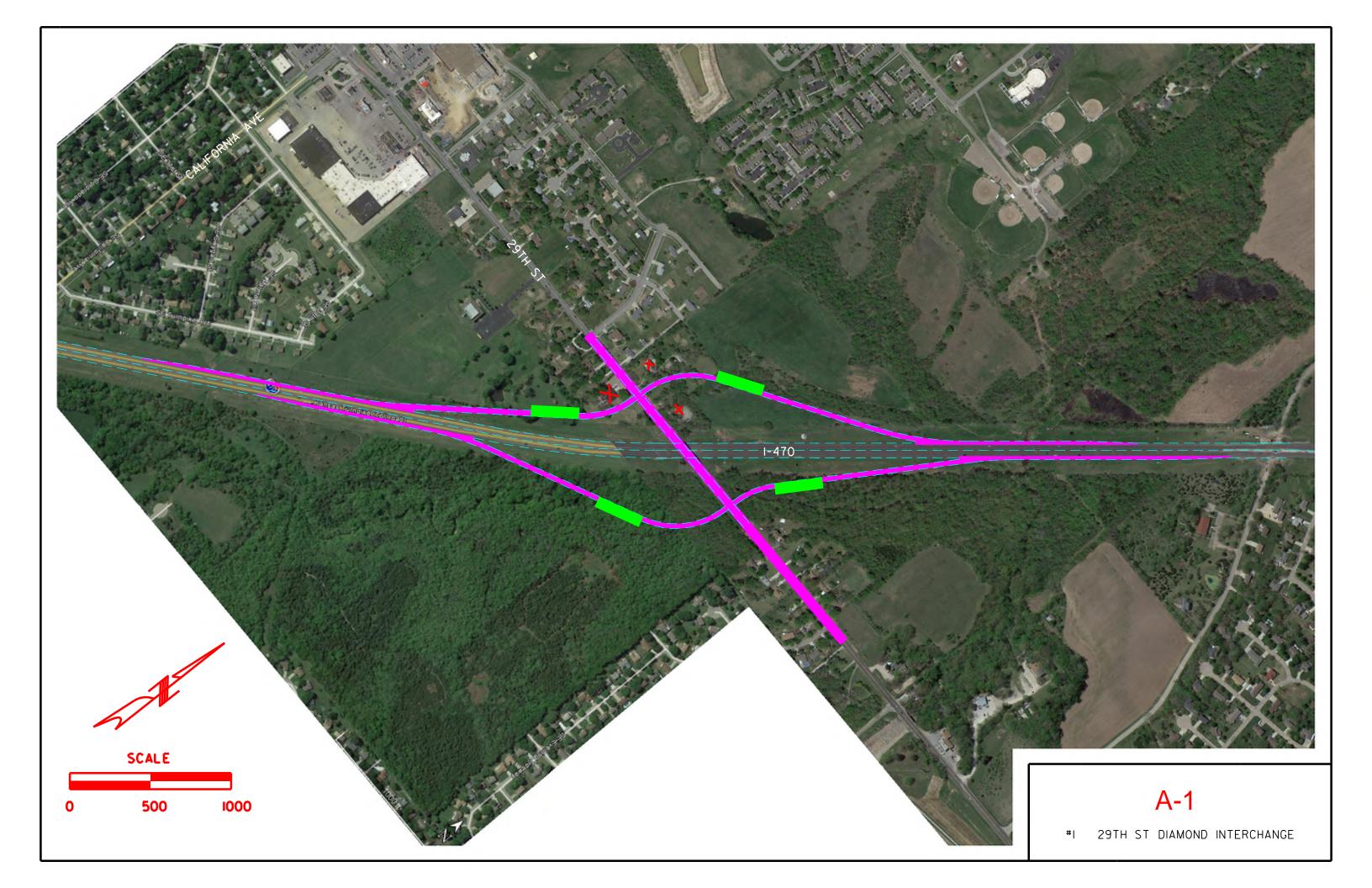
If there is further interest in pursuing these improvements, HNTB recommends a more detailed toll feasibility analysis to better evaluate the anticipated traffic, the willingness of users to pay for the use of the new interchange, and the impacts to KTA net revenue.

Disclaimer

For this analysis, HNTB used currently-accepted professional practices and procedures in the development of traffic and revenue estimates. However, it should be understood that differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of HNTB. HNTB is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to Kansas Turnpike Authority (KTA) and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to KTA with respect to the information and material contained in this report.

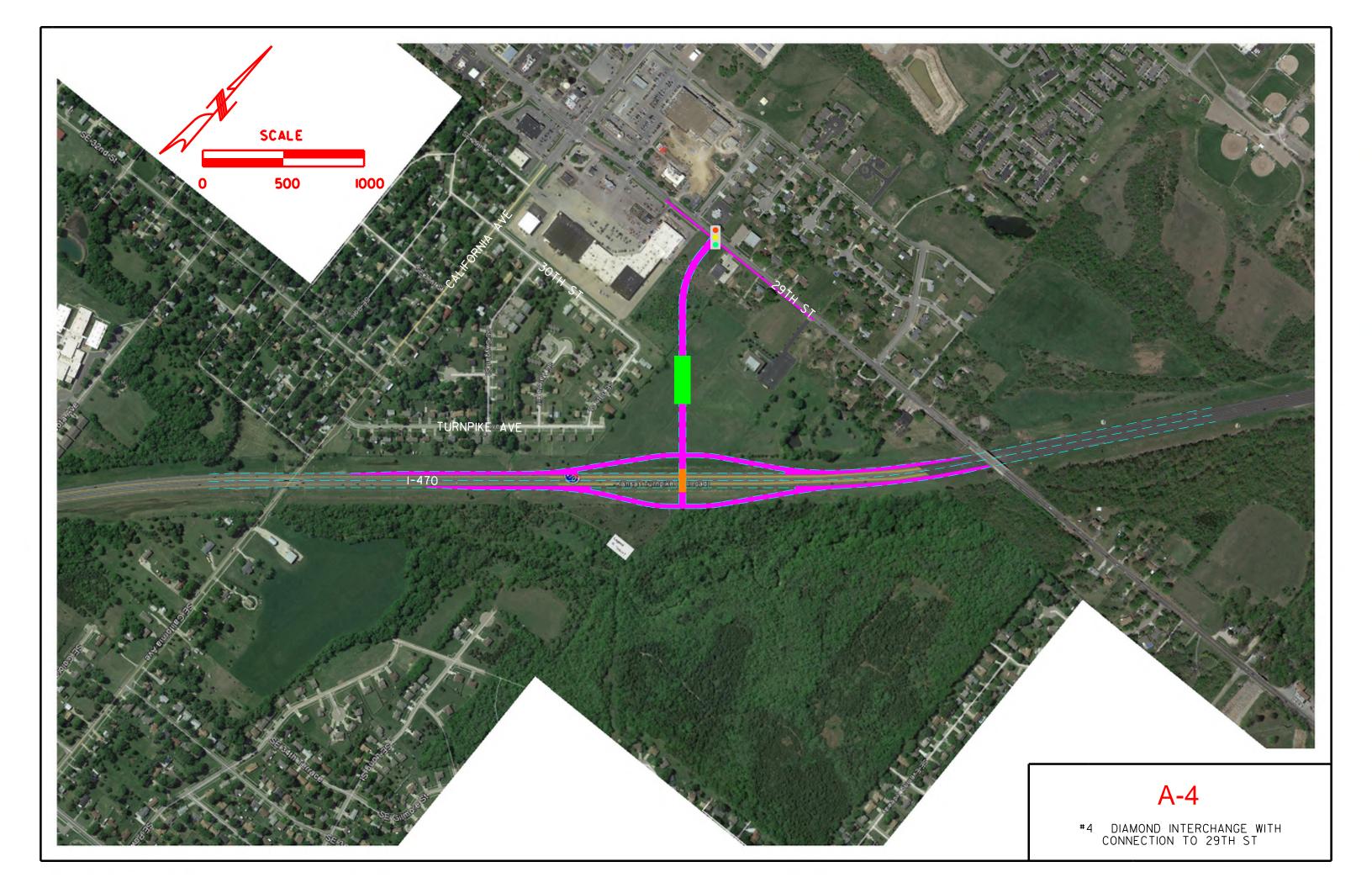
APPENDIX

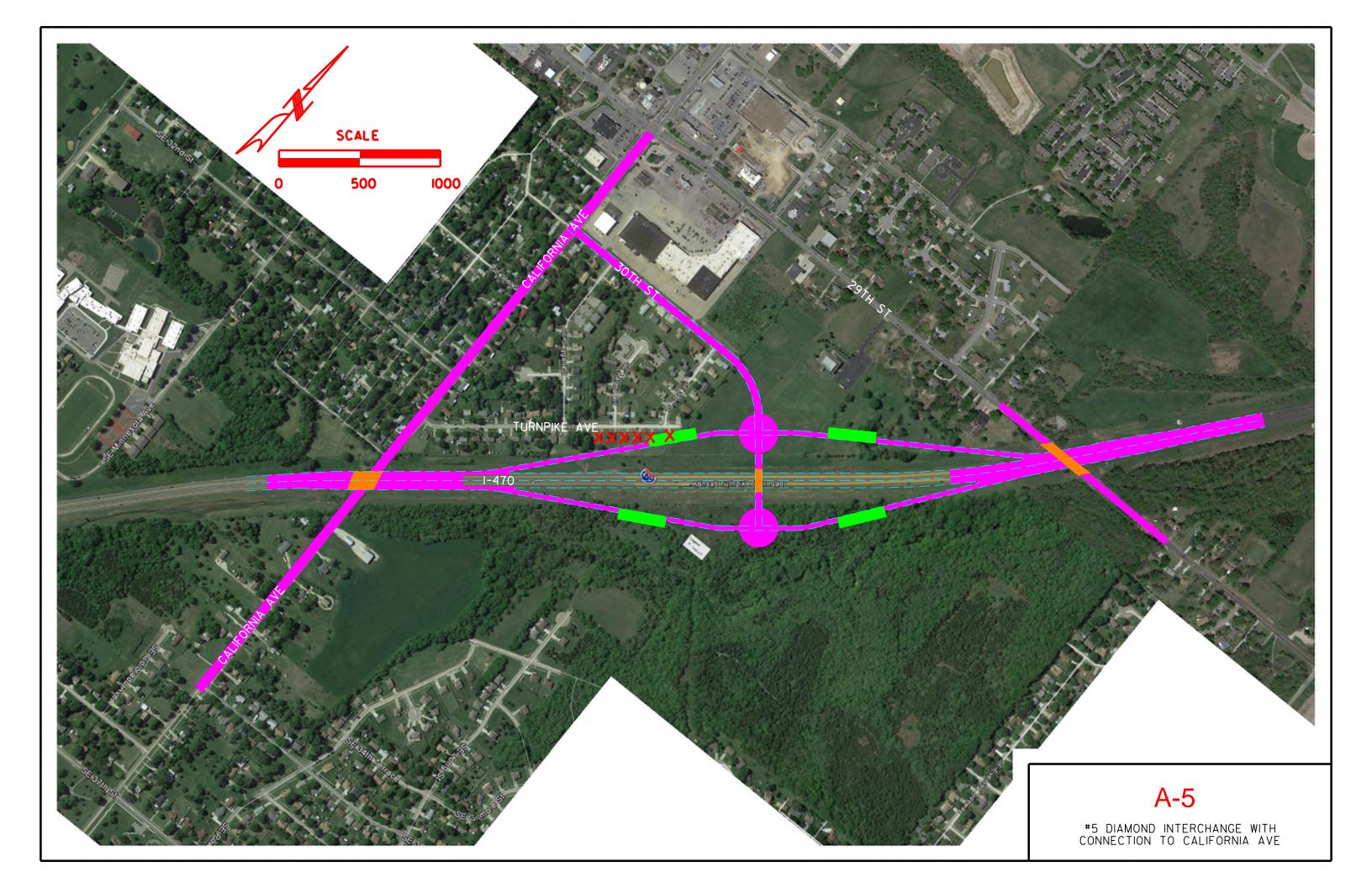
- A-1: Concept 1 29th St Diamond
- A-2: Concept 2 California Ave Diamond
- A-3: Concept 3 California Ave Folded Diamond
- A-4: Concept 4 Mid-Interchange connected to 29th St
- A-5: Concept 5 Mid-Interchange connected to California Ave
- A-6: Concept 4-Option 1 *The Preferred Concept*
- A-7: Concept 4-Option 2
- A-8: Program Cost Estimates
- A-9: Memorandum Gross Revenue Analysis
- A-10: Toll Schedule

















KTA-TOPEKA INTERCHANGE OVERALL PROGRAM COST

January 12, 2016

ITEM	Option 1	Option 2
CIVIL CONSTRUCTION	\$ 9,102,000	\$ 13,776,000
TOLL TECHNOLOGY	\$ 800,000	\$ 1,000,000
RIGHT-OF-WAY	\$ 840,000	\$ 830,000
UTILITY RELOCATIONS	\$ 50,000	\$ 50,000
PERMITS & MITIGATION	\$ 300,000	\$ 350,000
DESIGN ENGINEERING	\$ 910,000	\$ 1,378,000
CONSTRUCTION ENGINEERING & INSPECTION	\$ 728,000	\$ 1,102,000
SUBTOTAL	\$ 12,730,000	\$ 18,486,000
PROGRAM CONTINGENCY (25%)	\$ 3,180,000	\$ 4,630,000
PROGRAM TOTAL (2016 Dollars)	\$ 15,910,000	\$ 23,116,000

The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiation methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate of costs.

KTA - New Topeka Interchange Concept Study

Memorandum - Gross Revenue Analysis

Purpose

The purpose of this memorandum is to estimate the amount of gross revenue that would be generated by the opening of a new interchange at mile 180 on the Kansas Turnpike. The memorandum will estimate revenue for an approximate 30-year period, from 2015 through 2045.

Location

The proposed interchange lies between Exit 177 (S. Topeka) and Exits 182/183. The interchange would connect the Kansas Turnpike (I-470) directly to 29th Street. The proposed configuration of the interchange is illustrated in Figure 1.

Figure I – Configuration of Proposed Exit 180



Assumptions

The revenue analysis was built upon the following assumptions:

- The average daily volume at the proposed interchange in a toll-free environment is 10,000 vehicles per day (vpd). This is a 30-year projected volume for the year 2045.
- The imposition of tolls is expected to cause 40% of these vehicles to divert to local roadways. Therefore, the average daily volume of tolled trips in the year 2045 is 6,000 vpd.

¹ Exit 182 connects to K-4 and serves traffic oriented to and from the south. Exit 183 connects to I-70 and serves traffic oriented to and from the east. Collectively, these exits will be referred to as the "E. Topeka" interchange.

- It is assumed that traffic at the new interchange would grow by 1.5% per year. By applying this assumption to a volume of 6,000 vpd in 2045, we arrive at a 2015 volume of 3,839 vpd.
- All movements not associated with the new interchange were assumed to grow at 1.0% per year.
- The vehicles at the new interchange are assumed to be 60% electronic and 40% cash.
 - Electronic customers will roll through the toll plaza as they do today at electronic lanes at other plazas.
 - Cash customers will pay via Automatic Toll Payment Machines, or ATPMs. No attendants would be employed at this plaza.
- Video billing will <u>not</u> be considered as part of the analysis in this memorandum. The two primary reasons are as follows:
 - A video billing interchange at this location would not be consistent with the rest of the toll system. In order for video billing to work at this interchange, a video image at both the point of entry and the point of exit would be required in order to reconstruct the trip and assess the appropriate fare. Even if a video image were taken of a non K-Tag customer at Exit 180, it would be unable to be matched unless images were captured at all other points of entry or exit.
 - o It is very likely that video tolling would not be cost-effective. Recent analysis performed by HNTB for the Kansas Turnpike Authority suggests that video billing would likely cost between 65¢ and 90¢ per transaction. Meanwhile, HNTB also estimates that the average non K-Tag toll collected at Exit 180 would be in the range of 35¢ to 40¢. This means that, if video billing were deployed at Exit 180, the KTA would lose money on most fares collected from video customers.
- The traffic at Exit 180 would be comprised of 95% passenger cars (Class 2, under the current KTA classification system) and 5% commercial vehicles (i.e. Class 5 vehicles, primarily 5-axle tractor-trailers). These percentages equated to 5700 passenger cars and 300 commercial vehicles per day in 2045.
- Two scenarios were evaluated:
 - Scenario I assumed that 70% of the traffic at Exit 180 is new traffic either destined to or arriving from Exit 177 (S. Topeka) or Exits 182/3 (E. Topeka). The remaining vehicles represent traffic that is simply redistributed from either Exit 177 (20%) or Exits 182/183 (10%).
 - Scenario 2 assumed a greater proportion of redistributed trips as opposed to new trips. The assumed mix was 55% new traffic, 30% redistributed from Exit 177, and 15% redistributed from Exits 182/183.

Toll Rates

HNTB developed a set of toll rates for all possible movements associated with Exit 180. These rates were developed as follows:

Cash Toll Rates

First, HNTB developed the cash rates. They were based on the following assumptions:

- The cash rates to and from Exit 180 were the average of the rates associated with Exits 177 and Exits 182/3, with the average being rounded to the nearest nickel.
- The cash rate for trips between Exits 177 and 180, as well as the cash rate for trips between Exits 177 and 182/183, was set at 25¢ for Class 2 vehicles, and for 75¢ for Class 5 vehicles.

Table I summarizes the PC and CV cash rates assumed by HNTB for this analysis.

- A white cell indicates an existing rate (e.g. \$9.00 from the Southern Terminal to Exit 177).
- A yellow cell represents a proposed rate associated with Exit 180.
- A gray cell indicates that the designated origin-destination trip is not physically possible (e.g. from the Southern Terminal to Exit 183).

Table I - Assumed Cash Toll Rates

		Class	2 Cash -	- Destin	ation	Class 5	Cash –	Destinat	ion
		Topeka: I-470VV, US-75	Topeka: I-470W, US-75						
Originating Interchange	Exit#	177	180	182	183	177	180	182	183
Southern Terminal	4	9.00	9.00	9.00		26.25	26.65	27.00	
Wellington: US-160	19	8.00	8.15	8.25		23.25	23.75	24.25	
Mulvane: K-53 (A)	32	7.25	7.50	7.75		21.50	21.75	22.00	
Mulvane: K-53 (B)	33	7.25	7.50	7.75		21.50	21.75	22.00	
Haysville-Derby: 71st St.	39	7.00	7.15	7.25		20.75	21.00	21.25	
Wichita: I-135	42	6.75	6.90	7.00		20.25	20.65	21.00	
Wichita: K-15	45	6.75	6.90	7.00		20.00	20.25	20.50	
Wichita: US-54/400	50	6.25	6.50	6.75		19.75	20.00	20.25	
Wichita: K-96	53	6.25	6.40	6.50		19.75	19.90	20.00	
Andover: 21st St.	57	6.00	6.15	6.25		19.50	19.75	20.00	
El Dorado: US-254	71	5.50	5.65	5.75		18.75	19.00	19.25	
El Dorado: US-77	76	5.00	5.25	5.50		17.50	18.00	18.50	
Cassoday: K-177	92	4.50	4.50	4.50		15.00	15.25	15.50	
Emporia: I-35N	127	2.75	2.75	2.75		8.75	9.00	9.25	
Council Grove, Osage City: US-56	147	1.75	1.90	2.00		5.00	5.25	5.50	
Topeka: I-470W, US-75	177		0.25	0.35			0.75	1.00	
Topeka: 29th & California	180	0.25		0.25		0.75		0.75	
Topeka: K-4 / I-70	182	0.35	0.25			1.00	0.75		
Topeka: I-70	183								
Lecompton, Lawrence: K-10	197	1.15	1.00		0.85	3.50	3.15		2.75
Lawrence: US-59S, Iowa St.	202	1.40	1.25		1.10	4.00	3.75		3.50
Lawrence: US-59, US-40	204	1.55	1.40		1.25	4.25	4.00		3.75
Tonganoxie-Eudora: 222nd St.	212	1.95	1.80		1.65	4.75	4.50		4.25
Mystery	224	3.00	2.90		2.75	7.00	6.90		6.75
Eastern Terminal	236	3.00	2.90		2.75	7.00	6.90		6.75

ETC Toll Rates

The ETC rates associated with Exit 180 were assumed to be directly related to the cash rates.

- For Class 2 vehicles, the ETC rates were assumed to be 15% lower than the cash rates, consistent with the current fare structure.
- For Class 5 vehicles, the ETC rates were assumed to be 5% lower than the cash rates. Again, this is consistent with the current fare structure.

The PC and CV rates for electronic customers are summarized in

Table 2. Table 2 – Assumed ETC Toll Rates

		Class	2 Cash -	- Destin	ation	Class 5	Cash –	Destinat	ion
		Topeka: I-470VV, US-75	Topeka: I-470VV, US-75	Topeka: I-470VV, US-75	Topeka: I-470VV, US-75	Topeka: I-470W, US-75	Topeka: I-470W, US-75	Topeka: I-470W, US-75	Topeka: I-470W, US-75
Originating Interchange	Exit#	177	180	182	183	177	180	182	183
Southern Terminal	4	7.65	7.65	7.65		24.74	25.32	25.65	
Wellington: US-160	19	6.80	6.93	7.01		22.09	22.56	23.04	
Mulvane: K-53 (A)	32	6.16	6.38	6.59		20.43	20.66	20.90	
Mulvane: K-53 (B)	33	6.16	6.38	6.59		20.43	20.66	20.90	
Haysville-Derby: 71st St.	39	5.95	6.08	6.16		19.71	19.95	20.19	
Wichita: I-135	42	5.74	5.87	5.95		19.24	19.62	19.95	
Wichita: K-15	45	5.74	5.87	5.95		19.00	19.24	19.48	
Wichita: US-54/400	50	5.31	5.53	5.74		18.76	19.00	19.24	
Wichita: K-96	53	5.31	5.44	5.53		18.76	18.91	19.00	
Andover: 21st St.	57	5.10	5.23	5.31		18.53	18.76	19.00	
El Dorado: US-254	71	4.68	4.80	4.89		17.81	18.05	18.29	
El Dorado: US-77	76	4.25	4.46	4.68		16.63	17.10	17.58	
Cassoday: K-177	92	3.83	3.83	3.83		14.25	14.49	14.73	
Emporia: I-35N	127	2.34	2.34	2.34		8.31	8.55	8.79	
Council Grove, Osage City: US-56	147	1.49	1.62	1.70		4.75	4.99	5.23	
Topeka: I-470W, US-75	177		0.21	0.30			0.71	0.95	
Topeka: 29th & California	180	0.21		0.21		0.71		0.71	
Topeka: K-4 / I-70	182	0.30	0.21			0.95	0.71		
Topeka: I-70	183								
Lecompton, Lawrence: K-10	197	0.98	0.85		0.72	3.33	2.99		2.61
Lawrence: US-59S, Iowa St.	202	1.19	1.06		0.94	3.80	3.56		3.33
Lawrence: US-59, US-40	204	1.32	1.19		1.06	4.04	3.80		3.56
Tonganoxie-Eudora: 222nd St.	212	1.66	1.53		1.40	4.51	4.28		4.04
Mystery	224	2.55	2.47		2.34	6.65	6.56		6.41
Eastern Terminal	236	2.55	2.47		2.34	6.65	6.56		6.41

Gross Revenue Methodology

HNTB employed the following methodology in estimating the gross revenue impact of adding the proposed interchange at mile 180:

- Step I. We calculated the existing gross revenue based on current rates and travel patterns.
- **Step 2**. We created a "new" matrix of origin-destination movements based on the addition of Exit 180.
 - All new trips were assumed to occur between Exit 180 and either Exit 177 or Exit 182.
 - O All <u>redistributed</u> trips (e.g. trips that shifted from either Exit 177 or Exits 182/183 to Exit 180) were assumed to follow the same general pattern as existing trips. For example, a review of origin-destination trends indicates that most westbound trips exiting the Turnpike at Exit 183 originate at the Eastern Terminal. Therefore, we assumed that a majority of the westbound exiting vehicles shifting from Exit 183 to Exit 180 also originated from the Eastern Terminal.
 - The implication of these two assumptions is that no **new** trips exiting at Exit 180 originated from outside the study area (i.e. south of Exit 177 or east of Exit 180). Any vehicle originating outside the study area and exiting at Exit 180 was assumed to have shifted from one of the existing interchanges, in order to take advantage of more convenient access.
- **Step 3.** We calculated the gross revenue resulting from the addition of the new interchange and its attendant new and redistributed traffic.
- **Step 4**. We subtracted revenue calculated in Step 3 from the revenue calculated in Step 1. This represented the change in gross revenue.

Results

Table 3 summarizes the results of HNTB's gross revenue analysis. All numbers represent *changes* in gross revenue.

Table 3 - Projected Change in Gross Revenue

	20	15			20	45		
	Sc	. I	Sc	. 2	Sc. I			. 2
Redistributed Trips	\$	(3,821)	\$	790	\$	2,153	\$	9,360
New Trips	\$	244,322	\$	189,715	\$	382,266	\$	296,911
Total	\$	240,501	\$	190,505	\$	384,419	\$	306,271

A review of Table 3 indicates the following:

- The new interchange generates a very modest level of new revenue. It amounts to less than a quarter million in the early years, and it only escalates to the range of \$300-\$400k by 2045.
- The revenue associated with the redistributed trips is negligible. This is to be expected.
 - o For some drivers, shifting to Exit 180 will create a shorter trip. For example, some drivers that currently drive from Exit 182 to the southern terminal may find it more

- convenient to access the Turnpike via Exit 180. The new trip costs less than the existing trip, resulting in slightly lower revenue.
- O However, for other drivers, shifting to Exit 180 will create a longer trip. For example, some northbound drivers that currently leave the Turnpike at Exit 177 may find that using Exit 180 will place them closer to their final destination. This creates a slightly longer trip at a slightly higher toll rate, resulting in a modest increase in revenue.
- The net effect is that the KTA will gain little to no gross revenue from redistributed trips.
- Virtually all of the increase in gross revenue is from new trips. And since Scenario I assumes a higher proportion of new trips, Scenario I also yields higher levels of gross revenue.

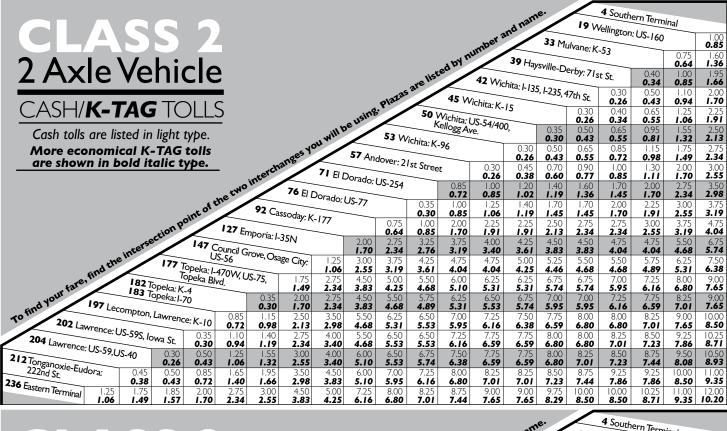
Table 4 provides a high-level estimate of gross revenue generated per new trip.

Table 4 - Gross Revenue per New Trip

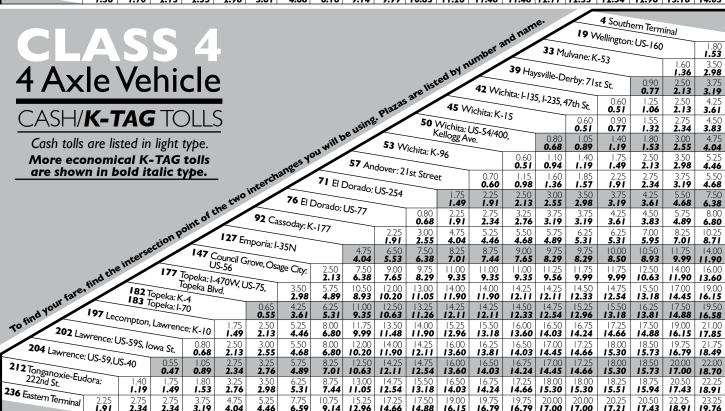
	2015		2045	
	Sc. I	Sc. 2	Sc. I	Sc. 2
Additional Gross Revenue	\$ 240,501	\$ 190,505	\$ 384,419	\$ 306,271
New Transactions	971,444	757,007	1,514,397	1,179,214
Additional Gross Revenue per New Trip	\$0.248	\$0.252	\$0.254	\$0.260

As Table 4 illustrates, the new interchange is only expected to generate about 25¢ per new trip. Given this low level of revenue per trip, it makes sense for the Authority to collect tolls via the most cost-effective alternative possible. As mentioned earlier, ATPMs are likely the most efficient way to collect non-electronic tolls. ATPMs (at approximately 28¢ per transaction) are far more cost effective than attended fare collection (at 75-80¢ per transaction) or video tolling (at 65-90¢ per transaction).

TTAG TOLL SCHEDULE



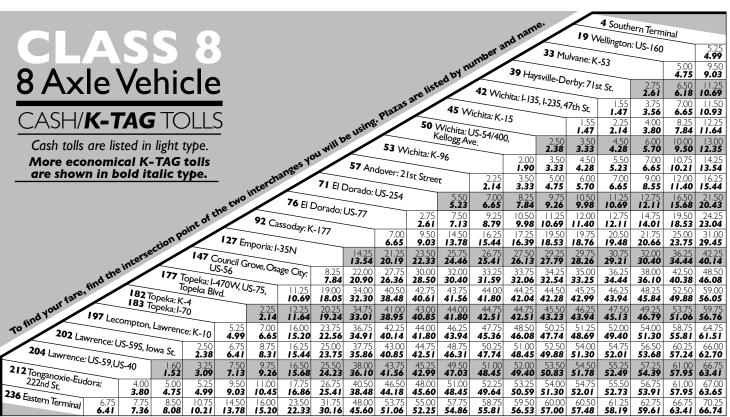
1.06	.49 1.57	1.70	2.34	2.55	3.83	4.25	6.16	6.80	7.01	7.44	7.65	7.65	8.29	8.50	8.50	8.71	9.33	10.20
CASH/K-TA Cash tolls are listed More economical are shown in bold 197 Lecomp 202 Lawrence: US-5:	SS	3								, a	umber 2	and nam	33 M	ulvane: K	-53	ern Term D: US-160	inal	1.50 1.28
3 Axle V	ehi	cle)						re list	ed by "	42 Wid	39 Hay	sville-D	orb	st St.	0.70 0.60	1.02 1.60 1.36	2.50 2.13 2.75 2.34
CASH/ K-TA	G TO	2110	5				ing	Plazas	50	45 W	ichita: K-	hita: I-13:	5, I-235, A	0.45	0.50 0.43 0.65	0.85 0.72 1.05	1.80 1.53 2.00	3.00 2.55 3.50
Cash tolls are listed	d in light	type.	_			will b	eusi	53 W	/ichita: K	vichita: (kellogg Av	JS-54/40 /e.	0,	0.55 0.47	0.38 0.75 0.64	0.55 1.05 0.89	0.89 1.40 1.19	2.25 1.91	3.75 3.19
More economical are shown in bold	K-TAG d italic t	tolls ype.		creh	anges Y	71 51	57 An	dover: 2	Ist Stree	et	0.50	0.45 0.38 0.80	0.75 0.64	1.05 0.89 1.25 1.06	1.20 1.02 1.60 1.36	1.60 1.36 1.95 1.66	2.50 2.13 3.00 2.55	3.75 3.19 4.25 3.61
		يو ر	ne two	inte	76 EI [Dorado:	Jorado: US-77	US-254	٥٢٢	1.20 1.02	1.60 1.36	1.80 1.53	2.00 1.70	2.00 1.70	2.50 2.13	2.75 2.34	3.75 3.19	5.00 4.25
	on P	oint of s	127 F	92 Ca	ssoday: K	-177		1.60	0.55 0.47 2.00	1.36 3.00	1.66 3.50	2.25 1.91 3.75	2.50 2.13 4.25	2.50 2.13 4.50 3.83	2.75 2.34 4.50 3.83	3.00 2.55 4.75 4.04	4.25 3.61 5.75 4.89	5.50 4.68 7.00 5.95
e int	ersection	147 C	ouncil C S-56	irove, Os	35N Bge Cip.	1.45	3.00 2.55	4.50 3.83	5.00 4.25	6.00 5.10	6.25 5.31	6.50 5.53	6.50 5.53	7.00 5.95 8.25	7.00 5.95 8.25	7.25 6.16 8.50	8.25 7.01	10.00 8.50
fare, find the	82 Topeka: V	opeka: J- opeka Bh	470W, L vd.	JS-75,	2.50 2.13	1.40 4.25 3.61	7.25 6.16	5.31 8.50 7.23	5.53 9.00 7.65	6.59 10.00	6.80 10.00	6.80 10.25	6.80 10.25 8.71	7.01 10.25 8.71	7.01 10.50 8.93	7.23 11.00 9.35	8.50 12.00 10.20	9.35 13.25 11.26
197 Lecomp	oton, Lawren	70	1.20	0.45 0.38	2.75 2.34	4.50 3.83	7.75 6.59	8.75 7.44	9.00 7.65	10.00 8.50	10.25 8.71	10.25 8.71	10.50 8.93	10.75 9.14	10.75 9.14	11.25 9.56 12.50	12.50 10.63 13.25	13.50 11.48
202 Lawrence: US-59, US-40	9S, Iowa St.	0.55 0.47	1.02 1.50 1.28	2.00 1.70	3.19 3.75 3.19	4.68 5.50 4.68	6.80 8.50 7.23	7.65 9.75 8.29	8.29 10.00 8.50	9.14 11.00 9.35	9.35 11.25 9.56	9.35 11.25 9.56	9.56 12.00 10.20	9.99 12.00 10.20	10.20 12.50 10.63	10.63 12.75 10.84	11.26 13.50 11.48	12.96 15.25 12.96
212 Tonganoxie-Eudora:	0.35 0.30 1.85 1.20	0.65 0.55 1.30	1.80 1.53 2.25	2.25 1.91 2.50	4.25 3.61 4.50	5.75 4.89 6.00	8.50 7.23 9.00	10.00 8.50	10.25 8.71	11.00 9.35	11.25 9.56	11.75 9.99	12.00 1 0.20	12.50 10.63	12.75 10.84	13.00 11.05	14.00 11.90	15.50 13.18
236 Eastern Terminal 1.60 2	.72 I.02 .00 2.50 .70 2.13	3.00 2.55	3.50 2.98	2.13 4.25 3.61	3.83 5.50 4.68	5.10 7.25 6.16	7.65 10.75 9.14	8.71 11.75 9.99	9.14 12.50 10.63	9.78 13.25 11.26	9.99 13.50 11.48	10.20 13.50 11.48	1 0.63 14.25 1 2.11	10.84 14.50 12.33	11.05 14.75 12.54	11.26 15.25 12.96	12.11 15.50 13.18	13.39 16.50 14.03



1.91	2.34	2.34	3.19	4.04	4.46	6.59	9.14	12.96	14.66	14.88	16.15	16.79	16.79	17.00	17.00	17.21	17.43	18.91	19.76
CASH/K-1 Cash tolls are lis More economic are shown in be 197 Lect 202 Lawrence: IS Fort	S	S	5								ed by m	umber a	nd nam	33 Mc	ulvane: K	4 South	ern Term : US-160	2.25 2.14 3.00	2.50 2.38 4.00 3.80 4.75
CASH/K-1	ΓΔ	TC		•				ي د	Plazas	are lis	45 W	42 Wic ichita: K-	hita: I-13:	5, I-235, 4	17th St. 0.70	0.70 0.67 1.05	1.24 1.60 1.52	3.25 3.09 3.75	4.51 5.00 4.75 5.25
Cash tolls are lis	sted in	light 1	type.	-			u will b	eusine	53 W	ichita: K	Vichita: L ellogg Av	JS-54/40 /e.	0,	1.15 1.09	0.67 1.50 1.43 2.00	2.00 1.90 2.50	2.75 2.61 3.50	3.56 4.25 4.04 4.75	4.99 5.50 5.23 6.75
are shown in b	cal K old it	alic t	tolis ype.		nterch	anges Y	71 EI [57 And	dover: 2	st Stree	t	1.05 1.00	0.86 1.50 1.43	2.25 2.14	2.75 2.61	2.38 3.00 2.85	3.33 4.00 3.80	4.51 5.25 4.99	7.25 6.89
			int of t	ne two	92 Ca	76 El [Dorado:	US-77	20/2/34	1.25 1.19	2.50 2.38 3.50 3.33	3.25 3.09 4.25 4.04	3.50 3.33 4.75 4.51	4.28 5.00 4.75	4.75 4.51 5.50 5.23	4.75 4.51 5.75 5.46	5.50 5.23 6.50 6.18		9.75 9.26 11.00 10.45
	nterse	ction P	147 0	127 En	poria: I-	35N		6.50 6.18	3.25 3.09 9.75 9.26	4.50 4.28 10.50 9.98	6.50 6.18 12.00	7.25 6.89 12.50 11.88	8.00 7.60 12.75	8.75 8.31 12.75 12.11	8.75 8.31 13.50 12.83	9.25 8.79 14.00 13.30	9.75 9.26 14.50 13.78	11.00 10.45 16.25 15.44	19.00
fare, find the	1827	177 T	Opeka: J-	S-56 470W, U. 'd.	S-75,	8e City: 5.00 4.75	3.75 3.56 8.75 8.31	10.00 9.50 15.00	12.25 11.64 17.50	13.75 13.06 18.75	14.75 14.01 19.50	15.00 14.25 19.75 18.76	15.25 14.49 19.75 18.76	15.50 14.73 20.00	15.75 14.96 20.25 19.24	16.25 15.44 20.75 19.71	17.00 16.15 21.50 20.43	19.00 18.05 23.25 22.09	26.25
To find Your 197 Lea	compton,	opeka: 1-7 Lawrenc	e: K-10	2.75	1.00 0.95 3.50	5.50 5.23 7.25	9.25 8.79 10.75	15.50 14.73 16.50	18.50 17.58 18.75	19.25 18.29 19.75	20.00 19.00 21.00	20.00 19.00 21.50	20.25 19.24 21.75	20.50 19.48 22.75	21.00 19.95 23.00 21.85	21.25 20.19 23.25 22.09	22.00 20.90 24.25 23.04	24.25 23.04 26.50 25.18	27.00 25.65 29.00
202 Lawrence: US-59,L	JS-59S, Ic JS-40	0.75	1.45	3.75	4.25	7.50	11.50	17.00	19.75	20.25	21.75	22.50	22.75	23.75	23.75 22.56 24.00	24.25 23.04 24.50	25.25 23.99 25.50	26.50 25.18 26.75	29.25 27.79 29.50
222nd St. 236 Eastern Terminal 3.00	1.90 1.81 3.50	2.25 2.14 3.75	2.25 2.14 4.75	3.56 4.25 4.04 6.75	4.04 4.75 4.51 7.00	7.13 8.00 7.60 10.50	10.93 12.25 11.64 14.50	16.15 18.00 17.10 21.25	20.50 19.48 23.50	21.25 20.19 24.50	20.66 22.50 21.38 25.75	21.38 23.00 21.85 26.25	21.61 23.25 22.09 26.75	24.00 22.80 27.00	24.25 23.04 27.00	23.28 25.00 23.75 27.25	24.23 25.50 24.23 28.00	27.25 27.89 29.50	30.00 28.50 31.50
2.85	3.33	3.56	4.5 I	6.41	6.65	9.98	13.78	20.19	22.33	23.28	24.46	24.94	25.41	25.65	25.65	25.89	26.60	28.03	29.93

CASH/K-TAG Cash tolls are listed in lig More economical K-TA are shown in bold itali 182 Topes 183 Topes 197 Lecompton, Law 202 Lawrence: US-59S, lowa											nam	e.	19 1	4 South	nern Tern	ninal	
	6									ner 2	ind .	33 M		, clillost Or	n: US-160		3.50 3.33
									יין אי	umb	30 11		^{uıv} ane: K	-53		3.25	5.25
6 Axle Veh	icle	7						,ist	ed bi	12:	Hay	vsville-D	erby: 71:	st St	1.75	3.09 4.00	4.99 6.75
O / UXIO VOI		_					عمر	are in		42 Wid	:hita: I-13	5, 1-235, 4	47+h C	0.90	1.66 2.00	3.80 4.25	6.41 7.00
CASH/K-TAG		ς				-6	Plaze		45 ⋈	ichita: K-	-15		0.90	0.86	1.90 2.25	4.04 4.75	6.65 7.25
C/ (3) 1/ K = 1 A G		_			. •	e using		50 \ k	Vichita: (JS-54/40	0	1.70	0.86	1.28	2.14	4.51	6.89
Cash tolls are listed in lig	ht type.				ou will !	/	53 M	ichita: K	-068 AI	ve.	-,	1.52	2.00 1.90	2.75 2.61	3.75 3.56	5.50 5.23	7.75 7.36
More economical K-TA	G tolls			nges Y		57 An	dover: 2		-70		1.20 1.14	2.00 1.90	2.75 2.61	3.50 3.33	4.50 4.28	6.50 6.18	8.50 8.08
are snown in bold itali	с гуре.	-	terch	31.1	71 EI	Doma		Ist Stree	t	1.40 1.33	2.00 1.90	3.00 2.85	3.75 3.56	4.25 4.04	5.25 4.99	7.25 6.89	10.00 9.50
		two	m	76 FI	Da	-01400:	US-254		3.50	4.25	5.00	5.75	6.25 5.94	6.75 6.41	7.50 7.13	10.00 9.50	12.75 12.11
	, of *	the	92 Co		Dorado:	US-77		1.60	4.75	5.75	6.50	6.75	7.00 6.65	7.50 7.13	8.75	11.25	14.75
	n Point	127.5		ssoday: k	(-177		4.50	5.75	4.51 8.75	9.75	10.25	11.25	11.50	12.00	8.31	10.69	1 4.01
"Sectif	147	- 27 Em	iporia: J-	35N	_	8.50	4.28	14.00	8.31 15.50	9.26	9.74	17.50	10.93	11.40	1 2.11	14.25 21.50	17.58 25.50
he inter		- ^{ouncil} Gr JS-56	°ove, Osa	ge City	5.00	8.08	17.25	13.30	14.73	20.25	20.50	16.63	16.86 21.00	17.10 21.50	18.05 22.75	20.43 25.75	24.23 29.25
find tr.	Topeka: I-	470W, U	S-75	(7E	4.75	13.30	16.39	17.81	19.00	19.24	19.48	19.71	19.95 27.50	20.43 28.00	21.61 29.00	24.46 32.00	27.79 35.50
ir fare, 182 Tope	(a: K-4	vd.	J-73,	6.41	10.93	19.24	22.80	23.25	24.70	24.94	24.94	25.65	26.13	26.60	27.55	30.40	33.73
and You 197 Lecompton	ca:1-70		1.30 1.24	6.89	11.40	20.75 1 9.71	24.50 23.28	25.75 24.46	26.50 25.18	26.75 25.41	27.00 25.65	27.25 25.89	27.75 26.36	28.25 26.84	29.50 28.03	32.25 30.64	36.25 34.44
202 Lawrence Lie	rence: K-10	3.25 3.09	4.25 4.04	9.75 9.26	14.50 1 3.78	22.00 20.90	25.50 24.23	26.50 25.18	27.75 26.36	28.50 27.08	29.25 27.79	30.00 28.50	31.00 29.45	31.50 29.93	32.50 30.88	35.25 33.49	38.50 36.58
202 Lawrence: US-59S, lowa 204 Lawrence: US-59, US-40	St. 1.55	4.25 4.04	5.25 4.99	10.00 9.50	14.75 14.01	22.50 21.38	26.00 24.70	27.00 25.65	29.00 27.55	29.50 28.03	30.00 28.50	31.25 29.69	31.75 30.16	32.25 30.64	33.75 32.06	35.50 33.73	39.50 37.53
	.00 1.95 .95 1.85	4.50 4.28	5.50 5.23	10.00 9.50	15.50 14.73	22.75 21.61	26.25 24.94	27.00 25.65	29.25 27.79	30.00 28.50	30.75 29.21	31.50 29.93	32.00 30.40	32.75 31.11	33.75 32.06	36.50 34.68	39.50 37.53
222nd St. 2.75	3.25	5.50	6.50	10.75	16.25	24.00	27.75 26.36	28.75	30.75	31.50	32.00	32.50	33.00	33.50	34.75	37.25	40.75
Eastern Terminal 4.00 4.50 5	.09 3.09 6.75 6.41	5.23 8.50 8.08	6.18 9.50 9.03	10.21 14.00 13.30	1 5.44 18.75 1 7.8 1	22.80 28.25 26.84	31.75 30.16	32.75 31.11	29.21 34.25 32.54	29.93 35.00 33.25	30.40 35.25 33.49	30.88 35.50	31.35 35.75 33.96	31.83 37.75 35.86	33.01 38.50 36.58	35.39 40.75 38.71	38.71 43.00 40.85

CASH/K-7 Cash tolls are lis More economic are shown in b 197 Leco 202 Lawrence: Us so use	S	S	5	7								ar ?	and nam	le.	19 W	"CIIINgtor	ern Term n: US-160	iinal	4.50
7 Aylo	\/o	hi	clo								ed by n	umber	39 Ha	33 M Vsville-D	ulvane: K	-52		4.25 4.04	4.50 4.28 7.50 7.13
	<u> </u>			- -					3\2I25	are list	45 W	42 Wid	:hita: I-13	5, 1-235,	47th St.	1.30	2.25 2.14 3.00 2.85	5.25 4.99 6.25 5.94	9.75 9.26 10.00 9.50
CASH/K-T	AG	light :)LL:	2			·illi	oe using	521	50 \	Vichita: (Kellogg A	JS-54/40 /e.	0,	2.25	1.30 1.24 3.00	2.00 1.90 3.75	3.50 3.33 4.75	7.00 6.65 8.25	10.50 9.98 11.00
More economic are shown in b	cal K. old it	TAG	tolls ype.		داد.	anges Y	ou w.	57 An	idover: 2	'ichita: K Ist Stree	-96	2.00	1.70 1.62	3.00 2.85	3.75 3.56 5.00	3.56 4.75 4.51 5.75	4.51 6.00 5.70 7.50	9.25 8.79	10.45 11.75 11.16
				ne two	interci	76 EI I	71 EI	Dorado:	US-254		4.75 4.51	6.00 5.70	2.85 6.75 6.41	4.04 8.00 7.60	4.75 9.00 8.55	5.46 9.75 9.26	7.13 10.75 10.21	9.74 13.75 13.06	12.83 17.75 16.86
		ion P	oint of f	127 F	92 Ca	ssoday: K	(-177		6.00	2.25 2.14 8.25 7.84	6.25 5.94 12.00	8.00 7.60 13.75	9.00 8.55 14.75	9.50 9.03 16.00	10.25 9.74 16.25 15.44	11.00 10.45 17.00 16.15	12.25 11.64 18.00 17.10	16.25 15.44 20.75 19.71	20.50 19.48 26.00 24.70
"ne	interse	1777	147	ouncil G S-56	riporia: I. Frove, Osa	35N age City:	7.00	12.50 11.88 19.50	18.50 17.58 24.75	20.25 19.24 26.50	22.50 21.38 27.50	23.75 22.56 28.00	24.25 23.04 28.25	24.50 23.28 28.50	25.25 23.99 29.50	25.75 24.46 30.50	26.75 25.41 32.00	30.50 28.98 36.00	35.50 33.73 40.75
ur fare, find a	182 T	Opeka: K	Opeka: I- Opeka BI -4	470W, L vd.	/S-75,	9.50 9.03	15.25 14.49	28.50 27.08	34.00 32.30	25.18 35.75 33.96	37.00 35.15	26.60 37.00 35.15	26.84 37.25 35.39	37.75 35.86	38.25 36.34	28.98 38.75 36.81	30.40 40.50 38.48	34.20 44.25 42.04	38.71 49.50 47.03
To find You 197 Lect	ompton,	Lawrence	e: K-10	4.75 4.5 1	6.25 5.94	9.98 13.50 12.83	16.75 15.91 20.00 19.00	29.25 27.79 31.00 29.45	34.50 32.78 35.50 33.73	36.25 34.44 37.00 35.15	37.25 35.39 38.75 36.81	35.63 40.00 38.00	37.75 35.86 40.75 38.71	36.10 42.25 40.14	38.75 36.81 43.00 40.85	39.75 37.76 43.75 41.56	41.50 39.43 45.50 43.23	45.25 42.99 49.25 46.79	50.50 47.98 54.50 51.78
202 Lawrence: US-59,U	JS-59S, Ic S-40	1.35	2.75	6.25	8.00	13.75	21.50	32.00	36.75	38.00	41.50	43.00	43.75	45.00	45.75	45.75 43.46 46.75	47.50 45.13 48.50	50.50 47.98 51.75	55.50 52.73 56.25
222nd St. 236 Eastern Terminal 5.50	3.50 3.33 6.75	4.50 4.28 7.25	2.61 4.50 4.28 8.50	8.00 7.60	9.25 8.79 13.50	13.06 15.25 14.49 19.75	20.43 22.00 20.90 27.25	30.40 34.00 32.30 40.75	34.91 38.75 36.81 45.25	36.10 40.25 38.24 46.75	39.43 42.75 40.61 49.00	40.85 43.75 41.56 49.75	41.56 44.25 42.04 50.25	42.75 45.50 43.23 51.00	43.46 46.00 43.70 51.25	44.41 46.75 44.41 51.75	46.08 48.50 46.08 53.25	49.16 51.75 49.16 56.50	53.44 56.50 53.68 59.75
5.23	6.41	6.89	8.08	11.64	12.83	18.76	25.89	38.71	42.99	44.41	46.55	47.26	47.74	48.45	48.69	49.16	50.59	53.68	56.76



CASH/K-TAG Cash tolls are listed in More economical K- are shown in bold it. 182 To find Your fare, find the interest list in the shown in bold it. 202 Lawrence: US-59S, lo	S	9									imber a	nd nam	e. 33 Mi	JIvane: K	-53	ern Term : US-160		5.50 5.23 10.25
9 Axle Ve	hic	:le	•					, 3 1 ,25	are list	ed by m	42 Wic	39 Hay hita: I-135	sville-D	erb z.	it St.	3.00 2.85 4.00 3.80	5.25 4.99 7.00 6.65 8.00 7.60	10.25 9.74 12.00 11.40 12.75 12.11
CASH/K-TAG Cash tolls are listed in	light ty	/pe.	2		۲۰	ou will b	Je using	53 W	50 V K Vichita: K	Vichita: U ellogg Av	JS-54/400 re.	15 0, 2.25	3.00 2.85 4.00	1.60 1.52 3.75 3.56 5.00	2.75 2.61 4.75 4.51 6.25	4.50 4.28 6.25 5.94 8.00	9.25 8.79 10.75 10.21 11.75	13.50 12.83 14.50 13.78 15.75
are shown in bold it	alic ty	pe.	ne two i	nterch	76 EI	71 El l	57 An Dorado: US-77	dover: 2 US-254	Ist Stree	6.25 5.94	2.75 2.61 7.75 7.36	2.14 4.00 3.80 9.00 8.55	5.50 5.23 10.50 9.98	4.75 6.50 6.18 11.50 10.93	7.75 7.36 12.00 11.40	7.60 9.75 9.26 14.25 13.54	11.16 13.75 13.06 17.75 16.86 21.25	14.96 17.50 16.63 23.25 22.09 26.75
-aterse	ction poir	nt of	127 En	92 Ca	ssoday: K 35N	-177	15.50 14.73	8.00 7.60 23.50 22.33	2.85 10.50 9.98 25.75 24.46	8.08 16.00 15.20 28.25 26.84	9.74 17.50 16.63 29.75 28.26	10.93 19.25 18.29 31.00 29.45	11.64 21.00 19.95 32.00 30.40	13.23 12.59 20.50 19.48 32.75 31.11	13.78 22.50 21.38 33.50 31.83	23.75 22.56 35.00 33.25	27.25 27.25 25.89 39.75 37.76	25.41 33.75 32.06 46.25 43.94
laz m	177 Top Top Ppeka: K-4 Ppeka: I-70	Deka: I-4 Deka Bly	5-56 170W, U. d.	S-75,	ge City: 12.25 11.64	9.25 8.79 21.00 19.95 22.00	24.50 23.28 37.50 35.63 38.25	30.50 28.98 44.25 42.04 45.25	32.75 31.11 46.75 44.41 47.50	35.00 33.25 48.00 45.60 48.75	37.00 35.15 48.25 45.84 49.00	37.25 35.39 48.50 46.08 49.25	37.75 35.86 49.25 46.79 50.00	38.50 36.58 49.75 47.26 51.00	39.75 37.76 50.75 48.21 52.00	41.75 39.66 53.00 50.35 54.00	46.50 44.18 57.75 54.86 59.25	53.50 50.83 64.75 61.51 66.00
202 Lawrence: US-59S, Io 204 Lawrence: US-59, US-40	Lawrence: wa St.	K-10 3.00 2.85	6.00 5.70 8.00 7.60	2.38 7.75 7.36 9.75 9.26	13.30 17.25 16.39 17.50 16.63	20.90 26.25 24.94 27.25 25.89	36.34 40.25 38.24 41.50 39.43	42.99 46.25 43.94 47.25 44.89	45.13 48.50 46.08 49.25 46.79	46.31 51.00 48.45 53.75 51.06	52.50 49.88 55.00 52.25	53.50 50.83 56.00 53.20	55.25 52.49 58.00 55.10	48.45 56.25 53.44 59.25 56.29	49.40 57.25 54.39 60.25 57.24	51.30 59.50 56.53 62.25 59.14	56.29 64.50	71.25 67.69 72.75 69.11
212 Tonganoxie-Fudora: 4.75 222nd St. 4.51 236 Eastern Terminal 7.50 8.50 7.13 8.08	1.90 1.81 6.00 5.70 9.75	3.50 3.33 6.00 5.70 12.00 11.40	8.50 8.08 10.25 9.74 16.00 15.20	10.50 9.98 11.75 11.16 17.00 16.15	18.00 17.10 19.50 18.53 26.00 24.70	27.75 26.36 29.25 27.79 34.75 33.01	42.00 39.90 44.75 42.51 52.75 50.11	48.25 45.84 51.25 48.69 59.00 56.05	49.50 47.03 52.50 49.88 60.50 57.48	54.50 51.78 56.25 53.44 63.50 60.33	55.75 52.96 57.50 54.63 64.75 61.51	57.00 54.15 58.25 55.34 65.50	58.50 55.58 59.75	59.75 56.76 60.50 57.48 66.50 63.18	60.75 57.71 61.75 58.66 67.25 63.89	63.00 59.85 63.75 60.56 69.00 65.55	67.25 63.89 68.00 64.60 73.25 69.59	73.25 69.59 74.50 70.78 77.50 73.63