




# Kansas Turnpike Authority Update



KU Annual Asphalt Paving Conference  
December 5, 2024



## **MISSION**

KTA moves Kansas forward by operating a safe, reliable and customer-valued turnpike system in a fiscally responsible, businesslike manner.

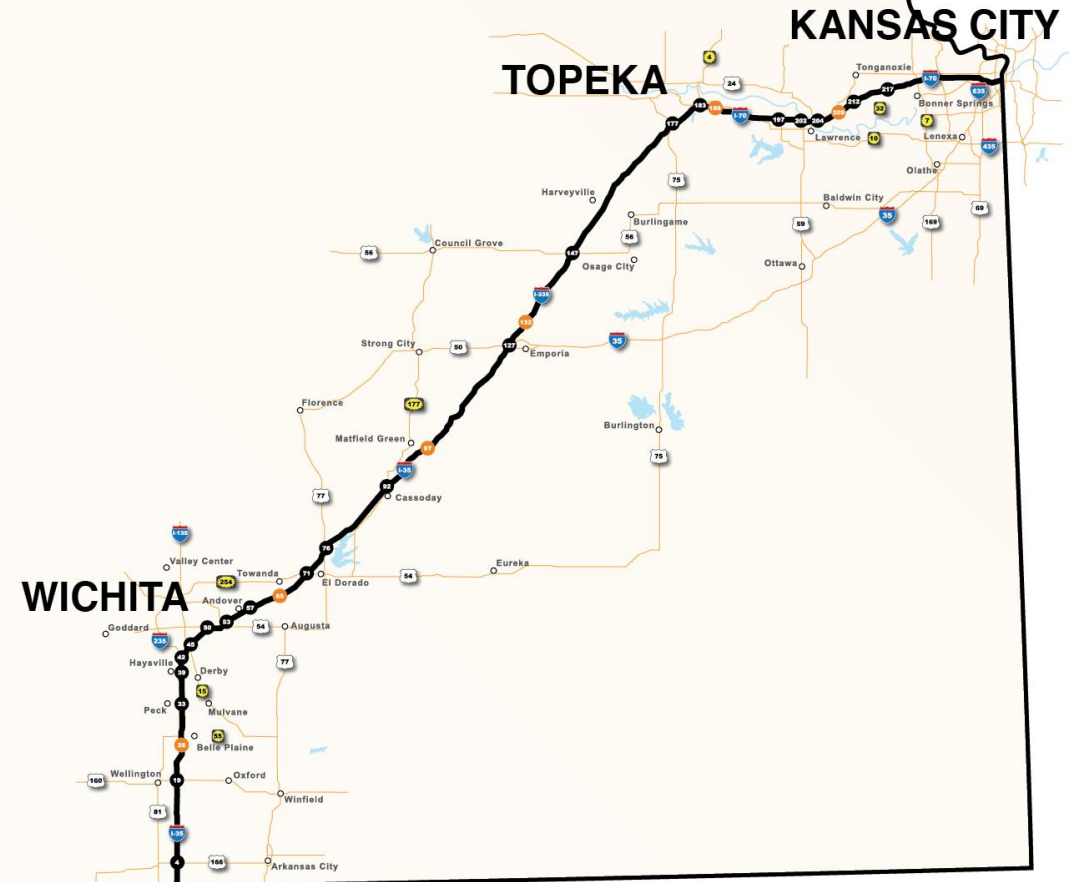
## **VISION**

KTA is committed to advancing transportation in Kansas through leadership, innovation and partnership.



236 Miles Interstate  
1000 Lane Miles  
I-70, I-470, I-335, I-35

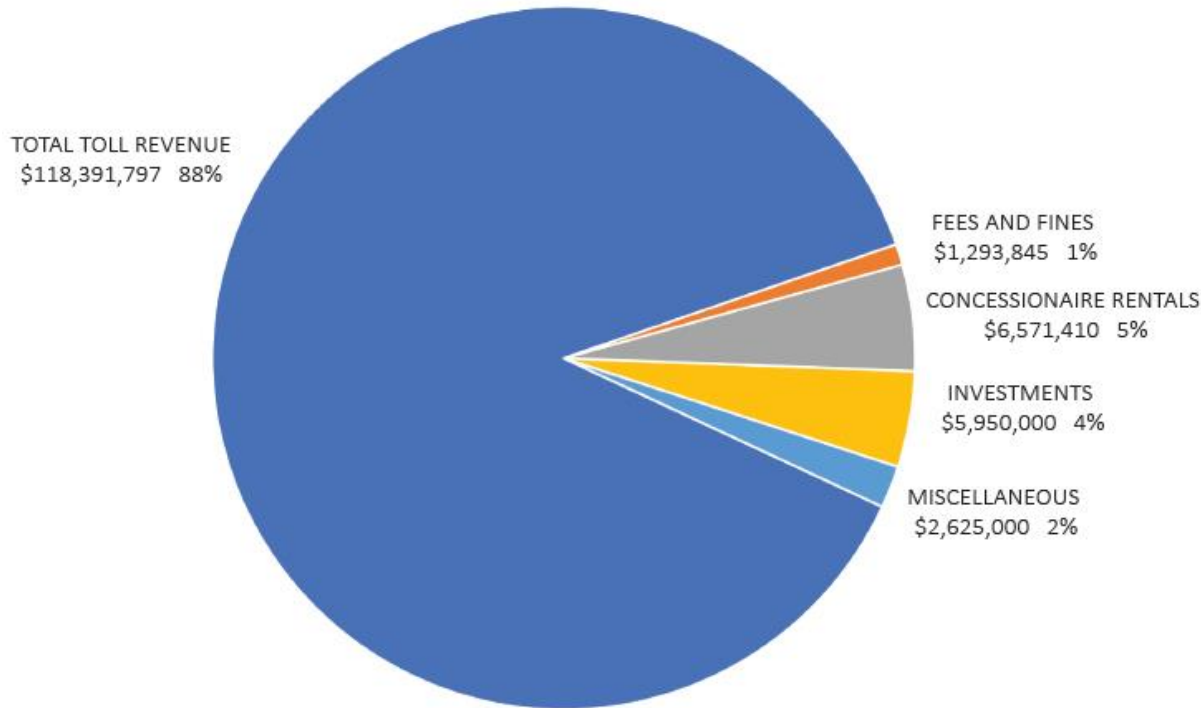
350 Bridges  
6 Service Areas  
**42 Toll Zones**  
9 Maintenance Facilities



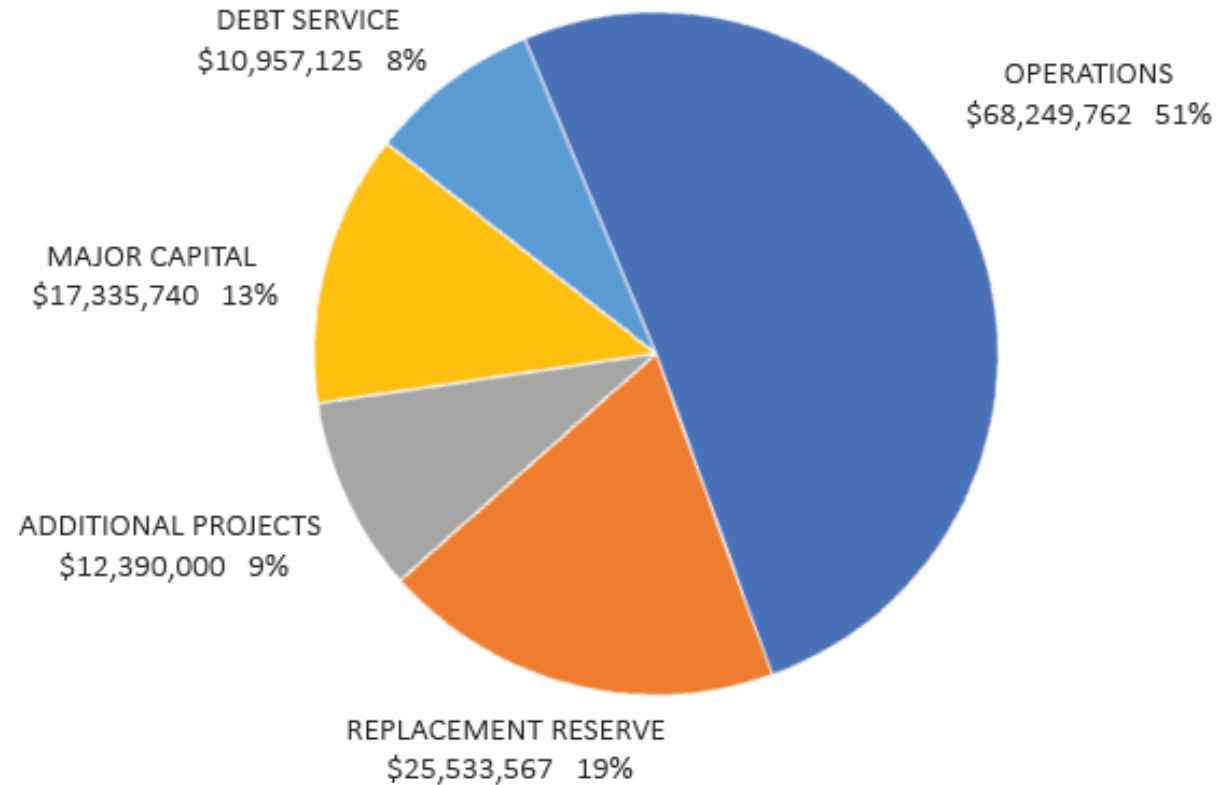


# Fiscal Year 2025 – Budget Overview

**KTA Revenues**  
\$134.8 million

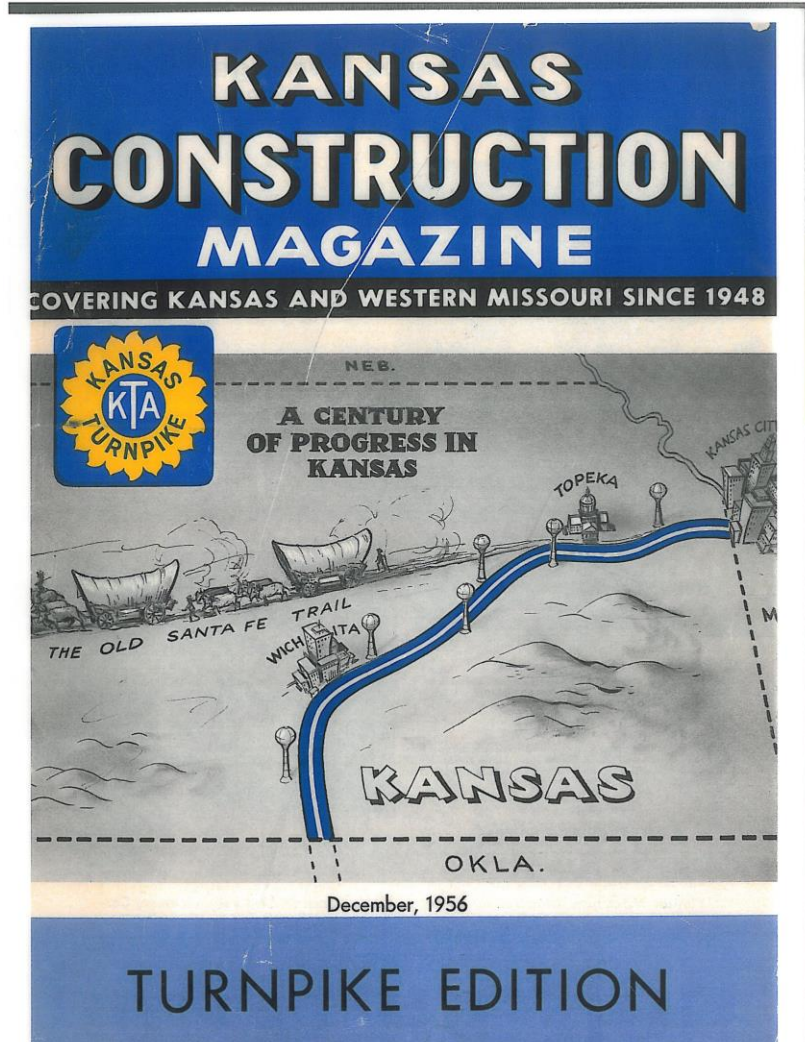


**KTA Expenditures**  
\$134.5 million





# Kansas Turnpike – “In the Beginning”



**“The idea of building a turnpike in Kansas was conceived at a meeting of the Kansas State Chamber of Commerce Highway Council Meeting in mid-October of 1951.”**



**Kansas Turnpike Act: April 7, 1953**

**(21 Months)**

**Begin Construction: Dec. 31, 1954**

**(22 Months)**

**End Construction: Oct. 25, 1956**



**350 Contracts**  
**85 Contractors**

**Construction Cost**  
**= \$107,113,037**

**Total Program Cost**  
**= \$160,000,000**

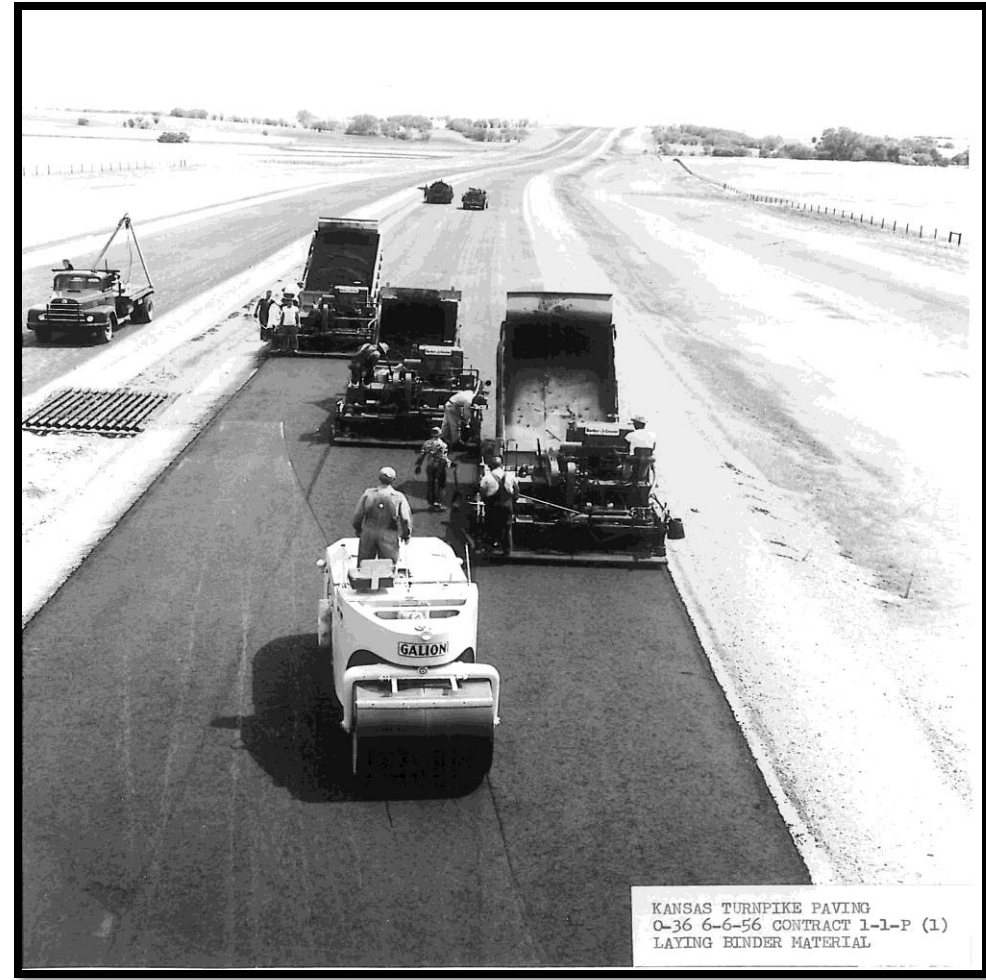


# Pavement History

Concrete Pavement – MM 177 to MM 236



Asphalt Pavement – MM 0 to MM 177



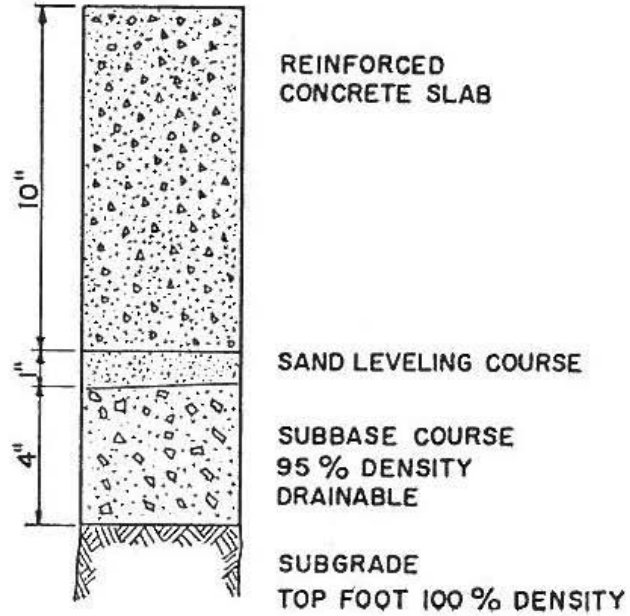


# Original KTA Pavement Sections

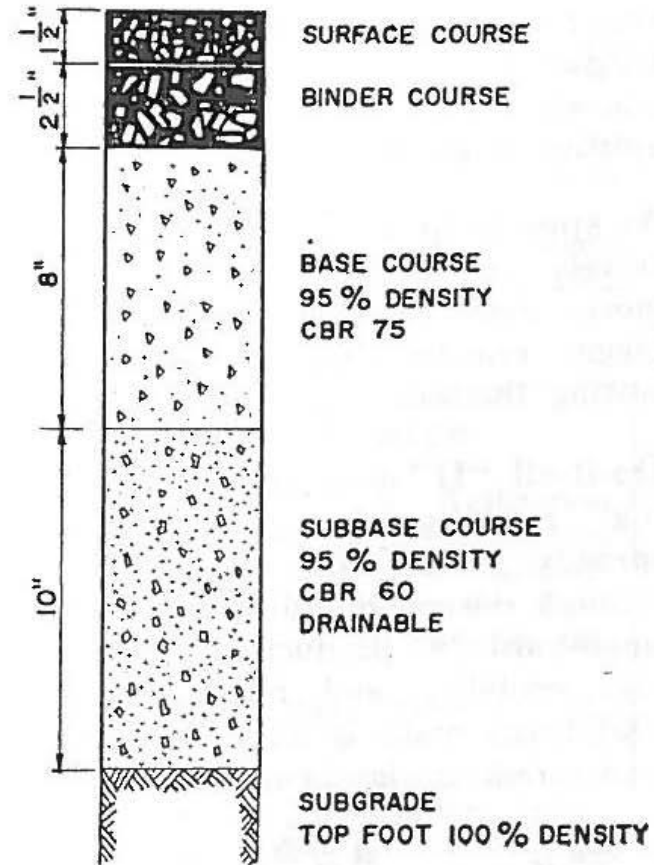
Topeka to K.C.  
MM 177 to MM 224

KANSAS TURNPIKE  
PAVEMENT SECTIONS

KS/OK Border to Topeka  
MM 0 to MM 177



RIGID



FLEXIBLE

# KTA 1963-66 Annual Reports



## FULL DEPTH PAVEMENT REPLACEMENT PROJECTS (MM 184 to MM 224)

<b>Year</b>	<b>MM to MM</b>	<b>Length (Miles)</b>	<b>Cost (\$M)</b>
1994	210.8 to 215.9	5.1	6.9
1995	215.9 to 220.5	4.6	5.6
1996	220.5 to 224	3.5	5.2
1997	189.5 to 194.6	5.1	7.5
1998	194.6 to 201.3 (EB)	6.7	5.6
1999	194.6 to 201.3 (WB)	----	6.0
2000	184.0 to 189.5	5.5	9.6
2008-11	201.3 to 204.4	3.1	9.7
2010-11	204.4 to 210.8	6.4	20
		40 Miles	\$76.1M

# 2014 Pavement Evaluation – MM 0 to MM 183



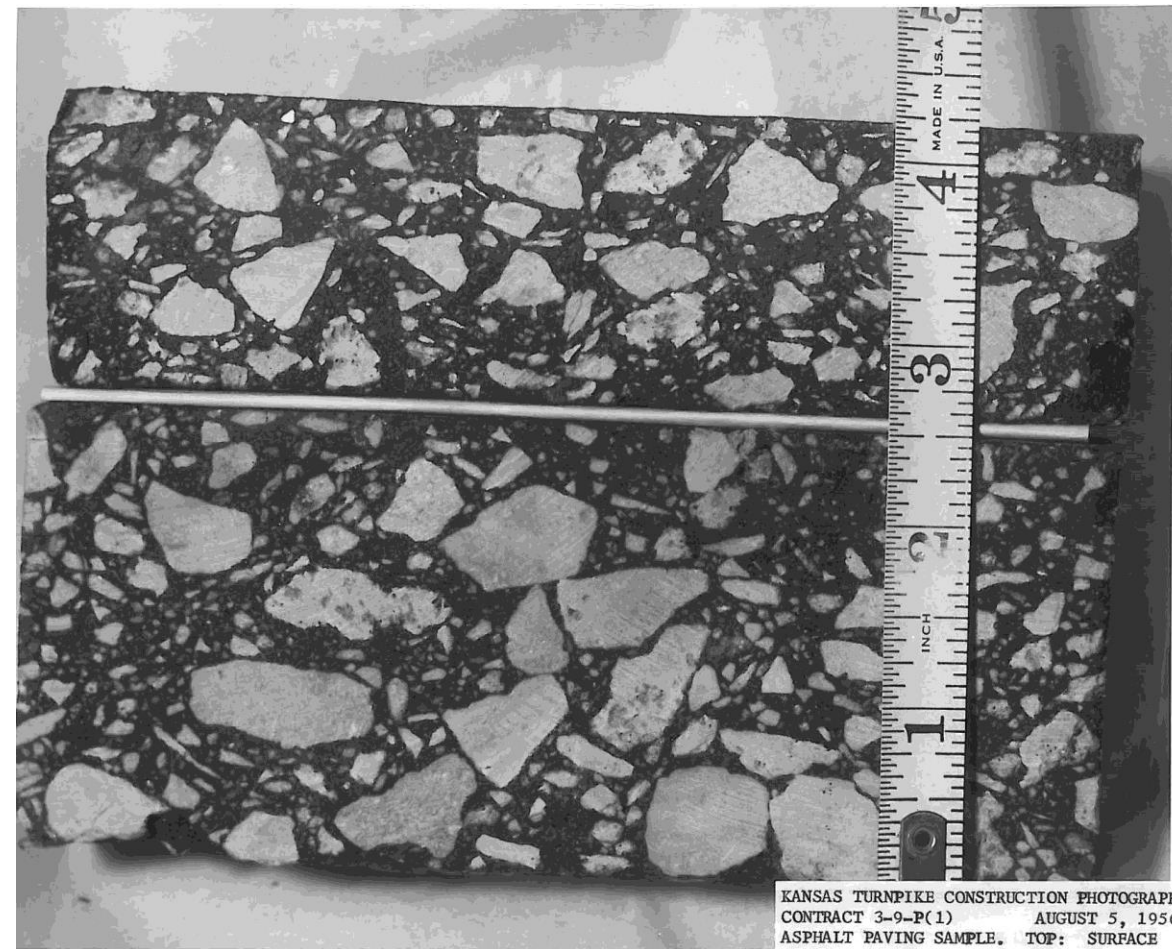
Depth Range - MM 0 to MM 177



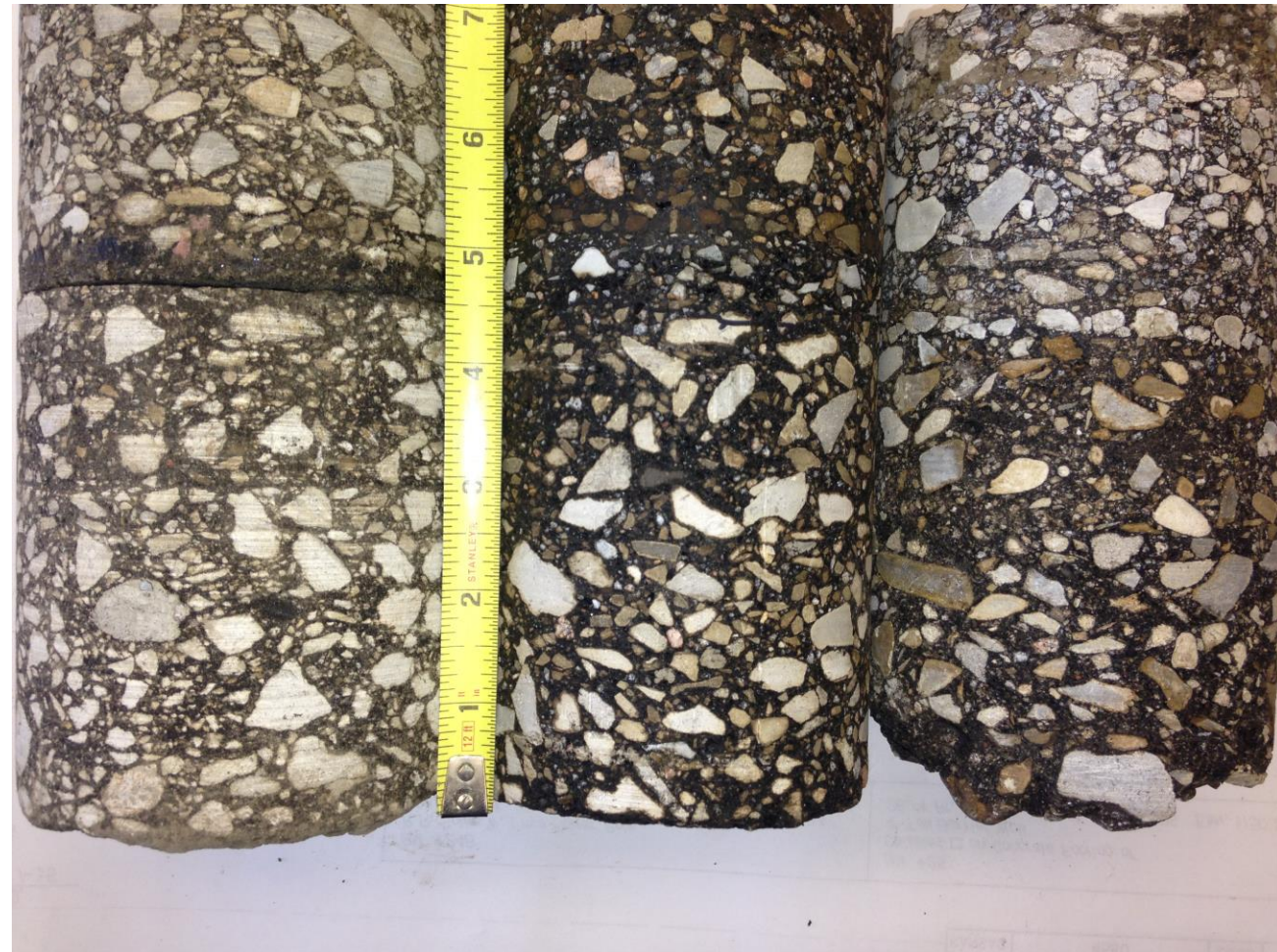
MM 177 to MM 183

# Aug. 1956

# Oct. 2013



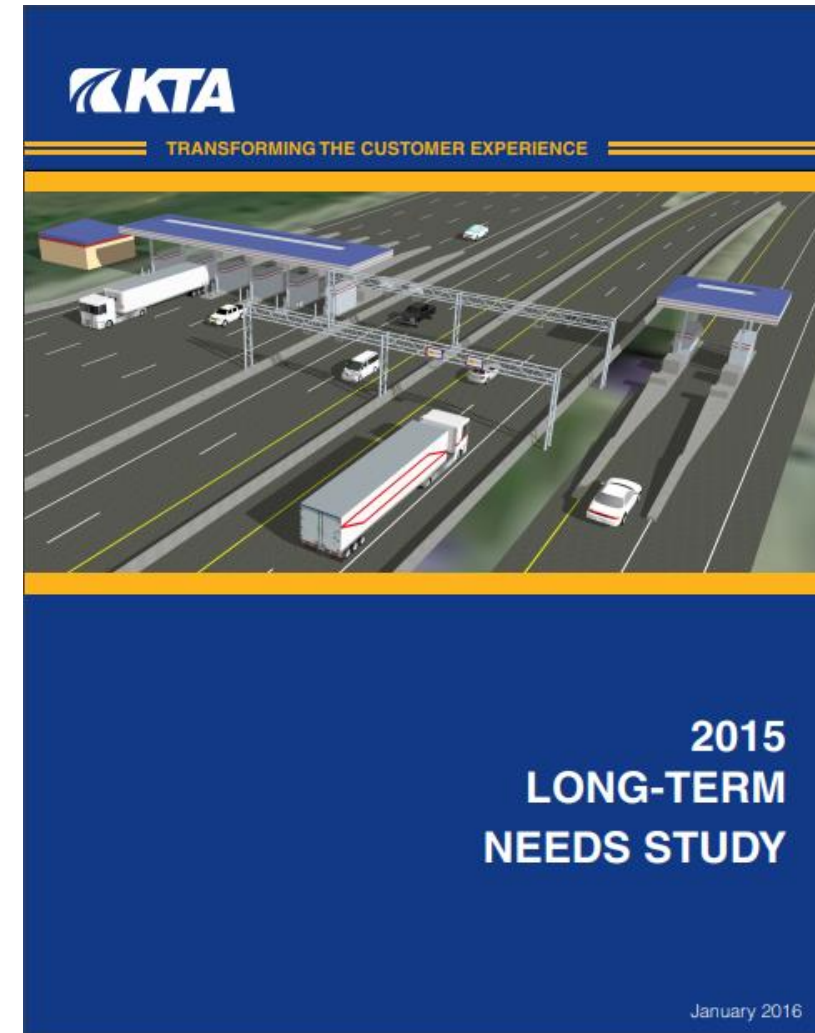
KANSAS TURNPIKE CONSTRUCTION PHOTOGRAPH  
CONTRACT 3-9-P(1) AUGUST 5, 1956  
ASPHALT PAVING SAMPLE. TOP: SURFACE  
COURSE; BOTTOM: BINDER COURSE.








# Long Term Needs Study

- Approved by board in late 2015
- Identified projects for 10-year period that preserve, maintain and enhance the Turnpike system.











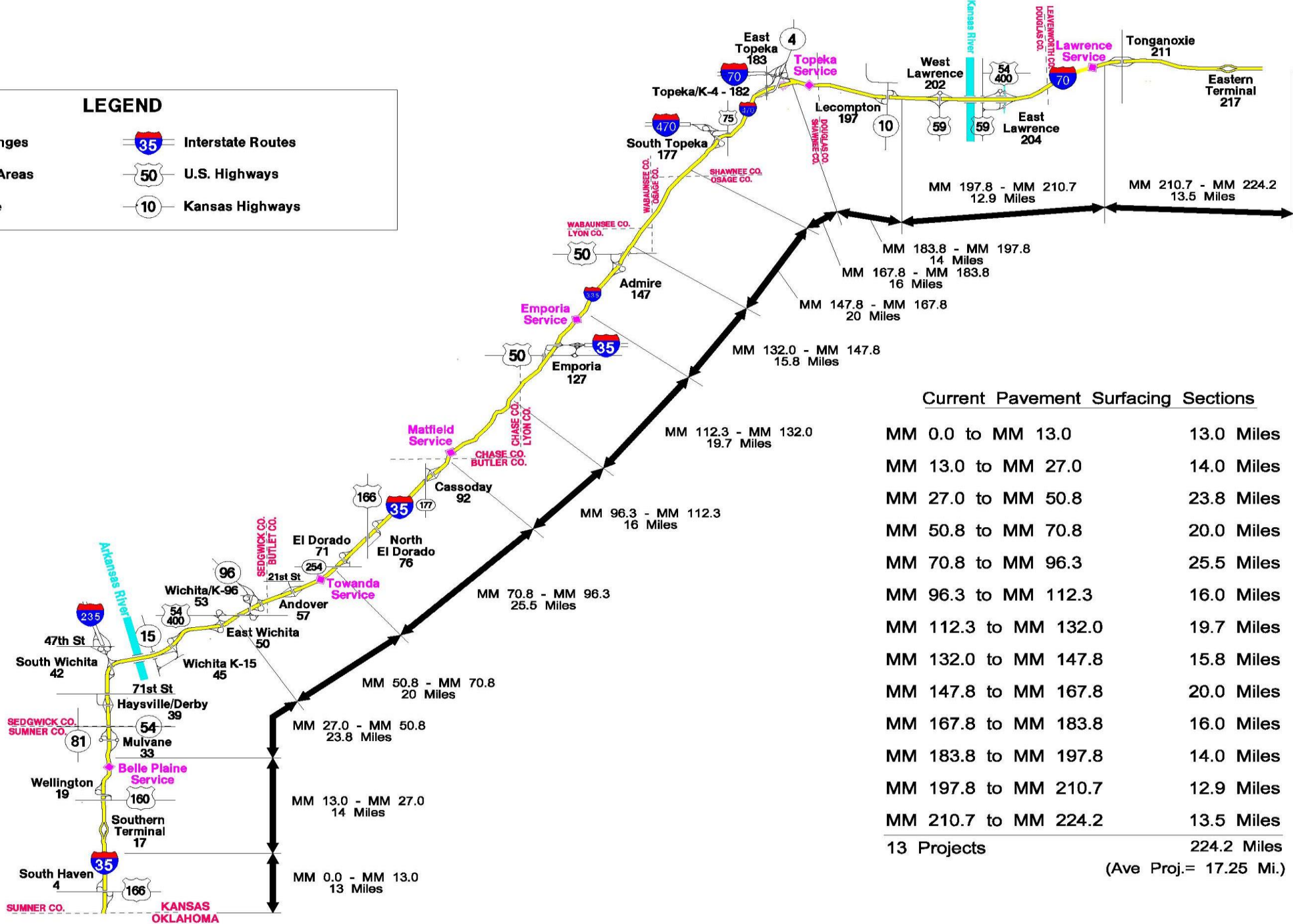
# Pavement Preservation

-  Lane miles full extent Good (89.8 %)
-  Lane miles full extent Fair (10.0 %)
-  Lane miles full extent Poor (0.1 %)



**LEGEND**

-  Interchanges
-  Service Areas
-  Turnpike
-  Interstate Routes
-  U.S. Highways
-  Kansas Highways



**Current Pavement Surfacing Sections**

MM 0.0 to MM 13.0	13.0 Miles
MM 13.0 to MM 27.0	14.0 Miles
MM 27.0 to MM 50.8	23.8 Miles
MM 50.8 to MM 70.8	20.0 Miles
MM 70.8 to MM 96.3	25.5 Miles
MM 96.3 to MM 112.3	16.0 Miles
MM 112.3 to MM 132.0	19.7 Miles
MM 132.0 to MM 147.8	15.8 Miles
MM 147.8 to MM 167.8	20.0 Miles
MM 167.8 to MM 183.8	16.0 Miles
MM 183.8 to MM 197.8	14.0 Miles
MM 197.8 to MM 210.7	12.9 Miles
MM 210.7 to MM 224.2	13.5 Miles
<b>13 Projects</b>	<b>224.2 Miles</b>
	<b>(Ave Proj.= 17.25 Mi.)</b>





## Kansas Turnpike Authority Lane Miles (Mainline) by Type

91.0%	909.9 Lane Miles	Asphalt Pavement
3.7%	37 Lane Miles	Bridges
	46 Lane Miles	Conc. Pvmt. (I-70 East of K-7)
5.3%	5.8 Lane Miles	Conc. Pvmt. (Terminals at 17, 183, 217)
	<u>1.3 Lane Miles</u>	Conc. Pvmt. (36 Toll Zones)
	1000 Lane Miles	

# Bridge Preservation

## KTA Bridge Condition Summary (2023 Inspection Data)

Total Deck Area (sq ft) = 2,945,905

Poor 23,893 0.8%

Fair 216,688 7.4%

Good 2,705,324 91.8%

2023 KTA Bridge Condition  
All KTA Bridges

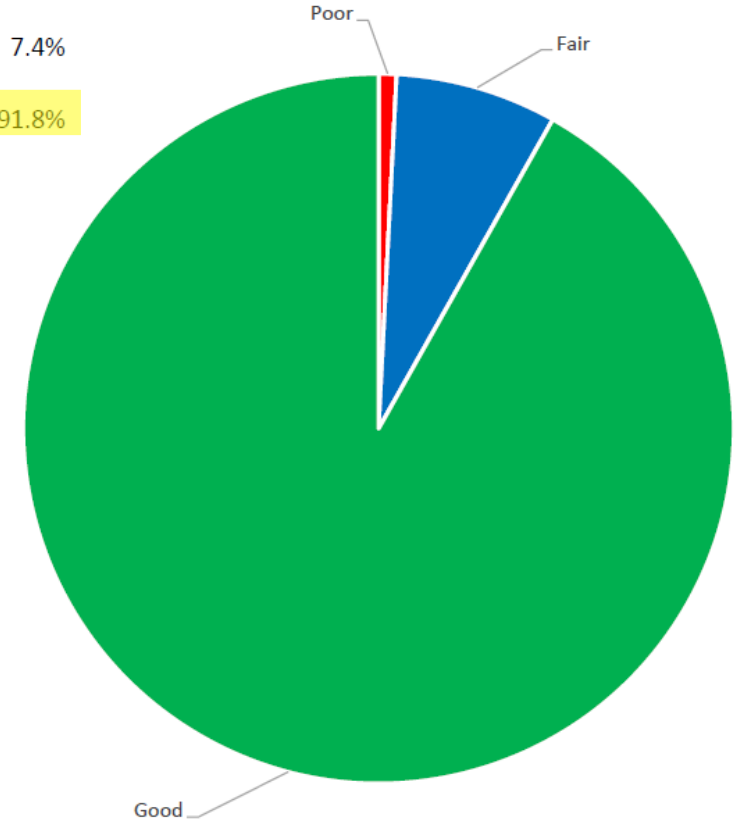
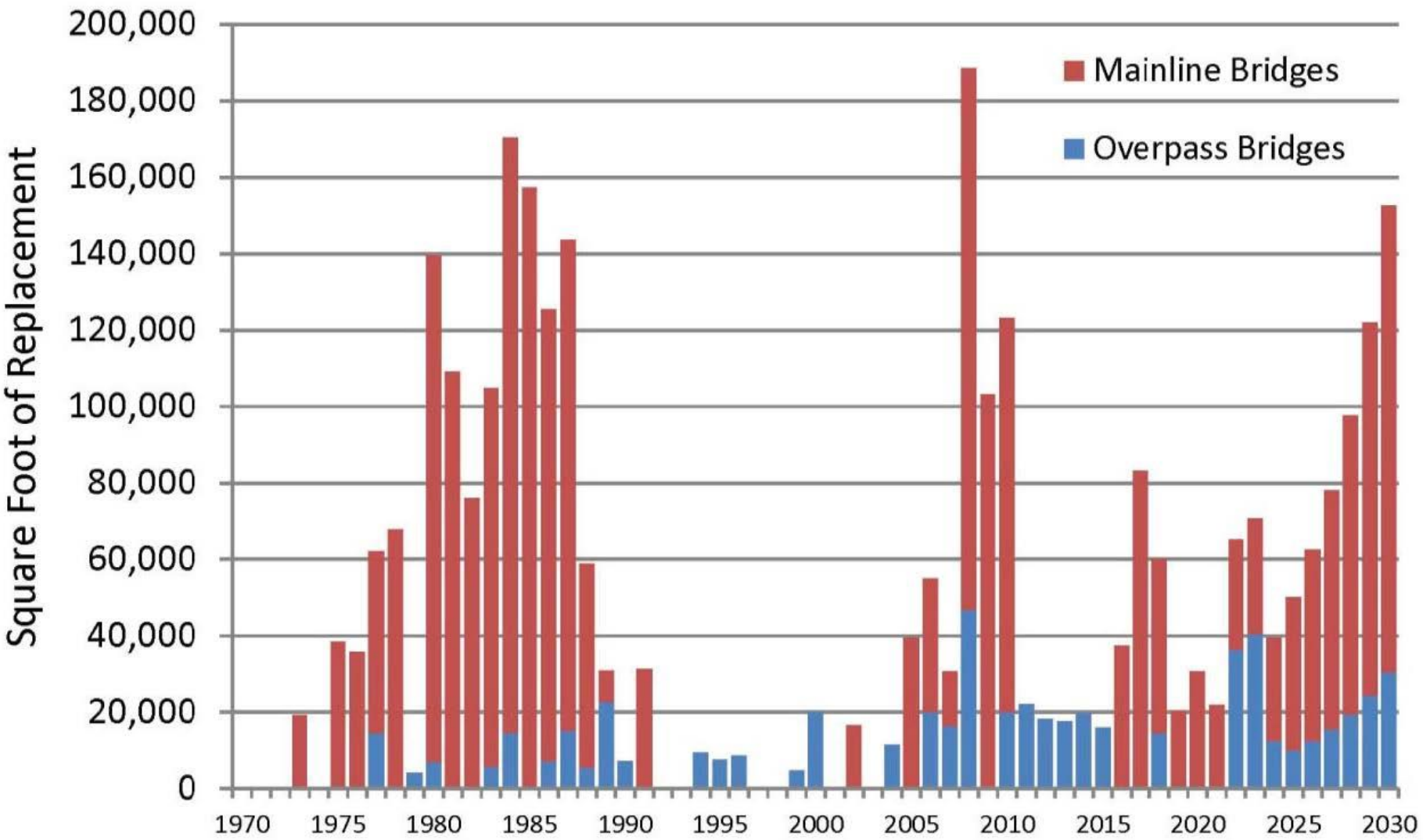


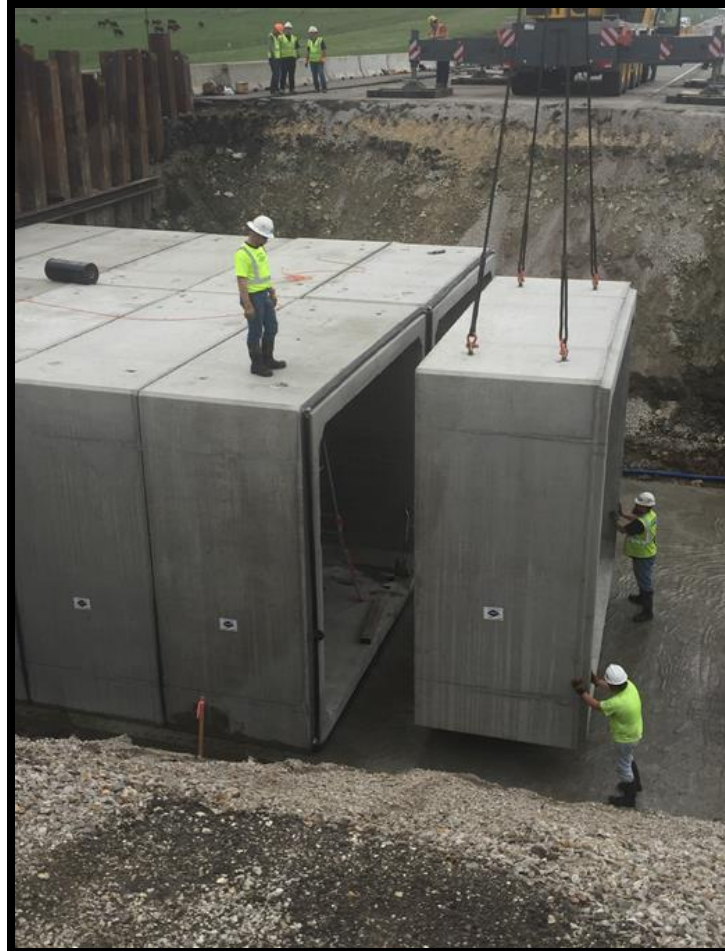


Figure D-3: Year of Deck Replacement on Mainline and Overpass Bridges





# Drainage Improvements





## Summary of Long Term Needs Study Flood Risk Mitigation Improvements (2016 - 2024)

2016	MM 116.1 and MM 118.2	\$2,599,165
2016-17	MM 101.9 and MM 101.9	\$3,447,233
2017	MM 105.2 and MM 105.5	\$2,874,082
2017	MM 176.7	\$1,548,171
2018	MM 0.6	\$2,452,423
2018	MM 4.1 and MM 6.2	\$2,845,209
2019	MM 212.1	\$4,557,415
2020	MM 19.7	\$1,834,034
2020	MM 132.2	\$1,520,350
2020	MM 151.5 and MM 153.8	\$1,926,334
2021	MM 172.2	\$124,400
2023	MM 15	\$684,283
2024	MM 141.6	\$5,037,671
2024	MM 214	\$268,581
<b>Total (2016-2024)</b>		<b>\$31,719,351</b>

$\$31,719,351 / 9 \text{ years} = \$3,524,372 \text{ per year}$

# Original Design Criteria Vertical Clearance = 15'-0"











# Bridge Raising





# Bridge Vertical Clearance Improvements 2016-2024 Summary

Round #1 Bridge Raising	11
Round #2 Bridge Raising	11
Round #3 Bridge Raising	11
Round #4 Bridge Raising	11
Round #5 Bridge Raising	2
Round #5A Bridge Raising	1
Bridge Raise, Rehab. and Reconst. Projects	24
<u>Overhead Bridges Removed</u>	<u>3</u>
<b>TOTAL</b>	<b>74</b>





# KTA Bridge Raising - Post Verification Testing





## Summary of Long Term Needs Study Ramp Improvements (2016 - 2021)

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South Topeka (MM 177)

Towanda Service Area (MM 65)

El Dorado Interchange (MM 71)

Matfield Green Service Area (MM 97)

South Haven Interchange (MM 4)

South Wichita Interchange (MM 42)

Wellington Interchange (MM 19)

North El Dorado Interchange (MM 76)

Cassoday Interchange (MM 92)

Lecompton Interchange (MM 197)

Tongonoxie Interchange (MM 212)

Emporia Service Area (MM 132)

Belle Plaine Service Area (MM 26)

# Added 150+ Truck Parking Stalls (2016-2021)



Topeka Service Area (MM 188)



Towanda Service Area (MM 65)



Belle Plaine Service Area (MM 26)



# KTA Bazaar Cattle Pens (I-35 MM 111)



# Contract No. 8072 Cattle Pens Reconstruction









# **KTA Roadway Safety Assessment (2020 – 2024)**

## **Phase 1**

- **Review Safety Data, Identify High-Crash Locations and Crash Types**
- **Stakeholder Engagement**

## **Phase 2**

- **Select Applicable Countermeasures and Identify Potential Road Safety Projects/Programs**
- **Calculate Expected Benefits/Costs of Recommended Safety Projects**

## **Phase 3**

- **Development of Safety Treatment Application Criteria and Location Identification**
- **Safety Corridor Action Plan**
- **Development of Performance Measures**
- **Crash Trend Data Update (2020 through 2022)**

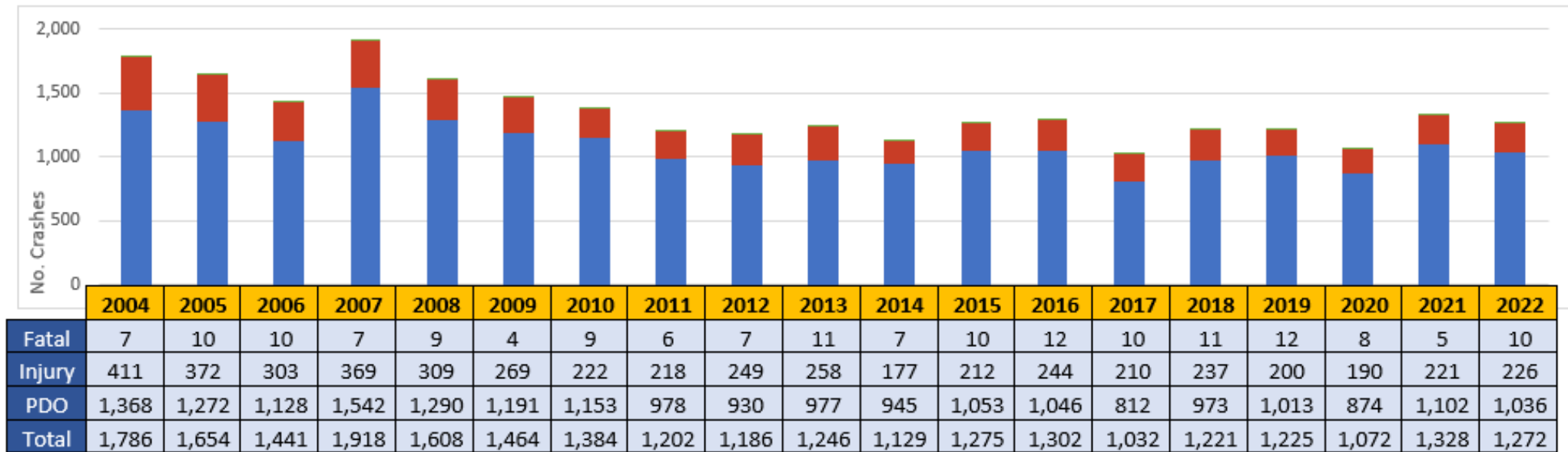
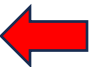


Table 2. Crash rates by Turnpike segment.

Segment Begin	Segment End	Segment Length (mi)	Segment weighted AADT (2020-2022 Avg)	2014 crash rate	2015-2019 crash rate	2020-2022 crash rate	2015-2019 KA rate	2020-2022 KA rate	2015-2019 Fatality rate	2020-2022 Fatality Rate
Oklahoma State Line	Haysville	38.8	20,027	52.26	51.72	61.23	1.78	1.18	0.68	0.59
Haysville	Andover	18.4	17,243	110.99	118.61	54.98	4.17	2.59	1.92	1.15
Andover	Emporia	70.6	16,019	74.35	76.16	64.92	2.22	1.21	0.69	0.08
Emporia	East Topeka	53.9	10,917	117.33	93.67	88.93	2.05	2.17	0.61	0.93
East Topeka	Bonner Springs	45.1	33,301	83.15	70.19	73.27	1.71	1.28	0.51	0.36
Oklahoma	Bonner Springs	226.8	18,612	--	74.97	71.26	0.71	1.49	0.71	0.48

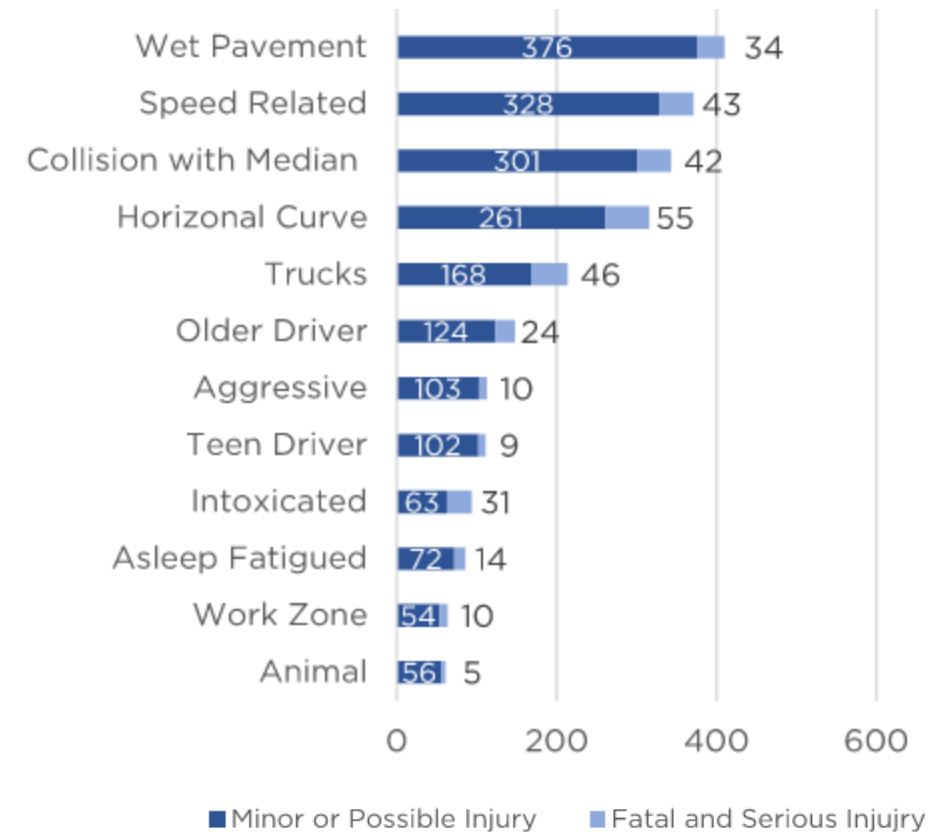




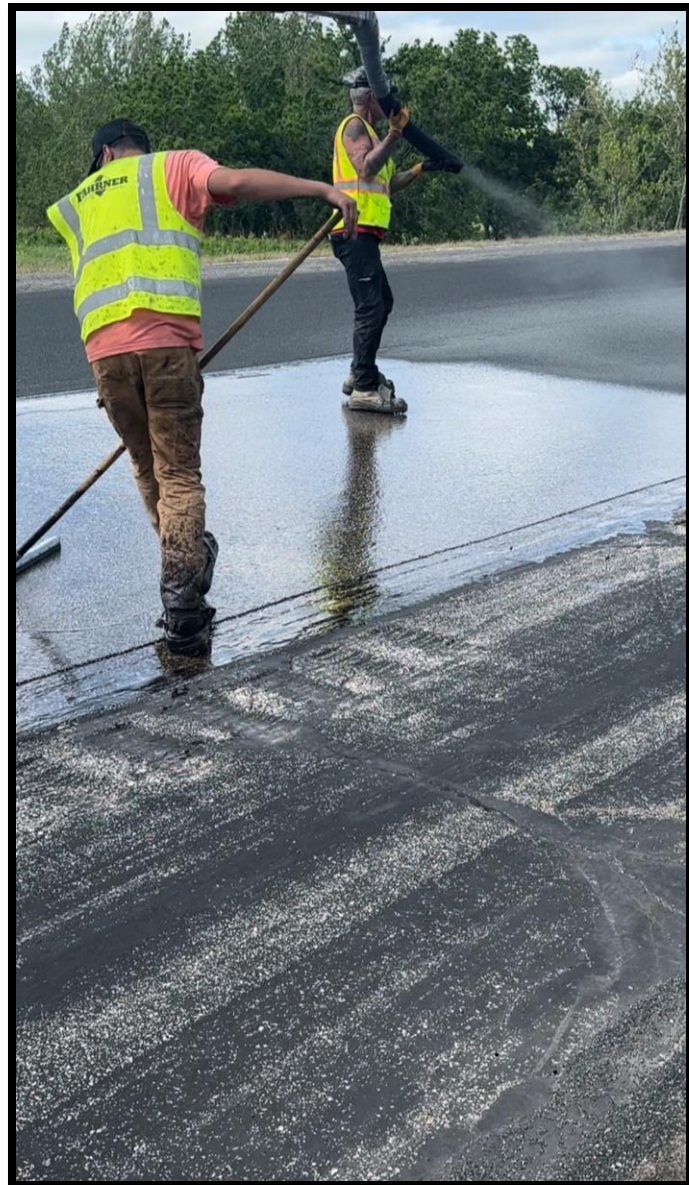
# Key Phase 1 Findings

- Crash analysis
  - KTA performs similarly to, or better than, other freeway segments in Kansas
  - Haysville to Andover has higher crash rates, higher injury rates and higher fatality rates than other segments of the KTA
  - Few “high-crash” locations where targeted treatment would have a big safety benefit
  - Several focus crash types spread across the system: speed related, weather related, near curves

Fatal and injury Turnpike crashes by category (2014 through 2019)



# High Friction Surface - Granite



MM 105



MM 103

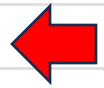
# High Friction Surface (HFS) using Calcined Bauxite for Aggregate



I-35 at MM 12.9

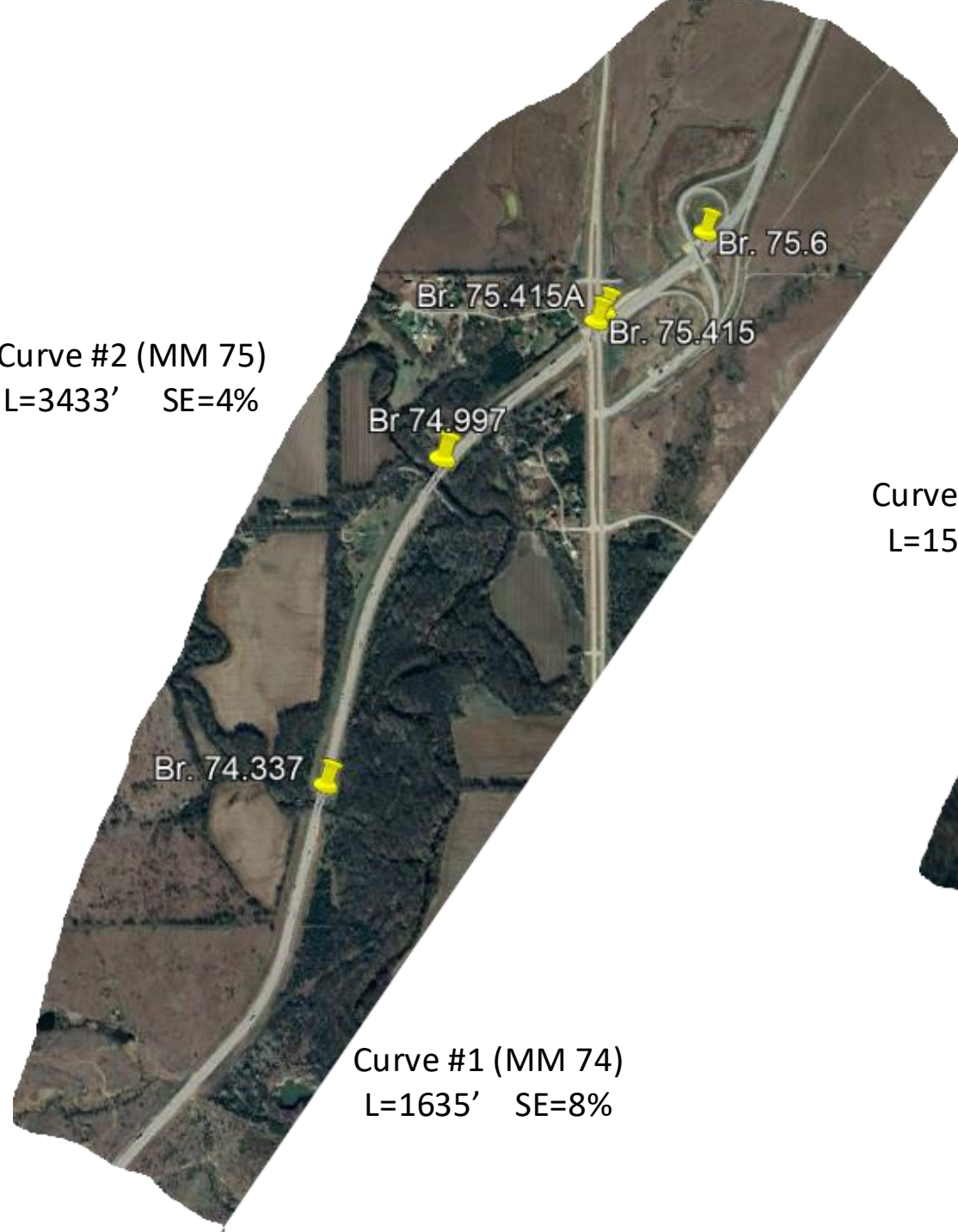


# Before and After (HFS) Friction Data

	Improvement Avg SN	Material	Adjacent Avg SN	Percent Improvement	Average Improvement
103 NB	67.9	Granite	35.2	93%	98% 
103 SB	67.9	Granite	34.7	96%	
105 NB	66.3	Granite	32.1	107%	
105 SB	66.6	Granite	34.1	95%	

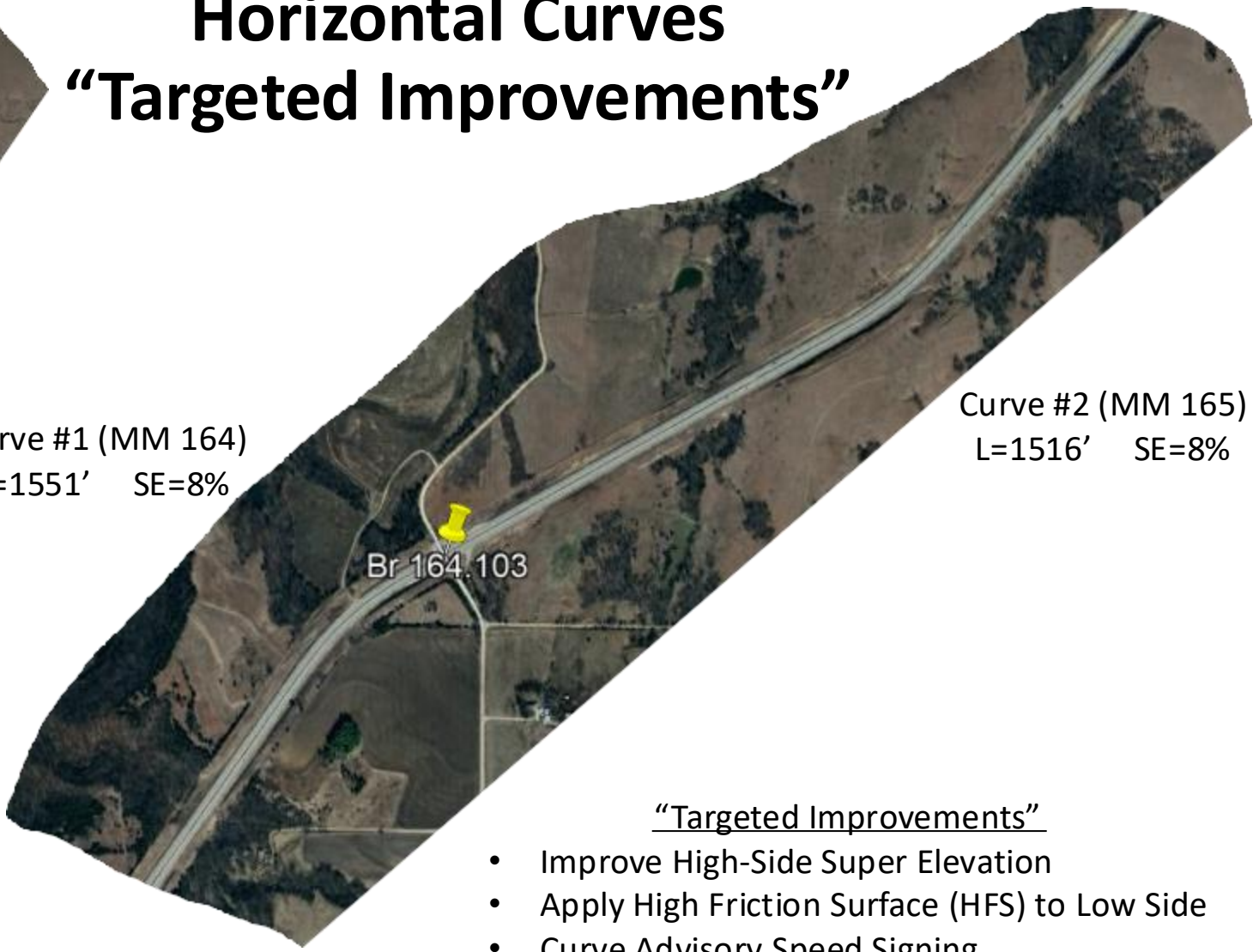
# Horizontal Curves “Targeted Improvements”

Curve #2 (MM 75)  
L=3433' SE=4%



Curve #1 (MM 74)  
L=1635' SE=8%

Curve #1 (MM 164)  
L=1551' SE=8%



Curve #2 (MM 165)  
L=1516' SE=8%

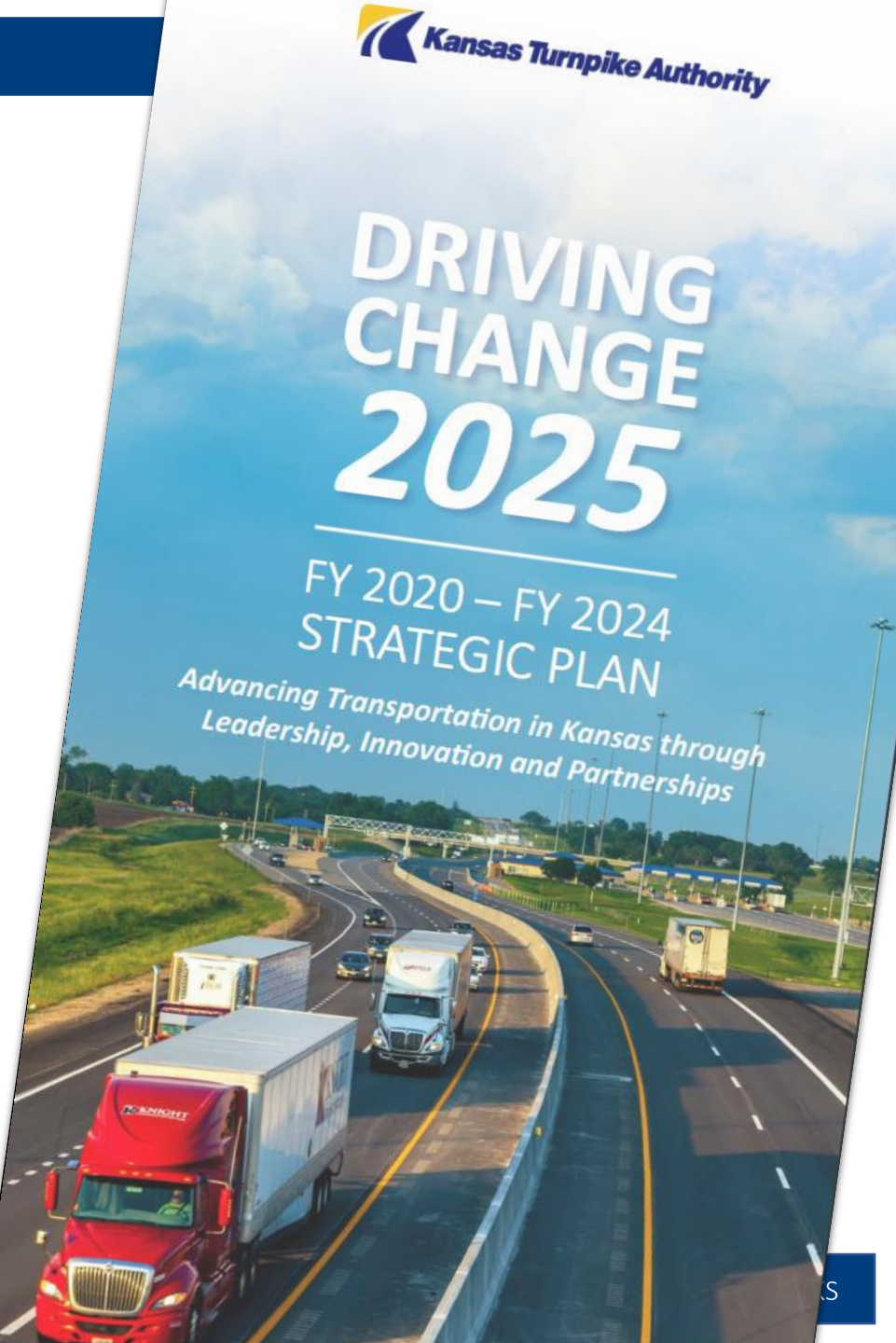
## “Targeted Improvements”

- Improve High-Side Super Elevation
- Apply High Friction Surface (HFS) to Low Side
- Curve Advisory Speed Signing
- Median Drainage Improvements
- Side Slope Improvements
- Rumble Stripe
- Guardrail Installation



# KTA's Strategic Plan

- Support and work toward **nationwide interoperability** of all electronic toll collection systems
- **Increase electronic usage** on the Kansas Turnpike
- Modernize with **cashless tolling** efficiencies
- **Partner** with KDOT and others to deliver projects

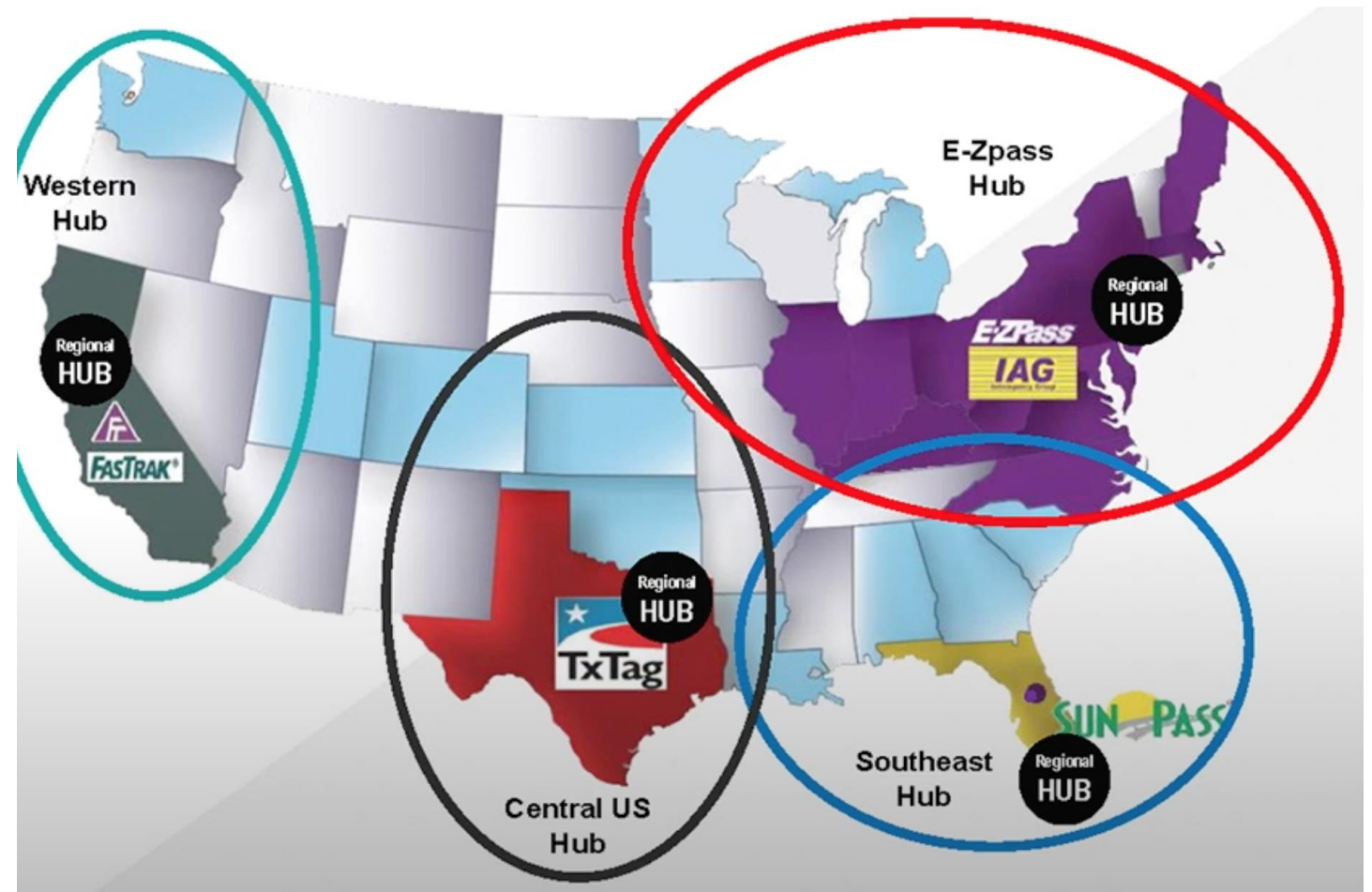






# Nationwide Compatibility

- Using a HUB approach to increase compatibility and minimize peer-to-peer agreements



## Kansas Compatibility

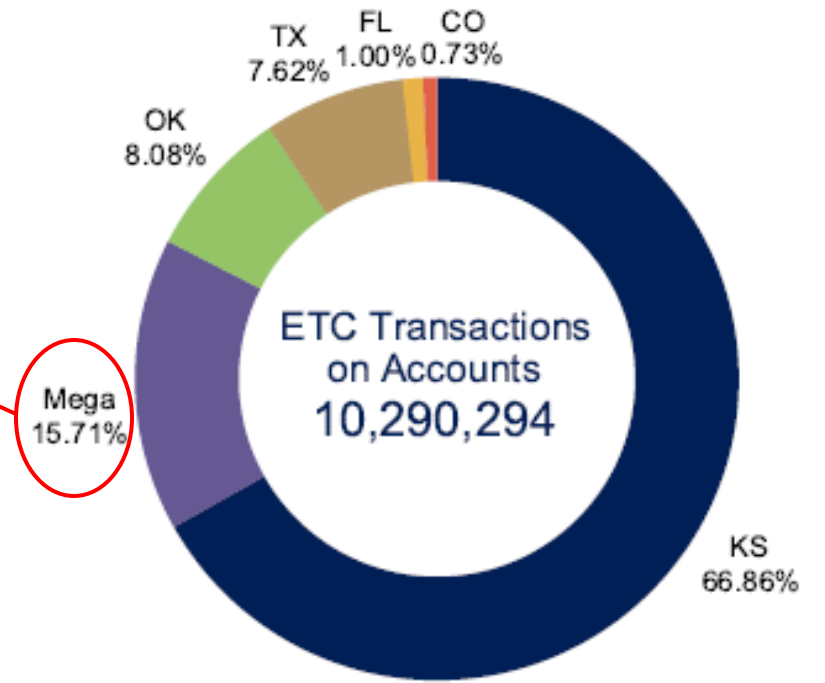


- ✓ **KANSAS**
- ✓ **OKLAHOMA**
- ✓ **TEXAS**
- ✓ **FLORIDA**

Also accept:

- PrePass Plus
- BestPass
- NationalPass
- BancPass

## ETC Agency State



## KTA Accepts





# Other Interop Initiatives

**CFX (Central Florida Expressway)**

**SRTA (State Road & Toll Authority in Georgia)**

**NCTA (North Carolina Turnpike Authority)**

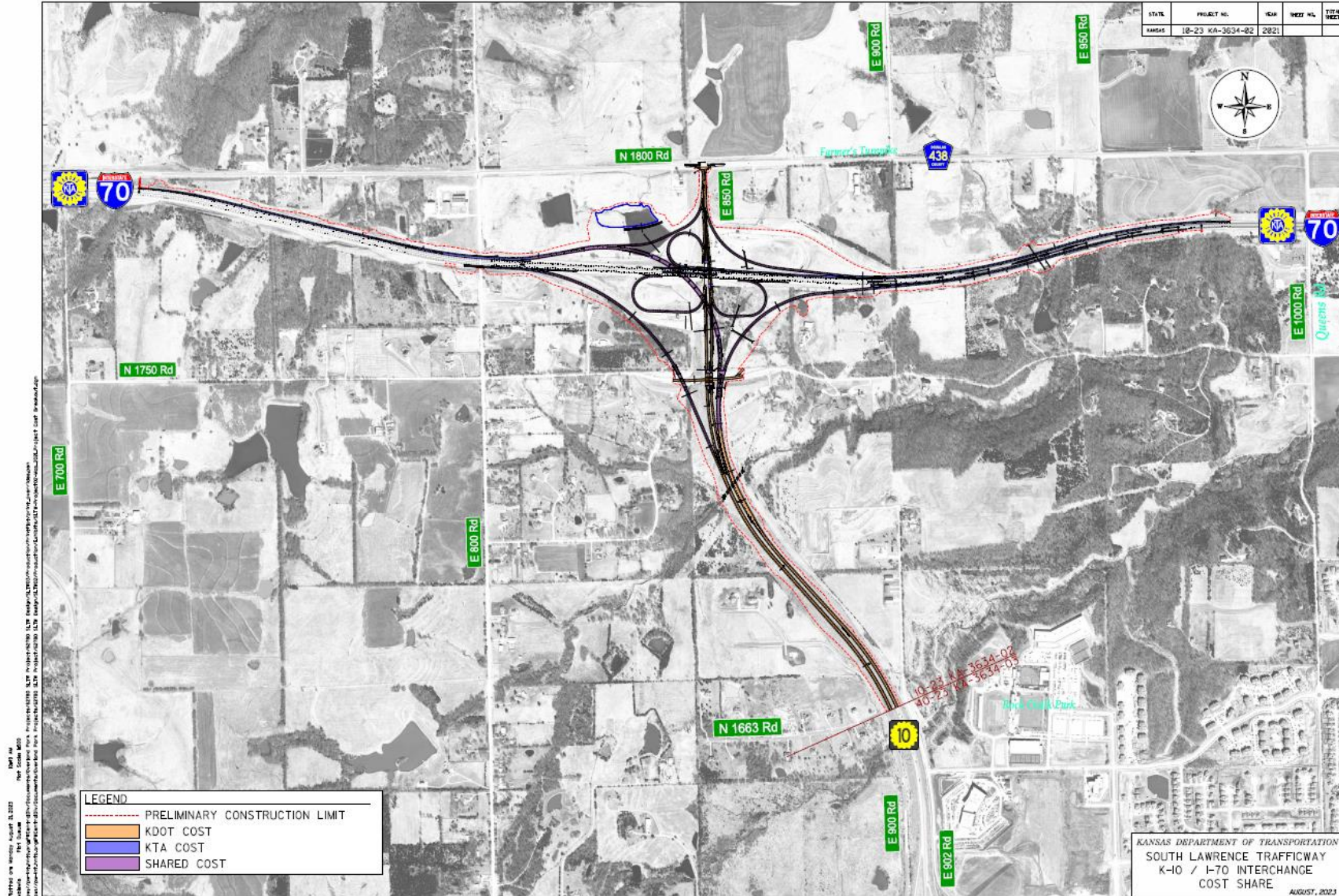
**NE Region (IAG/E-Z Pass)**

**Western Region (California has to get legislation to send transponder information out of state)**

# 69 EXPRESS

- Express toll lane will add capacity on US69 through Overland Park
- Additional lane is intended to relieve congestion on the busiest 4-lane highway in the state
- Partnership between KDOT, Overland Park and KTA
- KTA will serve as the toll partner on the project – providing toll experience, back office support and customer service
- Learn more at [www.69express.org](http://www.69express.org)

# I-70 (KTA) / K-10 Interchange (KDOT Project No. 10-23 KA-3634-02)



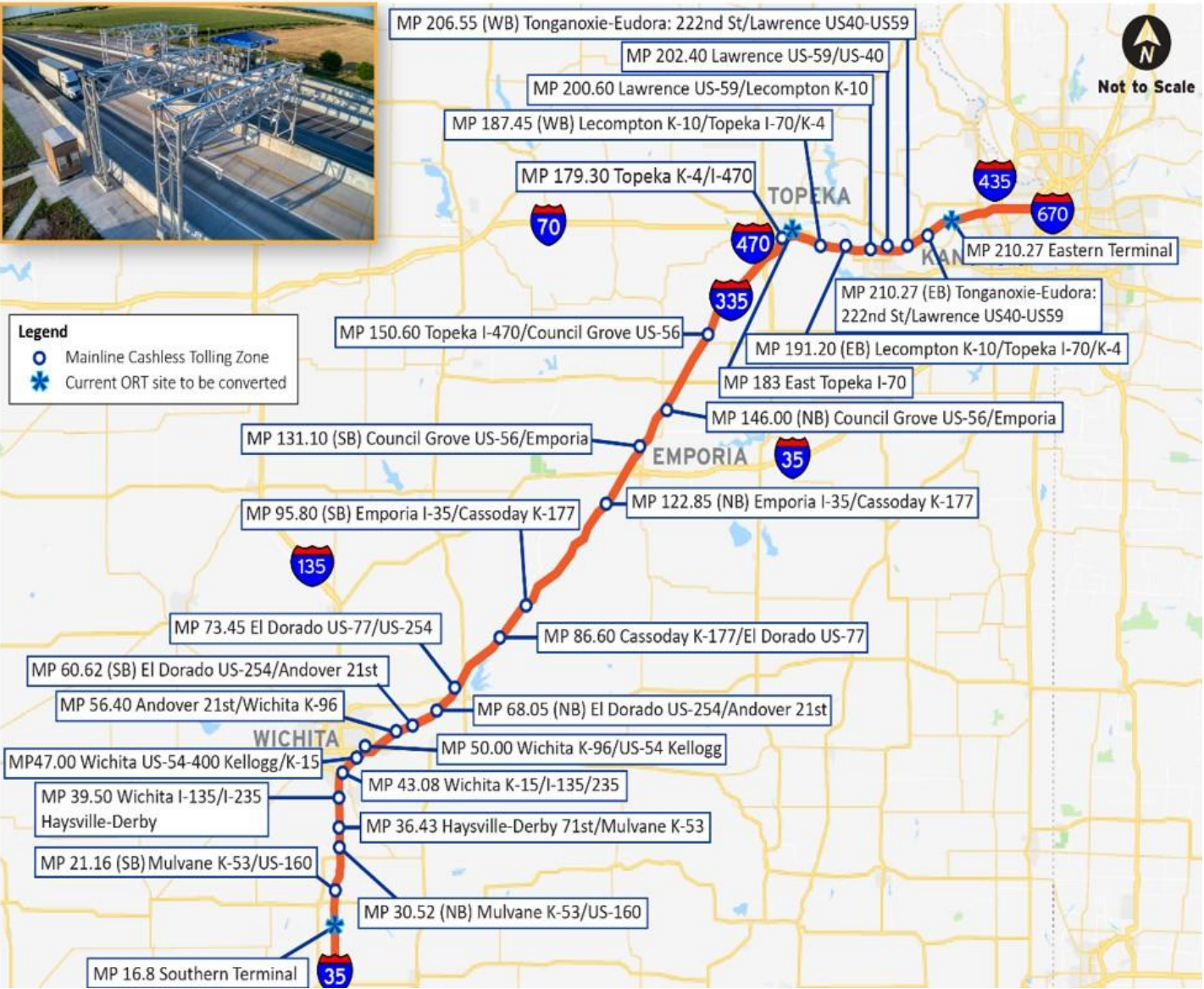
# *Cashless* Tolling



# Why Cashless Tolling

- Benefits of Cashless Tolling:
  - Improved **safety** – no stop and go traffic
  - **Greater customer service** and convenience
  - Near-term infrastructure, equipment and systems upgrade needs can be done with minimal waste
  - Addresses current system challenges (e.g., Exit 53A cashless, video violators vs. customers)
  - Long-term workforce and **operational efficiencies**
  - Readiness to respond to **partnership opportunities**





# All-Electronic Tolling (AET) “CASHLESS TOLLING”

21 Mainline Toll Zones (Each Direction)

Modify 3 Existing ORT Toll Zones

Construct 18 New Toll Zones

Contract No. 1 - 5 Toll Zones (2021-22)

Contract No. 2 – 5 Toll Zones (2022-23)

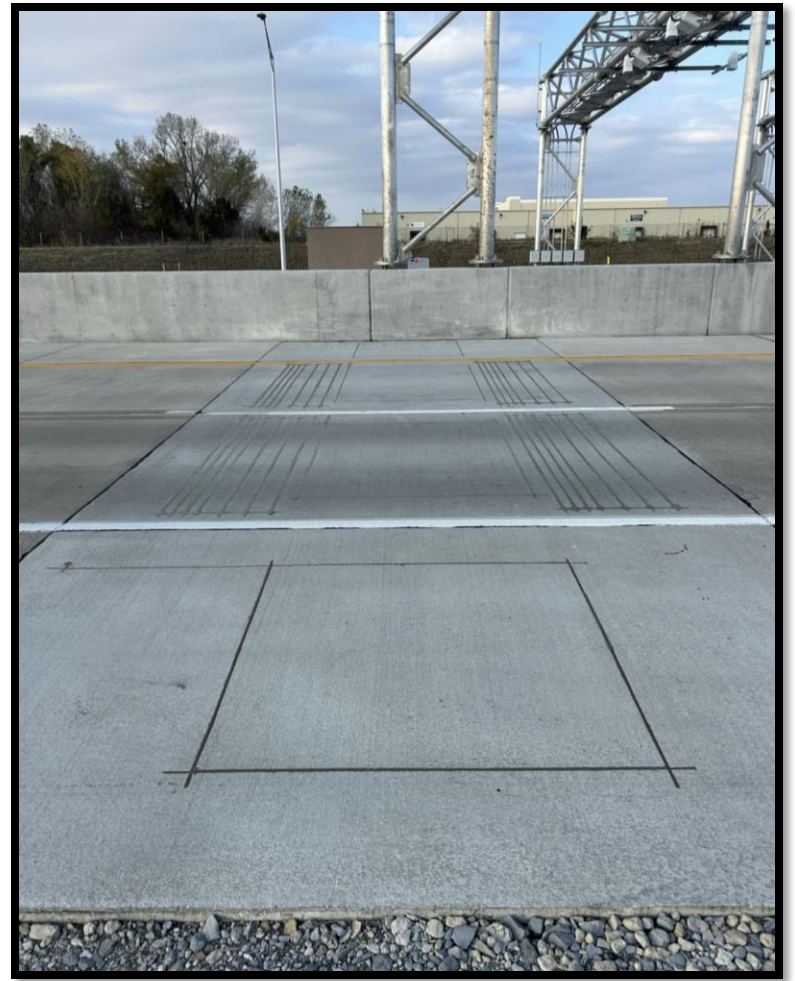
Contract No. 2A – 1 Toll Zone (2022-23)

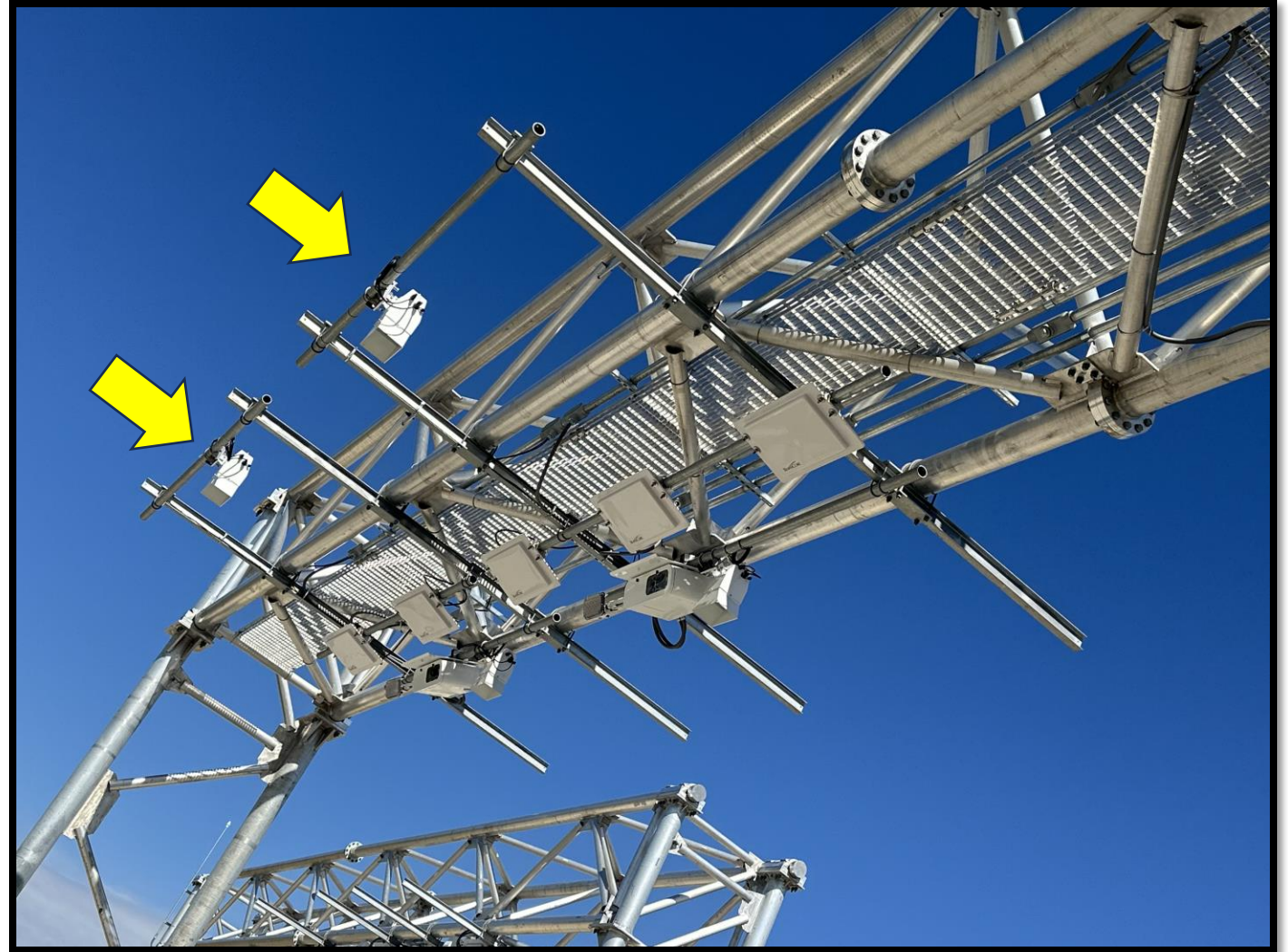
Contract No. 3 – 4 Toll Zones (2022-23)

Contract No. 4 – 3 Toll Zones (2022-23)

# Go Live – July 1, 2024







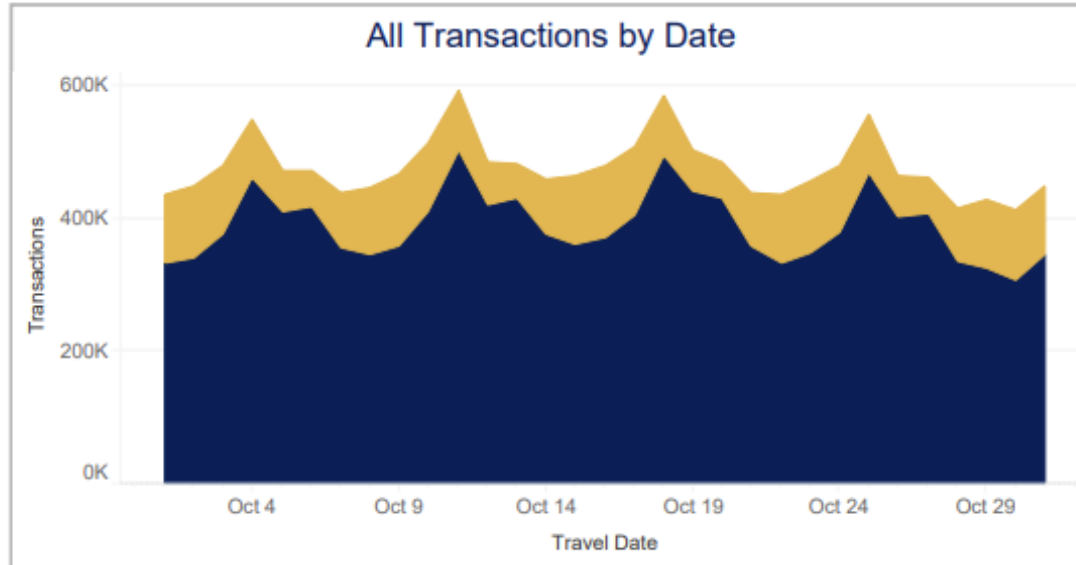
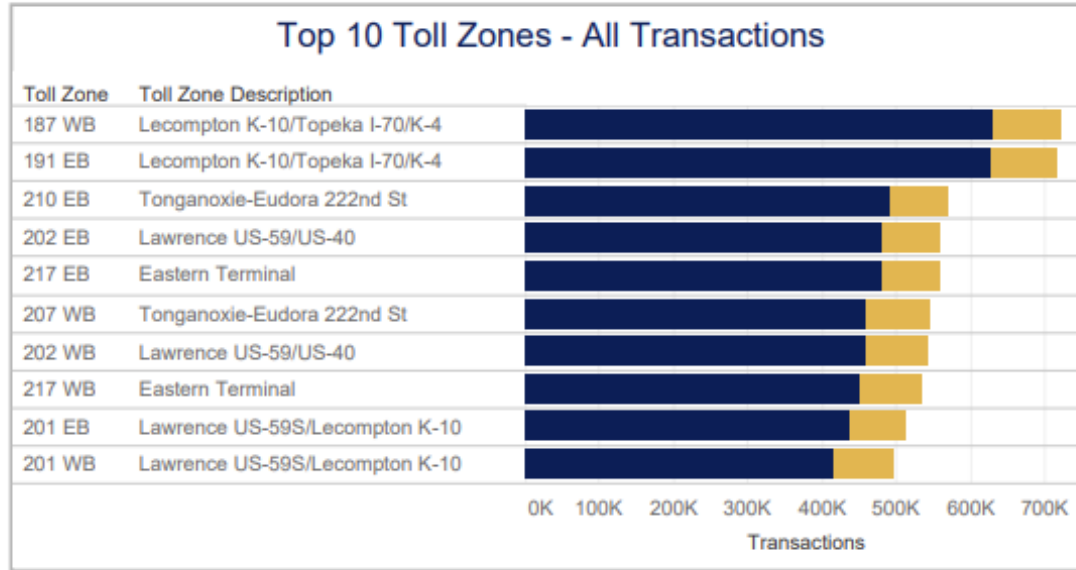
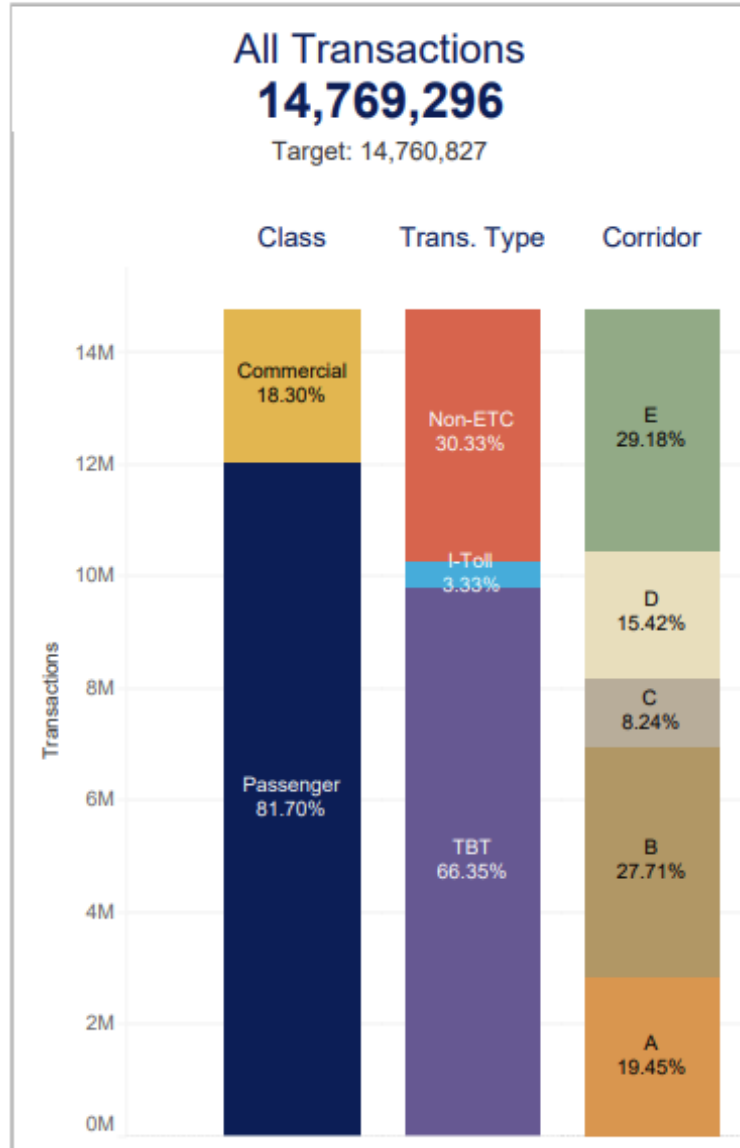
“OPUS” – Optical Profile Unifying System

KANSAS TURNPIKE  
TOLL ZONE 47



47

Traffic with date of travel in October 2024. Data as of 11/19/2024.



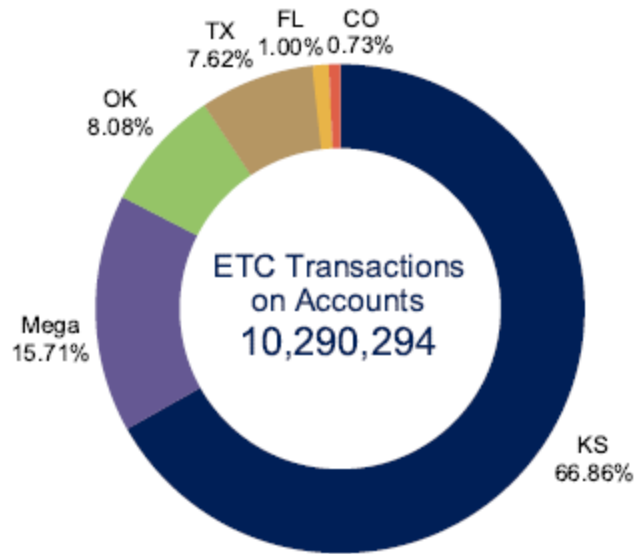
Passenger = Class 2-4  
Commercial = Class 5-9

TBT = Transponder Transaction  
I-Toll = Moved to Trpr by Plate  
Non-ETC = Image Transaction

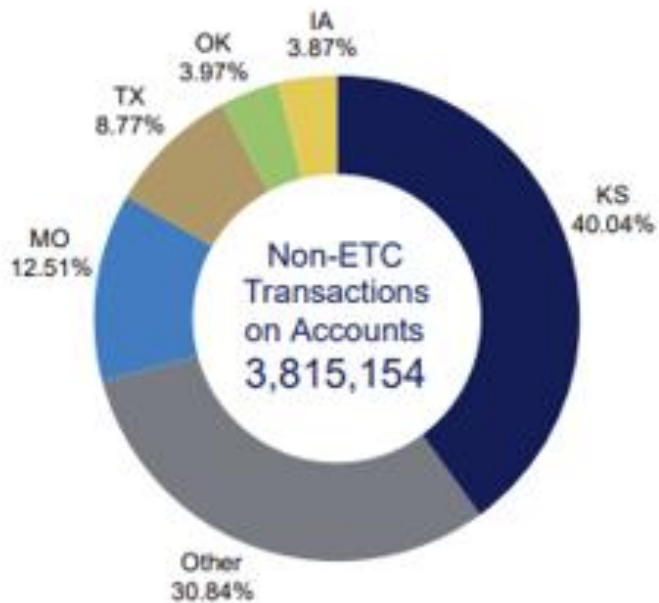
A = Oklahoma to Wichita  
B = Wichita to Emporia  
C = Emporia to Topeka  
D = Topeka to K-10  
E = K-10 to Kansas City

Excludes 72,814 non-revenue transactions.

### ETC Agency State

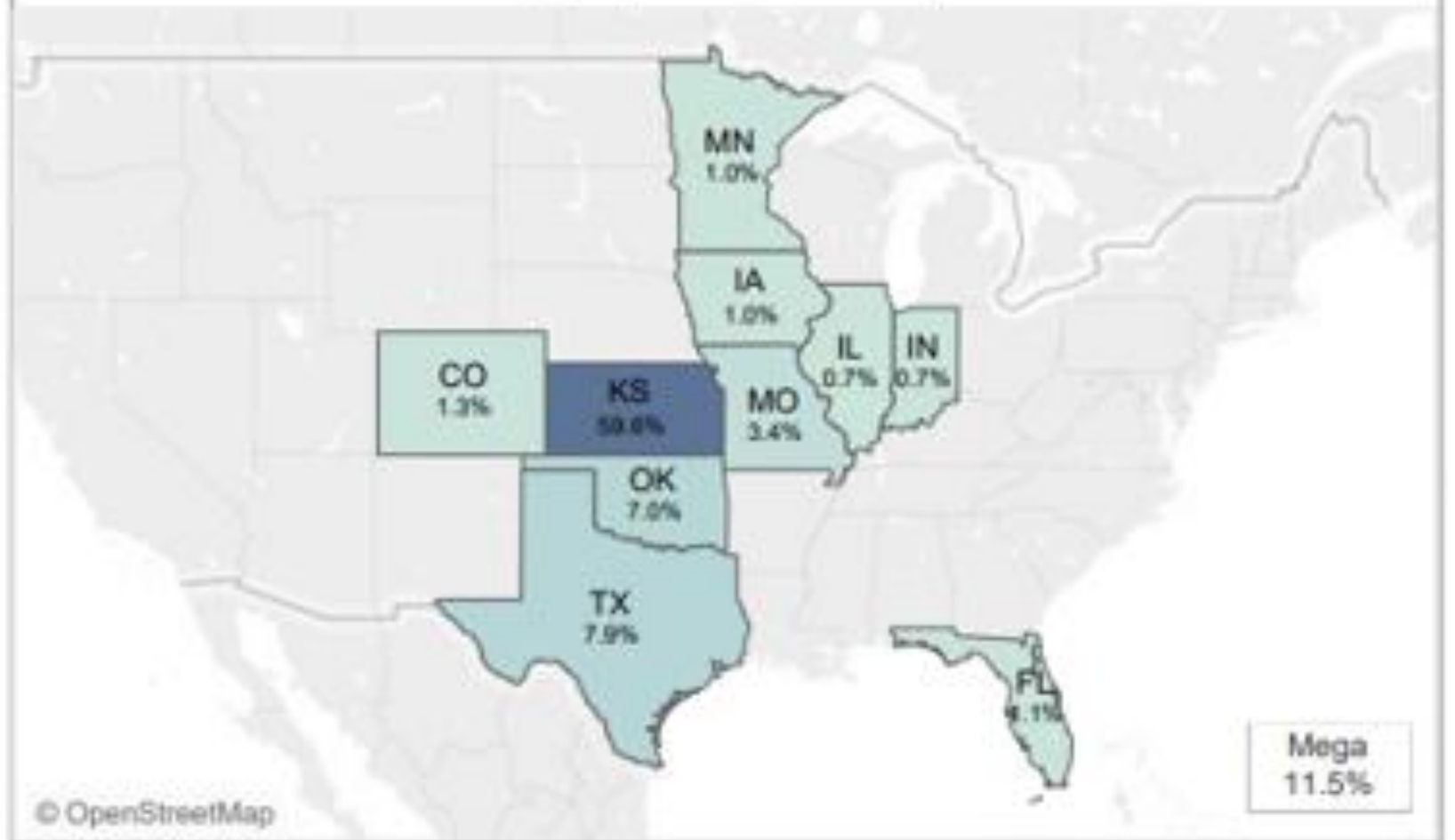


### Non-ETC Plate State

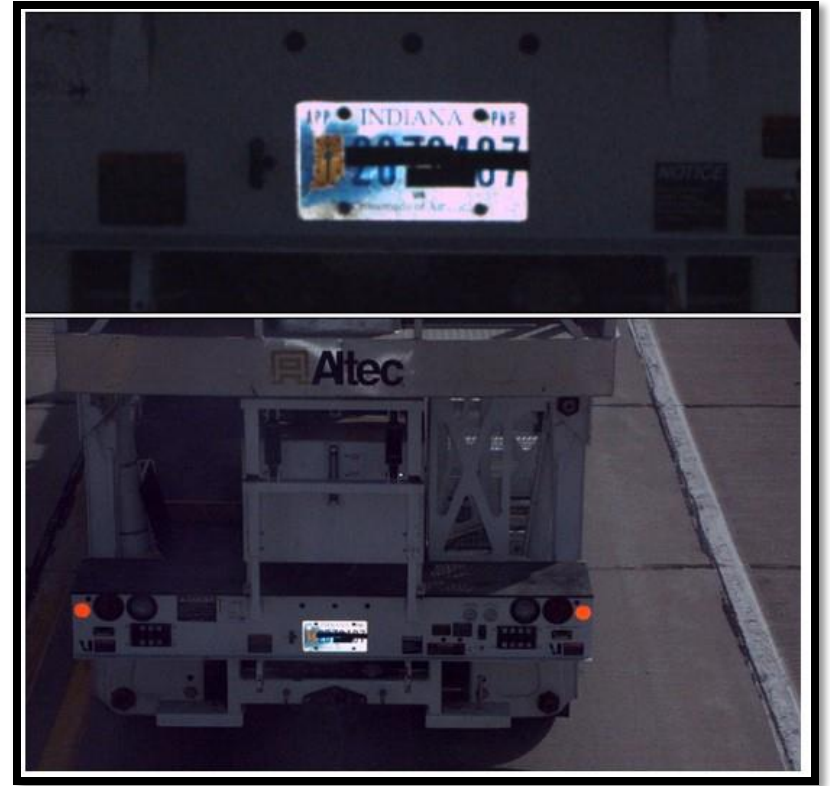


### Top 10 States

State based on toll agency for ETC and license plate for Non-ETC.



# "Leakage" – Kansas Version



# New Technology – “Facial Recognition”





# Toll Plaza Demo./Lane Configuration Contracts

25 Existing Toll Zones

Timeline: August 2024 to November 2025

8074 – 1 Plaza (42)	\$2,562,265 (42)	\$2,562,265/Plaza
8002 – 6 Plaza’s	\$2,602,168	\$433,694/Plaza
8003 – 7 Plaza’s	\$2,135,219 (127)	\$2,135,219/Plaza
	<u>\$2,216,569</u>	\$369,428/Plaza
	\$4,351,788	
8004 – 5 Plaza’s	\$1,911,806.80	\$382,361.36/Plaza
8005 – 6 Plaza’s	<u>\$2,773,770</u>	\$462,295/Plaza
	\$ 14,201,798 Total	\$568,072/Plaza



# Southern Terminal (19) - 2000



# Southern Terminal (17) - 2004



# Southern Terminal (17) - 2016



# Eastern Terminal (217) - 2006



# Eastern Terminal (217) - 2014



# Eastern Terminal (217) - 2014

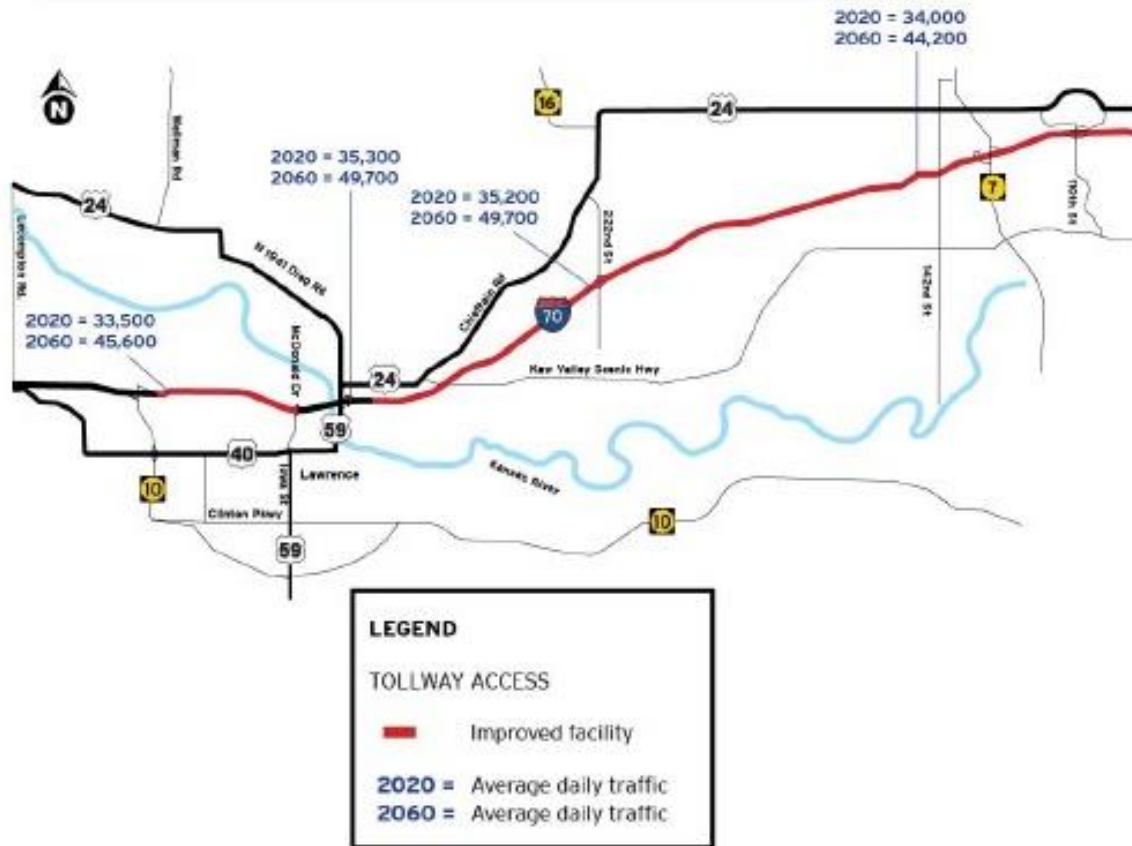


Figure D-14: I-70 Widening Concept



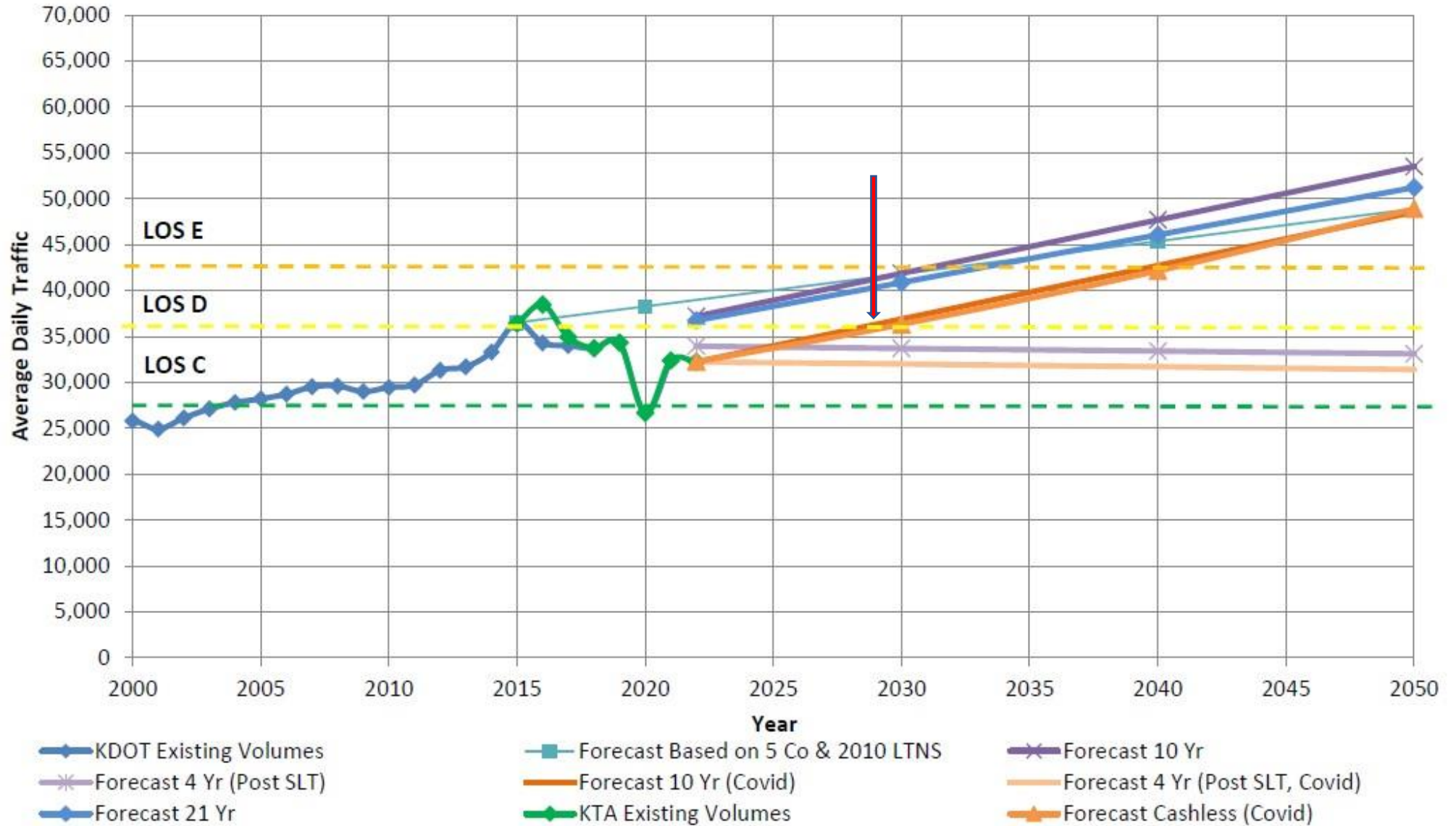
## I-70 Widening

<b>MM 204.6 to MM 211.6</b>	<b>7 Miles</b>
<b>MM 211.6 to MM 224.6</b>	<b>13 Miles</b>
<hr/>	
<b>MM 197.8 to MM 201.8</b>	<b>4 Miles</b>



# I-70 ADT Growth Projections - East Lawrence to Tonganoxie

Sept. 2022

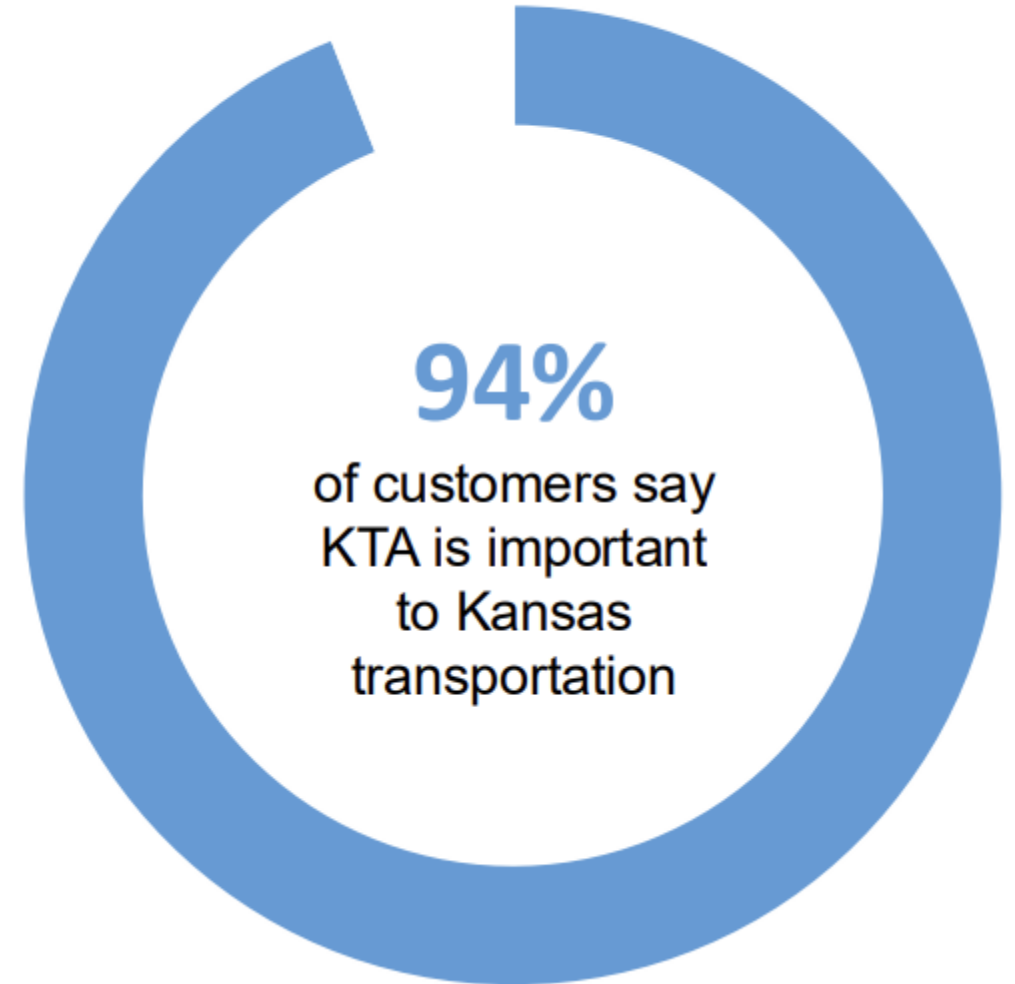






# Support for KTA assets & programs

- 90% are satisfied with the value they receive for the toll they pay
  - Consistent across usage levels
- 95% are satisfied with roadway maintenance; 4% are unsatisfied; 1% responded N/A
- 83% are satisfied with service areas; 6% are unsatisfied; 12% responded N/A



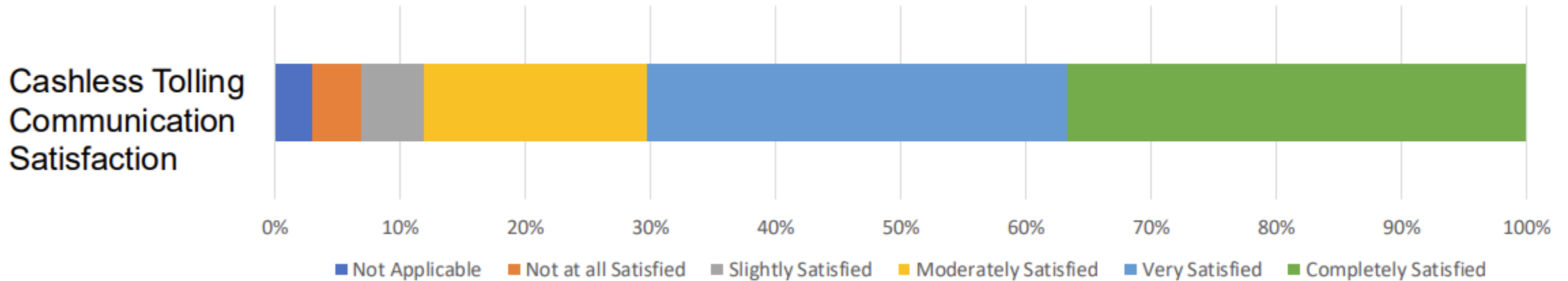


# 90%

of customers support  
Cashless Tolling

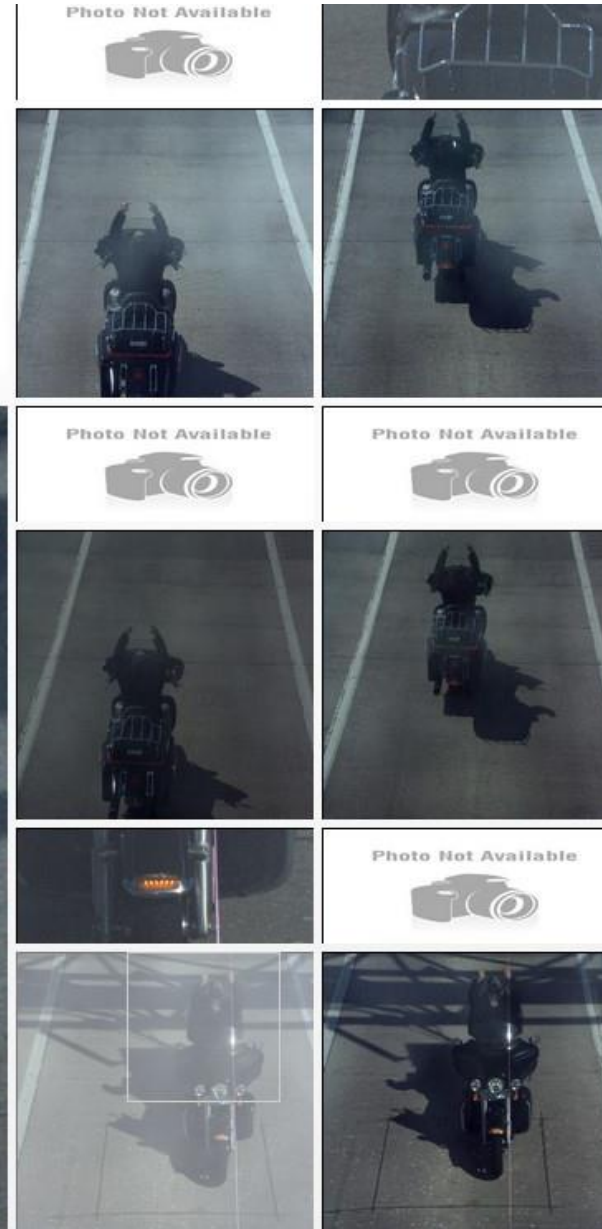
## Has the conversion to cashless tolling changed your satisfaction with the Kansas Turnpike?

- 48% - no change
- 43% - increased satisfaction
- 9% - decreased satisfaction



# Customer Satisfaction – Ongoing Effort

Photo Not Available



**irip number**  
7,510,618

**Exit Date**  
Apr 10, 2022

**Exit Time**  
15:54:31  
15543146

**Exit Plaza**  
183

**Exit Lane**  
15

**Exit Speed**  
70

**Exit Class**  
2

**Entry Date**

**Entry Time**

**Entry Plaza**

**Entry Lane**

# Accountability

**Being accountable for your actions, and being honest, reliable, and transparent.**

**Men wrapping gifts....**



**Men using a smoker....**



KANSAS TURNPIKE

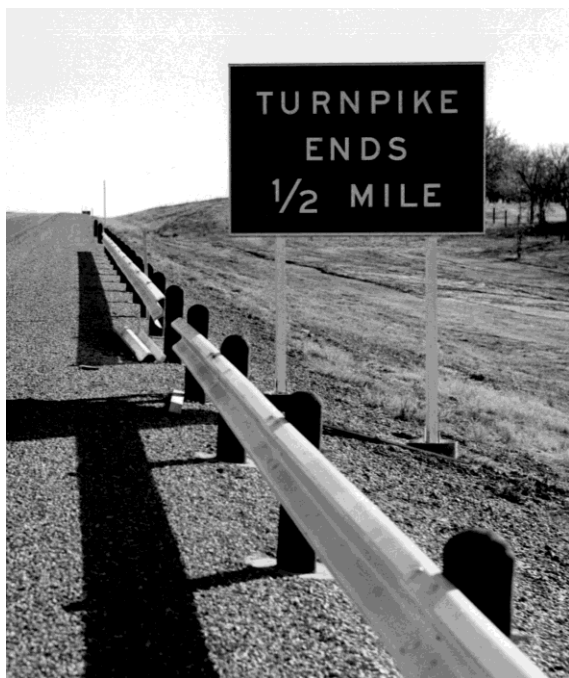
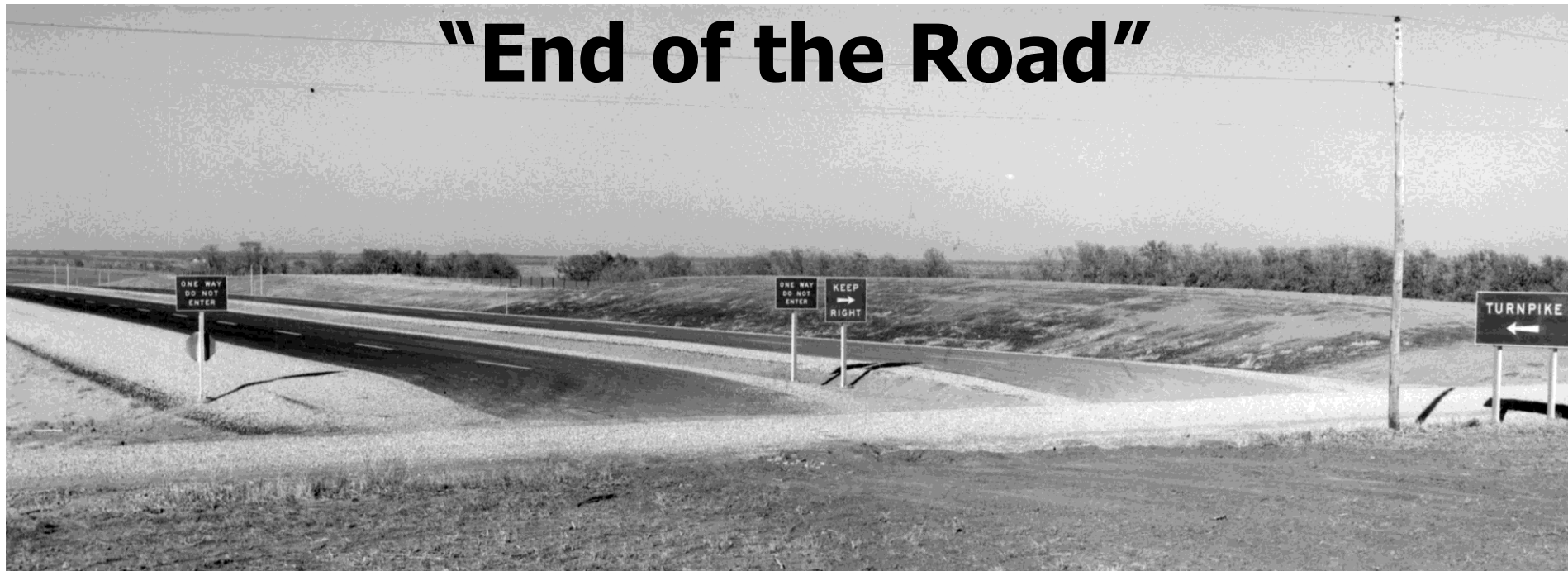
STOP  
GET  
TICKET



# Oklahoma/Kansas Border



# “End of the Road”







# 5 Mile Section of Oklahoma I-35 Completed in 1958-61







# Questions ?



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