I-435 North-South Corridor

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

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.
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.

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

<table>
<thead>
<tr>
<th>Project Number</th>
<th>Location Description</th>
<th>Construction Cost</th>
<th>Planned Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>I-435/K-70 Interchange (Johnson Co. Gateway)</td>
<td>$250 M</td>
<td>2014</td>
</tr>
<tr>
<td>4</td>
<td>I-70 from I-435 to State Line</td>
<td>$821,000</td>
<td>2012</td>
</tr>
</tbody>
</table>

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.
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.

**Demand Management Strategies**

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

**Increased Capacity Strategies**

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

**Green plan / local plans**

Operate and maintain existing roads, bridges, transit service, ITS, traffic signals, incident management

**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.

**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.

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

**Reconfigure the I-435 and State Avenue interchange.**

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

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Desired Outcomes (weighting factor***):</th>
<th>Total Score</th>
<th>Total Cost ($millions)*</th>
<th>Benefit Ratio**</th>
</tr>
</thead>
<tbody>
<tr>
<td>S10: Variable Speed Limits from Parallel Pkwy to K-10</td>
<td>4.5</td>
<td>4.4</td>
<td>3.3</td>
<td>10.0</td>
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<tr>
<td>D12: Construct Park &amp; Ride facilities near Shawnee Mission Parkway, and near 95th St.</td>
<td>4.4</td>
<td>3.3</td>
<td>3.3</td>
<td>6.0</td>
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<tr>
<td>C21: Construct remaining phases of I-435/35- K-10 Gateway project</td>
<td>6.2</td>
<td>5.0</td>
<td>5.0</td>
<td>3.4</td>
</tr>
<tr>
<td>S18: Expand KC Scout ITS System from KS / MO state line to Midland Drive</td>
<td>4.3</td>
<td>6.5</td>
<td>3.3</td>
<td>4.4</td>
</tr>
<tr>
<td>C32: Active lane use control including &quot;hard shoulder running&quot; and potential HOT or HOV lane during peak hours from K-10 to I-70</td>
<td>4.9</td>
<td>3.7</td>
<td>3.7</td>
<td>3.5</td>
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<tr>
<td>C33: Reconfigure the I-435 and State Avenue interchange</td>
<td>4.8</td>
<td>4.4</td>
<td>3.7</td>
<td>5.1</td>
</tr>
<tr>
<td>D26: Bicycle/pedestrian facilities: consider on all new or reconstructed bridges over I-435</td>
<td>3.8</td>
<td>3.7</td>
<td>3.3</td>
<td>4.1</td>
</tr>
<tr>
<td>C35: Add fly over ramp northbound to westbound on I-70 and I-435 interchange</td>
<td>5.0</td>
<td>5.6</td>
<td>3.7</td>
<td>3.4</td>
</tr>
<tr>
<td>C42: Reconfigure I-435 and Parallel Parkway interchange</td>
<td>4.5</td>
<td>4.4</td>
<td>3.7</td>
<td>4.2</td>
</tr>
<tr>
<td>C38: Reconfigure I-70 &amp; I-435 interchange</td>
<td>4.6</td>
<td>4.4</td>
<td>4.4</td>
<td>3.4</td>
</tr>
<tr>
<td>D49: Parallel bicycle / pedestrian trail development as specified in the MARC Metro Green plan / local plans</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.4</td>
</tr>
</tbody>
</table>

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

*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 Scores 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.