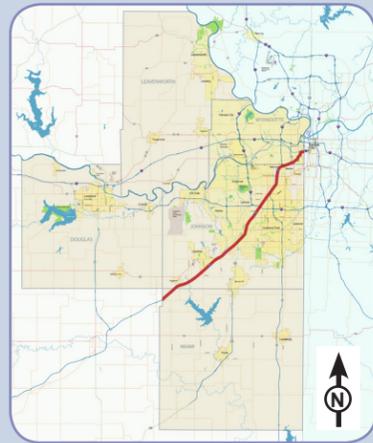


The corridors that were analyzed are shown in Table 14-1 are discussed in detail on the pages noted.

Table 14-1: Key Corridors and Associated Pages

Corridor	Pages
I-35	65-68
I-70	69-72
I-435 East-West	73-75
I-435 North-South	77-79
I-635/I-35/US-69	81-83
US-24/40	85-86
US-56	87-89
K-5	91-92
K-7/US-73/US-169	93-96
K-10	97-100
K-68	101-103
K-92/M-92/I-29	105-106
175th St./199th St./223rd St.	107-109
Metcalf Avenue	111-113
Shawnee Mission Parkway	115-116
State Avenue	117-119
Western Johnson County North-South Arterial	121-122
Strategy	Pages
Potential Outer Loop	123-126

I-35 Corridor



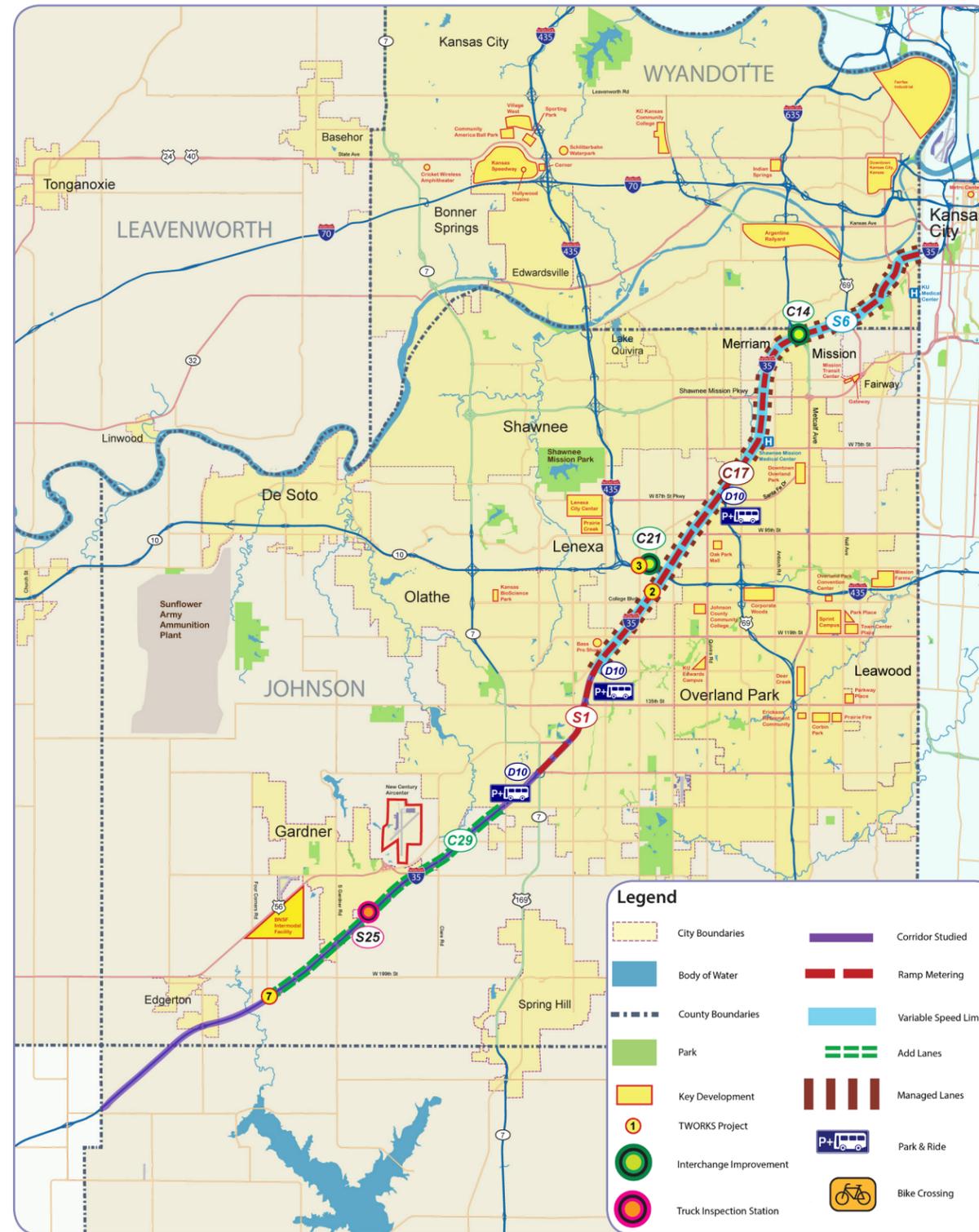
Corridor Profile

I-35

Length: 36 miles

Key Developments:

- Bass Pro Shops
- BNSF Intermodal Facility
- New Century Air Center
- Oak Park Mall
- Olathe Medical Center
- Shawnee Mission Medical Center
- University of Kansas Medical Center



Legend

- City Boundaries
- Body of Water
- County Boundaries
- Park
- Key Development
- TWORKS Project
- Interchange Improvement
- Truck Inspection Station
- Corridor Studied
- Ramp Metering
- Variable Speed Limits
- Add Lanes
- Managed Lanes
- Park & Ride
- Bike Crossing

Figure 14-2: Traffic Volumes along I-35

Segment	2010 Traffic Volumes	2040 Forecasted Traffic on Existing plus Committed Network	2040 Forecasted Traffic with Recommended Strategies
KS/MO Line	86,300 7% trucks	144,900	139,800
US-69 (18th)	107,600 7% trucks	153,300	153,200
I-635	129,300 7% trucks	174,600	175,300
US-56 (SMP)	143,300 7% trucks	183,500	183,000
US-69	96,400 7% trucks	137,700	137,100
I-435	90,300 9% trucks	146,400	149,200
K-7	42,700 14% trucks	94,300	95,100
US-56 (175th)	32,100 16% trucks	57,000	57,000
Gardner Rd.	22,300 21% trucks	44,800	44,800
FR/MI Co Line			

2010 Traffic Volumes
Average daily traffic volumes are shown for each segment along the corridor, as well as the percentage of commercial vehicles.

2040 Forecasted Traffic on Existing plus Committed Network
Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that the projects scheduled for construction during T-WORKS have been constructed.

2040 Forecasted Traffic with Recommended Strategies
Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that T-WORKS projects have been constructed and that the recommended strategies from the 5-County Regional Transportation Study have been implemented.

Not Congested
Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.

Moderately Congested
Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.

Congested
Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.

Severely Congested
Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.

LEGEND

CORRIDOR DESCRIPTION

I-35 is a principal freeway extending through the 5-County region from the northwest corner of Miami County through Johnson County and the southeast portion of Wyandotte County, where it continues to the Kansas City, Missouri Central Business District (CBD). In addition to accommodating travel through the region, I-35 serves as one of two major Interstates in Kansas which link the states together, providing a connection for residents in Kansas to employment opportunities in Kansas City, Missouri. I-35 also provides the connection to the regional freeway system for communities located south of I-435 including Olathe and Gardner.

Over the last few decades, employment growth in Johnson County has resulted in a strong reverse commute movement on I-35 to employment and retail opportunities that now exist in Johnson County.

There is existing development along both sides of I-35 from the City of Olathe to the north and the existing roadway has been constructed to use all the right-of-way available, particularly north east of I-435.

A new Bus-on-Shoulder transit policy has been implemented along I-35. This policy allows transit buses to use the shoulder lanes to bypass traffic when highway speeds drop below 35 mph. It has proven effective in this initial implementation test, and transit ridership in this corridor has doubled since the policy was put in place.

While the I-435 loop offers truck traffic an alternative to avoid the downtown constrictions, many trucks continue to use I-35 as their primary route. As identified in Phase 1, Section 4: Freight Movement, trucks encounter traffic congestion which delays freight movement through the region. Many of the congested areas involve I-35, which remains a critical route for the trucking industry.

EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-2 lists the expansion and modernization projects that are funded through T-WORKS along the I-35 corridor.

Table 14-2: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
2	I-435/I-35/K-10 Interchange (Johnson Co. Gateway)	1st Phase - Improve ramps and add lanes on I-35	\$14 M	2012
3	I-435/I-35/K-10 Interchange (Johnson Co. Gateway)	2nd Phase - Construct C-D roads and ramps	\$250 M	2014
7	I-35 at Homestead Lane between Edgerton and Gardner	Construct new interchange	\$26 M	2012

KEY DEVELOPMENTS

A primary future generator along the I-35 corridor will be the BNSF Intermodal Facility near Gardner and Edgerton. The majority of trucks from the facility are expected to use I-35. At I-435, intermodal truck traffic is expected to distribute on the freeway system. The intermodal facility is anticipated to be a major destination and generator of regional freight rail and truck traffic.

Traffic studies completed for this development have forecast that the combined intermodal and logistics park activity will generate over 17,000 trips a day when it is fully developed. The BNSF Intermodal Facility is expected to generate 7,000 truck trips per day when fully developed. From the forecast it is also expected that 85 percent of trips will go north on I-35, two percent will go west on US-56 and three percent will go south on I-35.

Three major regional medical facilities are located along the I-35 Corridor: Olathe Medical Center, Shawnee Mission Medical Center, and the University of Kansas Medical Center (KU Med).

There is very high projected population growth in Olathe and Gardner between I-435 and 199th. Both cities have undeveloped land which is intended for future housing. Some population growth is expected in Northeast Franklin County, west of Wellsville, along I-35.

Also, very high employment growth in both Olathe and Gardner is projected between 135th and 199th. Some employment growth near I-435 from 87th to 119th is anticipated. This is mostly surrounding College Boulevard to the west of I-35.

Some employment growth is also expected in Downtown Kansas City, Missouri and just to the south of the Downtown loop. This would draw even more traffic into the downtown area via I-35.

TRAFFIC

Traffic volumes forecast on I-35 are among the highest for the 5-County region. The capacity of I-35 was significantly increased in the mid-1980s. The continued growth of Johnson County has led to increased traffic on I-35 and this freeway currently experiences peak hour traffic congestion as well as incident-based congestion. Future year traffic projections for the year 2040 predict higher traffic volumes on this primarily six-lane freeway.

Traffic forecasts for the year 2040 indicate increased traffic volumes over current levels and the projections show that congestion levels on I-35 will increase. Traffic is expected to grow by as much as 60 percent in some segments. Much of the growth is expected in South Johnson County. Maintaining mobility on I-35 will be an important need

to address. During peak periods, it is anticipated that congestion on I-35 will extend from downtown Kansas City, Missouri all the way south to 175th street. In all, 22 of 36 miles of the corridor are expected to experience congestion during the peak period in 2040.

KDOT is currently doing a more in-depth study of the corridor through the I-35 Moving Forward Study to look for innovative ways to address immediate, mid-term and longer-term needs for I-35 over the next 30 years (<http://www.ksdot.org/kcMetro/projectstudytest.asp>).

OTHER MODES

Transit service has been improved along I-35 with a bus-on-shoulder operational test. The bus-on-shoulder allows transit buses to use shoulders to by-pass traffic congestion when speeds drop below 35 mph. This test implementation has supported an increase in transit ridership in this corridor. There is a possibility that more bus-on-shoulder operations could be implemented thereby further improving transit ridership.

Also, considerations of freight movements will be important to the future of the corridor. The BNSF Intermodal Facility is expected to generate an additional 7,000 trucks per day, which will rely primarily on I-35 and I-435 for northbound trips.

CORRIDOR CONNECTIONS

The area where I-435, K-10 and I-35 intersect, called the Johnson County Gateway, has been studied as part of a separate project. This location serves a complex set of travel patterns which currently result in high levels of traffic conflict and delay. The section of I-435 east of I-35 has been addressed in recent projects, but will continue to be the highest used east-west travel corridor in the region.

The connection of I-435 and I-35 in Lenexa could pose congestion problems in the future. This is an existing issue from I-435 onto I-35 from both the eastbound and westbound directions. As the two facilities interact, congestion on one facility could cause queuing that would negatively affect the other facility. Conditions on I-435 are projected to be very congested in the year 2040.

The I-635 and I-35 interchange in Merriam is a left exit/entrance onto I-35 which violates driver expectancy. Because of this, weave and merge issues exist at this interchange today and will continue to get worse as there is more traffic. This congestion will negatively impact both facilities.

A significant amount of traffic from US-69 merges with I-35 south of 75th street which causes traffic flow issues today. In the northbound direction, there is a significant amount of traffic from I-35 and US-69 that must merge into 3 lanes. In the southbound direction, there is traffic that enters I-35 from 75th Street in the same auxiliary lane that is used for traffic exiting to US-69 southbound. Congestion in both directions will continue to get worse with increased traffic.

The I-35 and K-7/US-169 interchange is a key connection providing access to southern Johnson County and Miami County. This area shows moderate congestion today and will become severely congested in the year 2040.

Other interaction points include US-56 in Gardner, where congestion is expected at the 175th/US-56 interchange. Also, at Shawnee Mission Parkway there is significant congestion on I-35 near the entrance ramp locations.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the I-35 corridor.

A variety of strategies were considered to improve current and future traffic operations on I-35 through the year 2040. These strategies are shown in Table 14-3. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the I-35 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S1: Implement ramp metering north of the K-7 interchange in Olathe to the Kansas/Missouri state line. Ramp metering uses traffic signals on the entrance ramps to control the rate at which vehicles enter I-35. Ramp metering will improve safety and traffic flow on I-35.

S6: Implement variable speed limits north of 127th Street. Variable speed limits can reduce the speed limit on I-35 when there is considerable congestion ahead. This strategy is used to slow traffic before it reaches the congested area and to better allow that congestion to dissipate.

S25: Construct new truck inspection stations to handle the growth in truck traffic due to the opening of the BNSF Intermodal Facility. The existing inspection stations lack the capacity to handle current truck volumes. Proper inspection of trucks impacts safety throughout the region.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D10: Construct Park & Ride facilities along I-35 near K-7 and near Santa Fe. Park & Ride facilities promote carpooling and transit use while offering the flexibility for travelers to use personal vehicles for errands either before or after their workday commute.

D22: Bicycle and pedestrian facilities should be considered on all new or renovated bridges over I-35.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C14: Reconstruct the I-35 and I-635 interchange to address existing and future congestion.

C17: Implement active lane use control including “hard shoulder running” and potential High Occupancy Vehicle (HOV)/High Occupancy Toll (HOT) lane during peak hours from 127th Street to the Kansas/Missouri state line. This strategy allows individual lanes and the shoulder to be controlled as to whether or not they are open for use by traffic, their speed limit based upon conditions, and whether HOV/HOT restrictions apply. This strategy provides great flexibility in allowing KDOT to address congestion due to peak traffic periods and non-peak incidents such as crashes or vehicle breakdowns.

C21: Construct the remaining phases of the I-35/I-435/K-10 Johnson County Gateway interchange.

C29: Widen I-35 to 6 lanes from Homestead Road to Lone Elm Road.

Table 14-3: I-35 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
	Operate and maintain existing roads and bridges													X	X
S1	Ramp metering on I-35 north of K-7	6.0	7.3	3.3	10.0	3.3	5.0	5.0	4.4	3.3	569	2.9	193.4	X	
C5	Construct HOV/HOT lanes from 127th to KS/MO state line	5.9	5.0	10.0	3.3	6.1	3.3	5.3	5.3	3.8	538	1,500	0.4		
S6	Variable speed limits, north of 127th Street (16.8 mi)	4.9	4.4	3.3	10.0	3.3	5.0	4.2	4.4	3.3	501	2.1	234.0	X	
C14	I-635 and I-35 interchange improvements	6.5	6.5	4.4	3.4	3.3	4.1	4.2	4.4	3.3	466	210	2.2	X	X
D10	Construct Park & Ride facilities near US-69, K-7 and Santa Fe	4.8	4.4	3.3	5.9	5.0	4.1	4.2	5.0	5.0	465	1.5	310.1	X	
C17	Active lane use control including "hard shoulder running" and potential HOT or HOV lane during peak hours from 127th to KS/MO state line	5.4	4.4	3.7	3.6	5.5	5.0	5.0	5.2	3.7	453	94	4.8		X
C21	Construct remaining phases of I-435/I-35/K-10 Gateway project	6.2	5.0	5.0	3.4	3.3	3.6	4.4	4.4	2.6	437	310.8	1.4	X	X
D19	Commuter transit service from BNSF Intermodal Facility, additional service Bus on Shoulder to downtown KCMO	4.9	4.4	3.3	3.4	5.0	4.5	4.2	5.0	5.0	433	11	39.3		
C29	Widen I-35 to 6 lanes from Homestead Lane to Lone Elm Road	7.7	3.7	3.7	5.0	3.3	2.3	3.4	4.4	2.3	426	64.7	6.6		X
D22	Bicycle / pedestrian facilities: consider on all new or renovated bridges over I-35	3.9	3.7	3.3	3.8	5.5	4.1	4.1	5.2	5.6	420	1.6	266.9	X	
S25	Construct new truck inspection stations	5.0	5.6	3.3	3.4	3.3	3.6	3.9	4.4	3.3	409	23.1	17.7	X	
D35	Parallel bicycle / pedestrian trail development as specified in the MARC Metro Green plan / local plans	3.3	3.3	3.3	3.3	5.5	5.0	4.5	5.2	5.1	401	16.8	23.9		

Note: I-35 Managed Lanes Study is in progress

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

I-70 Corridor



Corridor
Profile

I-70

Length: 51 miles

Key Developments:

- Berry Plastics
- Cerner
- Community America Ballpark
- Cricket Wireless Amphitheater
- Downtown Kansas City, Kansas
- Downtown Lawrence
- Hollywood Casino
- I-70 Business Center
- Indian Springs
- Sporting Park
- Kansas City Kansas Community College
- Kansas Speedway
- Schlitterbahn Waterpark
- Village West

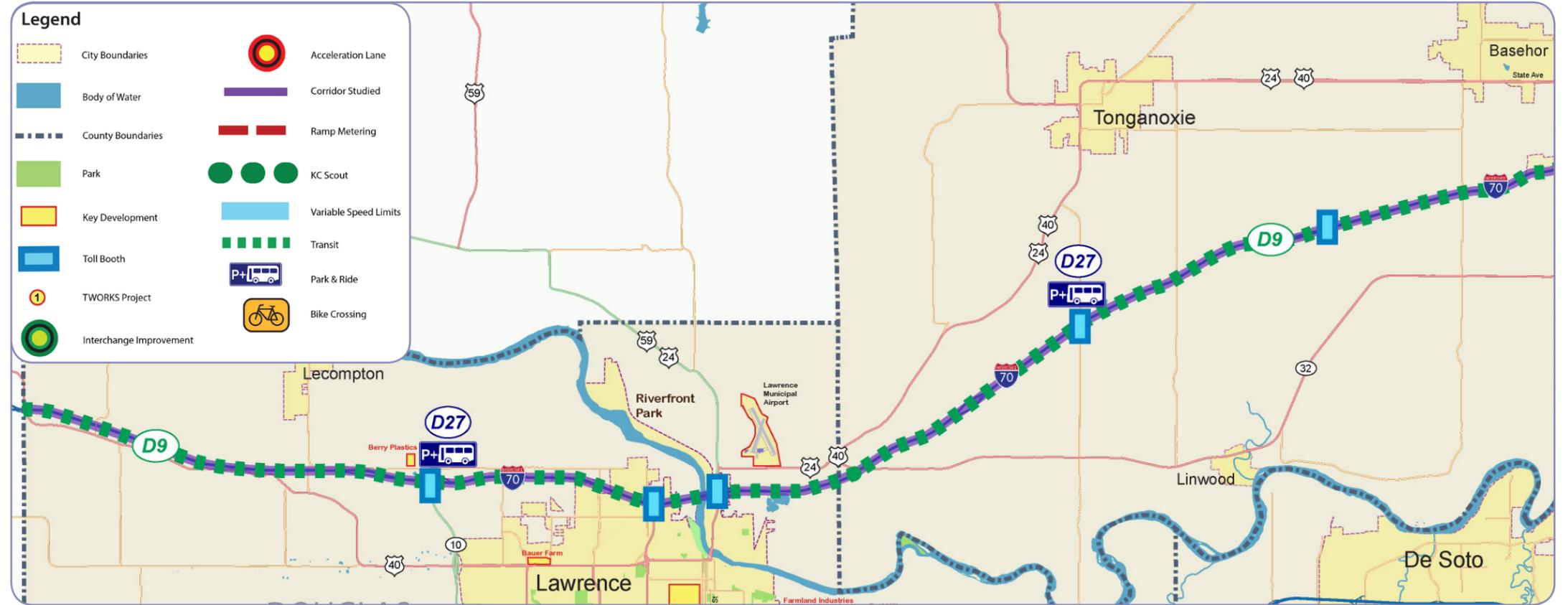
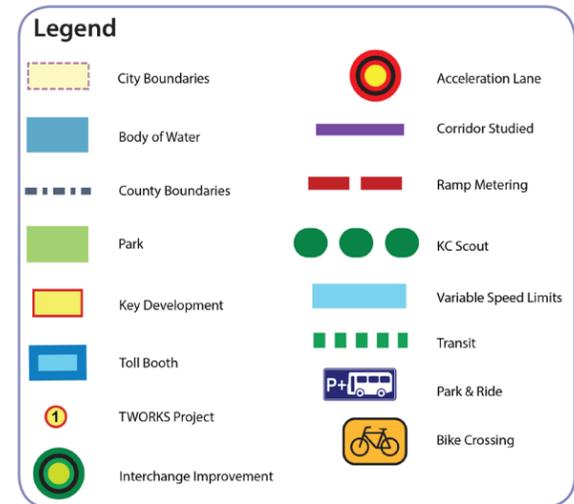
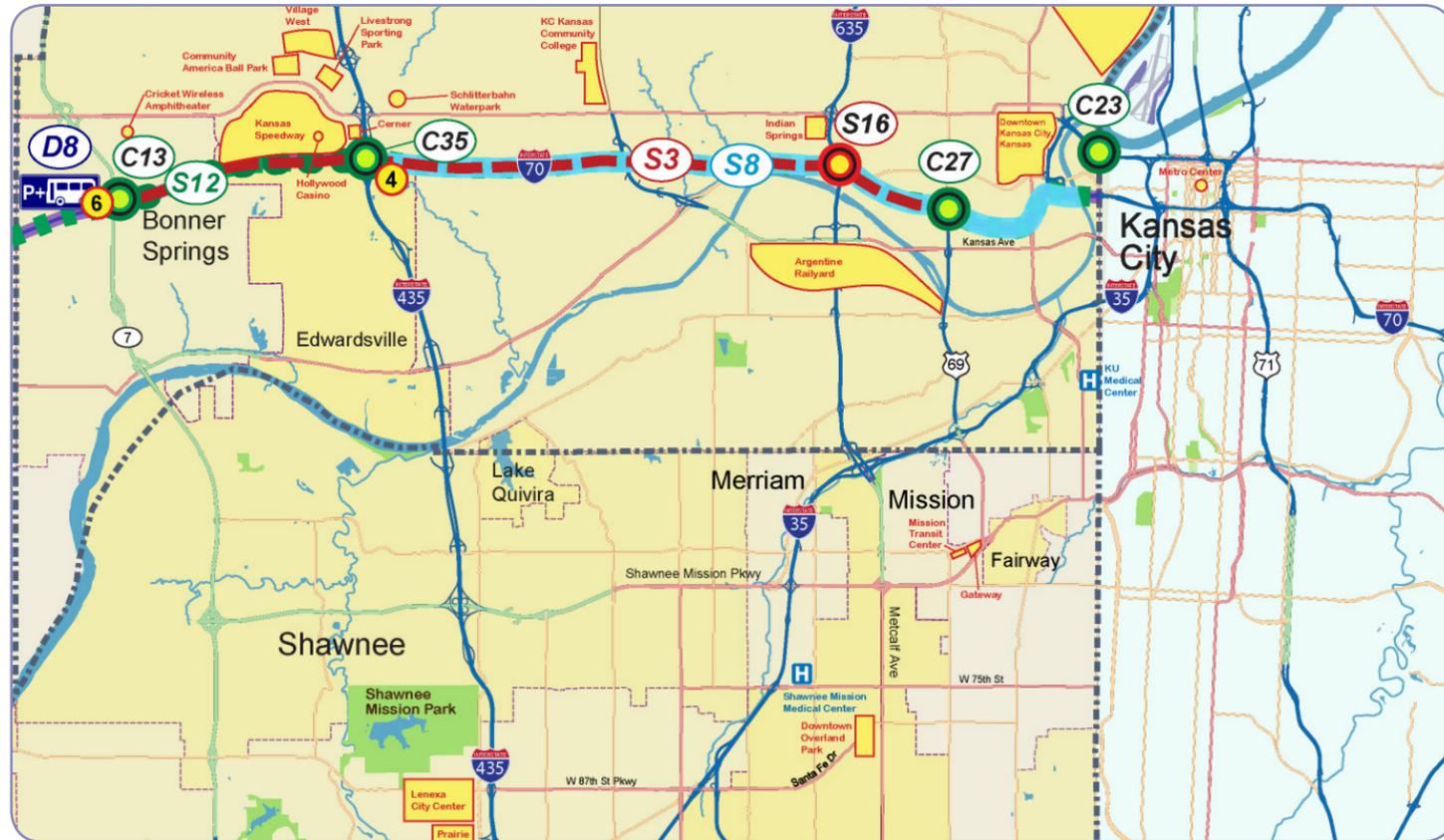


Figure 14-3: Traffic Volumes along I-70

Segment	2010 Traffic Volumes	2040 Forecasted Traffic on Existing plus Committed Network	2040 Forecasted Traffic with Recommended Strategies
5W/DG Co Line	35,900	60,900	60,900
K-10	28,700	46,600	43,200
Iowa St.	29,500	41,600	39,700
US-59/US-40	29,700	39,100	39,300
County Route 1	29,100	37,200	37,500
K-7	44,100	52,400	51,800
L-435	61,700	57,500	57,200
K-32 via 57th St.	77,400	85,900	85,200
I-635	74,600	76,000	75,300
US-69 (18th)	75,700	77,100	76,400
I-670	35,900	36,700	36,200
KS/MO Line			

Segment	Commercial Vehicle Percentage
5W/DG Co Line	13% trucks
K-10	15% trucks
Iowa St.	15% trucks
US-59/US-40	15% trucks
County Route 1	15% trucks
K-7	10% trucks
L-435	11% trucks
K-32 via 57th St.	10% trucks
I-635	13% trucks
US-69 (18th)	27% trucks
I-670	20% trucks
KS/MO Line	

Legend	Not Congested	Moderately Congested	Congested	Severely Congested
	Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.	Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.	Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.	Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.



EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-4 lists the expansion and modernization projects that are funded through T-WORKS along the I-70 corridor.

Table 14-4: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
4	I-70 from I-435 to State Line	I-70 Real Time Traveler Information	\$621,000	2012
6	I-70 & K-7	Interchange Improvements	\$68 M	2013

KEY DEVELOPMENT INFORMATION

Development of major activity centers such as Village West, potential new development near the County Road 1 interchange, and other I-70 corridor destinations is projected for 2040.

The Village West area near I-70 and I-435 continues to develop. Housing and employment are expected to grow significantly in this area. Employment is anticipated to triple in the area by 2040. Maintaining effective traffic access with I-435 is critical to the economic vitality of this area.

Cricket Wireless Amphitheater and the Kansas City Speedway are significant regional attractions. Both are accessed via I-70 near Village West. The primary I-70 exits used by travelers accessing these facilities are K-7 and 110th Street and I-435. While these facilities do not generate consistent levels of traffic, they generate significant traffic when in use. The K-7 and I-70 interchange is commonly recognized as one of the most congested interchanges along the corridor with backups onto K-7 mainline and on the westbound I-70 exit ramp.

Other areas of expected population growth include western Lawrence and Bonner Springs. Employment growth is also projected in downtown Kansas City, MO.

DESCRIPTION OF THE CORRIDOR

I-70 is one of two major east-west routes through the 5-County region and one of two major interstates in Kansas linking to other states. I-70 is a toll facility from west of the study region to the East Toll Plaza 13 miles east of Lawrence; the number of lanes varies from 4 to 8 lanes. I-70 is currently a 6-lane facility west of the K-10/Lecompton interchange, between the east and west Lawrence exits, and between the 110th Street and I-635 interchange. It widens to 8 lanes west of the interchange with I-670. East of the interchange, I-70 is 4 lanes and narrows to one east-bound lane west of the Lewis and Clark Viaduct as it approaches the Kansas City, Missouri central business district. The tolls from the eastern

terminus (K-7 and I-70 interchange) of the KTA managed roads to Topeka are \$2.75 each way, with an average 20 percent discount for K-TAG automated toll participants. While outside the study region, it is significant to note that I-70 winds through the central business district of Kansas City, Missouri.

KDOT owns, operates and maintains I-70 east of the 18th Street Expressway. The KTA owns and operates I-70 from the 18th Street Expressway west past the limits of the 5-County region. While it is under KTA ownership, KDOT does perform substantial maintenance activities from the 18th Street Expressway west to K-7.

TRAFFIC

Recent construction along I-70 from Topeka through Lawrence should adequately provide for the future traffic demand along the corridor. Completion of the east leg of the K-10, South Lawrence Trafficway will lessen the volume of traffic using I-70 between K-10 and Kansas City by providing a more direct route from Topeka to southern Johnson County. The growth and development forecast for this corridor do not demonstrate a need for additional capacity along I-70 from Lawrence to K-7.

The highest level of congestion will be on the section of I-70 between 57th Street and I-635.

OTHER MODES

The need for transit in the I-70 corridor has been identified in public meetings. This service could provide public transportation between Topeka, Lawrence and Kansas City. Forecast ridership between Lawrence and Kansas City is around 1,100 users per day. Potentially even more riders would use the system if it were extended to Topeka. KDOT is conducting a transit study to consider the feasibility of transit service along the I-70 corridor.

I-70 corridor is currently a major east-west freight corridor in the 5-County region and will continue to be in the year 2040.

CORRIDOR CONNECTIONS

The downtown areas of Kansas City, Kansas and Kansas City, Missouri are connected on I-70 by the Lewis and Clark Viaduct. This viaduct is being studied by KDOT to improve its functionality and develop a master plan to phase construction improvements to the bridge.

We anticipate some congestion in the I-635 interchange area by 2040.

We do not anticipate significant congestion at the interchange with I-435, near State Avenue, in 2040, except for merging and weaving issues currently seen in that area. These occur particularly where the northbound I-435 to westbound I-70 traffic crosses the westbound I-70 to southbound I-435 traffic. We do anticipate that the level of congestion for this weaving area will continue to get worse as traffic increases in the future.

The I-70 and K-7 interchange currently experiences traffic congestion that will become significantly worse by the year 2040. KDOT is developing a new design concept for this interchange and the initial phases of these improvements have been programmed for construction through T-WORKS.

The opening of the new I-70 interchange at County Route 1 south of Tonganoxie provides new access and potential for development in the surrounding area.

The I-70 and K-10 interchange, west of Lawrence, is a key connection in the 5-County region. Ideally, when the west leg of the K-10 South Lawrence Trafficway is improved to a four-lane freeway, the interchange at I-70 and K-10 would be upgraded as well. Due to the cost to improve the interchange and that traffic moving from one highway to the other must pass through toll booths, this reconstruction is not recommended at this time.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the I-70 corridor.

A variety of strategies were considered to improve current and future traffic operations on I-70 through the year 2040. These strategies are shown in Table 14-5. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the I-70 corridor maps. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost

and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S3: Implement ramp metering between K-7 and 18th Street. Ramp metering uses traffic signals on the entrance ramps to control the rate at which vehicles enter I-70. Ramp metering will improve safety and traffic flow on I-70.

S8: Implement variable speed limits from I-435 to the Kansas/Missouri state line. Variable speed limits can reduce the speed limit on I-70 when there is considerable congestion ahead. This strategy is used to slow traffic before it reaches the congested area and which allows that congestion to dissipate more quickly.

S12: Expand the KC Scout intelligent transportation system (ITS) from K-7 to I-435. The ITS devices would include dynamic message signs to warn drivers of upcoming travel conditions and a camera system to monitor the real-time flow of traffic.

S16: Lengthen the acceleration lanes at I-70 and I-635 interchange to allow safer and more efficient movement of traffic from northbound I-635 to westbound I-70 and from eastbound I-70 to southbound I-635.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D8: Construct a Park & Ride facility near the I-70 and K-7 interchange. Park & Ride facilities promote carpooling and transit use while offering the flexibility for travelers to use personal vehicles for errands either before or after their workday commute.

D9: Initiate transit service along I-70 between Topeka, Lawrence, Kansas City, KS and Kansas City, MO. An intercity bus service similar to the service on K-10 would operate on I-70 between Topeka and Lawrence, and

then Lawrence to Kansas City, Kansas and Kansas City, Missouri. The service would operate all day with more frequent service in commuter peak times. A study of this service is currently underway.

D21: Bicycle and pedestrian facilities should be considered on all new or renovated bridges over I-70.

D27: Expand Park & Ride facilities near I-70 at the Lecompton and Tonganoxie interchanges. Park & Ride facilities promote carpooling and transit use while offering the flexibility for travelers to use personal vehicles for errands either before or after their workday commute.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C13: Construct phases 4, 5, 6, 7 and 10 of the reconfigured I-70 and K-7 interchange.

C23: Reconfigure the I-70 and Lewis and Clark Viaduct interchange.

C27: Reconfigure the I-70 and 18th Street interchange as a partial cloverleaf interchange to eliminate the weaving areas between ramps at this location.

C35: Add a “fly-over” ramp for the northbound to westbound traffic movement at the I-70 and I-435 interchange.

Table 14-5: I-70 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
	Operate and maintain existing roads and bridges													X	X
S3	Ramp Metering on I-70 between K-7 and 18th Street	5.1	7.3	3.3	10.0	3.3	4.1	4.4	4.4	3.3	543	0.7	738.9		X
S8	Variable Speed limits on I-70 from I-435 to the KS/MO state line	4.3	4.4	3.3	10.0	3.3	5.0	4.2	4.4	3.3	491	1.4	354.4		X
D8	Construct Park & Ride facility near I-70 at K-7	4.0	3.3	3.3	9.7	4.1	4.1	3.5	4.7	4.8	474	0.7	644.5	X	
D9	Transit service connecting Topeka, Lawrence, Kansas City (KS) and Kansas City (MO)	4.7	3.7	3.7	4.8	5.5	5.5	4.7	5.2	5.6	470	22.3	21.1	X	
C13	Construct phases 4,5,6,7 & 10 of the reconfigured I-70/K-7 interchange	6.8	6.5	4.4	3.7	3.3	2.9	4.8	3.3	4.1	469	245	1.9	X	X
S12	Expand KC Scout ITS on I-70, K-7 to I-435	4.0	7.3	3.3	6.3	3.3	4.1	4.4	4.4	3.3	469	0.5	892.8	X	
S16	Lengthen acceleration lanes at I-635 and I-70	4.6	7.3	3.3	3.5	3.3	4.5	4.4	4.4	3.3	441	11	41.6	X	
C20	Reconfigure I-70 and I-635 interchange	5.5	5.0	4.4	3.5	3.3	5.0	4.4	4.4	3.3	438	210	2.1		
C23	Reconfigure I-70 and Lewis & Clark Viaduct Interchange	4.1	5.6	3.7	3.5	3.3	6.6	5.2	3.8	3.3	435	200	2.2	X	X
C26	Active lane control including "hard shoulder running" (using the shoulder as a driving lane) and potential HOT or HOV lane during peak hours from K-7 to KS/MO state line	5.1	4.4	4.4	3.7	4.1	4.5	3.9	4.7	3.4	429	88.2	4.9		
C27	Reconfigure I-70 and 18th Street interchange as Partial Cloverleaf	4.3	5.0	3.7	4.7	3.3	5.0	4.4	4.4	3.3	429	10.5	40.8	X	
D21	Bicycle / pedestrian facilities: consider on all new or reconstructed bridges over I-70	3.8	3.7	3.3	3.8	5.5	4.1	4.1	5.2	6.8	428	1.6	272.1	X	
D27	Expand Park & Ride facilities near KTA toll areas at Lecompton & Tonganoxie	3.8	3.3	3.3	5.4	4.5	4.1	3.6	4.8	4.9	414	1.1	394.3	X	
C35	Add fly-over ramp northbound to westbound on I-70 and I-435 interchange	5.0	5.6	3.7	3.4	3.3	3.3	3.9	4.4	3.3	412	52.5	7.8		X
C38	Reconfigure I-70 & I-435 interchange	4.6	4.4	4.4	3.4	3.3	4.5	4.2	4.4	3.3	407	210	1.9		
C40	Reconfigure I-70 and Turner Diagonal interchange	4.0	5.0	3.7	3.3	3.3	5.0	4.4	4.4	3.3	404	157.5	2.6		
D38	Parallel bicycle / pedestrian trail development as specified in the MARC MetroGreen plan / local plans	3.3	3.3	3.3	3.3	5.5	4.1	3.9	5.2	6.2	398	15.8	25.3		
C47	Reconstruct the K-10 and I-70 interchange	4.3	4.4	3.7	3.4	3.3	4.5	4.2	3.8	3.3	391	157.5	2.5		
C56	Construct phases 8 & 9 of the reconfigured I-70/K-7 interchange	4.8	3.3	4.4	3.4	3.3	2.9	3.3	2.8	3.3	358	60	2.6		
C59	Widen I-70 to 6-lane freeway (KTA) from Lawrence to K-7	3.8	3.3	3.7	3.1	3.3	2.9	3.3	4.4	3.3	343	171.7	2.0		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

I-435 East-West Corridor



Corridor
Profile

I-435
East-West

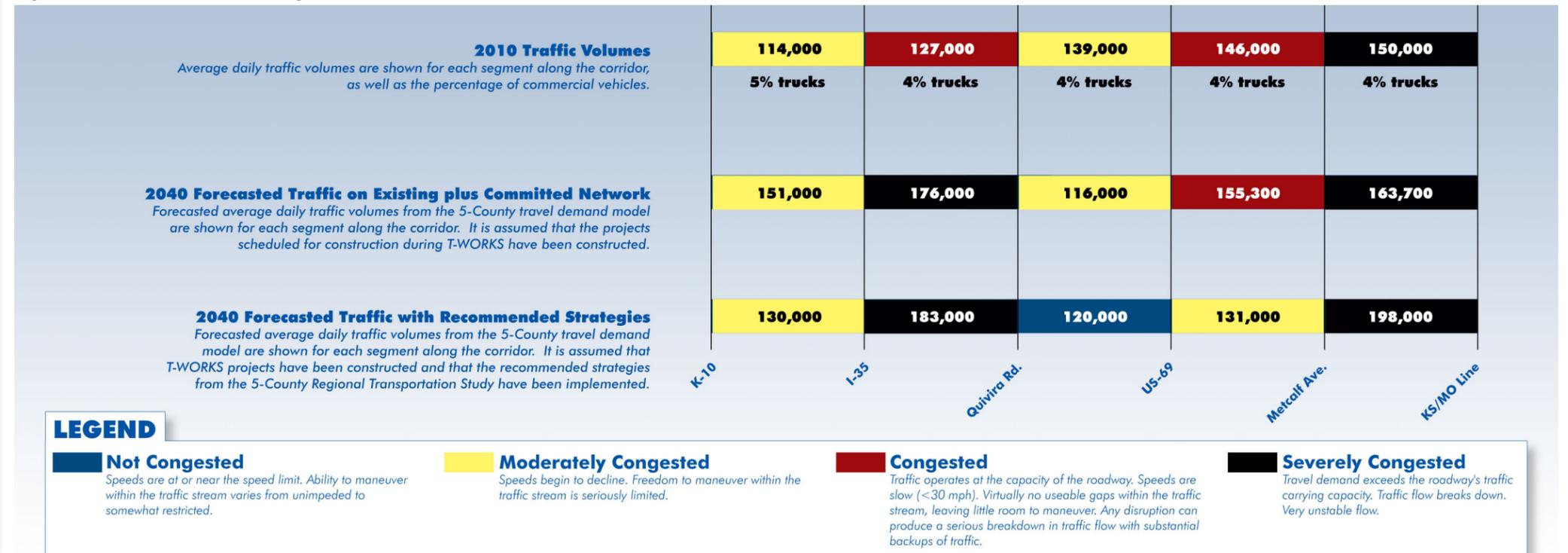
Length: 9 miles

Key Developments:
Corporate Woods
Johnson County Community College
Mission Farms
Overland Park Convention Center
Park Place
Sprint Campus
Town Center Plaza

Transit Service: K-10 Connector



Figure 14-4: Traffic Volumes along I-435 East-West



DESCRIPTION OF THE CORRIDOR

I-435 from the K-10 interchange to the Kansas/Missouri state line provides the major route for east-west travel through Johnson County. The route connects Lenexa, Overland Park and Leawood to K-10 on the west and communities in Missouri on the east. The highest traffic volumes in the 5-County region occur on I-435 between Metcalf Avenue and Nall Avenue. The I-435 corridor has six lanes until the US-69 interchange, where it expands to eight lanes. There is no additional right-of-way available for further widening.

KC Scout, the Kansas Department of Transportation, and the Missouri Department of Transportation have installed ramp meter traffic signals on the ramps entering I-435 from Metcalf Avenue in Kansas to the Three Trails Memorial Crossing (formerly the Grandview Triangle) in Missouri. These special signals pace the flow of vehicles entering the freeway, thereby minimizing disruption to traffic flow on the freeway and providing more reliable travel times.

KEY DEVELOPMENT INFORMATION

Major activity centers along the corridor include the Johnson County Community College, the Corporate Woods office park, and the Overland Park Convention Center. Regional medical facilities are located along this corridor also, including Children’s Mercy Hospital, Overland Park Regional Medical Center, and St. Joseph’s Hospital.

Projected population growth is anticipated between Antioch Road and State Line, mainly to the south of the corridor. The Mission Farm mixed-use development that features both housing and employment is an example of the continuing growth in this area. Employment growth is also forecast between Antioch and State Line.

The Vision Metcalf plan, adopted by the City of Overland Park, continues to be a catalyst for redevelopment along that intersecting corridor, which will affect the demand for I-435 to connect this area.

TRAFFIC

This section of the I-435 corridor currently experiences some of the highest traffic volumes in the 5-County region. It is anticipated that the traffic volume will continue to grow in the future.

It is expected that 6 miles of the 9 mile corridor will be congested during peak period in the year 2040. Peak period congestion is expected from I-35 to US-69 and from Metcalf to the I-49/US-71 interchange in Missouri in the year 2040. The completion of the K-10 South Lawrence Trafficway will also increase the volume of traffic on I-435.

OTHER MODES

Freight carriers use this corridor to access I-70 and I-35. No transit services are currently provided on this corridor.

CORRIDOR CONNECTIONS

The section where I-435, K-10 and I-35 intersect, called the Johnson County Gateway, has been studied as part of a separate project (<http://www.jocogateway.com/>). This location serves a complex set of travel patterns, which currently result in high levels of traffic conflict and delay. The section of I-435 east of I-35 has been addressed in recent projects, and will continue to be the highest used east-west travel corridor in the region.

Conditions on I-35 are also expected to be very congested in the year 2040. Congestion at the interchange of the two facilities could cause queuing that would negatively affect both facilities.

Projected traffic growth on K-10 is the highest rate in the region; this will directly impact I-435 at the merge point.

There is currently peak period congestion on both sides of the US-69 interchange. It is anticipated that congestion at the interchange will continue to get worse with additional traffic expected in the future.

EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-6 lists the expansion and modernization project funded through T-WORKS along the I-435 East-West corridor.

Table 14-6: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
3	I-435/I-35/K-10 Interchange (Johnson Co. Gateway)	2nd Phase - Construct C-D roads and ramps	\$250 M	2014

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the I-435 East-West corridor.

A variety of strategies were considered to improve current and future traffic operations on I-435 through the year 2040. These strategies are shown in Table 14-7. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the I-435 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S2: Expand the existing ramp metering system by implementing additional ramp meters between Quivira Road and Metcalf Avenue. Ramp metering uses traffic signals on the entrance ramps to control the rate at which vehicles enter I-435. Ramp metering will improve safety and traffic flow on I-435.

S9: Implement variable speed limits from K-7 to the Kansas/Missouri state line. Variable speed limits can reduce the speed limit on I-435 when there is considerable congestion ahead. This strategy is used to slow traffic before it reaches the congested area and to better allow that congestion to dissipate.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D20: Bicycle and pedestrian facilities should be considered on all new or renovated bridges over I-435.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C15: Implement active lane use control including “hard shoulder running” and potential High Occupancy Vehicle (HOV)/High Occupancy Toll (HOT) lane during peak hours from K-10 to the Kansas/Missouri state line. This strategy allows individual lanes and the shoulder to be controlled as to whether or not they are open for use by traffic, their speed limit based upon conditions, and whether HOV/HOT restrictions apply. This strategy provides great flexibility in allowing KDOT to address congestion due to peak traffic periods and non-peak, incidents such as crashes or vehicle breakdowns.

C21: Construct the remaining phases of the K-435/I-35/K-10 Johnson County Gateway interchange.

Table 14-7: I-435 East-West Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
	Operate and maintain existing roads, bridges, transit service, ITS, traffic signals, incident management													X	X
S2	Ramp metering: between Quivira Road and Metcalf Avenue	5.7	7.3	3.3	10.0	3.3	4.1	4.4	4.4	3.3	551	0.7	749.8	X	
S9	Variable speed limits K-10 to KS/MO line	4.8	4.4	3.3	10.0	3.3	4.1	3.6	4.4	3.3	487	1.1	429.5		X
C15	Active lane use control including "hard shoulder running" and potential HOT or HOV lane during peak hours from K-10 to KS / MO state line	6.2	4.4	3.7	4.1	5.0	5.0	4.8	5.0	3.6	466	47	9.9		X
C21	Construct remaining phases of I-435/I-35/K-10 Gateway project	6.2	5.0	5.0	3.4	3.3	3.6	4.4	4.4	2.6	437	311	1.4	X	X
D20	Bicycle / pedestrian facilities: Consider on all new or reconstructed bridges over I-435	3.9	3.7	3.3	3.9	5.5	4.1	4.1	5.2	6.8	431	1.6	273.8		
C30	Convert general purpose lanes to HOV/HOT lanes from K-10 to KS/MO state line	1.0	5.0	3.7	4.0	7.3	4.5	5.7	5.7	4.1	424	9	47.1		
D36	Parallel bicycle / pedestrian development to connect to Metro Green	3.3	3.3	3.3	3.5	5.5	4.1	3.9	5.2	6.2	401	4	95.4		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

This page intentionally left blank.

I-435 North-South Corridor



Corridor Profile
I-435
North-South

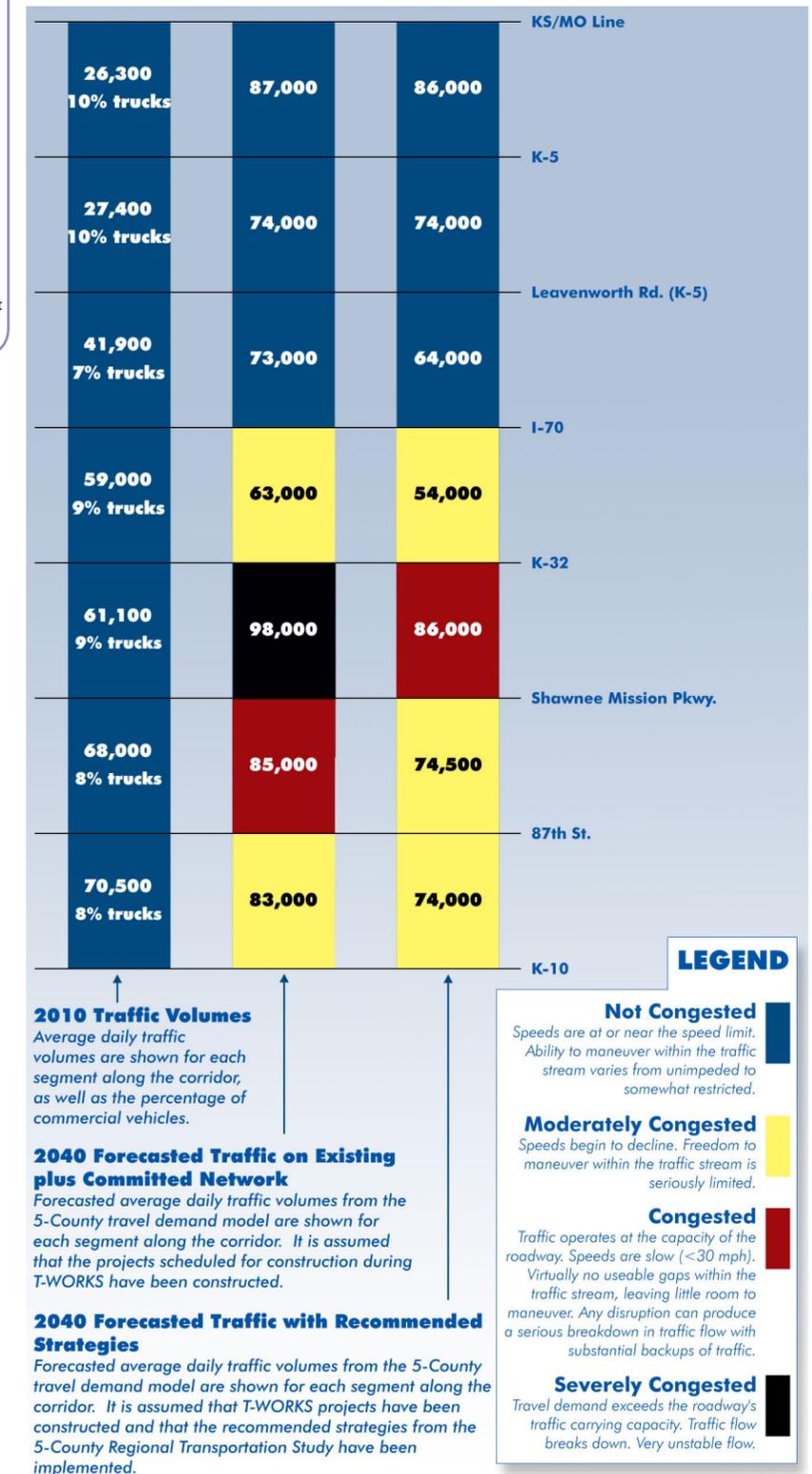
Length: 19 miles

Key Developments:

- Cerner
- Community America Ballpark
- Cricket Wireless Amphitheater
- Hollywood Casino
- KCI Airport
- Lenexa City Center
- Sporting Park
- Kansas Speedway
- Prairie Creek
- Schlitterbahn Waterpark
- Village West



Figure 14-5: Traffic Volumes along I-435 North-South



DESCRIPTION OF THE CORRIDOR

I-435 is a primary north-south route from K-10 north to the Kansas/Missouri state line. North into Missouri, I-435 provides access to the Kansas City International Airport. This section of I-435 was opened in the mid-1980s and has supported growth and development in the corridor since that time.

The highway is a 6-lane roadway with interchanges that service east-west highways and major arterials.

KEY DEVELOPMENT INFORMATION

While the overall roadway capacity of this section of I-435 is sufficient, a primary concern is access to and from I-435 near Village West and the Schlitterbahn Water Park. Existing development along the I-435 corridor includes a large warehouse district in Lenexa, retail activity in Shawnee, and the Kansas Speedway and Village West in Kansas City, Kansas.

A number of the future major activity centers are located along this section of I-435. These include the City Center development on 87th Street in Lenexa, proposed development on Johnson Drive, and expansion of the Village West area to include additional retail, office and recreational uses. The regional access provided by I-435 has been a catalyst for development. The future major developments will continue to need access to be successful. The Village West area continues to develop with an emphasis on automobile access. In general, projected population and employment growth between I-435 and K-7, north of I-70, is very high. I-435 also serves as major access to the KCI airport.

I-435 access is sufficient to retail activity along Shawnee Mission Parkway and to the industrial development at 95th Street and at Lackman Road. Decisions on Lackman Road access at I-435 will be important to industrial development at this location. Access to the Lenexa City Center mixed-used development now being constructed at 87th Street will need to be addressed. This area will have large amounts of new housing and employment development.

High population growth on the Missouri side of the river along I-435 could impact traffic on the Kansas side of the river as these residents would likely cross the river to access the Village West area development, as well as other employment and retail centers along the corridor.

TRAFFIC

Traffic volumes are projected to increase along the corridor through the year 2040. Six lanes should continue to provide sufficient capacity for most of this north-south section of I-435. There is some congestion expected in 2040 between 95th Street and K-32. It is expected that six miles of the 19 mile corridor will experience peak period congestion in the year 2040 between 87th Street and K-32. Both I-435 and K-7 show higher traffic volumes in the northbound direction during the evening peak. When the South Lawrence Trafficway is completed as a freeway all the way around Lawrence, traffic volumes on K-7 and I-435 are expected to be reduced.

OTHER MODES

Multimodal opportunities that are currently being explored in the Village West area include developing a Park & Ride lot and a bus rapid transit (BRT) route with a number of transit stops. To be effective, site plans need to orient development to enhance transit access.

CORRIDOR CONNECTIONS

Mainline I-435 does not show significant capacity issues in 2040; however, near the I-70 and State Avenue interchanges, merging and weaving in that area could cause problems. One concern is the weaving area on westbound I-70 between the I-435 ramps. The State Avenue and Parallel Parkway interchange configurations have been recommended for study to look for possible modification to provide more capacity to access key destinations. Similarly, access to the Lenexa City Center at 87th Street may need to be addressed as that development occurs.

The completion of the K-10 South Lawrence Trafficway will decrease the volume of traffic using the north-south segment of I-435. Many of the trips currently using I-70 and I-435 for travel to and from the west of Lawrence and southern Johnson County will divert to K-10.

Similarly, if K-7 were reconstructed as a freeway between I-70 and K-10, traffic would shift to this facility and decrease the volume of traffic using I-435. If K-7 is not converted to a freeway, it becomes significantly more congested and drivers will likely shift their trip to I-435. This change in travel behavior may also have an impact on east-west movement along K-10, Shawnee Mission Parkway and I-70 between the two corridors.

EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-8 lists the expansion and modernization projects that are funded through T-WORKS along the I-435 North-South corridor.

Table 14-8: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
3	I-435/I-35/K-10 Interchange (Johnson Co. Gateway)	2nd Phase - Construct C-D roads and ramps	\$250 M	2014
4	I-70 from I-435 to State Line	I-70 Real Time Traveler Information	\$621,000	2012

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the I-435 corridor.

A variety of strategies were considered to improve current and future traffic operations on I-435 through the year 2040. These strategies are shown in Table 14-9. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the I-435 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes.

Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S10: Implement variable speed limits from Parallel Parkway to K-10. Variable speed limits can reduce the speed limit on I-435 when there is considerable

congestion ahead. This strategy is used to slow traffic before it reaches the congested area and to better allow that congestion to dissipate.

S18: Expand the KC Scout intelligent transportation system (ITS) from Kansas/Missouri state line to Midland Drive. The ITS devices would include dynamic message signs to warn drivers of upcoming travel conditions and a camera system to monitor the real-time flow of traffic.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D12: Construct a Park & Ride facility near the Shawnee Mission Parkway interchange and near the 95th Street interchange. Park & Ride facilities promote carpooling and transit use while offering the flexibility for

travelers to use personal vehicles for errands either before or after their commute to work.

D26: Bicycle and pedestrian facilities should be considered on all new or renovated bridges over I-435.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C21: Construct the remaining phases of the I-435/I-35/K-10 Johnson County Gateway interchange.

C33: Reconfigure the I-435 and State Avenue interchange.

C35: Add a “fly-over” ramp for the northbound to westbound traffic movement at the I-70 and I-435 interchange.

Table 14-9: I-435 North-South Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
	Operate and maintain existing roads, bridges, transit service, ITS, traffic signals, incident management													X	X
S10	Variable Speed Limits from Parallel Pkwy to K-10	4.5	4.4	3.3	10.0	3.3	4.1	3.6	4.4	3.3	482	1.5	318.8		X
D12	Construct Park & Ride facilities near Shawnee Mission Parkway, and near 95th St.	4.4	3.3	3.3	6.0	5.0	4.5	3.8	5.0	5.5	448	1.5	304.5	X	
C21	Construct remaining phases of I-435/I-35/ K-10 Gateway project	6.2	5.0	5.0	3.4	3.3	3.6	4.4	4.4	2.6	437	310.8	1.4	X	X
S18	Expand KC Scout ITS System from KS / MO state line to Midland Drive	4.3	6.5	3.3	4.4	3.3	3.6	4.2	4.4	3.3	430	2.2	195.2	X	
C32	Active lane use control including "hard shoulder running" and potential HOT or HOV lane during peak hours from K-10 to I-70	4.9	3.7	3.7	3.5	5.0	4.5	4.5	5.0	3.6	421	58.8	7.2		
C33	Reconfigure the I-435 and State Avenue interchange	4.8	4.4	3.7	5.1	3.3	3.6	3.6	4.4	3.3	416	10.5	39.6	X	
D26	Bicycle/pedestrian facilities: consider on all new or reconstructed bridges over I-435	3.8	3.7	3.3	4.1	5.0	4.1	3.9	5.0	5.5	414	1.6	263.1	X	
C35	Add fly over ramp northbound to westbound on I-70 and I-435 interchange	5.0	5.6	3.7	3.4	3.3	3.3	3.9	4.4	3.3	412	52.5	7.8		X
C42	Reconfigure I-435 and Parallel Parkway interchange	4.5	4.4	3.7	4.2	3.3	3.6	3.6	4.4	3.3	398	15.8	25.3		
C38	Reconfigure I-70 & I-435 interchange	4.6	4.4	4.4	3.4	3.3	4.5	4.2	4.4	3.3	407	210	1.9		
D49	Parallel bicycle / pedestrian trail development as specified in the MARC Metro Green plan / local plans	3.3	3.3	3.3	3.4	5.0	4.1	3.8	5.0	5.0	381	8.4	45.4		

Recommended Strategy

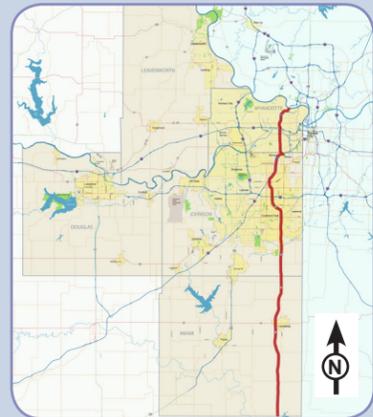
*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

This page intentionally left blank.

I-635/I-35/ US-69 Corridor



Corridor Profile
I-635/I-35/
US-69

Length: 56 miles

Key Developments:

- Argentine Railyard
- Argosy Casino
- Corbin Park
- Corporate Woods
- Deer Creek
- Erickson Retirement Community
- Fairfax Industrial
- Indian Springs
- Johnson County Community College
- KCI Airport
- Oak Park Mall
- Parkway Place
- Prairie Fire
- Shawnee Mission Medical Center

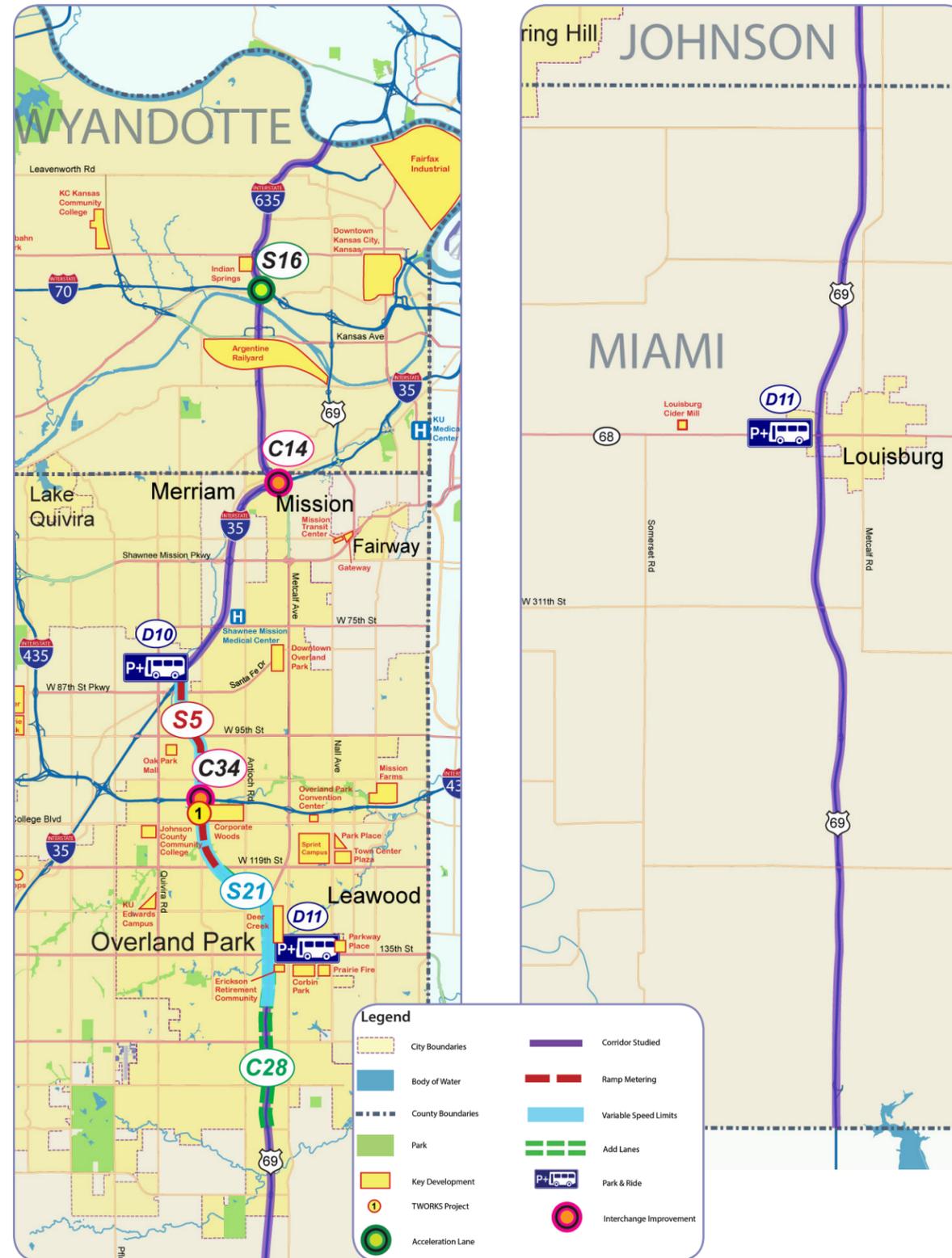
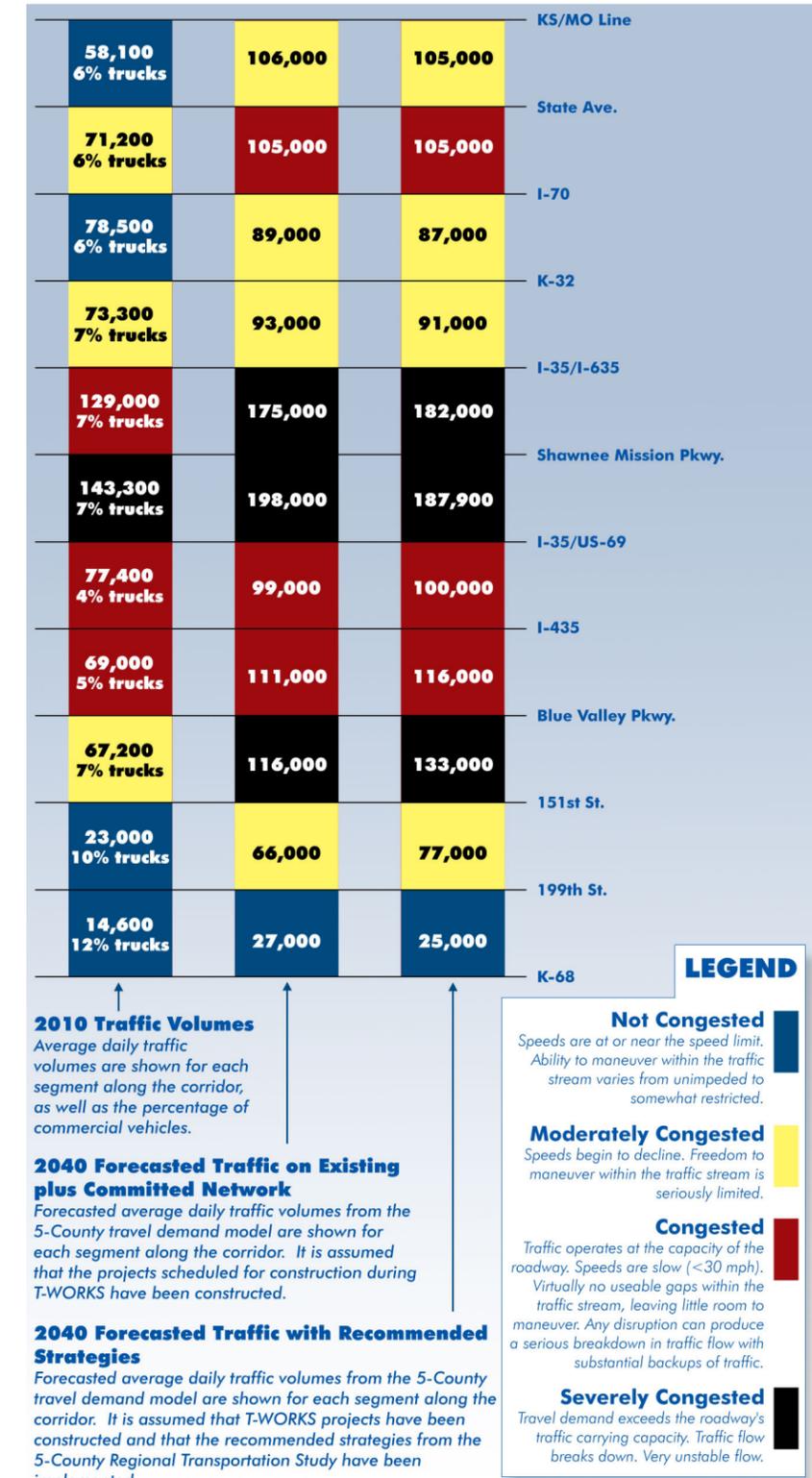


Figure 14-6: Traffic Volumes along I-635/I-35/US-69



DESCRIPTION OF THE CORRIDOR

The combination of these three freeways results in a north-south corridor from the Missouri River crossing that connects to the northern portion of Kansas City, Missouri, through Kansas City, Kansas, and providing regional freeway access to numerous communities in Johnson County and the eastern half of Miami County.

I-635 is a six lane freeway. The I-35 section of this corridor is one of the heaviest traveled sections of freeway in the 5-County region, and has eight lanes for most of its length. US-69 is currently a four lane freeway that is being widened to six lanes from 111th Street to 119th Street.

KEY DEVELOPMENT INFORMATION

This is a primary travel corridor that serves existing development and future growth areas in southern Overland Park and in Miami County. With the continued growth that is projected for these areas it may be necessary to apply a strategy for reducing congestion beyond simply adding freeway capacity.

US-69 provides access to the College Boulevard office park area and adjacent office areas. US-69 is adjacent to the highest concentration of employment in the 5-County region. US-69 also provides access to developing retail, mixed-use, and other major traffic generators along the 135th Street corridor. Very high population growth is projected in Overland Park between 135th and 199th.

US-69, like the east-west portion of I-435, provides direct access to the highest employment area in the 5-County region. It is important to maintain access to this area in order to sustain existing and encourage new economic activity. Projects are now being completed on US-69 north of I-435 and opportunities to add capacity to US-69 south of I-435 are being studied.

There is some population growth expected near the US-69 and I-435 interchange, and very high employment growth projected between I-435 and 135th Street. There is some employment growth expected between 135th Street and 179th Street.

TRAFFIC

Traffic projections for the year 2040 show the most growth on the US-69 and I-35 portions of this route. Traffic is expected to grow by as much as 74 percent in some segments of US-69, particularly between I-35 and 179th Street interchange.

Future congestion is expected on I-35 and on US-69 from the I-35 interchange south to College Boulevard. Peak period congestion is expected for 15 miles of the 56 mile corridor in the year 2040.

OTHER MODES

The Indian Springs Transit Center, adjacent to I-635, is a major transfer point for Wyandotte County transit services, including BRT service.

CORRIDOR CONNECTIONS

The I-635 and State Avenue interchange is a key connection for an area of redevelopment at the Indian Springs shopping center in Kansas City, Kansas. Traffic projections indicate the potential for some congestion in the future.

Congestion at the I-70 and I-635 interchange is also expected in the future. Short merge sections from the interchange ramps are one of the issues facing this interchange that impact the smooth flow of traffic.

At the I-35 and I-635 interchange there is a heavy movement of traffic during certain periods of the day, from northbound I-35 to northbound I-635 and from southbound I-635 to southbound I-35. During peak periods, these ramps are currently operating near capacity. Congestion will continue to develop in these areas as traffic volumes grow.

The I-35 and US-69 interchange north of I-35 and 87th Street is currently one of the most congested areas in the region. Completion of projects on I-35 and on US-69 between 75th Street and 95th Street allow high volumes of traffic to meet at this merge. Traffic projections show increased congestion in the future.

Significant congestion is expected along I-35 on both sides of the I-35 and Shawnee Mission Parkway interchange.

I-435 could serve as alternate routes if future traffic conditions make the US-69/I-35/I-635 corridor less attractive for north-south movements through the 5-County region.

EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-10 lists the expansion and modernization project that is funded through T-WORKS along the I-635/I-35/US-69 corridor.

Table 14-10: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
1	US 69	Improvements from I-435/Quivira to 119th	\$102 M	2011

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the I-635 corridor.

A variety of strategies were considered to improve current and future traffic operations on I-635 through the year 2040. These strategies are shown in Table 14-11. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the I-635 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes

should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S5: Implement ramp metering on US-69 between 119th Street and I-35. Ramp metering uses traffic signals on the entrance ramps to control the rate at which vehicles enter US-69. Ramp metering will improve safety and traffic flow on US-69.

S16: Lengthen the acceleration lanes at I-70 and I-635 interchange to allow safer and more efficient movement of traffic from northbound I-635 to westbound I-70 and from eastbound I-70 to southbound I-635.

S21: Implement variable speed limits on US-69 from 143rd Street to I-35. Variable speed limits can reduce the speed limit on US-69 when there is considerable congestion ahead. This strategy is used to slow traffic before it reaches the congested area and to better allow that congestion to dissipate.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D11: Construct a Park & Ride facilities near the US-69 interchanges with 135th Street and with K-68. Park & Ride facilities promote carpooling and transit use while

offering the flexibility for travelers to use personal vehicles for errands either before or after their workday commute.

D28: Bicycle and pedestrian facilities should be considered on all new or renovated bridges over I-635, I-35, and US-69.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C14: Reconstruct the I-35 and I-635 interchange to address existing and future congestion.

C28: Widen US-69 to 6 lanes from 119th Street to 167th Street, including an interchange at 159th Street.

C34: Construct the remaining phases of the US-69 and I-435 interchange (Brown project, Blue project, and Yellow project.)

Table 14-11: I-635/I-35/US-69 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
	Operate and maintain existing roads, bridges, transit service, ITS, traffic signals, incident management													X	X
S5	Ramp Metering on US-69 from 119th St. to I-35	5.6	5.6	3.3	10.0	3.3	4.1	3.9	4.4	3.3	520	0.6	826.0	X	
C14	I-635 and I-35 interchange improvements	6.5	6.5	4.4	3.4	3.3	4.1	4.2	4.4	3.3	466	210	2.2	X	X
D11	Construct Park & Ride facilities near 135th and K-68	4.4	3.3	3.3	7.3	4.5	4.1	3.6	4.8	5.4	455	1.1	433.5	X	
S16	Lengthen acceleration lanes at I-635 and I-70 interchange	4.6	7.3	3.3	3.5	3.3	4.5	4.4	4.4	3.3	441	11	41.6	X	
C20	Reconfigure I-70 and I-635 interchange	5.5	5.0	4.4	3.5	3.3	5.0	4.4	4.4	3.3	438	210	2.1		
C28	Widen US-69 to 6 lanes from 119th St. to 167th St., includes interchange at 159th St	8.4	3.3	3.7	6.2	3.3	2.0	2.8	3.3	1.8	428	68	6.3	X	X
S21	Variable speed limits on US-69 from 143rd St. to I-35	4.8	4.4	3.3	5.6	3.3	4.1	3.6	4.4	3.3	422	1.0	418.2		X
C34	Construct remaining phases of US-69 and I-435 interchange (Brown project, Blue project, and Yellow project)	8.1	3.3	3.7	4.5	3.3	2.3	2.8	4.4	2.6	415	204	2.0	X	X
D28	Bicycle / Pedestrian facilities: consider on all new or reconstructed bridges over I-635, I-35 or US-69	3.9	3.7	3.3	3.9	5.0	4.1	3.9	5.0	5.5	413	1.6	262.3	X	
D44	Transit commuter service connecting Louisburg to connect with JO service	3.7	3.3	3.3	3.5	4.5	4.1	3.6	4.8	5.4	387	4	94.3		
C65	Construct new interchange at US-69 and 159th St. (See C28)	5.5	1.0	3.3	4.0	3.3	2.9	2.0	3.3	3.3	323	19	17.1		

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

Recommended Strategy

This page intentionally left blank.

US-24/40 Corridor



Corridor
Profile

US-24/40

Length: 23 miles

Key Developments:

- Cerner
- Community America Ballpark
- Cricket Wireless Amphitheater
- Hollywood Casino
- Lawrence Municipal Airport
- Sporting Park
- Kansas Speedway
- Schlitterbahn Waterpark
- Village West

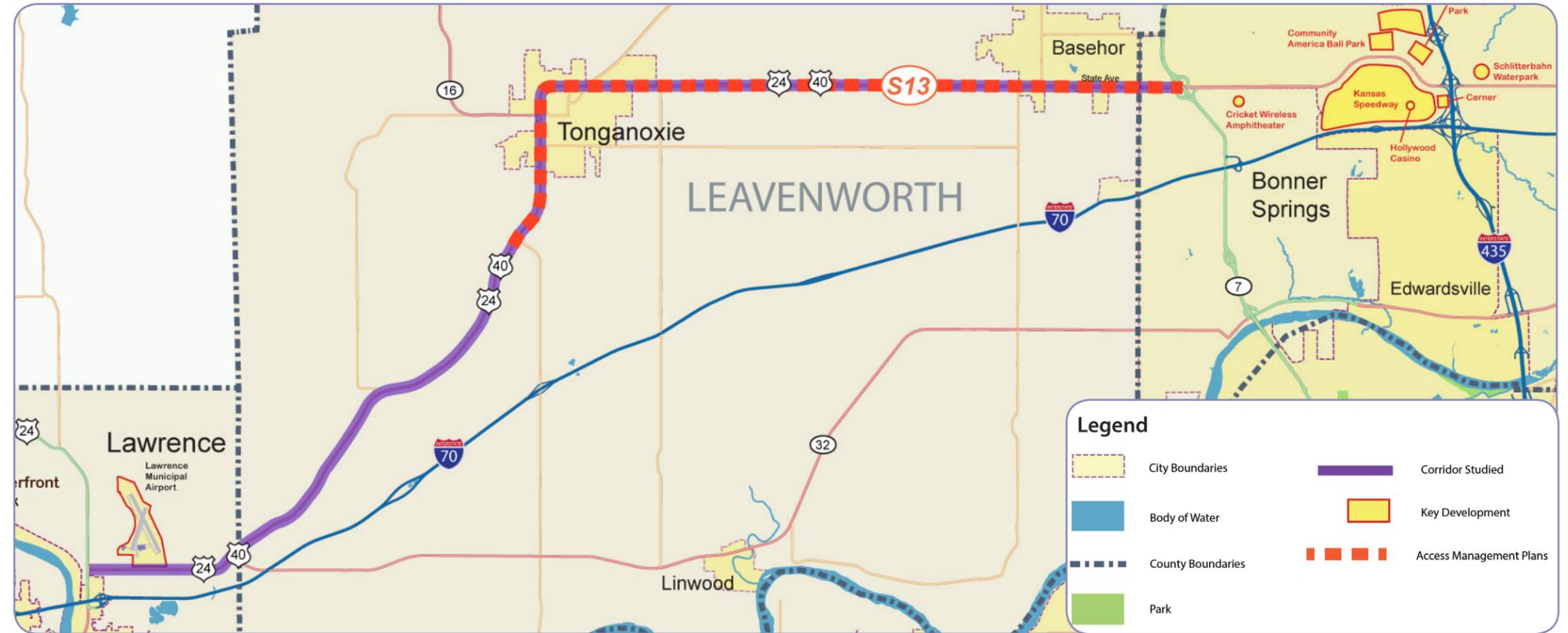


Figure 14-7: Traffic Volumes along US-24/40

	US-59	K-32	County Route 1	K-16	ECL Tonganoxie	WCL Basehor	K-7
2010 Traffic Volumes Average daily traffic volumes are shown for each segment along the corridor, as well as the percentage of commercial vehicles.	6,600 9% trucks	3,800 8% trucks	5,500 6% trucks	12,100 5% trucks	12,100 5% trucks	16,100 5% trucks	
2040 Forecasted Traffic on Existing plus Committed Network Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that the projects scheduled for construction during T-WORKS have been constructed.	23,000	13,000	21,000	23,000	15,000	18,000	
2040 Forecasted Traffic with Recommended Strategies Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that T-WORKS projects have been constructed and that the recommended strategies from the 5-County Regional Transportation Study have been implemented.	22,000	13,000	20,000	22,000	15,000	18,000	

LEGEND	Not Congested	Moderately Congested	Congested	Severely Congested
	Not Congested Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.	Moderately Congested Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.	Congested Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.	Severely Congested Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.

DESCRIPTION OF THE CORRIDOR

This corridor serves rural Leavenworth and Douglas Counties, and for this study, is considered to be from K-7 (Bonner Springs) on the east, past City of Basehor and through the City of Tonganoxie to its junction with US-59 north of the City of Lawrence. The corridor features 2-lane rural roads west of Tonganoxie, a 5-lane section through Tonganoxie, and a 4-lane divided roadway east of Tonganoxie. This corridor provides the major regional connection for the cities of Basehor and Tonganoxie. It provides an option to the I-70 turnpike (tolled) for trips to and from the Kansas City metropolitan area and Lawrence.

KDOT and the communities in this corridor have developed a US-24/40 Corridor Management Plan which can be found at: http://www.ksdot.org/pdf_files/US-24-Corridor-Management-Plan.pdf.

KEY DEVELOPMENT INFORMATION

Population growth is expected on the eastern end of the corridor in Bonner Springs and in the Village West area located east of the corridor on State Avenue (former US-24/40).

Employment growth is forecast just outside the eastern end of the corridor in the Village West area as that development continues to grow. Residents of Basehor and Tonganoxie may seek employment at Village West.

TRAFFIC

Congestion in the year 2040 is anticipated to the north of Lawrence at the US-24/40 and US-59 junction as well as the section between US-59 and K-32. As this intersection is controlled by a traffic signal, drivers on each approach will incur delay when slowing for a stop or waiting at a red signal. Delays at the signalized intersection will increase with the growth in traffic.

The US-24/40/State Avenue and K-7 interchange has been constructed with future growth planned, therefore, congestion is not expected at that location. No congestion is expected at the East Lawrence I-70 exit for travelers accessing US-24/40.

OTHER MODES

There is no fixed route transit service provided in this corridor. It is not a major freight corridor.

CORRIDOR CONNECTIONS

The US-24/40 intersects with K-7 on the east end of the corridor and at US-59 north of Lawrence on the west end.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the US-24/40 corridor.

A variety of strategies were considered to improve current and future traffic operations on US-24/40 through

the year 2040. These strategies are shown in Table 14-12. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the US-24/40 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S13: Implement the recommendations of the US-24/40 Corridor Management Plan. Excerpts from the Corridor

Management Plan state:

- “The recommended long range (2030) traffic and access management plan must envision the transportation system needed to support the future land development. For US-24/40 to retain a high level of mobility and safety, a supporting system of arterial and collector streets will be needed to complement US-24/40.”
- The Plan limits “locations where full access to the highway will be permitted. Only right turns will be permitted at those locations where the major streets intersect US 24/40 and where full access has not been designated. It is anticipated that only those locations with full access will be permitted to have a traffic signal, and then only when the intersection meets appropriate warrants and only in consultation between local jurisdictions and KDOT.”
- “Other recommendations of the long range traffic and access management plan on the corridor include:
 - Medians will be constructed the full length of the corridor, with two lanes in each direction by such time that traffic volume thresholds reach the demand for four lanes throughout.
 - Existing access in between the full access points will be restricted to right turn only by such time that alternative traffic circulation has been provided for through reverse frontage roads.
 - Reverse frontage roads will be constructed to provide alternative traffic circulation and access for properties fronting US 24/40.”

Table 14-12: US-24/40 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
Operate and maintain existing roads, bridges, traffic signals														X	X
S13 Access Management: Follow the US 24/40 Corridor Management Plan	4.0	8.0	3.3	3.3	3.3	4.1	4.5	3.8	5.0	450	10	45.0	X		
D16 Construct paved shoulder with rumble strips for bicycle use from US-59 to Tonganoxie	3.3	7.3	3.3	3.3	4.1	4.1	5.0	4.1	4.8	435	45.4	9.6			
C25 Widen US 24/40 to 4-lanes from US-59 to K-16	6.2	7.3	3.3	3.0	3.3	3.3	4.4	3.8	2.0	431	85.7	5.0			
C41 Widen US 24/40 to 4-lanes from US-59 to K-32 and from County Road 1 to K-16	4.2	7.3	3.3	3.2	3.3	3.3	4.4	3.8	2.0	404	32.1	12.6			

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

Recommended Strategy

US-56 Corridor



Corridor
Profile
US-56

Length: 21 miles

Key Developments:
Baker University
BNSF Intermodal Facility &
Logistics Park
New Century Air Center



Figure 14-8: Traffic Volumes along US-56

	OS/DG Co Line	US-59	K-33	199th St.	WCL Gardner	I-35
2010 Traffic Volumes <i>Average daily traffic volumes are shown for each segment along the corridor, as well as the percentage of commercial vehicles.</i>	1,900	4,200	4,300	4,200	23,800	
	11% trucks	6% trucks	5% trucks	6% trucks	3% trucks	
2040 Forecasted Traffic on Existing plus Committed Network <i>Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that the projects scheduled for construction during T-WORKS have been constructed.</i>	6,700	13,000	19,000	5,600	50,000	
2040 Forecasted Traffic with Recommended Strategies <i>Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that T-WORKS projects have been constructed and that the recommended strategies from the 5-County Regional Transportation Study have been implemented.</i>	6,700	13,000	18,400	5,300	49,000	

LEGEND

Not Congested

Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.

Moderately Congested

Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.

Congested

Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.

Severely Congested

Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.

DESCRIPTION OF THE CORRIDOR

The section of US-56 addressed in the 5-County Study begins at I-35 and ends at US-59. The US-56 corridor is a two-lane highway that serves east-west movement of traffic. US-56 becomes Main Street in the city of Gardner and provides the primary access to the cities of Edgerton and Baldwin City to the west. The US-56 connection with US-59 provides a route between southern Johnson County and the City of Lawrence.

KEY DEVELOPMENT INFORMATION

The BNSF Intermodal Facility is anticipated to be a major generator of future travel demand. The 1,300-acre intermodal park is comparable to existing BNSF facilities in Fort Worth and Chicago. BNSF will bring freight from Pacific ports to be offloaded onto trucks and distributed regionally. A new interchange is under construction on I-35 at Homestead Lane connecting the BNSF Intermodal Facility and other industrial/warehouse development with I-35. This new interchange may lead to a desire to realign US-56 to 199th Street in Johnson County. The potential need for modifications to US-56 to accommodate higher truck volumes was studied as part of the Area Plan for Southwest Johnson County.

The economic development potential of the BNSF Intermodal Facility is likely to have a significant impact in the area around the US-56 corridor in southern Johnson County. The railroad predicts the creation of more than 7,000 new jobs and believes investment in the site could exceed \$1 billion. Seven million square feet (7,000,000 sq ft) of warehouse/industrial development is anticipated with this project. A current projection of trip generation for the site is 17,000 trips per day with over 7,000 trucks expected each day. It is expected that 85 percent of trips will go north of the facility, 15 percent will go south or west. However, access to US-56 will be via 199th Street and Waverly Road from this site.

Other activity centers along the US-56 corridor include Baker University in Baldwin City and the New Century AirCenter near Gardner.

In addition, there is very high projected population growth in Olathe and Gardner between I-435 and 199th. There is also very high projected employment growth in Olathe and Gardner between 135th and 199th. Some employment growth is projected near I-435 from 87th to 119th.

KDOT and the communities in this corridor have developed a Corridor Management Plan for US-56 (<http://www.us56corridorplan.org/>).

TRAFFIC

In the year 2040, this route is not shown to be congested except during the peak periods at the US-56/175th Street and I-35 interchange. Another location that may experience congestion is the intersection of US-56 and 199th Street due to its geometry and an expected increase in traffic volume from the nearby BNSF Intermodal Facility. The study found two highway lanes to be sufficient along most of the corridor.

OTHER MODES

Consideration of freight movements will be important to the future of the corridor. The BNSF Intermodal Facility is expected to generate an additional 7,000 trucks per day.

CORRIDOR CONNECTIONS

Moderately high levels of congestion should be expected in the future at the interchange of 175th Street /US-56 and I-35. The New Century AirCenter and its industrial park are located just west and north of the interchange.

US-56 passes along the northwest side of the BNSF Intermodal Facility, although there is no direct connection. Traffic can access the facility from the intersection of 199th Street and US-56. A study of the expected traffic generated by the intermodal facility determined that 85 percent of the trucks will use I-35 to the north, while two percent of the truck trips, or about 140 trucks per day, will use US-56 to the west. The US-56 and 199th Street intersection is located on a curve adjacent to the BNSF rail line. The intersection geometry raises questions regarding the safe and efficient flow of traffic. A concept to replace the intersection with an interchange has been developed. KDOT, local agencies and MARC are conducting a transportation and land use study of a 22-square mile area around the intermodal facility.

Some consideration has been given to re-routing US-56 onto 199th Street and then onto I-35 via the new interchange at Homestead Road. This would remove some of the truck and highway traffic that currently travels through the City of Gardner to the existing US-56/175th Street and I-35 interchange.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the US-56 corridor.

A variety of strategies were considered to improve current and future traffic operations on US-56 through the year 2040. These strategies are shown in Table 14-13. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the US-56 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S14: Implement the recommendations of the US-56 Corridor Management Plan. The Corridor Management Plan identifies existing access points on the highway that should be closed over time, as appropriate circumstances present themselves, to achieve access management objectives. Also, to help ensure that all property owners are afforded reasonable access to the mainline and to the local street network consistent with the full functionality of that network, it is encouraged that joint access to that network by adjacent property owners be utilized to the maximum extent possible.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C19: Construct a new interchange at US-56 and 199th Street. Consider re-routing US-56 onto 199th Street.

Table 14-13: US-56 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
	Operate and maintain existing roads, bridges, traffic signals													X	X
S14	Access Management: Follow the US-56 Corridor Management Plan	4.7	7.3	3.3	3.3	3.3	4.1	4.4	3.8	5.0	447	10	44.7	X	
C19	New Interchange at US-56 and 199th Street	4.6	6.5	6.5	3.4	3.3	2.9	4.2	3.3	2.6	438	26	16.7	X	
C36	Intersection improvement at US-56 and 199th street	4.1	5.6	5.0	3.4	3.3	3.6	3.9	3.3	3.3	409	5	77.9		
D29	Commuter transit service to Baldwin City and Lawrence	3.8	4.4	3.3	3.6	4.5	4.5	4.0	4.2	5.4	410	4	102.6		
D40	Construct Park & Ride facilities near Baldwin City and Intermodal	3.8	3.7	3.3	4.2	4.1	4.1	3.7	4.1	5.3	396	1.5	269.2		
C50	Realign US-56 along 199th Street from Edgerton to I-35	4.3	5.0	3.3	3.3	3.3	3.6	4.4	3.3	3.6	384	63	6.1		
C62	Widen US-56 to 6 lanes from Moonlight Road to I-35	4.7	3.7	3.3	2.3	3.3	2.9	3.9	3.8	2.3	338	14	23.6		

Recommended Strategy

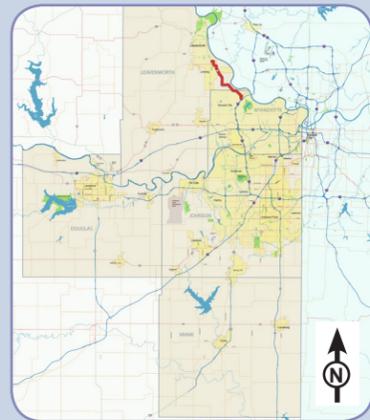
*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

This page intentionally left blank.

K-5 Corridor



Corridor
Profile

K-5

Length: 10 miles

Key Developments:
Fort Leavenworth
Lansing Correctional Facility

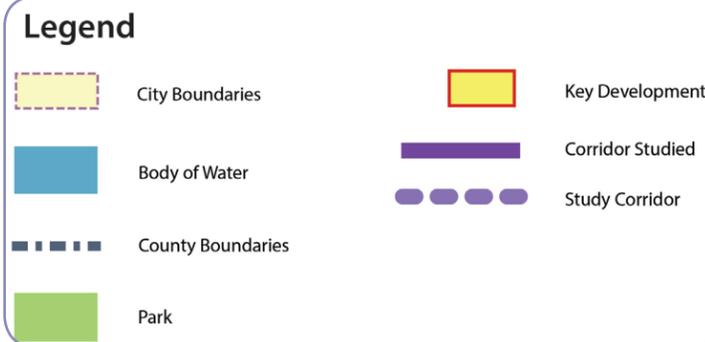
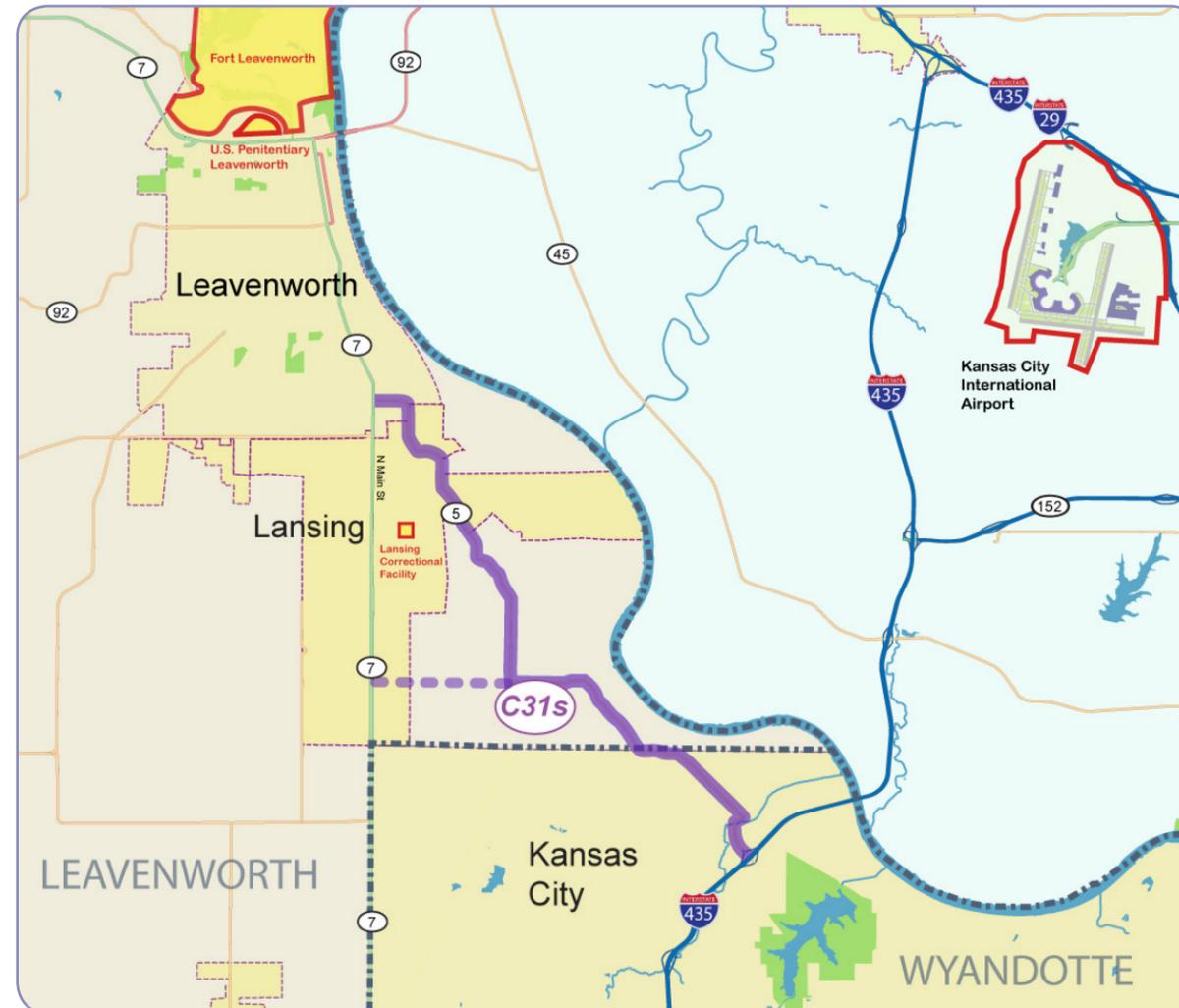
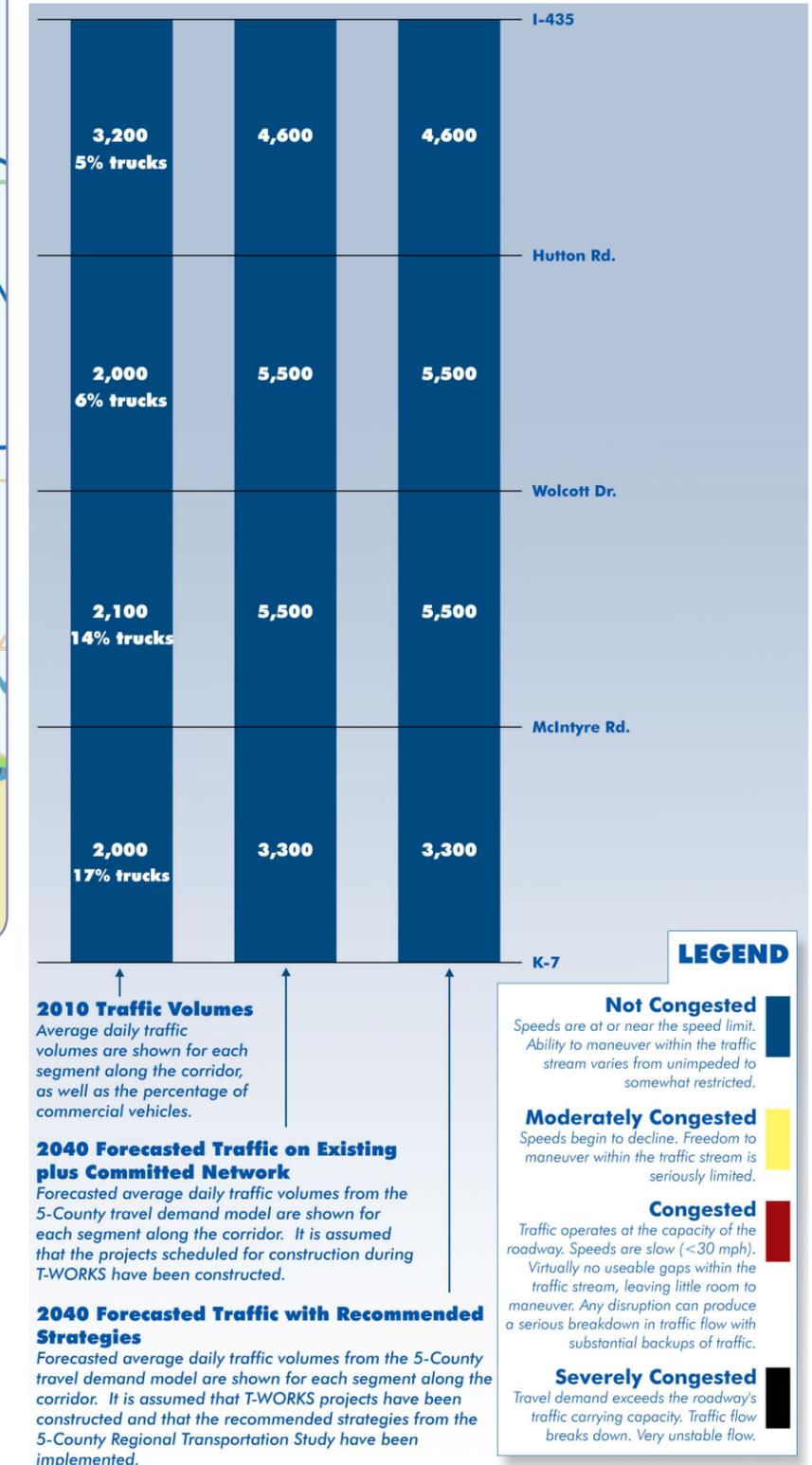


Figure 14-9: Traffic Volumes along K-5



DESCRIPTION OF THE CORRIDOR

The section of K-5 addressed in the 5-County Study extends from I-435 northwest along Wolcott Drive, Wolcott Road, and finally Muncie Road to an intersection with K-7 in the City of Leavenworth. This section of K-5 is a winding two-lane rural highway characterized by minimal width shoulders, numerous sharp curves, and low speeds.

KEY DEVELOPMENT INFORMATION

Population growth and employment growth are projected in Lansing east of K-5 and west of K-7.

Some information regarding development potential can be found in the K-7 Corridor Economic Development Strategy, a study completed by the Mid-America Regional Council in January 2012. While the study focused on the K-7 corridor, it did provide some discussion of K-5 as a “twin” corridor. The scenario for K-5 that was explored in the study assumed K-5 was realigned and upgraded to a “parkway-style” roadway. Several findings noted in the study are:

- “While this scenario would reduce the commute time for those in the Lansing/Leavenworth area to reach certain destinations via the Interstate 435 corridor – the time savings is anticipated to be negligible.”

- “To the extent these K-5 Corridor improvements would “siphon” traffic from using the K-7 Corridor on a daily basis, the resulting reduction in traffic could also reduce the projected development demand for uses along the central portions of the K-7 Corridor. However, a marginal benefit of this scenario could be some additional development potential around the intersection of K-5 and K-7.”
- “While an improved K-5 Corridor would provide fairly direct access to Interstate 435, the existing terrain is still fairly rugged and will limit its ability to carry significant traffic at comparable rates of speed as that of the K-7 Corridor. These conditions will also limit the amount and type of adjacent development activity that could be implemented adjacent to an improved K-5 Corridor.”

TRAFFIC

Currently K-5 is one of the lowest volume corridors that was analyzed during the 5-County Study. Traffic volumes vary from a low of 2,000 vehicles per day between K-7 and McIntyre Road to a high of 3,200 vehicles per day near I-435. Traffic is anticipated to grow by the year 2040. The road will continue to operate at an acceptable level of service.

There is currently no significant congestion issue for K-5 at either I-435 or K-7.

There are safety concerns for this section of K-5 due to the number of crashes that occur versus the volume of traffic using the roadway. Over a 5 year period, there were 4 fatal crashes, 63 injury crashes, and 134 property damage only (PDO) crashes on this 10 mile section of K-5. Many of the crashes were associated with one of the curves.

CORRIDOR CONNECTIONS

K-5 and K-7 both serve to connect the Cities of Lansing and Leavenworth with the interstate highway system. As travel time increases on K-7 due to additional signalized intersections, some traffic may divert to K-5. Upgrading K-5 to a freeway would divert traffic from a K-7 expressway with signals. Traffic volumes would remain about the same if K-7 is upgraded to a freeway.

Area residents have the option of using K-5 and I-435 or K-7 and K-92/M-92 to reach the Kansas City International Airport and the commercial areas in Platte County. The route chosen by drivers in the future may depend on observed congestion or roadway improvements that increase service. If K-92 and MO-92 are not widened to 4 lanes, traffic volumes may increase on K-5 to make a connection with I-435 crossing into Missouri.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the K-5 corridor.

A strategy to improve the alignment of the highway was considered that would improve current and future traffic operations on K-5 through the year 2040. This strategy is shown in Table 14-14. Strategies are assigned an identifier code of a letter and number. A “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C31s: Conduct a study for a potential realignment and improvement of K-5 from K-7 to I-435.

Table 14-14: K-5 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
Operate and maintain existing roads and bridges														X	X
C31 Realign K-5 from K-7 to I-435	3.8	8.0	3.3	3.3	3.3	2.9	4.5	3.8	3.3		421	84	5.0		
C31s Realign K-5 from K-7 to I-435 (Conduct Study)												.4			

Recommended Strategy

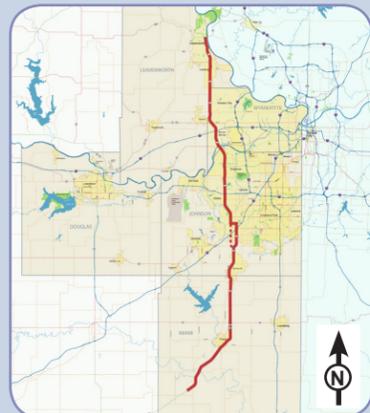
Recommended Study

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

K-7/US-73/ US-169 Corridor



Corridor Profile

K-7/US-73/
US-169

Length: 72 miles

Key Developments:

- Cricket Wireless Amphitheater
- Fort Leavenworth
- Kansas BioScience Park
- Lansing Correctional Facility
- New Century Air Center

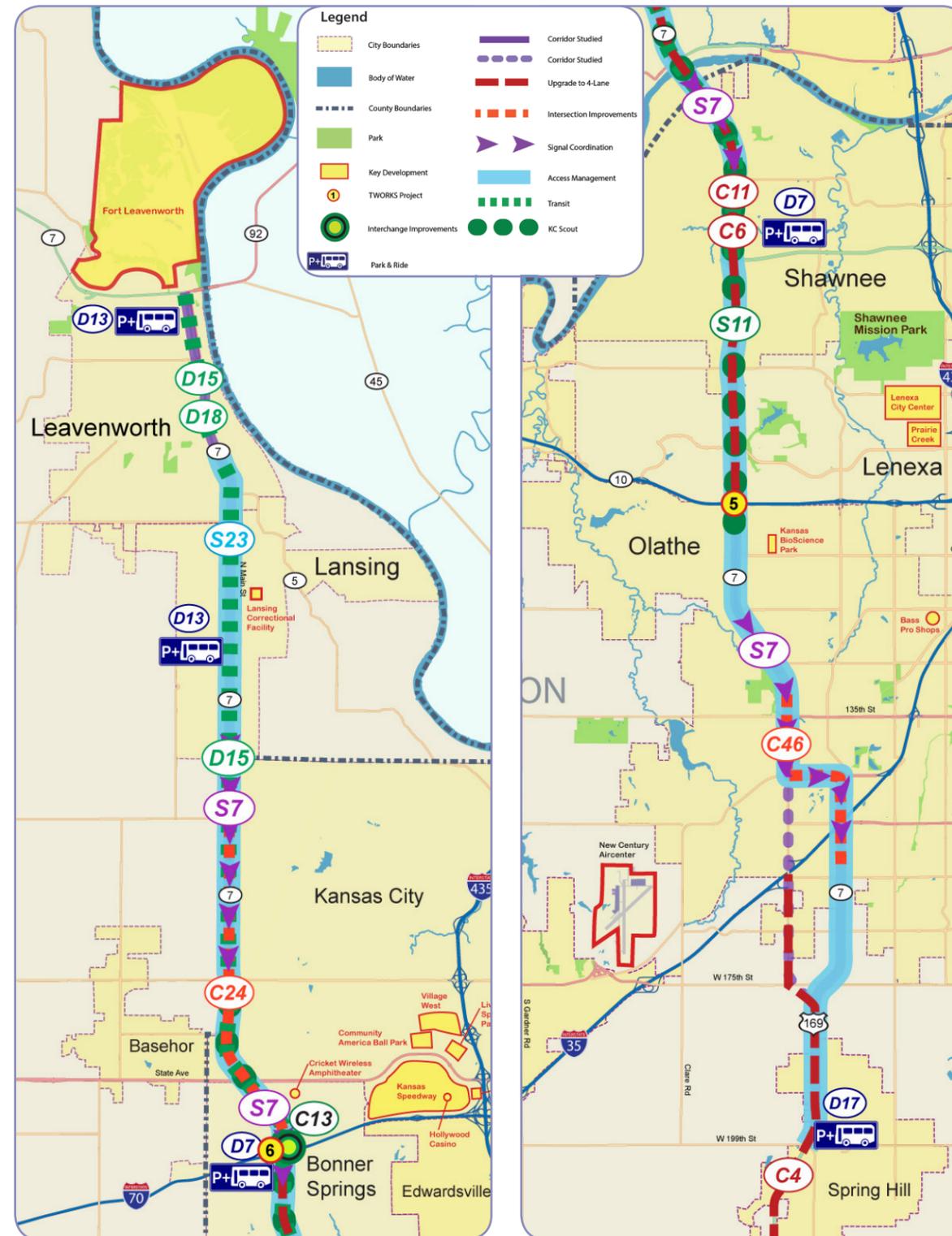
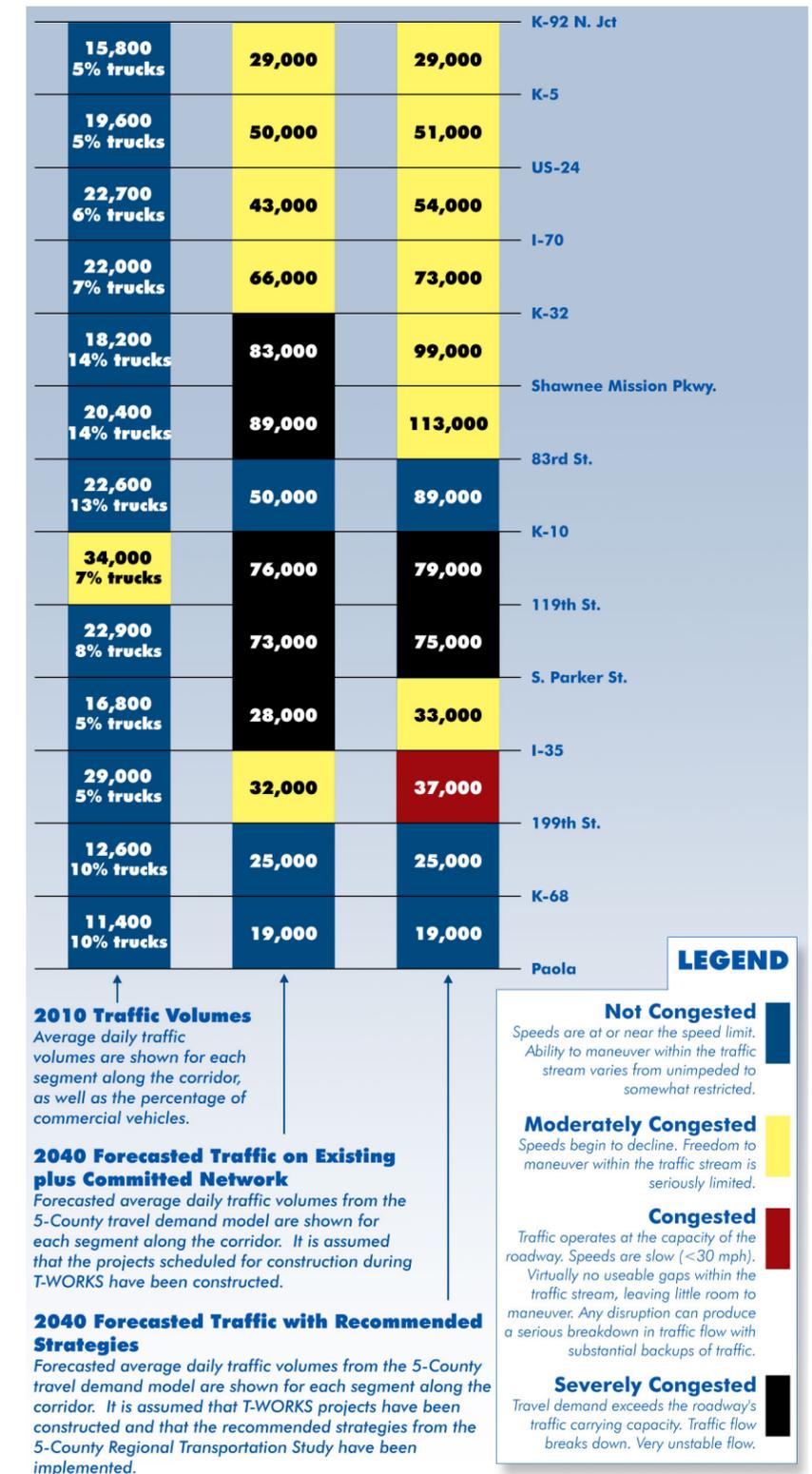


Figure 14-10: Traffic Volumes along K-7/US-73/US-169



DESCRIPTION OF THE CORRIDOR

K-7, also designated as US-73 in Leavenworth County and as US-169 in southern Johnson County and Miami County, forms a north-south corridor along the western edge of the Kansas City Metropolitan Area that connects four of the five counties in the study. This route has provided improved access and supported residential growth in the adjacent communities.

The roadway classification type varies considerably throughout its length. Each segment of the highway has its own characteristics that are described in the following paragraphs.

KDOT studied the corridor through the development of the K-7 Corridor Management Plan (<http://www.ksdot.org/projects.asp>) and it has been determined that the expressway portions should be upgraded to a fully access-controlled freeway. As part of the plan, 11 cities and counties along the corridor have a Memorandum of Understanding (MOU) with KDOT where they agree to upgrade K-7 to an access-controlled freeway.

In Leavenworth, K-7 highway is also called both Metropolitan Avenue and 4th Street. In Lansing, K-7 is also called Main Street. K-7 highway is a 4-lane urban arterial with posted speed limits between 20 and 50 MPH. Due to the number of traffic signals, travel times are relatively high.

Between Lansing and I-70, K-7 was constructed as a high-speed rural 4-lane divided expressway. As development has occurred along this corridor, traffic signals have been installed at many of the intersections. Closely spaced traffic signals reduce the capacity of the highway and lower average travel speeds.

The interchange at I-70 has been studied (www.k7andi70interchange.org) and the first phases of planned improvements will be constructed during the T-WORKS transportation program.

From I-70 south to 110th Street in Olathe, K-7 was constructed as a high-speed rural 4-lane divided expressway. Over time, many at-grade intersections have been replaced with grade-separated interchanges. Ten interchanges exist along this approximately 13 mile long segment. Traffic growth on this segment will exceed the capacity of the remaining existing at-grade intersections.

Within the city of Olathe, K-7 is routed on urban arterial streets. From north to south, K-7 is carried on Parker Street, then east on old US-56 before turning south on Harrison Street crossing I-35 towards Paola. There are eight signalized intersections on S. Parker St./Lone Elm Road between Harold Street and Old 56 (1.4 miles). There are seven signalized intersections on S. Harrison between Old 56 and 159th Street (1.9 miles). The route is four lanes through Olathe.

South of Olathe, K-7/US-169 is again a 4-lane divided expressway with traffic signals at major intersections. South of 223rd Street, K-7/US-169 becomes a fully access-controlled freeway through most of Miami County.

KEY DEVELOPMENT INFORMATION

Fort Leavenworth is a major activity center at the northern end of the K-7 corridor and has seen recent expansion. To the south in Lansing, population and employment growth is projected to the east and west of K-7.

There is also some employment growth projected in Bonner Springs, and population growth expected in the Village West area around State Avenue and in Bonner Springs.

Very high population growth is expected in Shawnee adjacent to K-7 from Johnson Drive to 95th Street. Future land-use plans show continued growth in western Shawnee and Lenexa. There is also high employment growth expected in Shawnee from Johnson Drive to K-10.

In Olathe, very high population growth south of the K-10 interchange, particularly on the west side of K-7, is projected. There is also very high employment growth expected in Olathe.

Projections show population growth adjacent to K-7 south from I-35 to Miami County line, as well as increased industrial growth on US-169 south of I-35.

EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-15 shows the expansion and modernization projects that are funded through T-WORKS along the K-7 corridor.

Table 14-15: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
5	Near K-7	KC Scout Expansion	\$475 K	2010
6	I-70 & K-7	Interchange Improvements	\$68 M	2013

TRAFFIC

The K-7 Corridor currently experiences isolated areas of moderate congestion, primarily at signalized intersections. A concern has been expressed that travel times on the segment of K-7 between the City of Lansing and I-70 have grown significantly in recent years with the addition of traffic signals along this highway. The lack of left turn lanes at some intersections in Olathe result in traffic delays at these intersections as well.

The year 2040 traffic forecasts show traffic volume growth with traffic exceeding the capacity of some signalized intersections. Overall, traffic volumes will exceed the capacity of K-7 from the Kansas River crossing to 83rd Street in the City of Shawnee and from 95th Street to 167th Street in the City of Olathe. The interchange of K-7 and K-10 shows congestion on all four approaches.

OTHER MODES

Multimodal considerations include examining transit connections from Leavenworth/Lansing to the existing transit system in Kansas City, KS and also expanding service from Paola to the existing transit system in Johnson County. Information about Smart Moves, metropolitan Kansas City’s vision for expanded and enhanced regional transit service can be found at www.kcsmartmoves.org.

CORRIDOR CONNECTIONS

K-7, along with I-70, K-10 and I-435, form an interdependent network of roadways. A capacity improvement on any one of these corridors impacts the others. The travel demand model indicates a strong association between K-7 and I-435. As K-7 is improved to a freeway, a significant volume of traffic will shift from the north-south segment of I-435 to K-7. This also slightly increases the volume of traffic on I-70.

Widening K-10 does not have a significant impact on existing K-7, but would reduce the volume of traffic on I-70 and the north-south segment of I-435.

K-7/US-73 is a key connection for the cities of Leavenworth and Lansing with the rest of the Kansas City metropolitan area. Travel time between Lansing and I-70 has been steadily increasing as traffic signals are added at intersections in this segment of the corridor. This increase

in travel time is a concern to those living and working in these cities and at Fort Leavenworth. Also, as K-7 becomes more congested between I-70 and the cities of Leavenworth and Lansing, some traffic may divert to K-5 and I-435 for north-south movements.

The interchange at I-70 provides a connection to the national interstate highway system and also serves trips to local and regional destinations. Currently several traffic movements experience significant congestion during peak periods at the K-7 and I-70 interchange. This is especially true for the southbound left turn onto the I-70 ramps and for the westbound I-70 exit to K-7. A project in the T-WORKS program will construct the initial phases of an interchange improvement that will address this congestion.

The K-7 interchange with K-10 provides an important connection for trips to and from Lawrence, as well as the I-435 corridor leading to Missouri. Congestion will grow at this location as traffic continues to increase.

The interchange with K-7/US-169 and I-35 provides an important connection for traffic coming from the south. The corridor currently approaches I-35 from the south on a city arterial street that has little access control. This area will become congested as traffic continues to grow. Some consideration has been given to realigning K-7/US-169 onto Lone Elm Road from north of 175th Street to the new interchange at I-35.

The at-grade intersections of the corridor at 175th Street and 199th Street are locations that experience some congestion today and will see congestion grow in the future.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the K-7 corridor.

A variety of strategies were considered to improve current and future traffic operations on K-7 through the year 2040. These strategies are shown in Table 14-16. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy

was assigned an identifier code of a letter and number that are shown on the K-7 corridor maps. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S7: Coordinate traffic signal phasing and timings from 4H Road to Parallel Parkway and from W. Harold Street to 154th Street.

S11: Expand the KC Scout intelligent transportation system (ITS) between Parallel Parkway and College Boulevard. The ITS devices would include dynamic message signs to warn drivers of upcoming travel conditions and a camera system to monitor the real-time flow of traffic.

S23: Follow the recommendations of the K-7 Corridor Management Plan.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D7: Construct Park & Ride facilities along K-7 near Shawnee Mission Parkway and in Bonner Springs.

D13: Construct Park & Ride facilities along K-7/US-73 near 4H Road and near the northern junction of K-7 and K-92.

D15: Implement commuter transit service connecting the cities of Leavenworth and Lansing with State Avenue, I-70, Shawnee Mission Parkway, and College Boulevard.

D17: Construct Park & Ride facilities along K-7/US-169 near Spring Hill.

D18: Implement peak and off-peak transit service connecting the cities of Leavenworth and Lansing with State Avenue and I-70.

D34: Bicycle and pedestrian facilities should be considered on all new or renovated bridges over K-7.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C4: Upgrade K-7/US-169 to a 4-lane freeway from 215th Street to north of 175th Street. This lengthens the existing freeway that extends from 223rd Street to south of Osawatimie. Also, relocate K-7 from north of 175th Street to Lone Elm Road and improve this arterial street to I-35.

C6: Upgrade K-7 to a 6-lane freeway from Kansas Avenue to K-10 including a bicycle crossing over the Kansas River. C11 is a likely first step.

C11: Upgrade K-7 to a 4-lane freeway from 43rd Street to K-10.

C13: Construct phases 4, 5, 6, 7 and 10 of the reconfigured I-70/K-7 interchange.

C24: Construct expressway intersection enhancements from the City of Lansing to State Avenue.

C46: Construct arterial street enhancements to existing K-7 through the City of Olathe.

Table 14-16: K-7 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
	Operate and maintain existing roads and bridges													X	X
C4	Upgrade K-7 to a 4-lane freeway from 215th Street to north of 175th Street, arterial street improvements on Lone Elm Road to I-35	6.4	6.5	4.4	10.0	3.3	2.9	4.2	2.4	3.6	542	60.5	9.0	X	
C6	Upgrade K-7 to a 6-lane freeway from Kansas Ave. to K-10, bike/ped crossing over Kansas River	8.1	6.5	5.6	5.3	3.3	4.1	4.8	3.8	2.6	529	215	2.5		X
C10	Upgrade K-7 to a 6-lane freeway from K-10 to I-35	8.8	4.4	6.5	5.5	3.3	3.6	4.2	2.4	2.0	497	714	0.7		
S7	Signal coordination from 4H Road to Parallel Parkway and from W. Harold Street to 154th Street	5.1	5.0	3.3	10.0	3.3	3.6	3.8	3.8	3.3	493	1	493.3	X	
C11	Upgrade K-7 to a 4-lane freeway from 43rd Street to K-10	6.8	6.5	3.7	45.1	3.3	4.1	4.8	2.8	4.1	488	46.2	10.6	X	
D7	Construct Park & Ride facilities near Shawnee Mission Parkway and in Bonner Springs	4.5	4.4	3.3	7.2	4.5	4.5	4.6	4.2	5.4	481	0.7	655.1	X	
S11	Expand KC Scout ITS between Parallel Parkway and College Boulevard	5.1	7.3	3.3	6.3	3.3	3.6	4.4	3.8	3.3	479	2.2	217.3	X	
C13	Construct phases 4,5,6,7 & 10 of the reconfigured I-70/K-7 interchange	6.8	6.5	4.4	3.7	3.3	2.9	4.8	3.3	4.1	469	245	1.9	X	X
D13	Construct Park & Ride facilities near 4H Road and near northern junction of K-7 and K-92	4.6	3.7	3.3	5.9	4.5	4.1	3.8	4.2	5.4	442	1.5	300.4	X	
D15	Commuter transit service connecting Leavenworth/State Avenue/I-70/ Shawnee Mission Parkway/College Boulevard	4.6	5.0	3.3	3.4	4.5	5.0	4.2	4.2	5.9	440	11.1	39.6	X	
D17	Construct Park & Ride facilities near Spring Hill	4.6	3.4	3.3	5.9	4.1	4.5	4.1	4.1	5.3	435	0.7	592.2	X	
C24	Expressway intersection enhancements from Lansing to State Avenue	5.1	4.4	3.3	6.2	3.3	5.0	4.2	2.8	3.3	434	21	20.7	X	
D18	Peak and off-peak transit service connecting Leavenworth/Lansing and State Ave/I-70	4.6	3.7	3.3	3.4	5.0	5.5	4.5	4.4	6.1	434	11.2	38.7	X	
D23	Transit commuter service connecting Paola to I-35	4.6	3.3	3.3	3.4	5.0	5.5	4.4	4.4	5.5	419	4	104.9		
S23	Access management: follow K-7 Corridor Management Plan	4.6	6.5	3.3	3.3	3.3	4.1	4.2	3.8	3.3	416	10	41.6	X	
D34	Bicycle / Pedestrian facilities: consider on all new or reconstructed bridges over K-7	3.9	3.7	3.3	3.5	5.0	4.1	3.9	4.4	5.5	402	1.6	255.1	X	
C44	Leavenworth/Lansing bypass: 2-lane west of Leavenworth connecting K-5 to US-73/K-7	5.8	1.6	5.0	6.6	3.3	3.6	3.5	2.4	2.0	396	123.5	3.2		
C45	Upgrade K-7 to 4-lane freeway from Lansing to State Avenue	5.6	5.0	3.7	3.7	3.3	2.6	3.3	3.8	2.9	396	98.3	4.0		
C46	Arterial street enhancements to existing K-7 in Olathe	5.7	4.4	3.7	3.5	3.3	4.1	3.6	2.4	3.3	395	47.3	8.4	X	
D48	Parallel bicycle and pedestrian trail development per MetroGreen / local plans	3.3	3.3	3.3	3.3	5.5	4.1	3.9	4.5	5.1	384	17.5	21.9		
C56	Construct phases 8 & 9 of the reconfigured I-70/K-7 interchange	4.8	3.3	4.4	3.4	3.3	2.9	3.3	2.8	3.3	358	60	2.6		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

K-10 Corridor



Corridor Profile

K-10

Length: 38 miles

Key Developments:

- Bauer Farms
- Berry Plastics
- East Hill Business Park
- Farmland Industries Redevelopment Site
- Haskell Indian Nations University
- Kansas Bioscience Park
- Rock Chalk Park
- Sunflower Army Ammunition Plant Redevelopment
- University of Kansas

Transit Service:

- Lawrence Transit
- K-10 Connector

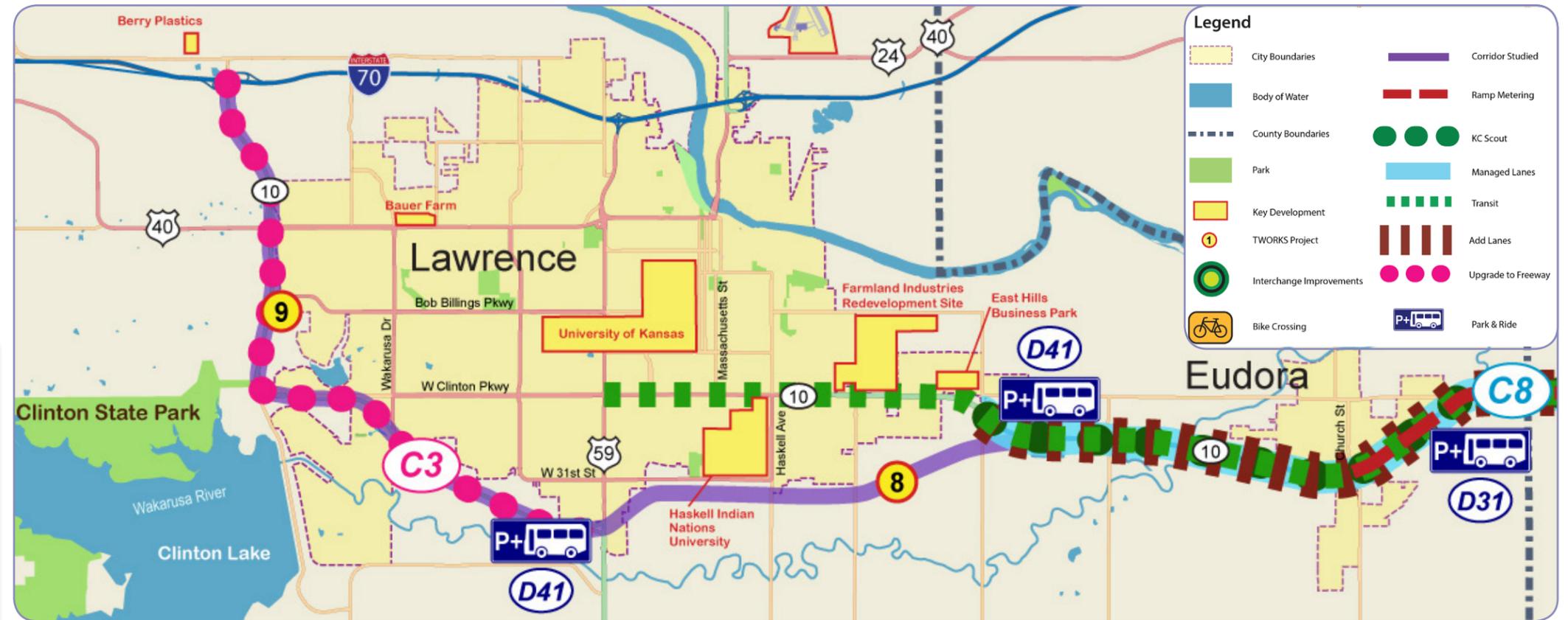
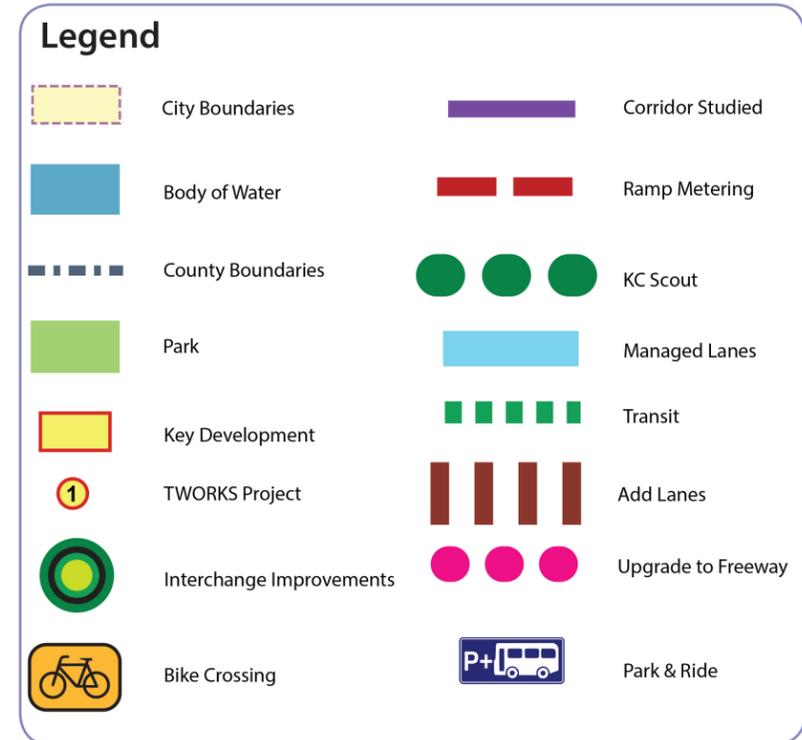


Figure 14-11: Traffic Volumes along K-10

2010 Traffic Volumes		Average daily traffic volumes are shown for each segment along the corridor, as well as the percentage of commercial vehicles.									
		11,800	9,200	7,000	N/A	26,800	27,600	36,000	47,300	55,600	
		6% trucks	5% trucks	5% trucks	N/A	4% trucks	4% trucks	5% trucks	6% trucks	6% trucks	
2040 Forecasted Traffic on Existing plus Committed Network		Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that the projects scheduled for construction during T-WORKS have been constructed.									
		29,300	34,900	37,800	36,400	71,200	78,200	86,100	76,200	97,600	
2040 Forecasted Traffic with Recommended Strategies		Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that T-WORKS projects have been constructed and that the recommended strategies from the 5-County Regional Transportation Study have been implemented.									
		34,200	39,700	50,800	41,900	76,200	82,700	90,900	89,000	114,400	
		I-70	US-40	Clinton Pkwy.	US-59	E. 1900 Rd.	Church St.	Kill Creek Rd.	K-7	Ridgeview Rd.	I-435

LEGEND			
 Not Congested	 Moderately Congested	 Congested	 Severely Congested
Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.	Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.	Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.	Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.



DESCRIPTION OF THE CORRIDOR

K-10 from the I-70 interchange west of Lawrence to I-435 in Lenexa provides a major route for east-west travel through the 5-County region. The route connects Lenexa, Olathe, De Soto, Eudora and Lawrence.

K-10 is a two-lane highway, built on a four-lane right-of-way, from I-70 to Iowa Street (designated as US-59), near the southern edge of Lawrence. K-10 is currently designated on Iowa Street and on 23rd Street moving eastward through Lawrence. KDOT studied the corridor in the K-10 Transportation Study, completed in 2005 (<http://www.ksdot.org/projects.asp>).

Construction is scheduled to begin in Fall 2013 on the South Lawrence Trafficway (SLT), a six-mile, four-lane freeway connecting the existing west leg of the K-10 corridor to K-10 at a point east of Lawrence, via a route around the southern edge of the city. The construction of the SLT will eliminate the K-10 designation on Iowa and 23rd Streets in Lawrence. K-10 is a four-lane freeway between Lawrence and I-435.

EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-17 shows the expansion and modernization projects that are funded through T-WORKS along the K-10 corridor:

Table 14-17: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
3	I-435/I-35/K-10 Interchange (Johnson Co. Gateway)	Construct C-D roads and ramps	\$250 M	2014
5	Near K-7	KC Scout Expansion	\$475 K	2010
8	South junction of US-59 to K-10 near E. 1750 Road (South Lawrence Trafficway)	Construct 4-lane freeway	\$150 M	2013
9	15th St/Bob Billings Pkwy	Construct Interchange	\$18 M	2014

KEY DEVELOPMENTS

The K-10 corridor supports existing and future redevelopment in Lawrence and cities in the Kansas City metropolitan area. Major educational institutions, industrial areas, new high technology businesses, office locations, and commercial sites are located along this corridor. This corridor supports more adjacent economic activity potential than any other corridor in the 5-County region.

The K-10 corridor is also key to the future development of Eudora, De Soto, western Shawnee, western Lenexa and western Olathe as well as the former Sunflower Army Ammunition Plant. The potential Sunflower development site is located just south of K-10 on Lexington Avenue near De Soto. This development has the potential to be a major traffic generator. It should be noted, however, that site preparation for the Sunflower development has been estimated to cost much more than originally expected. This additional cost could slow redevelopment at this site.

A new business park is proposed at the Farmland site in Lawrence. It is located near and projected to be a business/industrial park similar to East Hills business park.

High growth in population and employment is projected in western Lenexa and western Olathe adjacent to K-10. High population growth is also anticipated in Eudora, with some employment growth also expected to the east of Lawrence.

TRAFFIC

Traffic forecasts for the year 2040 were determined assuming completion of the projects in T-WORKS. These projections show congestion on the west leg of the K-10 South Lawrence Trafficway (SLT), on 23rd Street, and along K-10 between Lawrence and I-435.

There is a relatively high volume of traffic that currently travels through the City of Lawrence to make the connection between I-70 and K-10. The construction of the east leg of the SLT (new alignment for K-10) is scheduled to be completed by fall of 2016. Completing the east leg will divert much of the “pass-through” traffic, but with only two lanes on the west leg of the SLT, some traffic will continue to travel through the city. Interchange improvements at I-70 and K-10 are not recommended as part of the study because of the high cost to construct a system-to-system interchange and traffic must slow for the toll booths, therefore little benefit is gained by constructing a free-flowing interchange.

Overall traffic on the corridor is projected to grow from current levels of 28,000 vehicles per day (vpd) to approximately 78,000 vpd on the eastern segments of the corridor. As a result, 15 miles of the 40 mile corridor is likely to experience peak period congestion in the year 2040. That congestion will mainly occur on the two-lane section between I-70 and US-59 and on the section between Lawrence and I-435. Regional growth will generate sufficient traffic volumes that K-10 will need to be widened to six lanes between Lawrence and K-7. Between K-7 and I-435, K-10 will eventually need eight lanes to ensure travel at a reasonable level of service.

OTHER MODES

Express bus service currently connects the University of Kansas and Haskell Indian Nations University in Lawrence with Johnson County Community College and the KU Edwards Campus in Overland Park. This service,

called the K-10 Connector, is operated by Johnson County Transit and has been very successful. Opportunities exist to expand this service to provide additional buses and connections.

CORRIDOR CONNECTIONS

At the west end of the corridor a key connection with I-70 serves traffic to and from the west. On the south side of Lawrence, the interchange with US-59 provides a connection with a new freeway that runs south to the City of Ottawa and a junction with I-35. The section where K-10 connects with I-435 and I-35 is called the Johnson County Gateway. This area has been studied as part of a separate project (<http://www.jocogateway.com/>). The Gateway serves a complex set of travel patterns which currently result in high levels of traffic conflict and delay.

IMPACTS TO OTHER CORRIDORS

K-10 and I-70 (the Kansas Turnpike) are the two major east-west corridors serving the 5-County region. Traffic volumes are growing more quickly on K-10 than I-70.

There is a considerable volume of traffic that desires to travel between I-70 west of Lawrence and southern Johnson County. Currently, much of this traffic uses I-70 and either K-7 or I-435 for these trips. Completion of the South Lawrence Trafficway (K-10) will provide a more direct route and reduce travel times; therefore, significant traffic will likely shift from I-70 to K-10. This will place an additional burden on the Johnson County Gateway area. This shift in traffic will extend the service life of I-70, the four-lane Kansas Turnpike, delaying the need to widen this highway to six lanes.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the K-10 corridor.

A variety of strategies were considered to improve current and future traffic operations on K-10 through the year 2040. These strategies are shown in Table 14-18. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the K-10 corridor

maps. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S4: Implement ramp metering from the Church Street interchange in Eudora to the Ridgeview Road interchange in Lenexa. Ramp metering uses traffic signals on the entrance ramps to control the rate at which vehicles enter K-10. Ramp metering will improve safety and traffic flow on K-10.

S19: Implement intelligent transportation system (ITS) devices from E. 1750 Road to Cedar Creek Road similar to the KC Scout devices that are in place in the Kansas City metro area. These devices would include dynamic message signs to warn drivers of upcoming travel conditions and a camera system to monitor the real-time flow of traffic.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D4: Expand the operating hours/service of the K-10 Connector transit service. Additional transit trips would be added to the existing service, with this service providing stops along K-10 at Eudora, DeSoto and possibly one stop in Lenexa, before proceeding to the Edwards Campus and then continuing on to the College Boulevard/Corporate Woods area.

D14: Construct a bicycle path parallel to K-10, along Prairie Star Parkway across the bridge over highway K-7. This freeway crossing would connect two significant lengths of existing bicycle paths, the first from west of Cedar Creek Parkway to the west side of K-7 and the second from the east side of K-7 east along Prairie Star Parkway.

D31 and D41: construct Park & Ride facilities near US-59, near E. 1750 Road, near Eudora, and near DeSoto. Park & Ride facilities promote carpooling and transit use while offering the flexibility for travelers to use personal vehicles for errands either before or after their workday commute.

D32: Anytime a new bridge is constructed over K-10 or a bridge is reconstructed, consideration will be given to including a shared use path on the bridge.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C3: This strategy adds two new lanes parallel to the existing lanes from I-70 to US-59 and improves at-grade intersections to grade separated interchanges to create a four-lane freeway.

C8: Widen K-10 to six lanes from approximately E. 1750 Road (eastern end of the South Lawrence Trafficway) to I-435. The two new lanes would be constructed as high occupancy toll lanes where transit and carpool vehicles travel for free but single-occupant vehicles pay a toll. HOT lanes provide the KDOT with a great deal of flexibility in managing future traffic operations along the highway.

C9: This strategy would widen the section between K-7 and I-435 to eight lanes. The high occupancy toll lanes from strategy C8 would be maintained through this area.

C21: Construct the phases of the Gateway Interchange improvements that remain following the T-WORKS project. The Gateway Interchange extends along K-10/I-435 from Ridgeview Road to US-69 and includes the interchanges with I-35 and the north-south segment of I-435.

Table 14-18: K-10 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
	Operate and maintain existing roads and bridges													X	X
C3	Widen K-10 as a 4 lane freeway from I-70 to US-59	6.7	7.3	5.0	5.9	3.3	5.5	5.7	3.8	3.6	549	98.5	5.6	X	
S4	Ramp metering between Church Street and Ridgeview Road	6.0	6.5	3.3	10.0	3.3	4.1	4.2	3.8	3.3	540	1.5	367.1	X	
C7	Widen K-10 to 6 lane freeway from E. 1750 Road to I-435	7.9	3.7	5.0	6.1	5.0	5.0	5.2	4.4	4.1	528	195.8	2.7		
C8	Widen K-10 to 6-lane freeway from E. 1750 Road to I-435 with high occupancy toll lanes (HOT)	7.9	3.7	5.0	6.0	5.0	5.0	5.2	4.4	4.1	527	205.6	2.5		X
D4	Expand operating hours/service for transit K-10 Connector Service	5.5	3.7	3.3	8.5	5.0	5.5	4.5	4.4	5.0	514	10.1	50.9	X	
C9	Widen K-10 to 8-lane freeway from K-7 to I-435, K-10 remains 4-lane west of K-7	8.0	3.3	5.6	8.3	3.3	4.5	4.4	2.8	2.6	514	82.2	6.3	X	X
D14	Construct bicycle path on K-10 across K-7 on Prairie Star Pkwy to connect existing paths	3.9	4.4	3.3	4.7	5.5	4.1	4.3	4.5	5.6	441	1.1	400.2	X	
C21	Construct remaining phases of I-435/I-35/K-10 Gateway project	6.2	5.0	5.0	3.4	3.3	3.6	4.4	4.4	2.6	437	310.8	1.4	X	X
S19	Intelligent Transportation Systems (ITS) from E. 1750 Road to Cedar Creek Road	4.5	6.5	3.3	4.3	3.3	3.6	4.2	3.8	3.3	427	2.5	170.8	X	
D24	Expand Park & Ride facilities at KTA Lecompton Toll Plaza	3.9	3.3	3.3	6.7	4.1	4.1	3.5	4.1	4.3	418	0.5	796.4		
S24	Variable speed limits on K-10 from K-7 to I-435	4.6	4.4	3.3	5.5	3.3	4.1	3.6	3.8	3.3	412	0.6	654.5		
D31	Construct Park & Ride facilities near Eudora and DeSoto	4.5	3.3	3.3	4.3	4.5	4.1	3.6	4.2	5.4	407	1.5	277.1	X	
D32	Bicycle / pedestrian facilities: consider on all new or reconstructed bridges over K-10	3.9	3.7	3.3	3.7	5.0	4.1	3.9	4.4	5.5	405	1.6	257.2	X	
S27	Incident management	4.5	5.0	3.3	4.2	3.3	3.6	3.8	3.8	3.3	398	2	199.1		
D41	Construct Park & Ride facilities near US-59 and near E.1750 Road	4.2	3.3	3.3	4.3	4.5	4.1	3.6	4.2	4.4	394	1.5	268.2	X	
C47	Reconstruct the K-10 and I-70 interchange	4.3	4.4	3.7	3.4	3.3	4.5	4.2	3.8	3.3	391	157.5	2.5		
D43	Construct bicycle path adjacent to K-10 from Lawrence to Eudora	3.3	3.3	3.3	3.7	5.5	4.1	3.9	4.5	5.1	389	3.4	115.8		
D45	Construct bicycle path adjacent to US-59 to 31st Street	3.3	3.3	3.3	3.5	5.5	4.1	3.9	4.5	5.1	386	6.4	60.3		
D46	Construct bicycle path between DeSoto and Prairie Star Pkwy at Cedar Creek Pkwy to connect with existing path	3.3	3.3	3.3	3.4	5.5	4.1	3.9	4.5	5.1	386	7.2	53.2		
D47	Construct bicycle path adjacent to K-10 from Eudora to DeSoto	3.3	3.3	3.3	3.4	5.5	4.1	3.9	4.5	5.1	385	7.9	48.9		
C53	Construct interchange at K-10 and Prairie Star Pkwy	5.1	2.0	3.7	4.5	3.3	4.1	3.3	3.3	2.9	364	18.9	19.2		
C58	Construct interchange at K-10 and Clare Road	5.2	1.1	3.7	5.4	3.3	3.6	2.6	3.3	2.6	351	18.9	18.6		
C63	Construct interchange and collector-distributor road at K-10 and Lone Elm Road	4.9	1.1	3.7	4.3	3.3	3.6	2.6	3.3	2.6	330	28.4	11.6		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

K-68 Corridor



Corridor
Profile

K-68

Length: 25 miles

Key Development:
Louisburg Cider Mill

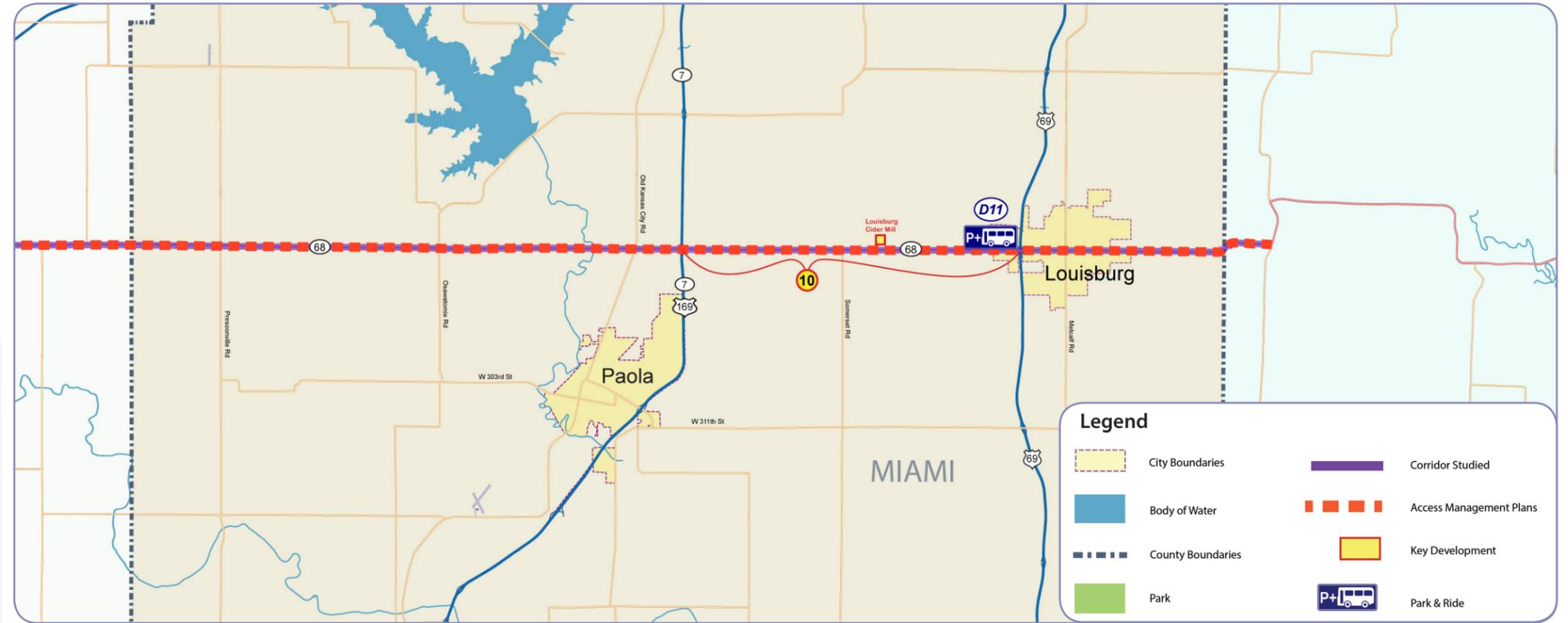


Figure 14-12: Traffic Volumes along K-68

	FR/MI Co Line	Osawatomie Rd.	K-7/US-169	US-69	City of Louisburg	KS/MO Line
2010 Traffic Volumes Average daily traffic volumes are shown for each segment along the corridor, as well as the percentage of commercial vehicles.	2,300 15% trucks	3,200 12% trucks	6,200 10% trucks	11,500 3% trucks	2,200 13% trucks	
2040 Forecasted Traffic on Existing plus Committed Network Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that the projects scheduled for construction during T-WORKS have been constructed.	4,900	4,900	13,300	12,400	4,500	
2040 Forecasted Traffic with Recommended Strategies Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that T-WORKS projects have been constructed and that the recommended strategies from the 5-County Regional Transportation Study have been implemented.	4,600	4,800	12,700	12,300	4,400	

Legend	Not Congested	Moderately Congested	Congested	Severely Congested
Not Congested	Moderately Congested	Congested	Severely Congested	
Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.	Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.	Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.	Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.	

DESCRIPTION OF THE CORRIDOR

The K-68 corridor is a 2-lane, east-west highway that extends across Miami County. It provides connections between Paola and Louisburg in the 5-County region with the City of Ottawa and I-35 to the west. It also connects across the state line into Missouri where the route designation changes to M-2. Missouri highway M-2 travels eastward to Harrisonville, MO. This route is the next major road connection, south of 135th Street, between US-69 and I-49/US-71. It is the only east-west highway crossing the 5-County region south of I-435. As this is a bi-state corridor some improvements may require investments on both sides of the state line. And as would be expected, different states may have different priorities for funding transportation improvements.

Highway K-68 is a two-lane rural highway that has local concerns for the safe and efficient flow of traffic. These issues have been addressed in a separate K-68 Corridor Plan, which was collaboratively developed by KDOT and the surrounding communities (http://www.ksdot.org/pdf_files/K-68-Corridor-Management-Plan.pdf).

KEY DEVELOPMENT

As growth and development continues to move south from Johnson County into northern Miami County, K-68 will have an ever increasing role for providing traffic movement and supporting growth for the cities located along this corridor.

K-68 provides one of the few east-west travel corridors in Miami County. While no large major activity centers are currently located along this corridor, both Louisburg and Paola are locating new development adjacent to K-68. Although population and employment growth are relatively slow, there is a need to manage how future development would access K-68 in order to maintain mobility and travel efficiency on one of the few direct east-west travel routes. Commercial distribution centers and warehouses along this corridor use this route to access I-35 for distribution.

TRAFFIC

Projected growth along the corridor will result in increased traffic on K-68. There are currently no projected bottlenecks or congestion points; however, traffic must slow down considerably when traveling through the town of Louisburg.

The K-68 Corridor Plan addressed land uses, traffic access and roadway improvement needs. This corridor received a highway preservation allocation as part of the T-WORKS funding program.

The total trips on K-68 are expected to increase from 6,300 seen today to around 10,000 in the year 2040.

CORRIDOR CONNECTIONS

The K-68 corridor intersects US-169/K-7 just to the north of Paola and US-69 in the town of Louisburg. To the west of the 5-County region, K-68 connects with I-35 near Ottawa.

There is no significant interaction with other key corridors in the 5-County region or congestion impact expected here in the future.

EXPANSION & MODERNIZATION T-WORKS PROJECTS CURRENTLY FUNDED FOR CONSTRUCTION

In May 2010, the Kansas Legislature passed Transportation Works for Kansas (T-WORKS), an \$8 billion 10-year transportation program. T-WORKS is designed to create jobs, preserve highway infrastructure, and provide multimodal economic development opportunities across the state. Table 14-19 shows the expansion and modernization projects that are funded through T-WORKS along the K-68 corridor.

Table 14-19: T-WORKS Expansion and Modernization Projects Currently Funded for Construction

Project Number	Location	Description	Construction Cost	Planned Year
10	K-68 from US-169 to Louisburg	Preliminary engineering work for 4-lane expressway/evaluate, prioritize and build interim improvements	\$10 M	2018

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the K-68 corridor.

A variety of strategies were considered to improve current and future traffic operations on K-68 through the year 2040. These strategies are shown in Table 14-20. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the K-68 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D11: Construct a Park & Ride facilities near the US-69 interchanges with 135th Street and with K-68. Park & Ride facilities promote carpooling and transit use while offering the flexibility for travelers to use personal vehicles for errands either before or after their workday commute.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S17: Implement access management strategies from the K-68 Corridor Study. These include:

- Interim intersection upgrades (traffic signals, turn-lanes, and acceleration lanes)
- Consolidate mainline driveways
- Relocate mainline driveways/side road access
- Relocate public road connections to mainline, reconnect to frontage roads
- Relocate private driveways, reconnect to frontage roads
- Intersection and drive way consolidation
- Convert major intersections to interchanges
- Advanced right-of-way acquisition
- Close median breaks

Table 14-20: K-68 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering Factor		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
	Operate and maintain existing roads and bridges													X	X
D11	Construct Park & Ride facilities near 135th and K-68	4.4	3.3	3.3	7.3	4.5	4.1	3.6	4.8	5.4	455	1.1	433.5	X	
S17	Access management: follow K-68 Corridor Management Plan	3.9	7.3	3.3	3.3	3.3	4.1	4.4	3.8	5.0	434	10	43.4	X	
D30	Bicycle facilities	3.3	4.4	3.3	3.3	5.5	4.5	4.3	4.5	5.1	409	14.7	27.8		
D42	Construct a Park & Ride facility on K-68 near US-69 and US-169	4.0	3.7	3.3	3.7	4.1	4.1	3.7	4.1	5.3	392	1.5	266.7		
C48	Expand K-68 to a 4-lane highway from Old Kansas City Road to Metcalf Ave (in Louisburg)	4.0	5.6	4.4	3.2	3.3	3.3	4.5	3.8	2.0	390	71.4	5.5		
C57	Intersection Capacity Improvements	3.9	3.7	3.3	3.3	3.3	3.6	3.4	3.8	3.3	351	16.8	20.9		
C60	Construct Louisburg Bypass: 2-lane with interchange at US-69, 4-lane from Old KC Road to US-69	4.0	3.3	3.7	3.3	3.3	3.3	4.4	2.8	2.6	341	95.7	3.6		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

This page intentionally left blank.

K-92/M-92 Corridor



Corridor Profile
K-92/M-92

Length: 13 miles

Key Developments:
Downtown Leavenworth
Fort Leavenworth
KCI Airport

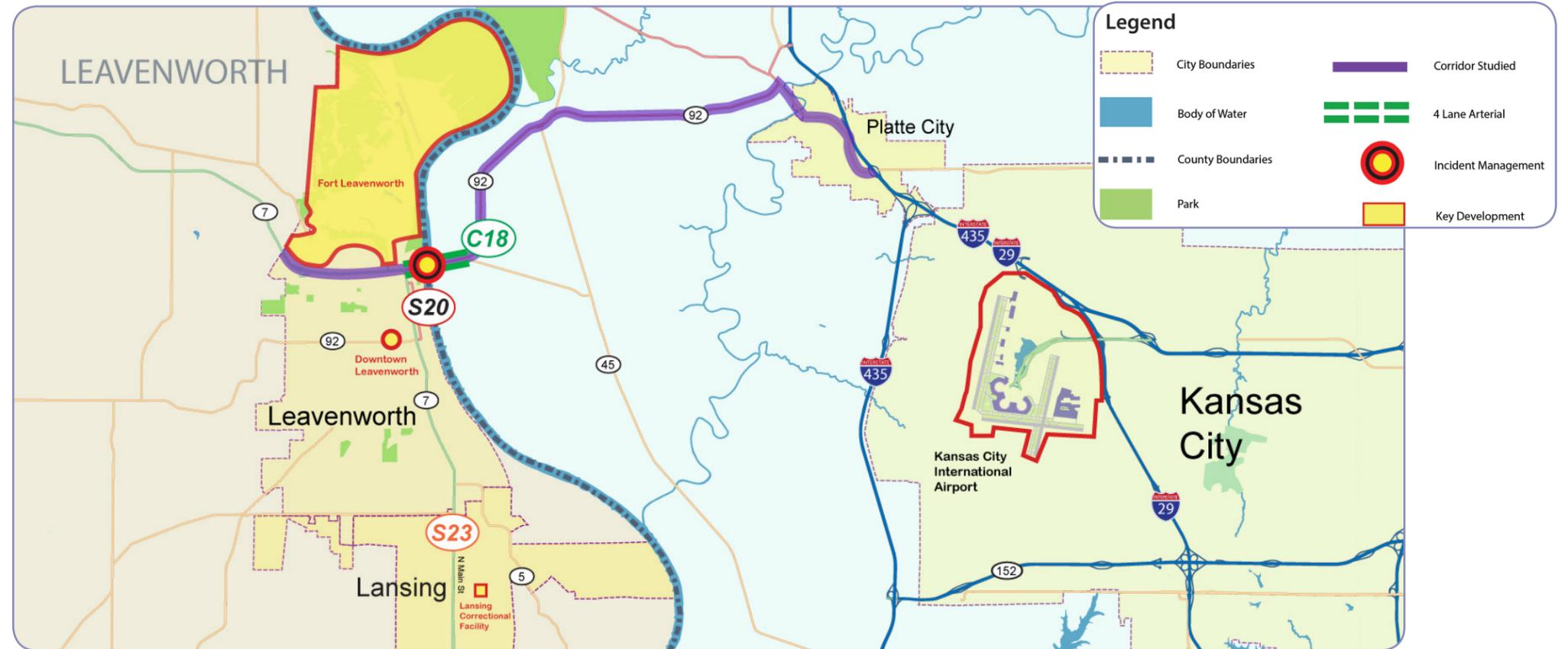
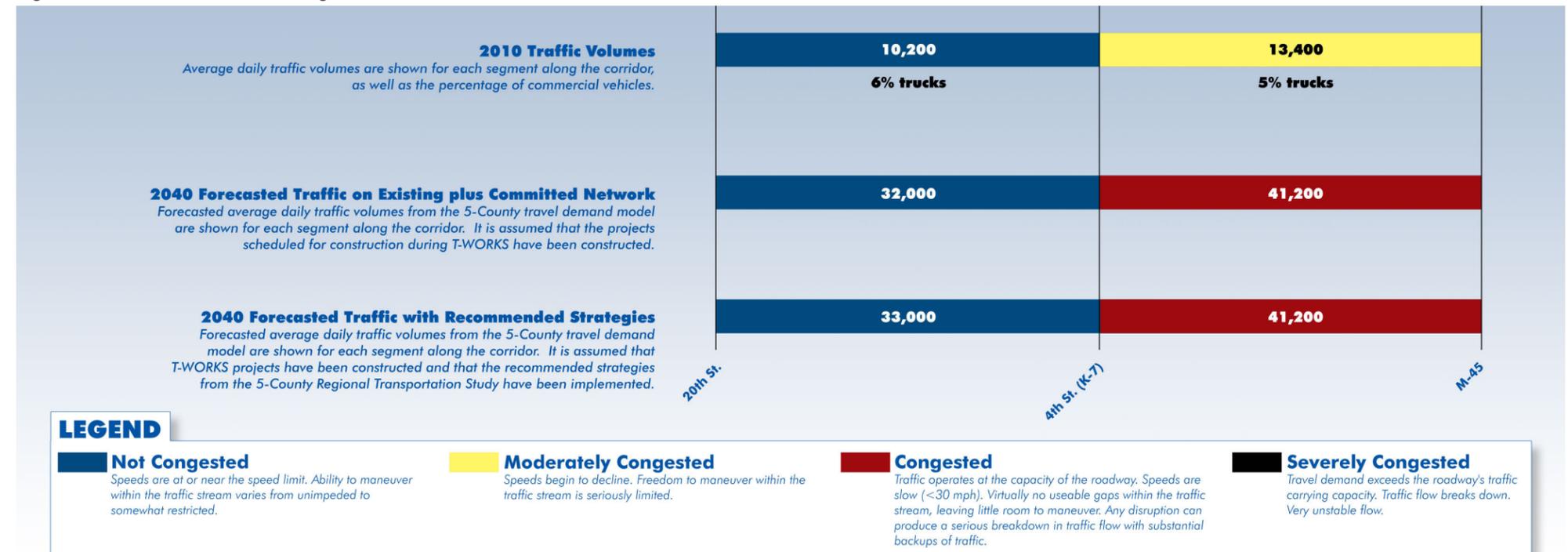


Figure 14-13: Traffic Volumes along K-92/M-92



DESCRIPTION OF THE CORRIDOR

Kansas highway K-92 and Missouri highway M-92 provide a connection from Fort Leavenworth, the City of Leavenworth, and the City of Lansing to the Kansas City International (KCI) Airport and the commercial areas in Platte County, Missouri.

K-92 and M-92 are two-lane rural highways which include a major bridge over the Missouri River. They connect to interstate highway I-29, a freeway that runs from downtown Kansas City, MO north and west past KCI airport. KDOT is currently conducting a toll-feasibility study for the K-92 bridge.

As this is a bi-state corridor some improvements may require investments on both sides of the state line. And as would be expected, different states may have different priorities for funding transportation improvements.

KEY DEVELOPMENT INFORMATION

The major activity centers along the K-92/M-92 corridor include Fort Leavenworth and the Kansas City International (KCI) Airport. Fort Leavenworth is one of the largest single users of the airport and K-92 is the primary access between the post and the airport. An airport redesign is currently being considered to consolidate the terminals.

High levels of population and employment growth is expected in Platte County north of Barry Road, just across the river in Missouri.

TRAFFIC

By the year 2040, K-92 will be congested during peak hours due to the traffic carrying capacity of a two-lane highway. The number of daily vehicle trips on the corridor is expected to rise by 23 percent by the year 2040. At this level of traffic, a four-lane facility will likely be needed.

CORRIDOR CONNECTIONS

The K-92 Bridge over the Missouri River is a key connection point between Kansas and Missouri. The next closest bridge over the river is on I-435, approximately 15 miles to the south. Travelers would either have to take K-5 to I-435 or K-7 to I-70 to I-435. The K-92 bridge is the primary route from Fort Leavenworth and Leavenworth to the Kansas City International Airport. Trips from the south side of Leavenworth and from Lansing have two options for reaching the airport and commercial areas in Platte County, MO. Drivers can choose to take K-92 to MO-92 or MO-45, or they can take K-5 to I-435 or K-7 to I-70 to I-435. Decisions on which route to take will likely depend on travel time which is impacted by the amount of future congestion or future improvements to roadways.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on K-92/M-92 corridor.

A variety of strategies were considered to improve current and future traffic operations on K-92 through the year 2040. These strategies are shown in Table 14-21. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the time period 2020 to 2040 are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the K-92/M-92 corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost

and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S20: Implement an incident management plan for the K-92 Centennial Bridge. An incident management plan details a coordinated process to detect, respond to, and remove traffic incidents and restore the flow of traffic as safely and quickly as possible. Traffic incidents include crashes, vehicle break-downs, and other events that disrupt the normal movement of traffic.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C18: Widen the K-92 Centennial Bridge over the Missouri River to four lanes and implement a toll in accordance with the recommendations of the toll feasibility study. Widening of M-92 would appear to be justified by growth in traffic volumes, but is under the authority of the Missouri Department of Transportation.

Table 14-21: K-92/M-92 Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
Operate and maintain existing roads and bridges														X	X
C18 Widen Centennial Bridge over Missouri River to 4 lanes w/ toll ^A	7.3	4.4	3.3	4.8	3.3	4.1	4.2	3.8	3.3	446	53.3	8.4	X		
C22 Widen Centennial Bridge over Missouri River to 4 lanes ^A	6.6	4.4	3.3	4.5	3.3	4.1	4.2	3.8	3.3	432	44.3	8.9			
S20 Incident management on bridge	6.1	5.6	3.3	3.6	3.3	3.6	3.9	3.8	3.3	424	2	211.9	X	X	
C39 Widen Missouri 92 or Missouri 45 to 4 lanes, includes 4-lane bridge ^B	5.7	4.4	4.4	3.4	3.3	4.5	4.2	2.4	2.6	404	132	3.1			
C55 Intersection capacity improvements	4.9	3.3	3.3	3.6	3.3	3.6	3.3	3.8	3.3	362	2.1	172.5			

Recommended Strategy

^ACentennial Bridge Toll Feasibility Study on-going

^BKCI Terminal location study on-going could impact the potential route for the project

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

175th/199th/ 223rd Street Corridor



Corridor Profile

175th/199th/
223rd Street

Length

175th Street: 12 miles
199th Street: 14 miles
223rd Street: 9 miles

Key Developments:

BNSF Intermodal Facility
CenterPoint Intermodal Center
New Century Air Center

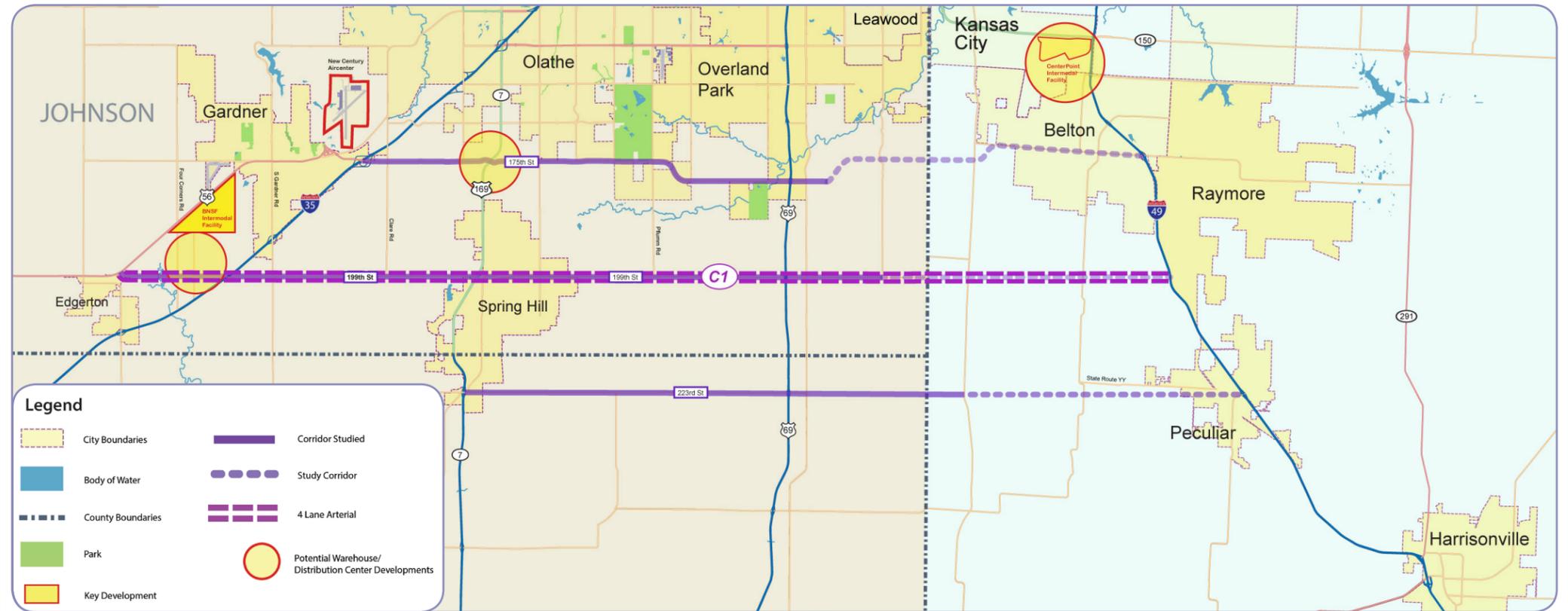


Figure 14-14: Traffic Volumes along 175th/199th/223rd Streets

		2010 Traffic Volumes				
		Average daily traffic volumes are shown for each segment along the corridor, as well as the percentage of commercial vehicles.				
		U5-56	I-35	K-7/U5-169	U5-69	
2010 Traffic Volumes	175th St.		8,600	5,100	4,600	
	199th St.	900	1,800	2,500	4,000	
	223rd St.		1,400	1,200	1,200	
2040 Forecasted Traffic on Existing plus Committed Network	Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that the projects scheduled for construction during T-WORKS have been constructed.					
			19,200	9,500	27,500	
	175th St.	14,100	25,000	28,400	29,500	
2040 Forecasted Traffic with Recommended Strategies	Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that T-WORKS projects have been constructed and that the recommended strategies from the 5-County Regional Transportation Study have been implemented.					
			17,800	8,600	25,600	
	175th St.	15,900	28,400	34,800	40,000	
		4,600	2,000	1,500		
	223rd St.					

LEGEND	
Not Congested	Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.
Moderately Congested	Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.
Congested	Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.
Severely Congested	Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.

DESCRIPTION OF THE CORRIDOR

175th Street, 199th and 223rd Street are two-lane roadways that provide for east-west travel through southern Johnson County and northern Miami County. 175th Street connects with I-35 near Gardner and stretches east to its terminus at Metcalf Avenue just east of US-69. West of I-35, 175th Street becomes US-56, which is discussed on pages 87 through 89. 199th Street also intersects I-35, just to the south of Gardner, then runs east through the community of Spring Hill to its terminus at State Line Road. 223rd Street connects to K-7/US-169 on the south side of Spring Hill and continues to the east where it ends at S. Holmes Road in Missouri.

175th, 199th and 223rd Streets are each under local jurisdiction in the unincorporated portions of Johnson and Miami Counties and in the cities of Overland Park and Olathe. 175th and 199th Streets are shown in the County Arterial Road Network Plan (CARNP) as parkways. There is an opportunity for one of these three roadways to become a connector between US-69 in Kansas and I-49/US-71 in Missouri.

KEY DEVELOPMENT INFORMATION

Most of the major development will occur along 175th Street and 199th Street. These streets are located in one of the fastest growing areas in the 5-County region. Major developments include the BNSF Intermodal Facility and the New Century AirCenter. By the year 2040, these corridors will be impacted by very high population growth projected in the area between I-35 and US-69. This area is likely to take on a more suburban character with some potential at key intersections for warehouse/distribution center development.

Due to continuous growth and development into southern Johnson County, the need for a new major east-west route has been extensively studied. The CARNP concluded that east-west travel movements would need to be served by improving existing roadways. 175th and 199th Streets were the two roadways identified as the primary corridors to serve this need.

Additionally, an east-west corridor through this area could possibly become a connection between US-69 in Kansas and I-49/US-71 just across the state line in Missouri. There is the potential for employment growth and increased truck traffic in this area, attributed to the BNSF Intermodal Facility just west of I-35 and the CenterPoint - KCS Intermodal Center along I-49/US-71 in Kansas City, MO, and associated warehouse developments. One of these routes could provide improved connectivity from southern Johnson County to population and employment centers in Missouri. Connectivity between US-69 and I-49/US-71 would require cooperation with the Missouri Department of Transportation. Some of this potential demand could be served by planned improvements to 199th Street, but this area should be re-evaluated in the future to track growth and manage travel demand in this corridor.

TRAFFIC

Projections of future traffic growth for the year 2040, on the two-lane 175th and 199th Streets, showed significant potential for congestion. Traffic volumes on 175th Street are expected to increase by 160 percent of current vehicles per day, on 199th Street traffic volumes are expected to increase by 400 percent, and on 223rd Street traffic volumes are expected to increase by 42 percent of current vehicle counts. These traffic projections are likely to put significant strain on the capacity of existing roadways.

The analysis completed as part of the 5-County Study suggests for the regional movement of traffic, not all three streets need to be widened during the study's timeframe.

CORRIDOR CONNECTIONS

The 175th Street, 199th Street and 223rd Street roadways connect with the primary north-south corridors running through southern Johnson County and northern Miami County. The projection for 2040 shows significant congestion occurring at the 175th Street and I-35 interchange. There is also significant congestion projected on US-69 north of the 175th Street interchange. The at-grade intersections of K-7 with 175th and 199th could also be significantly impacted by increased future traffic flows along the two corridors. The 223rd Street connections to K-7/US-169 and to US-69 are not expected to be congested.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on all three roadways.

A variety of strategies were considered to improve current and future traffic operations on 175th, 199th, and 223rd Streets through the year 2040. These strategies are shown in Table 14-22. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were

not recommended during the time period 2020 to 2040 are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the 175th, 199th, and 223rd Streets corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes.

Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C1: Widen 199th Street to a four-lane arterial street from US-56 to I-49/US-71. Each of the three street corridors showed the potential for increased traffic volumes that would require widening. 199th Street scored the highest of the three and is therefore recommended.

Table 14-22: 175th/199th/223rd Street Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
	Operate and maintain existing roads and bridges													X	X
C1	Widen 199th Street from a 2-lane to a 4-lane arterial street from US-56 to I-49/US-71	8.1	5.0	10.0	8.6	3.3	4.5	5.7	3.8	2.0	614	196	3.1	X	X
C2	Widen 175th Street from a 2-lane to a 4-lane arterial street from I-35 to I-49/US-71	8.8	4.4	10.0	7.0	3.3	4.1	5.5	3.8	2.0	586	156	3.7		
C12	Widen 223rd Street to a 4-lane arterial from K-7/US-169 to I-49/US-71	6.0	4.4	10.0	4.5	3.3	2.6	3.6	3.3	2.0	474	146			
S26	Access Management	4.9	5.6	3.3	3.5	3.3	3.6	3.9	3.8	3.3	404	10	40.4		
D37	Bicycle and pedestrian facilities	3.3	3.7	3.3	3.3	5.0	4.1	3.9	4.4	6.6	400	14	28.6		
C61	Widen 223rd Street to a 4-lane arterial from K-7/US-169 to US-69	3.6	4.4	3.3	3.2	3.3	3.3	3.6	3.3	2.0	340	165	2.1		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

This page intentionally left blank.

Metcalf Corridor



Corridor Profile
Metcalf

Length: 11 miles

Key Developments:

- Deer Creek
- Downtown Overland Park
- Corporate Woods
- Overland Park Convention Center
- Park Place
- Sprint Campus
- Town Center Plaza

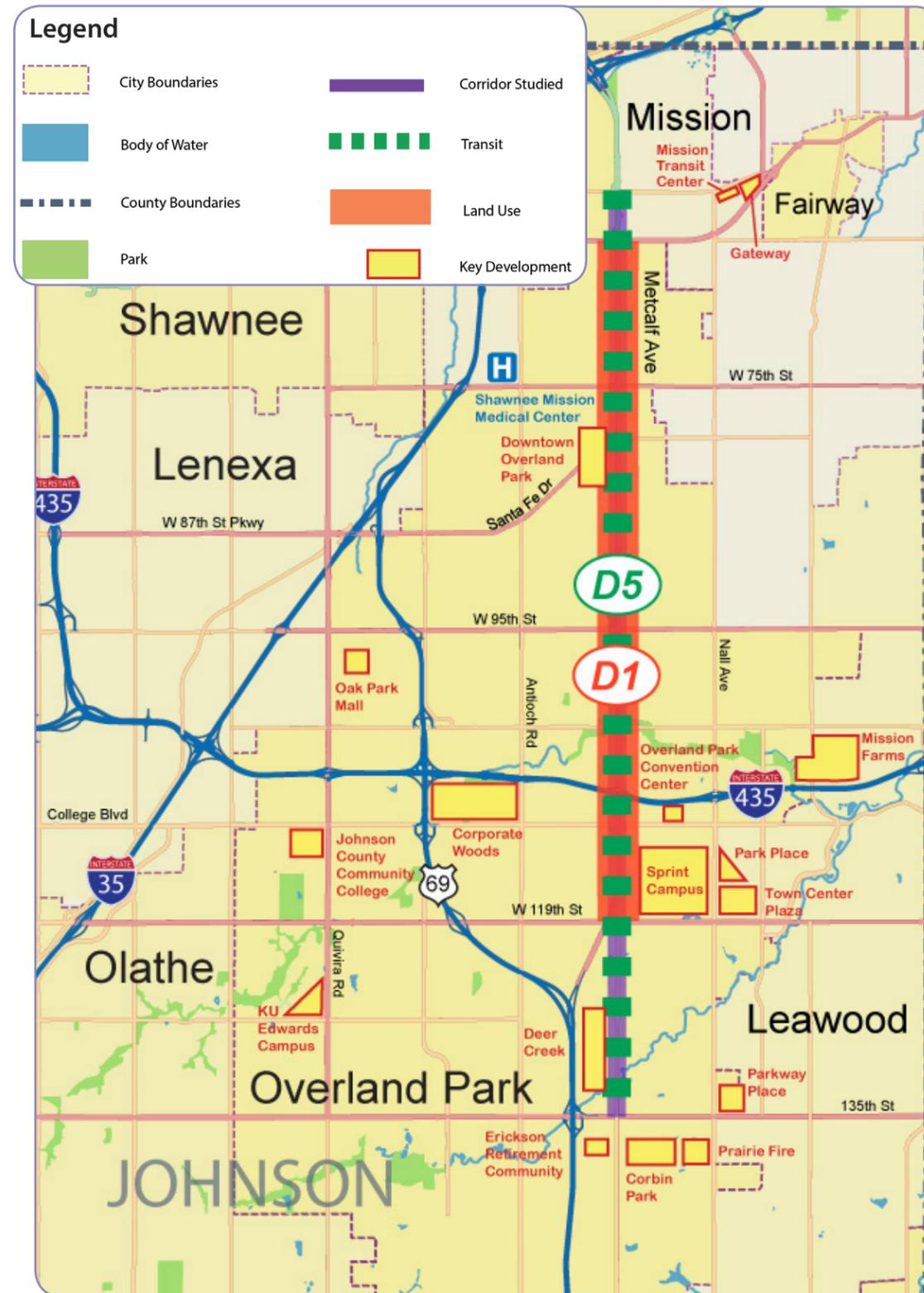
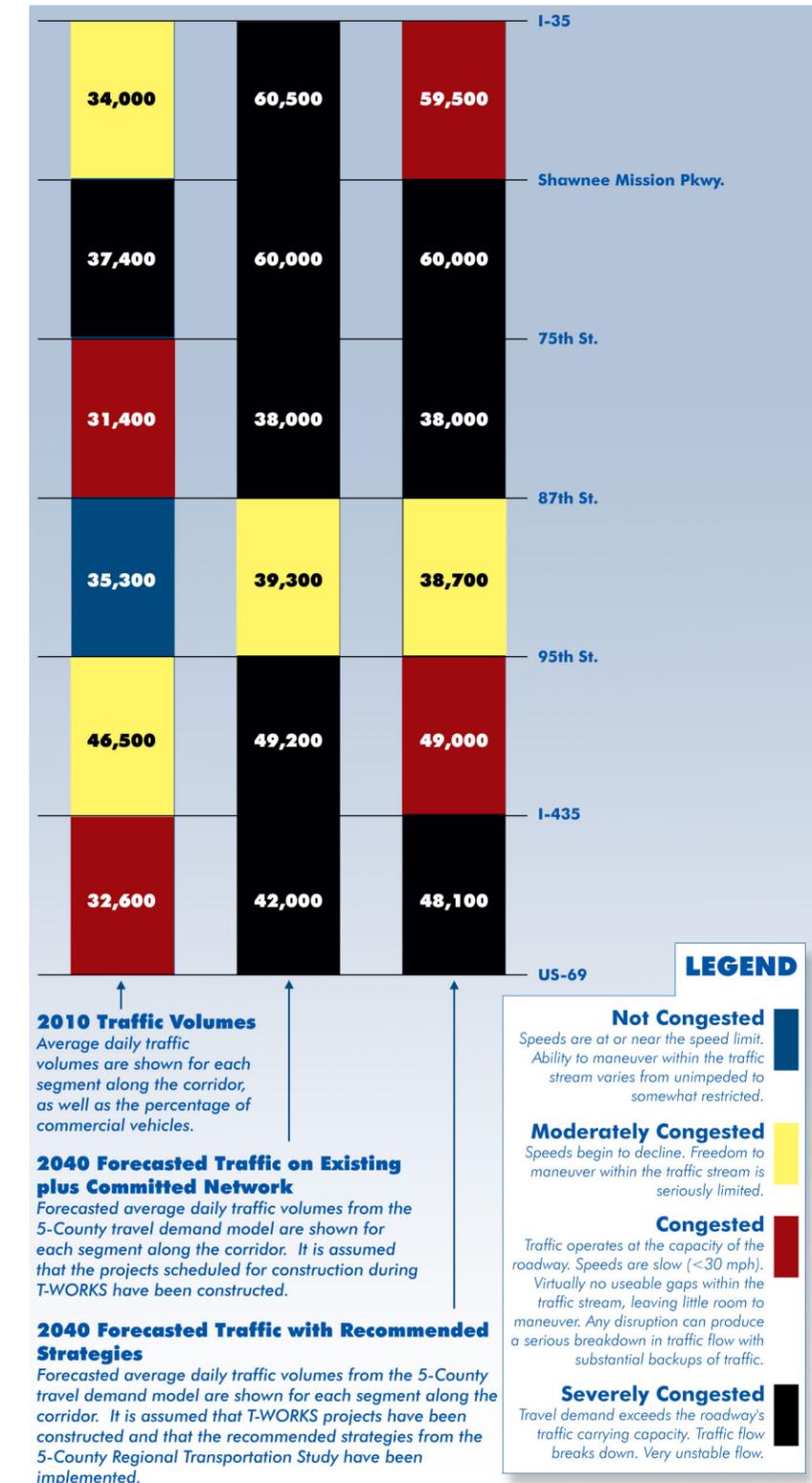


Figure 14-15: Traffic Volumes along Metcalf



DESCRIPTION OF THE CORRIDOR

The Metcalf Avenue corridor provides north-south travel movement through the City of Overland Park and provides a connection to I-35 and Downtown Kansas City, Missouri.

Metcalf Avenue is a 4-lane expressway from the I-35 and I-635 interchange south to Shawnee Mission Parkway. It continues south as a 4-lane arterial street from Shawnee Mission Parkway to 87th Street, then a 6-lane arterial to just north of 119th Street. Just north of 119th Street, Metcalf changes alignment and leaves the roadway that becomes the Blue Valley Parkway. For study purposes, the south end of the Metcalf Avenue corridor extends to 135th Street. Metcalf Avenue provides access to downtown Mission, downtown Overland Park, and considerable retail activity from 87th Street south to US-69.

KEY DEVELOPMENTS

Major activity centers located in close proximity to the corridor include Downtown Overland Park, the Overland Park Convention Center, the Corporate Woods office park, Sprint campus and Town Center Plaza.

The age of the development located in the Metcalf corridor varies considerably with older development to the north and newer development to the south.

A major planning effort, Vision Metcalf (<http://www.opkansas.org/doing-business/special-area-studies/vision-metcalf/vision-metcalf-plan/>), was completed by the City of Overland Park to identify how the corridor could be redeveloped in a more dense and urban character that would support bicycle, pedestrian and transit travel. The study area of the plan stretched from Shawnee Mission Parkway to 119th street. This planned redevelopment of the corridor is an important opportunity for sustained economic growth in the 5-County region.

Year 2040 projections show some population and employment growth expected in the Mission area on the north end of the corridor. There is some employment growth projected in the area near Metcalf and 95th Street in Overland Park, and to the south of I-435.

TRAFFIC

The four-lane arterial portion of this route experiences peak hour traffic congestion. Year 2040 traffic forecasts reflect a similar level of traffic to that which currently exists.

OTHER MODES

Johnson County, the City of Overland Park and KDOT are jointly exploring a bus rapid transit project in the Metcalf corridor as one of the initial steps to encourage the redevelopment of the Metcalf corridor and to support sustainable multimodal transportation.

The Metcalf/Shawnee Mission Parkway corridor recently received a TIGER grant to fund transit infrastructure improvements including a transit signal priority system, park-and-ride locations, transit stations and pedestrian improvements.

CORRIDOR CONNECTIONS

The Metcalf Avenue corridor closely interacts with the principal highways of I-35, I-435 and US-69. There is currently some congestion at the Metcalf Avenue and I-35 interchange. Year 2040 projections show this area becoming more congested, potentially causing queuing at the north end of Metcalf.

Projections show US-69 becoming more congested in 2040 and traffic from Metcalf could negatively affect the interchange north of 135th Street. If US-69 and I-35 become too congested, some drivers might choose to divert from US-69 to Metcalf Avenue, adding additional traffic. I-435 is also projected to become significantly more congested and could negatively affect traffic near the Metcalf Avenue interchange.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the Metcalf corridor.

A variety of strategies were considered to improve current and future traffic operations on Metcalf Avenue through the year 2040. These strategies are shown in Table 14-23. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the Metcalf Avenue corridor map. A “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes.

Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D1: Implement land use and transportation strategies from the Vision Metcalf Plan. These include: redevelopment in a more dense, urban character that

supports travel by walking, bicycling, and transit. The Vision Metcalf Plan objectives are as follows:

- Establish a coherent and positive identity for the Metcalf Corridor by creating a series of unique destinations.
- Enhance the economic vitality of the Corridor and city by expanding the level of residential and commercial activity in the Metcalf Corridor, thereby increasing the potential for economic activity and job creation.
- Promote a pattern of mixed and multiple-use development within the Corridor. New buildings within nodes should appropriately combine residential, commercial, and entertainment uses and encourage a balance of jobs-to-housing.
- Integrate open and green space into the Corridor by incorporating a system of parks, plazas, natural amenities, and a continuous green streetscape.

- Develop a balanced transportation system that provides multimodal travel options within the Corridor.
- Make walking easy, desirable, and convenient.
- Amend local policy to facilitate the intent of the Plan.
- Make sustainability a theme of future development and redevelopment that guides land use and transportation decisions.

D5: Expand Bus Rapid Transit Service (BRT). Service would be added to the route to the Plaza to provide more all-day service with less time between buses. Existing corridor transit service would add 20 weekday round trips, 12 Saturday daily round trips, and 10 Sunday round trips. This improved transit service would be used with BRT-like elements including enhanced vehicles, upgraded stations, and real-time information at the stations constructed from TIGER funds.

Table 14-23: Metcalf Corridor Strategy Package

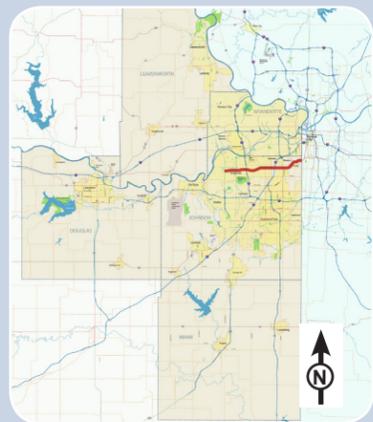
Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
	Operate and maintain existing roads and bridges													X	X
D1	Redevelopment per Vision Metcalf Plan	5.5	3.3	3.7	10.0	5.0	5.5	3.8	4.4	7.9	556	1	555.6	X	
D5	Expand transit to Bus Rapid Transit service	5.5	3.7	3.7	5.2	6.6	5.5	5.0	4.8	7.1	510	9.5	53.7	X	
D39	Bicycle and pedestrian facilities	3.3	3.3	3.3	3.4	5.0	4.5	3.8	4.4	6.6	396	8	49.5		
C49	Intersection capacity improvements	5.0	4.4	3.3	3.3	3.3	4.1	3.6	3.8	3.3	385	21	18.3		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

This page intentionally left blank.

Shawnee Mission Parkway Corridor



Corridor Profile

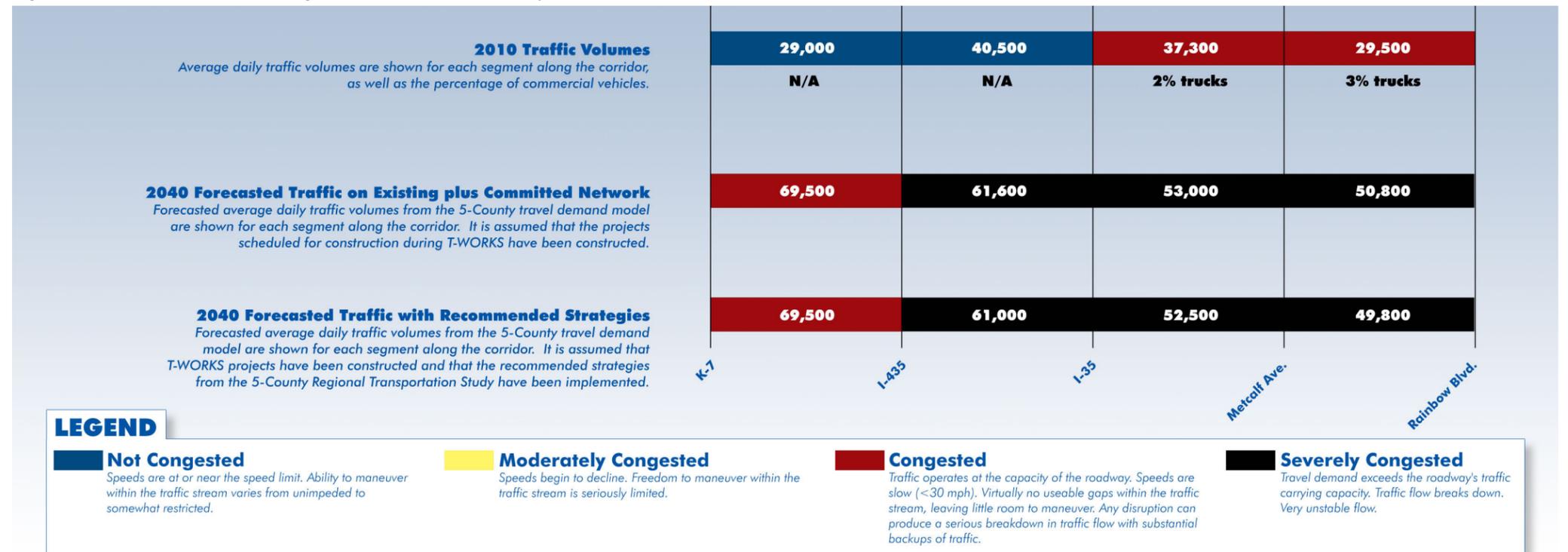
Shawnee Mission Parkway

Length: 15 miles

Key Developments:
Gateway
Mission Transit Center



Figure 14-16: Traffic Volumes along Shawnee Mission Parkway



DESCRIPTION OF THE CORRIDOR

The Shawnee Mission Parkway corridor provides east-west travel movement through seven cities in northeast Johnson County. It also provides a connection to I-35, I-435, K-7 and Rainbow Boulevard (US-169).

Shawnee Mission Parkway is a four lane arterial from the Kansas-Missouri state line to the I-35 interchange. Between the I-35 interchange and Pflumm Road in Shawnee it is a six lane arterial. West of Pflumm Road, the corridor returns to four lanes and is designated as an expressway.

KEY DEVELOPMENT INFORMATION

Shawnee Mission Parkway serves as a primary east-west commercial corridor through Johnson County.

The anticipated East Gateway Development, at the intersection of Roe Avenue and Shawnee Mission Parkway in the city of Mission, is expected to be a major future generator of travel along the corridor. In accordance with this development, there is some population and employment growth expected in the area between Metcalf Avenue and Roe Avenue in Mission.

Other places of potential future growth along the corridor include the area between Quivira Road and Nieman Road in Shawnee and just to the east of the I-435 interchange

also in Shawnee. Some employment growth is also anticipated at the Shawnee Mission Parkway and I-435 interchange. At the intersection of Shawnee Mission Parkway and K-7 there is also very high population and employment growth projected in the future.

TRAFFIC

The Shawnee Mission Parkway corridor currently experiences peak hour congestion from the state line to I-35. Additional congestion is projected for the year 2040 from the state line to Quivira Road and from I-435 to Woodland Road.

OTHER MODES

The Metcalf/Shawnee Mission Parkway corridor has been studied and recently received a TIGER grant to fund transit infrastructure improvements including a transit signal priority system, park-and-ride locations, transit stations and pedestrian improvements. This will include a major transit center in the City of Mission. A ridership forecast projects around 1100 riders per day on the Shawnee Mission Parkway express bus route.

CORRIDOR CONNECTIONS

The Shawnee Mission Parkway corridor interacts with three of the principal north-south highways in the study area. The Shawnee Mission Parkway interchange with I-35 currently experiences significant congestion, which

is projected to continue into the future. There is currently some congestion during the peak period in the area around the I-435 interchange. There is no congestion anticipated at the K-7 interchange.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services is a critical “baseline” strategy for the Shawnee Mission Parkway corridor.

A variety of strategies were considered to improve current and future traffic operations on the corridor through the year 2040. These strategies are shown in Table 14-24. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended during the 2020 to 2040 timeframe are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the Shawnee Mission Parkway corridor maps. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was

determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S22: Optimize the traffic signal phasing, timing, and coordination along Shawnee Mission Parkway. This strategy seeks to minimize delays to drivers traveling along this corridor.

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D2: Expand transit service - a BRT type service similar to that on Metcalf Avenue is envisioned for Shawnee Mission Parkway. This service would provide all-day service, Saturday, and limited Sunday service. Planning, design and construction for service, stations, signal pre-emption and real-time information would need to be completed.

Table 14-24: Shawnee Mission Parkway Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
	Operate and maintain existing roads, bridges, traffic signals, transit													X	X
D2	Expand transit service										545	9.5	57.1	X	
S22	Traffic signal optimization										418	1	417.7	X	
D33	Bicycle and pedestrian facilities										403	8	50.4		
C52	Intersection capacity improvements										370	21	17.6		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

State Avenue Corridor



Corridor Profile
State Avenue

Length: 16 miles

Key Developments:

- Cerner
- Cricket Wireless Amphitheater
- Community America Ballpark
- Downtown Kansas City, Kansas
- Hollywood Casino
- Indian Springs
- Kansas City Kansas Community College
- Kansas Speedway
- Sporting Park
- MetroCenter
- Schlitterbahn Waterpark
- Village West



Figure 14-17: Traffic Volumes along State Avenue

	K-7	118th St.	I-435	Turner Diagonal	I-635	18th St.	5th St.
2010 Traffic Volumes <i>Average daily traffic volumes are shown for each segment along the corridor, as well as the percentage of commercial vehicles.</i>	13,700	11,700	12,200	15,000	8,400	3,600	
2040 Forecasted Traffic on Existing plus Committed Network <i>Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that the projects scheduled for construction during T-WORKS have been constructed.</i>	16,500	20,000	18,300	19,000	14,900	11,200	
2040 Forecasted Traffic with Recommended Strategies <i>Forecasted average daily traffic volumes from the 5-County travel demand model are shown for each segment along the corridor. It is assumed that T-WORKS projects have been constructed and that the recommended strategies from the 5-County Regional Transportation Study have been implemented.</i>	19,500	44,700	21,000	19,000	17,000	11,000	

Legend	Not Congested	Moderately Congested	Congested	Severely Congested
	Not Congested Speeds are at or near the speed limit. Ability to maneuver within the traffic stream varies from unimpeded to somewhat restricted.	Moderately Congested Speeds begin to decline. Freedom to maneuver within the traffic stream is seriously limited.	Congested Traffic operates at the capacity of the roadway. Speeds are slow (<30 mph). Virtually no useable gaps within the traffic stream, leaving little room to maneuver. Any disruption can produce a serious breakdown in traffic flow with substantial backups of traffic.	Severely Congested Travel demand exceeds the roadway's traffic carrying capacity. Traffic flow breaks down. Very unstable flow.

DESCRIPTION OF THE CORRIDOR

The State Avenue corridor provides east-west travel movement through Wyandotte County from K-7 highway to I-70 in Downtown Kansas City, Kansas. The roadway continues west of K-7 as US-24/40. State Avenue provides a close, parallel route to supplement traffic movement on I-70.

State Avenue is a four lane arterial, with a center turn lane or channelized medians along most of its length. East of K-7, State Avenue is primarily rural in nature and west of K-7 it is in an urbanizing or urban area.

KEY DEVELOPMENT INFORMATION

The State Avenue corridor supports transportation access to the major regional activity center developing near the I-70 and I-435 junction. The 400-acre Village West development in this area now includes recreational, entertainment and retail activities including the Kansas Speedway, Sporting Park (Major League Soccer Venue), Community America Ballpark, Cabela's, Nebraska Furniture Mart, Great Wolf Lodge, and Hollywood Casino. The development also includes the Legends Shopping Center, with around 750,000 square feet of retail. Upon completion, the project is predicted to create 8,300 new jobs in Wyandotte County and is estimated to produce 37,800 average daily auto trips.

To the east of I-435 along State Avenue, the Schlitterbahn Vacation Village is a 300-acre outdoor family destination and resort estimated to produce 34,700 daily auto trips, with the majority during summer weekends. Downtown Kansas City, Kansas is a major activity center at the eastern end of the State Avenue Corridor. The corridor also provides access to the Fairfax industrial district to the northeast of Downtown Kansas City, Kansas. The Fairfax district includes a number of industrial employers, with some potential for future growth and redevelopment.

The primary area of year 2040 population growth is located between K-7 and I-435, directly surrounding the Village West development. There is also some population and employment growth expected just to the east of I-435 along State Avenue.

TRAFFIC

The current level of peak hour traffic along the State Avenue corridor does not show congestion; however, some queuing issues exist around intersections serving the Village West development area. Conditions will worsen as the area continues to develop and additional congestion is projected for the year 2040. Queuing will become an even more significant problem in the area. A study of the I-70/Village West area has recommended the construction of an interchange at State Avenue/Village Parkway and an improved interchange at I-435/State Avenue.

OTHER MODES

A bus rapid transit (BRT) route along State Avenue is currently under development. The route will likely increase the transit mode share and provide improved accessibility to Village West, Downtown Kansas City, Kansas and destinations in between. A potential transit hub and redevelopment opportunity may be located on the site of the former Indian Springs Shopping Center at the intersection of I-635 and State Avenue. A ridership forecast projects around 2400 riders per day on the planned State Avenue BRT.

CORRIDOR CONNECTIONS

The State Avenue corridor interacts with K-7, I-435, I-635 and I-70 along its east-west route through Wyandotte County. Significant capacity issues are expected in the year 2040 near the I-435 and State Avenue interchange. Queuing issues can be expected to get worse in this area with the additional traffic. There is also some congestion currently at the I-635 and State Avenue interchange.

RECOMMENDED STRATEGIES

The continued maintenance and operation of existing roadways and transit services must occur before other strategies are implemented on the State Avenue corridor.

A variety of strategies were considered to improve current and future traffic operations on State Avenue through the year 2040. These strategies are shown in Table 14-25. Strategies that are recommended as part of a corridor package are shaded in blue; strategies that were not recommended are not shaded. Each strategy was assigned an identifier code of a letter and number that are shown on the State Avenue corridor map. An “S” indicates a system management strategy, a “D” indicates a demand management strategy, and a “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes

should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

System Management Strategies

These strategies seek to enhance traffic flow and reduce congestion through better management and operation of the existing transportation facilities.

S15: Optimize the traffic signal phasing, timing, and coordination along State Avenue from 130th Street to 38th Street. This strategy seeks to minimize delays to drivers traveling along this corridor

Demand Management Strategies

These strategies address transportation needs by reducing the number of vehicles during the peak travel periods.

D3: Expand the transit service along this corridor.

Additional trips would be added to provide a service frequency level typically provided by Bus Rapid Transit (BRT) services across the country. This route is the primary service spine of transit service in Kansas City, KS.

D6: Construct Park & Ride facilities on State Avenue near K-7 and near I-435. Park & Ride facilities promote carpooling and transit use while offering the flexibility for travelers to use personal vehicles for errands either before or after their workday commute.

Increased Capacity Strategies

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C37: Construct a new interchange at State Avenue and Village West Parkway to address growing congestion and to support continued economic development.

C33: Reconfigure the I-435 and State Avenue interchange. This will increase the throughput of traffic on State Avenue and reduce congestion.

Table 14-25: State Avenue Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies	Desired Outcomes (weighting factor***)										Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
	Engineering		Economic Impact		Community Impact					2020-2030				2030-2040	
	Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)						
	Operate and maintain existing roads and bridges													X	X
D3	Expand transit service to include BRT along State Ave.	4.5	5.6	3.3	4.5	6.6	5.5	5.7	5.5	7.1	520	14.4	36.1	X	
D25	Bicycle and pedestrian facilities	3.3	4.4	3.3	3.4	5.0	4.5	4.2	4.4	6.6	417	12	34.7		
C37	New interchange at State Avenue and Village West Parkway	4.1	5.2	5.0	3.7	3.3	3.5	3.6	3.8	3.6	407	21	19.4	X	
S15	Traffic signal optimization from 130th Street to 38th Street	4.1	6.5	3.3	6.0	3.3	3.6	4.2	3.8	3.3	444	1	444	X	
C33	Reconfigure the I-435 and State Avenue interchange	4.8	4.4	3.7	5.1	3.3	3.6	3.6	4.4	3.3	416	10.5	39.6	X	
D6	Construct Park & Ride facilities near K-7 and I-435	4.1	5.0	3.3	7.6	4.5	4.5	4.2	4.2	5.4	485	1	485	X	
C51	Intersection capacity improvements	4.1	4.4	3.3	3.4	3.3	4.1	3.6	3.8	3.3	372	21	17.7		

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

This page intentionally left blank.

Western Johnson County North-South Arterial



Corridor Profile

Western Johnson County North-South Corridor

Length: 8 miles

Key Developments

- Sunflower Army Ammunition Plant Redevelopment
- BNSF Intermodal Facility and Logistics Park

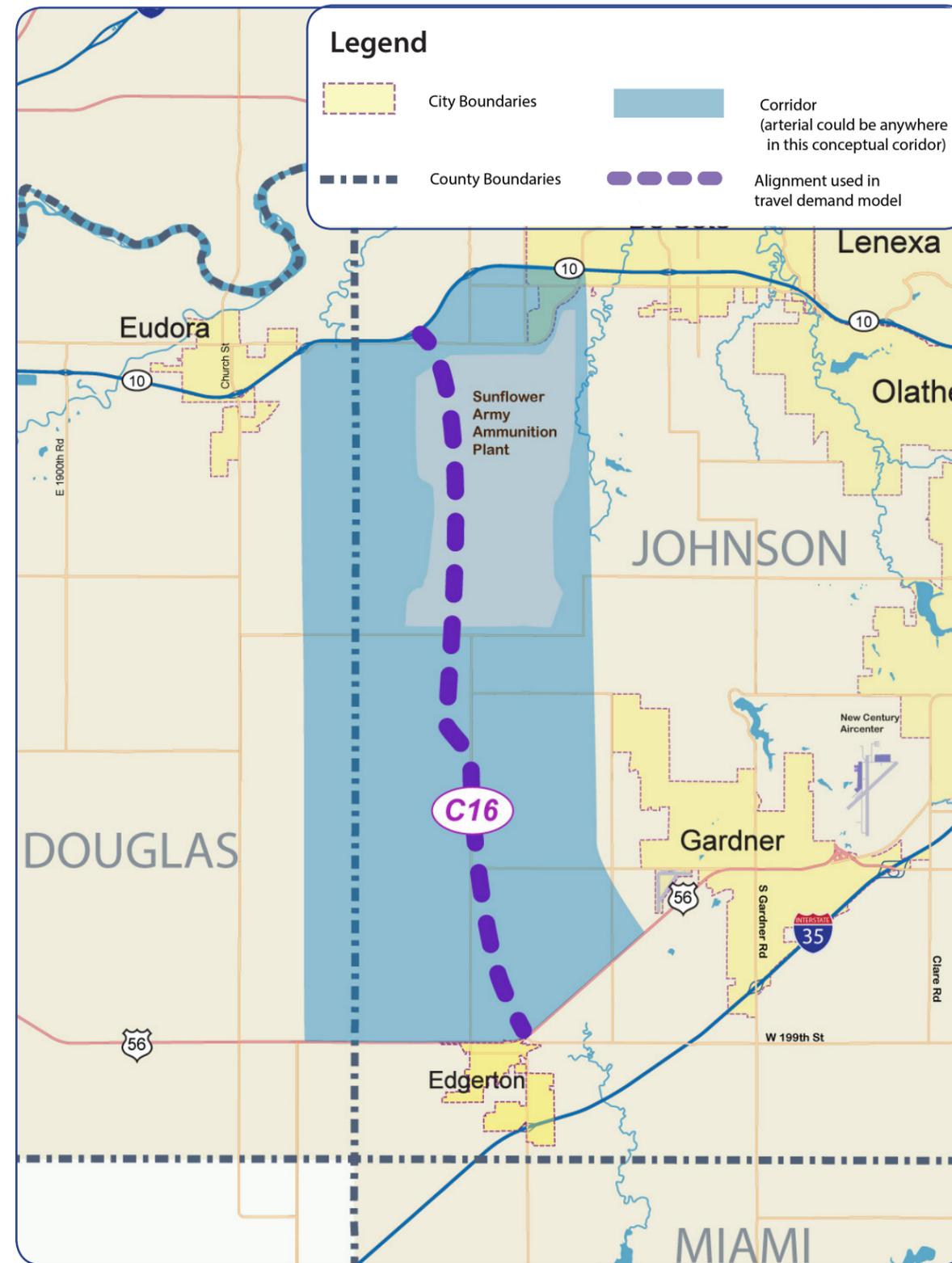
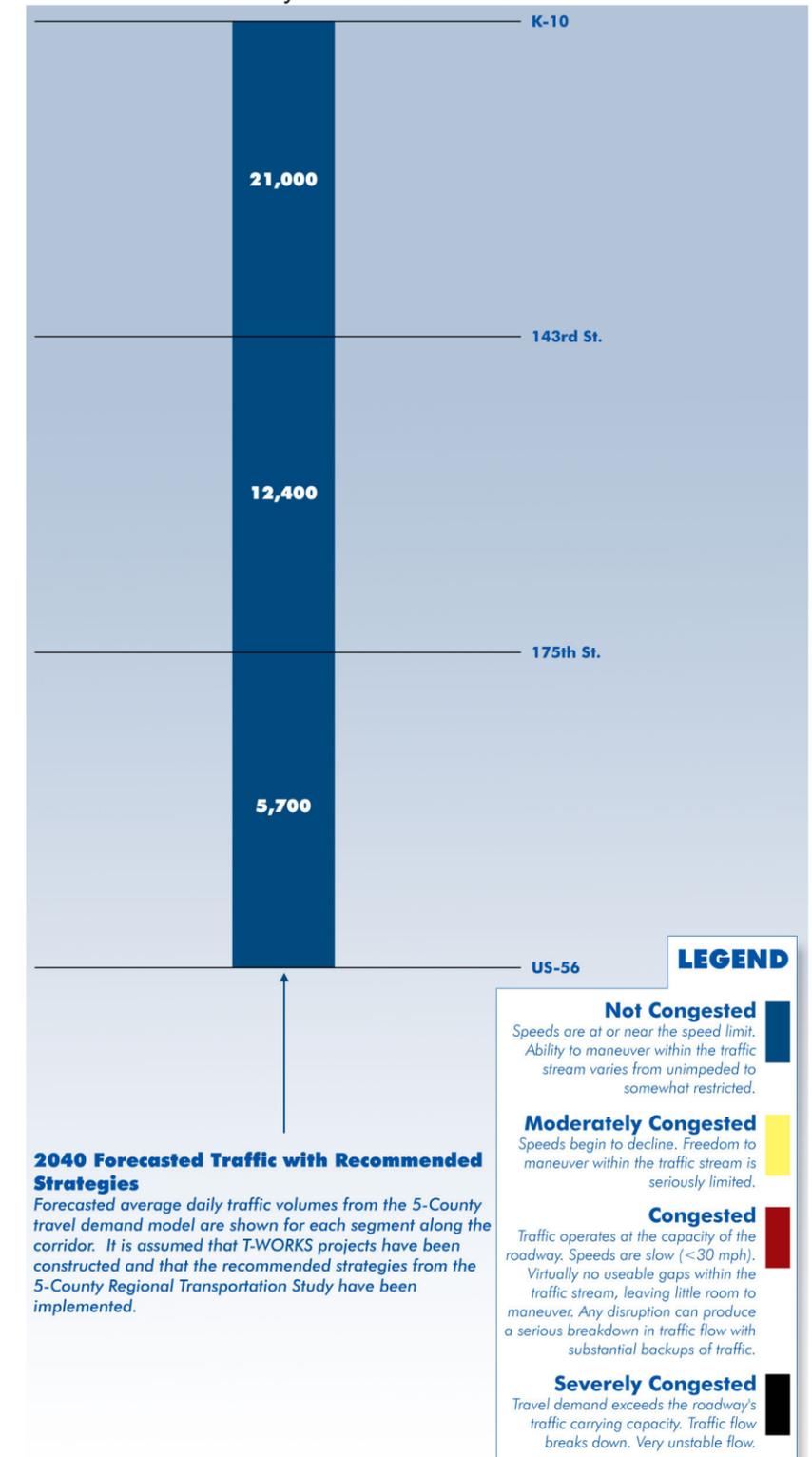


Figure 14-18: Traffic Volumes along Western Johnson County North-South Arterial



CONCEPTUAL ALIGNMENT

A corridor for a north-south arterial street was studied as an alternative to a potential outer loop. The Comprehensive Arterial Road Network Plan (CARNP) for Johnson County includes a north-south arterial street. This corridor is shown as the shaded area in the corridor map. The dashed line on the map represents the alignment that was analyzed using the 5-County Travel Demand Model; this alignment is for general study purposes only.

The north end of the corridor is the existing Evening Star Road interchange on K-10 near Eudora. Going south from K-10, the alignment veers to the east and passes through the western side of the former Sunflower Army Ammunition Plant redevelopment property. The corridor then follows portions of Edgerton Road and Sunflower Road to a connection at the recommended new interchange at US-56 and 199th Street between the Cities of Edgerton and Gardner.

KEY DEVELOPMENT INFORMATION

For trips bound for the west, some of the trucks traveling to and from the new BNSF Intermodal Facility may seek alternatives to using the heavily traveled and urbanized I-35 and I-435 to access K-10. The intermodal facility is expected to generate a total of 7,000 truck trips per day with only approximately two percent traveling to the west. If the former Sunflower Army Ammunition Plant property redevelops as planned, a high volume of traffic will be generated. The potential North-South Arterial would be a major route accessing this property.

TRAFFIC

Travel demand modeling for this corridor assumed the potential population and employment growth along K-10, in the Sunflower redevelopment site, and near the BNSF Intermodal Facility. The model predicts that the North-South Arterial would carry approximately 13,900 vehicles per day in the year 2040.

OTHER MODES

There are no other modes planned for this corridor.

CORRIDOR CONNECTIONS

The potential North-South Arterial would provide a new connection between K-10 and US-56 in western Johnson County. Both K-10 and US-56 provide east-west connections across the 5-County region.

RECOMMENDED STRATEGY

The recommended strategy was to construct a new 4-lane arterial in western Johnson County. This strategy is shown in Table 14-26. Each strategy is assigned an identifier code of a letter and a number that is shown on the corridor map. A “C” indicates an added capacity strategy.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment

decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

INCREASED CAPACITY STRATEGIES

These strategies increase the traffic-carrying capacity of a roadway through adding lanes, modifying interchanges, and constructing new roadways.

C16: Construct an improved 4-lane arterial street from K-10 south to US-56. The alignment would begin at the existing K-10 and Evening Star Road interchange and go south through the former Sunflower Army Ammunition site then using Edgerton Road and Sunflower Road to connect to a recommended interchange at US-56 and 199th Street.

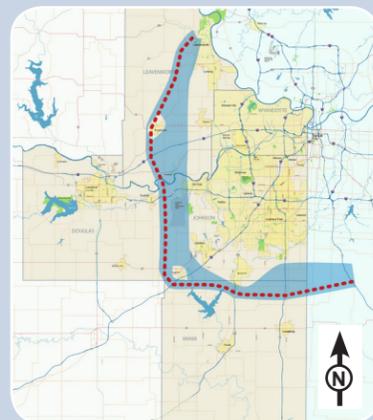
Table 14-26: Western Johnson County North-South Arterial Corridor Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
C16	Construct North-South 4-lane arterial along Sunflower Road/Edgerton Road/ Evening Star Road from US-56 to K-10	7.1	4.4	7.3	4.2	3.3	2.6	3.6	3.3	2.9	460	136	3.4	X	X

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.
 **Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.
 ***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.

Potential Outer Loop Corridor



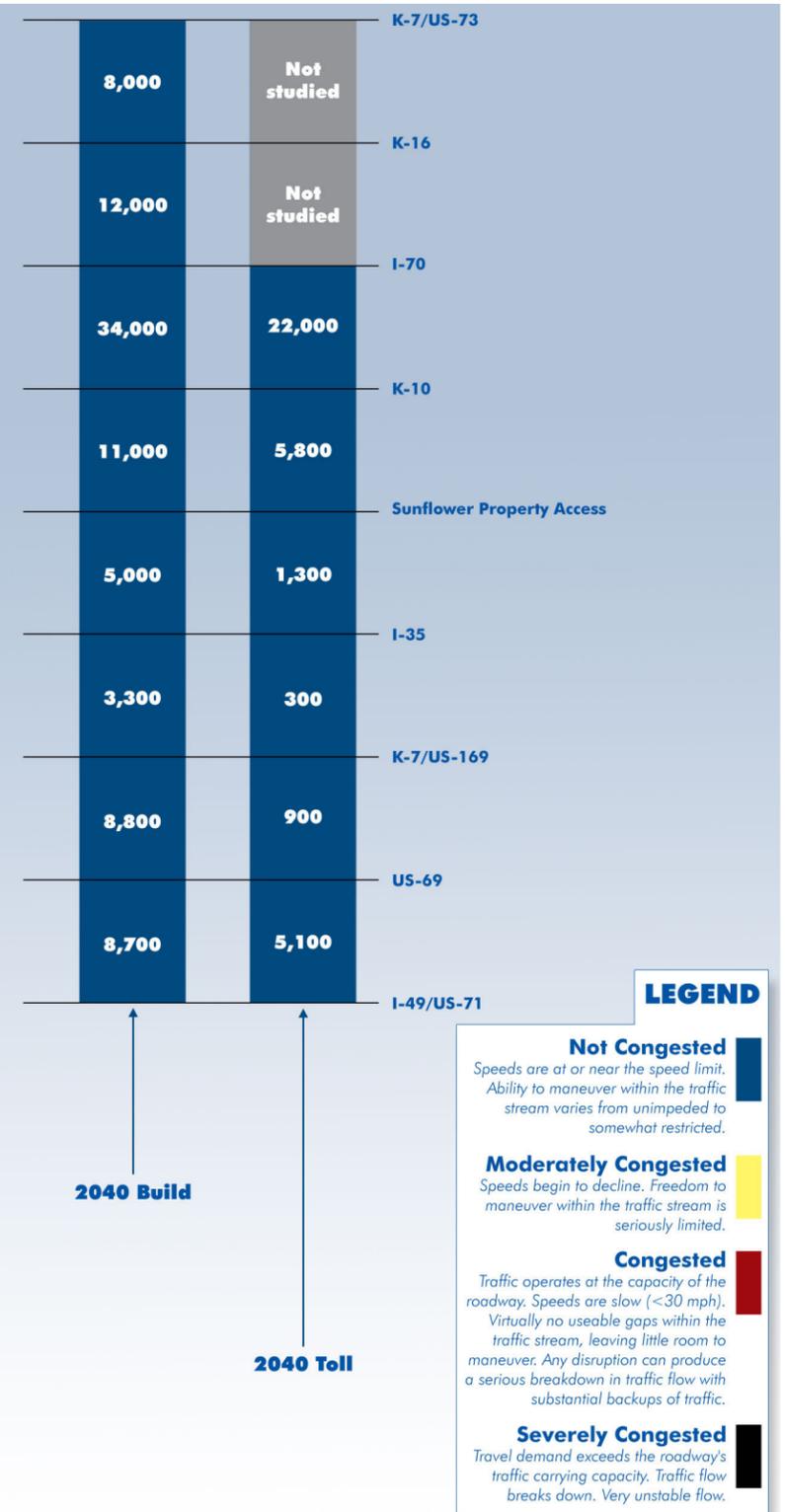
Corridor Profile
Potential Outer Loop

Length: 75 miles

Key Developments
Fort Leavenworth
Sunflower Army Ammunition Plant Redevelopment
BNSF Intermodal Facility and Logistics Park



Figure 14-19: Traffic Volumes along a Potential Outer Loop



The need for an outer loop has been discussed by the Johnson County Commission for several years. Johnson County continues to grow to the west along K-10 Highway and to the southwest along I-35 and there are limited connections between these two freeways. There are key developments either planned or underway that have the potential to significantly alter travel patterns in the area beyond the existing I-435 loop. These include the planned redevelopment of the Sunflower Army Ammunition Plant near De Soto and the development of the BNSF Intermodal Facility & Logistics Park in Edgerton. There has also been interest in improving the commuter connections between Johnson County and Cass County, Missouri. The potential outer loop is a strategy which could provide additional routing options for traffic within the south and west portions of the Kansas City metro area and open up new areas to urban development.

All parties involved in the 5-County Regional Transportation Study process recognize that there will be significant challenges that need to be addressed before building a new outer loop or some segments of it. A new outer loop would be very expensive to build; table 14-27 provides details about how much each segment would cost to build. The costs are high enough that building an outer loop would impact the ability to deliver other projects in the 5-County Region. A detailed toll feasibility study would need to be completed if toll financing were to be used to pay for a portion of project development and operations costs. Finding a suitable alignment for an outer loop would require the need to balance existing environmental constraints (e.g., locations of natural features such as the Kansas River, Hillsdale Lake and land reserved for the future development of Mildale Park & Big Bull Creek Park) with emerging high impact developments (e.g., BNSF Intermodal Facility & Logistics Park, Sunflower Army Ammunition Plant Redevelopment) and existing cities (i.e., Leavenworth, Tonganoxie, Linwood, Eudora, De Soto, Edgerton, and Spring Hill).

Table 14-27: Types of Transportation Strategies

Section	Cost (\$millions)
K-7/US-73 (west of Leavenworth) to I-70	317
I-70 to K-10	339
K-10 to I-35	
K-10 to 159th Street	674
159th Street to US-56	
US-56 to I-35	
I-35 to US-69	
I-35 to K-7/US-169	847
K-7/US-169 to US-69	
US-69 to US-71	521

CONCEPTUAL ALIGNMENT

A conceptual alignment for a potential outer loop was selected for analysis purposes within a general corridor. The general corridor connects K-7/US-73 northwest of the City of Leavenworth to I-70, then to I-35, and finally to I-49/US-71 in Missouri.

The potential route analyzed during the study would be a new 4-lane freeway that is shown on the corridor map on the previous page. The dashed line depicted on the map represents an approximate alignment that was used for travel demand modeling purposes. The path shown on the map attempts to avoid existing development, parks, lakes, and other established areas.

For analysis purposes, the potential outer loop was evaluated both as individual segments and as a whole. This was done to identify costs, forecasted traffic use, and benefits of each segment of new roadway. In addition, the section from I-70 to I-49/US-71 was analyzed as a toll facility to determine the impacts on traffic use.

Segment 1: K-7/US-73 to I-70

This segment would connect K-7/US-73, northwest of the City of Leavenworth, to I-70 (the Kansas Turnpike). For travel demand modeling purposes, interchanges were assumed to be located at selected major roadways. Interchanges were assumed at K-7/US-73 approximately one mile west of 20th Street, at K-92, at Eisenhower Road, at K-16 approximately one mile west of US-24/40 to avoid

existing development, at US-24/40 south of Tonganoxie, and at I-70. The interchange at I-70 would require major reconstruction to a “system” interchange that would provide appropriate connections between two freeway facilities.

Segment 2: I-70 to K-10

For modeling purposes, interchanges were assumed at I-70, K-32, and K-10. One of the major challenges in this section is crossing the Kansas River and associated floodplain. This would require a long and costly bridge to span this area. A second challenge is the construction of a new system interchange at K-10. With existing K-10 interchanges at E. 2300 Road and at Evening Star Road there is not sufficient spacing for a new interchange. Therefore, it would be necessary to construct an interchange that could provide the system-to-system connections for two freeways as well as the service connection with one or both local roads. This would significantly increase the cost of an outer loop and K-10 interchange.

Segment 3: K-10 to I-35

This segment would pass near or through the west edge of the former Sunflower Ammunition Plant and continue south near the county line between Johnson and Douglas Counties to a new interchange with I-35. For modeling purposes, interchanges were assumed at K-10, an access road serving the Sunflower redevelopment property, 159th Street, US-56, and I-35. The route would likely pass west of the City of Edgerton to a new system interchange on I-35 approximately two miles west of Sunflower Road. An alignment between Edgerton and Gardner was not selected due to the complexity of routing around obstacles near the Intermodal Facility such as the new interchange on I-35 with Homestead Lane, Johnson County parkland, a quarry, and Edgerton’s sewage treatment facilities.

Segment 4: I-35 to US-69

This segment would connect I-35 to US-69 in northern Miami County. For modeling purposes, the alignment was assumed to pass north of Hillsdale Lake and south of the City of Spring Hill. Interchanges were assumed at I-35, K-7/US-169, and US-69. The challenge for this segment would be to finalize an alignment that would minimize environmental impacts and avoid existing development.

Segment 5: US-69 to I-49/US-71

This segment would connect US-69 to I-49/US-71 in Missouri. For modeling purposes interchanges were assumed at US-69 and at I-49/US-71.

KEY DEVELOPMENT INFORMATION

Leavenworth County could benefit from an outer loop that provided a connection to I-70 along the western side of the county. This new roadway may relieve traffic congestion on K-7 in the cities of Leavenworth and Lansing.

If the former Sunflower Army Ammunition Plant is redeveloped as planned, there could be a large increase in traffic generated from that area. Travel demand would increase considerably in this area; our analysis shows that most travelers would connect to K-10 and to I-70. Currently, development of the site has slowed until environmental issues can be addressed.

Southwest Johnson County will soon be home to the 1,000 acre BNSF Intermodal Facility and Logistics Park (IMF/LP) which includes plans for up to 7 million square feet of warehouse and distribution center development on site. There is realistic potential for another 9 million square feet of warehouse and distribution center development between 191st Street and I-35 just south of the BNSF IMF/LP site. The BNSF IMF/LP will generate 7,000 truck trips each day at build-out. If additional areas are developed south of the IMF/LP, the truck trips in this area will be even higher. The majority of the trucks will use I-35 to access markets in metropolitan Kansas City and beyond (e.g., Saint Louis, Omaha, Des Moines). The potential outer loop could benefit some trucks destined for Lawrence and Topeka who wish to avoid the following routes: I-35, K-7 and I-435. There may also be potential for one to two million square feet of commercial development in this area as well.

TRAFFIC

The travel demand model assumes the population and employment growth that will occur by the year 2040 along the K-10 Corridor, at the Sunflower Ammunition Plant redevelopment site, and the BNSF Intermodal Facility and Logistics Park. Additional population and employment growth was assumed along the potential outer loop.

As shown in Figure 14-19, the model predicted that travel demand for the potential outer loop would vary widely by segment of roadway. The highest demand was forecasted for the segment between I-70 and K-10 with approximately 34,000 vehicles per day. If the west leg of the K-10, South Lawrence Trafficway were constructed, the volume of traffic using the outer loop from I-70 to K-10 would drop significantly. The segment from K-16 to I-70 is forecasted to carry 12,000 vehicles per day and the segment from K-10 to the access for the Sunflower Ammunition Plant redevelopment property would carry 11,000 vehicles per day. Future traffic volumes on the remaining segments of the outer loop vary between 3,300 and 8,800 vehicles per day. To put these traffic volumes in perspective, a four-lane freeway has the capacity to accommodate 8,000 vehicles per hour.

The section of the potential outer loop from I-70 to I-49/US-71 was also analyzed as a toll road. When tolls were included, traffic use dropped significantly. The segment from I-70 to K-10 dropped from 34,000 vehicles per day to 22,000. Other segments saw reductions in traffic that varied from approximately 50% to 90%.

OTHER MODES

No other modes such as transit or bicycle facilities are assumed for the potential outer loop. However, any new freeway creates a barrier to pedestrians and bicyclists who wish to cross the roadway. If an outer loop were to be constructed, these needs should be considered. The Kansas River also creates a barrier to bicycle and pedestrian traffic. If a new outer loop were constructed, the needs of these modes would need to be considered, although the existing bridges over the river may provide a better crossing point.

OTHER STUDIES

Johnson County completed a study of the 21st Century Parkway in 1995. The Johnson County Commission abandoned this proposed project due to local opposition. After this study, Johnson County put into place a Comprehensive Arterial Roadway Network Plan (CARNP) that would enhance the existing road corridors in order to meet anticipated travel needs.

The Mid-America Regional Council (MARC), at the request of Johnson County, completed a study of the South Metro Connector in 2007. Again this project was abandoned due to opposition from residents in southeast Johnson County.

KDOT, in partnership with MARC, Johnson County, Gardner, and Edgerton is currently preparing an Area Plan for Southwest Johnson County. The study will examine alternatives for the three corridors included in the CARNP plan that were truncated by the construction of the BNSF Intermodal Facility: 191st Street, Four Corners Road, and Waverly Road. This transportation and land use study will be completed in the Fall of 2013. The study will cover an approximately 22 square mile area near the BNSF Intermodal Facility. Key components of the study/plan are:

1. An update to the Johnson County Arterial Roadway Network Plan with recommendations and capital program phasing for additional transportation system improvements;
2. Identification and analysis of issues associated with the potential alignment of US-56 along 199th Street from Edgerton to I-35;
3. A bicycle/pedestrian trail plan/concept plan for Johnson County Parks District land in the area with connections between Edgerton, Gardner, and Hillsdale Lake in Miami County;
4. A land use component testing alternative land use scenarios using travel demand modeling and highway capacity analysis software to ensure that planned developments will not exceed the capacity of the transportation system;
5. A natural resource component with Best Management Practices (MARC's Eco-Logical) to protect Hillsdale Lake and JOCO Parkland as development occurs.

CORRIDOR CONNECTIONS

A potential outer loop would increase the connectivity of major highways in the south and west portions of the 5-County Study region. However, when evaluating the outer loop it appears that the service would provide for regional traffic movements that are redundant to other existing or planned highways.

- An outer loop would provide a more direct connection between I-70 west of the Kansas City metropolitan area and I-49/US-73 to the south of the metro area. However, the anticipated travel demand from I-70 to I-49/US-71 is low and this movement is adequately served by other regional roadways.
- An outer loop was evaluated to determine whether it would provide relief for I-35 from traffic that will be generated by the BNSF Intermodal Facility. Findings show that 85 percent of the traffic generated by the BNSF Intermodal Facility have destinations that make travel northeast along I-35 the most attractive route.
- The outer loop segment from I-70 to K-10 would serve a significant volume of traffic that desires to travel between I-70 west of the City of Lawrence and southern Johnson County. However, this travel movement will be served by the completion of the east leg of the K-10, South Lawrence Trafficway (SLT) that will be constructed as a four-lane freeway during the next few years. Therefore, upgrading the west leg of the SLT to a four-lane freeway is a more cost effective means of serving this travel movement and one with significantly less impact on environmental resources.
- The section of an outer loop from I-70 north to K-7/US-73 northwest of the City of Leavenworth is a roughly parallel corridor to that of K-7/US-73, which is an existing expressway that could more cost effectively be improved to a freeway.

The impact to existing development must be considered as well when evaluating the new connections provided by an outer loop. Given current development and growth plans, the most likely source of population and employment growth along an outer loop would come from the relocation of existing development. It is likely that an outer loop would require a large investment in public infrastructure, consume environmental resources,

and lessen the sense of connection to the Kansas City metropolitan area. A new outer loop does not align with the regional priorities established in this study process by public officials from the 5-County region nor does it align with the vision for growth developed by either of the Metropolitan Planning Organizations. However, local priorities established by the various city and county governments may result in different recommendations.

As part of the 5 County Regional Transportation Study, the impact of strategies in one corridor was evaluated against strategies in other corridors. Regarding the potential outer loop, strategies in several other corridors were examined. These are as follows:

1. East-west arterial road improvements along 199th from US-56 to I-49/US-71 (see pages 107-109) scored higher than any other capacity project in the 5-County region.
2. North-south arterial road improvements following an alignment that uses portions of Sunflower Road/Edgerton Road/Evening Star Road from US-56 to K-10 (see pages 121-122) also scored well.
3. Reconstructing the US-56 & 199th Street intersection as a grade-separated interchange is an important improvement from a safety and traffic operations standpoint that scored well (see pages 87-89).
4. The completion of the South Lawrence Trafficway (SLT) as a freeway scored well. This includes both the extension of K-10 to the east along the 32nd Street alignment from US-59 east to Noria Road as a freeway. It also includes the addition of two lanes along K-10 from the Lecompton Toll Plaza south to US-59 and the conversion to a freeway. (see pages 97-100).
5. The conversion of K-7 to a freeway from I-70 to K-10 and arterial improvements on K-7 from K-10 to I-35 scored well (see pages 93-96).

Together, these strategies provide solutions in a more cost effective manner and in a manner that better addresses identified traffic issues than a potential outer loop.

STRATEGIES

A number of capacity strategies were considered for the outer loop. The outer loop was analyzed as both a freeway and as a toll road. All strategies scored poorly based upon the criteria selected by local officials. None of these strategies shown in Table 14-27 are recommended during the 2020 to 2040 timeframe due to their scores compared to other strategies in the 5-County region.

The table shows how each strategy scored for the criteria used to evaluate each of the 9 Desired Outcomes. Stakeholders determined that the 9 Desired Outcomes should be used in making transportation investment decisions. The total score for each strategy was determined by multiplying the individual outcome score by a weighting factor that was established by stakeholders for that desired outcome. The total cost is given in year 2020 dollars and includes the construction/ implementation cost and 10 years of maintenance/operation cost. The Benefit Ratio was determined by dividing the Total Score by the Total Cost in \$millions.

As an alternative to a new outer loop, two arterial street improvement strategies are recommended:

C1: Widen 199th Street to a four-lane arterial street from US-56 to I-49/US-71. Each of the three street corridors showed the potential for increased traffic volumes that would require widening. 199th Street scored the highest of the three and is therefore recommended.

C16: Construct an improved 4-lane arterial street from K-10 south to US-56. The alignment would begin at the existing K-10 and Evening Star Road interchange and go south through the former Sunflower Army Ammunition site then using Edgerton Road and Sunflower Road to connect to a recommended interchange at US-56 and 199th Street.

At this time no further activity is warranted and is not recommended; however, understanding the potential for changes in development and traffic needs the Outer Loop concept can be revisited through the local consult process if deemed necessary.

Table 14-28: Potential Outer Loop Strategy Package

Recommended Corridor Strategies and Evaluation Scores															
Strategies		Desired Outcomes (weighting factor***)									Total Score	Total Cost (\$millions)*	Benefit Ratio**	Decade	
		Engineering		Economic Impact		Community Impact								2020-2030	2030-2040
		Mobility (15.5)	Safety (16.0)	Regional Prosperity (12.5)	Financial Resources (15.0)	Choice (8.5)	Environment (9.0)	Public Health (7.0)	Social Equity (7.5)	Livability (9.0)					
C54	Construct new freeway connecting US-73/K-7 to I-70	5.0	1.0	10.0	3.7	3.3	1.3	1.7	3.3	1.6	363	317	1.1		
C64	Construct new freeway connecting US-69 to I-49/US-71 in Missouri	6.1	1.0	3.3	3.7	3.3	4.1	3.3	2.4	1.6	325	521	0.6		
C66	Construct new freeway connecting I-70 to K-10	6.1	1.0	3.7	3.9	3.3	1.4	1.7	2.4	1.6	298	339	0.9		
C67	Construct new freeway connecting K-10 to I-35	5.0	1.0	3.3	3.2	3.3	1.3	1.7	2.4	1.6	264	674	0.4		
C68	Construct new toll road connecting I-70 to K-10	4.5	1.0	3.3	3.0	3.3	1.4	1.7	2.4	1.6	255	360	0.7		
C69	Construct new freeway connecting I-35 to US-69	4.1	1.0	3.3	3.1	3.3	1.3	1.7	2.4	1.6	248	847	0.3		
C70	Construct new toll road connecting K-10 to I-35	3.3	1.0	3.3	2.9	3.3	1.3	1.7	2.4	1.6	233	706	0.3		
C71	Construct new toll road connecting US-69 to I-49/US-71 in Missouri	3.3	1.0	3.3	2.7	3.3	1.3	1.7	2.4	1.6	230	542	0.4		
C72	Construct new toll road connecting I-35 and US-69	3.3	1.0	3.3	1.0	3.3	1.3	1.7	2.4	1.6	205	868	0.2		
Recommended Strategies on Adjacent Corridors															
C1	Widen 199th Street from a 2-lane to a 4-lane arterial street from US-56 to I-49/US-71	8.1	5.0	10.0	8.6	3.3	4.5	5.7	3.8	2.0	614	196	3.1	X	X
C16	Construct North-South 4-lane arterial along Sunflower Road/Edgerton Road/ Evening Star Road from US-56 to K-10	7.1	4.4	7.3	4.2	3.3	2.6	3.6	3.3	2.9	460	136	3.4	X	X
C19	New Interchange at US-56 and 199th Street	4.6	6.5	6.5	3.4	3.3	2.9	4.2	3.3	2.6	438	26	16.7	X	

Recommended Strategy

*Total Cost is in 2020 dollars and includes costs for constructing/implementing the strategy and 10 years of operation and maintenance costs.

**Benefit Ratio is determined by dividing the Total Score of the strategy by the Total Cost in \$millions. It provides a way to compare strategies.

***The numbers in parenthesis below each Desired Outcome indicate the weight assigned as determined through stakeholder input.