CHAPTER I
Purpose and Need for Action

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) are proposing to reconstruct and widen Interstate 29/35 with new interchange configurations, bridges, including the bridge over the Missouri River, and roadways in Clay and Jackson Counties. The I-29/35 Study Corridor extends approximately 4.7 miles (7.6 kilometers), just north of Missouri Route 210/Armour Road in Clay County and continues south on I-29/35/US 71, to the northwest corner of the central business district (CBD) freeway loop in downtown Kansas City, Missouri. The project includes the north side of the CBD Loop, designated as both I-35/70 and US 24/40. This document examines operational and capacity improvements for this section of I-29/35 and I-35/70 and evaluates whether to complete a major rehabilitation of the existing I-29/35 Paseo Bridge over the Missouri River and construct a new companion bridge or replace the existing bridge with an entirely new structure. A final determination on the Paseo Bridge will be made during the design-build process. It describes existing problems in the corridor, discusses development of alternatives, examines potential impacts of the alternatives considered and identifies a preferred alternative. The location of the I-29/35 Study Area within the Kansas City region is shown in Figure I-1, Project Location Map. The I-29/35 Study Corridor is shown in Figure I-2.

This chapter of the Environmental Impact Statement (EIS) provides a description of the transportation-related problems that are to be addressed by the proposed improvements, the purpose and need for the project, and the proposed action.

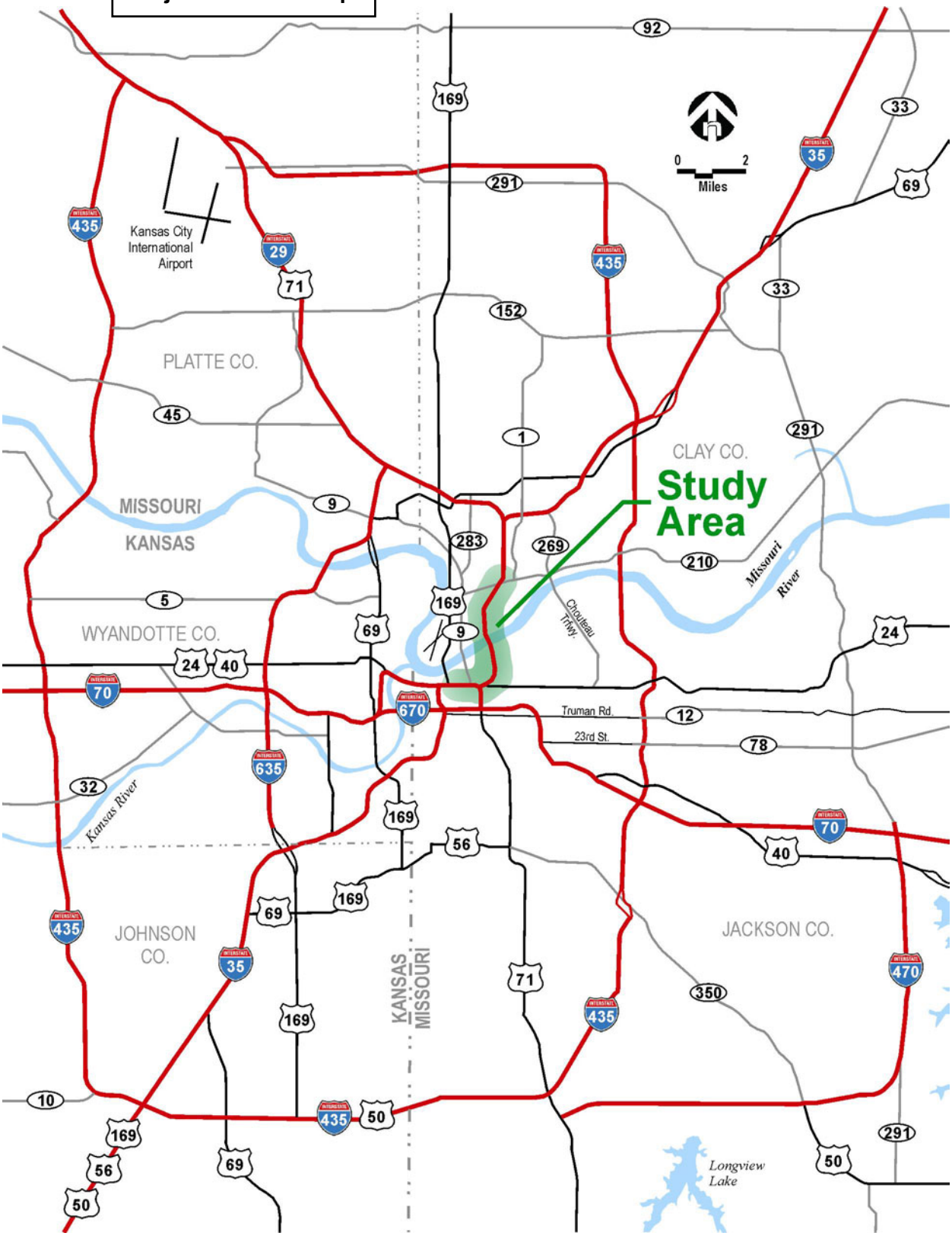
A. Project Description

1. PROJECT BACKGROUND

Efforts to provide support to the movement of vehicles and goods across the Missouri River have been made throughout Kansas City's history. In the post-World War II era, the concept of constructing the existing I-29/35 Paseo Bridge crossing was included as part of a comprehensive transportation planning study completed by the City Plan Commission in 1949. The section of what is now designated as I-29/35 between M-210/Armour Road and the Paseo Boulevard was originally constructed as a four-lane limited access expressway by Jackson and Clay Counties using bond financing. The project was designed in 1951-52 and the I-29/35 Paseo Bridge was dedicated in August 1954. The project was constructed as a toll facility. The project cost was $15 million.

When it opened, the I-29/35 Paseo Bridge and approaches were an extension of the Paseo Boulevard. The north end of the project terminated at M-210/Armour Road. The 1949 Plan called for the project to ultimately connect with a relocated US 71 and US 69. These relocations were completed in the 1950s as part of the interstate highway system. Relocated US 71 was designated as I-29 and US 69 was designated as I-35.

Figure I-1
Project Location Map



The proposed action was identified in a Major Investment Study (MIS) completed in 2002. The Northland~Downtown MIS focused on connections between the portion of the Kansas City metropolitan area located north of the Missouri River (the Northland) and the downtown area located within the CBD Loop. The study area for the MIS was primarily focused along the I-29 Corridor between the Kansas City International Airport and the Kansas City, Missouri CBD. The Northland~Downtown MIS included recommendations to widen and upgrade mainline lanes from US 169 to the Downtown Loop to generally provide an eight-lane section with auxiliary lanes as needed, including a new four-lane companion bridge to the existing four-lane I-29/35 Paseo Bridge. The location of the proposed new bridge was shown immediately downstream (east) of the I-29/35 Paseo Bridge. An MIS for I-70 was also completed in 2004, which included conceptual improvement recommendations for the north and east sides of the CBD Loop.

The need for improvements to I-29/35 was reaffirmed in the Kansas City region's long-range transportation plan developed by the Mid-America Regional Council (MARC). The current long-range transportation plan, *Transportation Outlook 2030*, identifies the I-29/35 Corridor as having heavy and moderate traffic congestion. The section of I-29/35 between M-210/Armour Road and the Kansas City CBD is identified as a regionally significant capacity project to be constructed between 2007 and 2010.

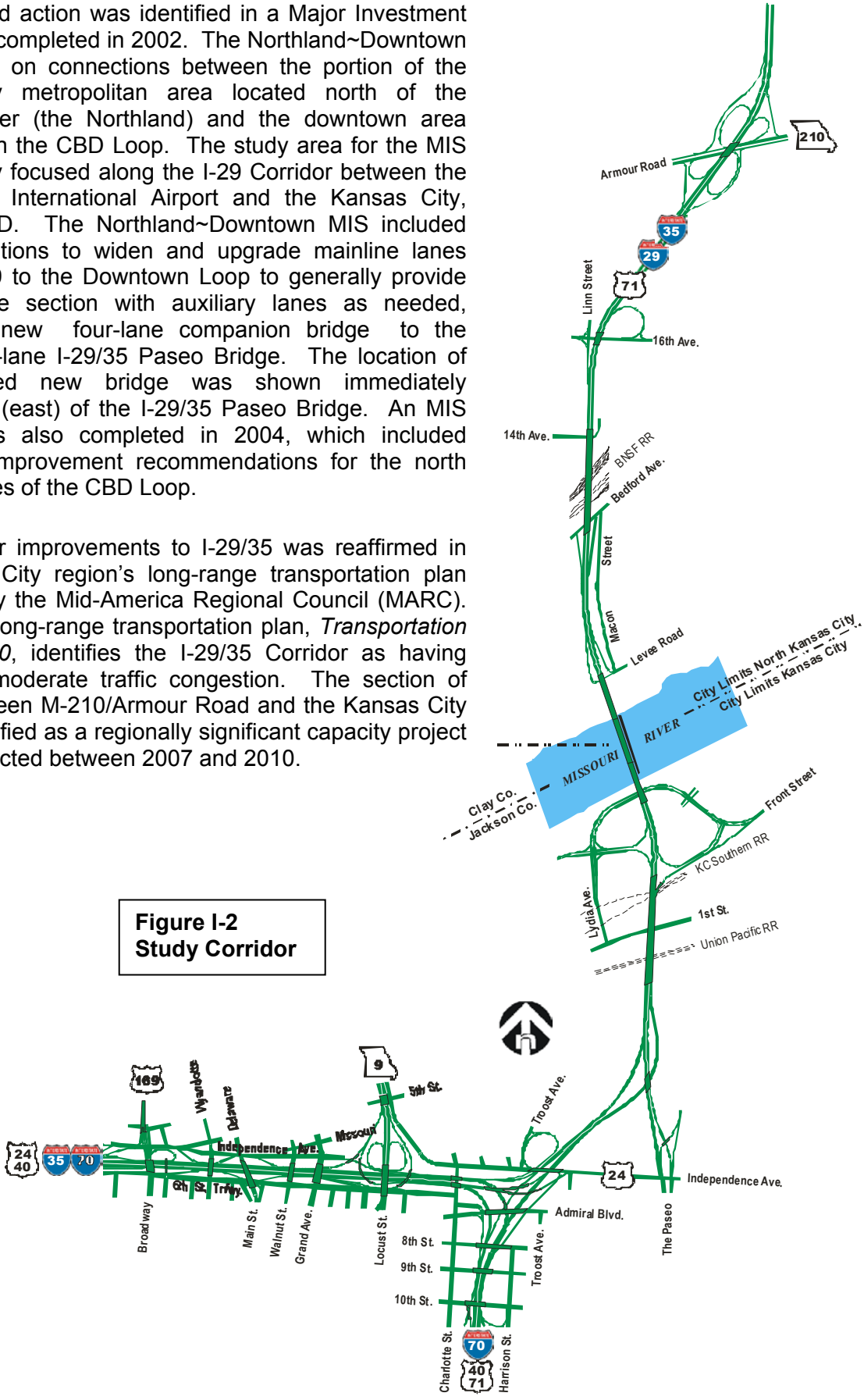


Figure I-2
Study Corridor

With the inclusion of the preferred strategy in the area's long-range transportation plan, sponsoring agencies moved forward with the next steps of the project development process for the study's recommendations. This EIS represents the next step in the project development process for the portion of the preferred strategy's highway recommendations along the I-29/35 corridor between M-210/Armour Road and the CBD. MoDOT was identified as the most appropriate agency to move forward with the highway improvement recommendations, and the Kansas City Area Transportation Authority (KCATA) was recognized as the most appropriate agency to move forward with the transit recommendations contained in the MIS. A separate environmental document may be prepared for transit recommendations.

2. PROJECT TERMINI

The proposed action is a response to the recommendations from the Northland~Downtown MIS. The proposed action addresses an important element of those recommendations, to provide an improved crossing of the Missouri River that better connects the north and south sides of the river. For this proposed action, the north terminus of the I-29/35 and I-35/70 Study Corridor is defined at M-210/Armour Road with the south terminus of the study corridor at US 169/Broadway Boulevard on the north side of the CBD Loop.

These freeway sections were constructed prior to the designation and construction of an interstate highway system. The project corridor includes the former Sixth Street Expressway (now the north side of the CBD Loop) and the Paseo Boulevard Extension (now part of I-29/35). These sections of I-29/35 and I-35/70 have close interchange spacing, improper lane balance, narrow traffic shoulders and less lane traffic capacity than do adjacent freeway sections to the north of M-210/Armour Road and sections outside the CBD freeway Loop that were built later. This section of freeway is a traffic capacity "bottleneck" and is the focus of the proposed action. The I-29/35 Paseo Bridge crossing of the Missouri River is four lanes wide, with narrow shoulders.

In addition to the proposed action, the Northland~Downtown MIS included recommendations to widen the section of I-29/35 north of M-210/Armour Road from six to eight lanes. Also, the I-70 MIS includes recommendations to improve traffic operations on the east side and the south side of the CBD freeway Loop. These recommendations may be addressed in the future as separate actions. The section of I-29/35 located south of M-210/Armour Road has less capacity than does the section north of M-210/Armour Road. The proposed action can be formulated to accommodate the existing six lane section located to the north of M-210/Armour Road, as well as accommodate a future widening to eight lanes if such action is proposed in the future.

Similarly, efforts will be made to ensure that alternatives developed to support the proposed action will be consistent with potential operational or capacity improvements in the area of the CBD Loop located outside the study corridor. A separate Loop concept study was completed to ensure that any recommended actions or improvements will be compatible with the overall Loop master plan. Information from this concept study will be a consideration in the development of alternatives to address this proposed action.

For these reasons, the proposed action has logical termini. The proposed action will not foreclose transportation options to the north of the project termini or to the adjacent sections of the CBD freeway loop.

3. MAJOR ATTRACTIONS/DESTINATIONS LOCATED WITHIN CORRIDOR

A number of attractions and destinations are provided access by I-29/35. Since the I-29/35 Corridor is located in the central part of the metropolitan area, the corridor serves regional and local destinations. Regional and local destinations use I-29/35 as their main north-south

transportation corridor. The major local destinations in the study corridor located along I-29/35 are located in either North Kansas City, north of the Missouri River or Kansas City, Missouri, south of the River.

While nearly 5,000 people reside in North Kansas City, the working population is more than 20,000 persons. North Kansas City is home for over one thousand companies engaged in manufacturing, warehousing, transportation, wholesale and retail trade, and business and personal services. Major businesses include: Cerner Corporation, North Kansas City Hospital, and Burlington Northern Santa Fe Railroad. Other major destinations include the North Kansas City North Town shops and Harrah's casino and hotel.

On the south side of the Missouri River, at the terminus of I-29, the Kansas City, Missouri downtown is the primary destination center for the I-29/35 Corridor. This area is the CBD for the metropolitan area, where more than 50,000 people currently work. In addition to the CBD, other major destinations within the corridor include the River Market, Isle of Capri casino and Berkley Park.

B. Overview of Purpose and Need

The purpose of the proposed project is to add vehicular capacity and improve safety consistent with best design practices along this 4.7 mile (7.6 kilometer) section of I-29/35. The proposed action will address several needs. The rationale for setting these project needs is described in the subsequent sections of this chapter.

- ***Replace Deteriorating Infrastructure and Improve Interchanges*** – There is a need to improve the pavement surface and upgrade substandard roadway features along I-29/35, including shoulder widths, weaving and merge/diverge areas, bridge clearances, and interchanges to improve traffic operation and safety. There is also a need to replace or rehabilitate the Paseo Bridge.
- ***Improve Traffic Safety*** – The number of crashes along the corridor exceeds the statewide average for similar facilities. There is a need to reduce crashes occurring along this section of I-29/35, through improved roadway design and improved operations.
- ***Improve Interstate System Linkage Across the Missouri River*** – The project location is an important connecting link between the portions of Kansas City located north and south of the Missouri River. This crossing is also an important system linkage of the interstate highway system and is part of the I-35 NAFTA trade corridor. There is a need to maintain and enhance movement and connectivity across the Missouri River.
- ***Provide Sufficient Vehicle Capacity and Improve Traffic Operation*** – Current and projected future vehicle demands exceed the existing capacity of I-29/35. Vehicular mobility is limited across the Missouri River and to-and-from the Northland and the CBD by the capacity of I-29/35 between M-210/Armour Road and the northeast corner of the CBD freeway loop. There is a need to improve capacity to meet future travel demands. There is also a need to address operational deficiencies which currently exist along the corridor, including poor traffic weaving sections, short acceleration/deceleration lanes, narrow roadway shoulders and substandard ramp configurations.
- ***Improve Access to the Kansas City CBD and Other Major Activity Centers*** – The Kansas City Central Business District is a large employment center and cultural center for the region. There is a need to provide safe and efficient access to-and-from a number of major land uses and activity centers including the North Kansas City industrial area located adjacent to the corridor, the North Kansas City Hospital, the Northeast industrial area, the Isle of Capri Casino, Berkley Park the Kansas City, Missouri CBD, the River

Market, the Columbus Park neighborhood, and the Downtown Airport. There is also a need to improve north-south connectivity between the River Market and the CBD areas, currently separated by the north leg of the CBD freeway loop. Improving the physical connectivity between these areas impacted by previous highway construction would further support the economic sustainability of the CBD and surrounding areas.

- ***Facilitate the Movement of Trucks*** – M-210/Armour Road and Front Street are designated as NHS Intermodal Connectors and serve major intermodal transfer and loading facilities located in the Northeast Industrial Area. The movement of truck traffic is constrained by traffic congestion and by the operational deficiencies of the interchanges that are used by truck traffic to access I-29/35. There is a need to improve truck movement along the I-29/35 Corridor and interchanges and support the movement of international trade along this designated NAFTA corridor.

Each of these specific needs is discussed in the following sections.

1. REPLACE DETERIORATING INFRASTRUCTURE AND IMPROVE INTERCHANGES

a. Mainline Design Features

Roadway characteristics of the existing I-29/35 mainline are listed in Table I-1. The existing facility within the study corridor is generally a four-lane facility, with two lanes of travel in each direction from M-210/Armour Road to the northeast corner of the CBD Loop.

Table I-1
Description of Existing Facility

Beginning Description	Log Mile	Section Length (mi.)	Number of Lanes	Inside/Outside Shoulder Width (ft)	Surface Type	Surface Date
I-29/35 Southbound						
M-210/Armour Road	125.700	0.29	2	2/10	AC	1975
16th Avenue	126.282	0.54	2	2/10	AC	1975
Bedford Avenue	126.778	0.43	2	2/10	AC	1975
Levee Road	127.143	0.36	2	2/10	AC	1975
Front Street	127.506	0.67	2	2/10	AC	1975
The Paseo	128.483	0.59	2	2/10	AC	1999
NE Corner/I-70	128.682	0.22	2	2/10	AC	1999
M-9	128.920	0.41	3	8/8	AC	1994
Broadway	129.510	0.30	3	8/8	AC	1994
I-29/35 Northbound						
Broadway	1.254	0.30	3	8/8	AC	1994
M-9	1.851	0.44	3	8/8	AC	1994
NE Corner/I-70	2.138	0.21	2	2/10	AC	1999
The Paseo	2.276	0.58	2	2/10	AC	1999
Front Street	3.288	0.69	2	2/10	AC	1975
Levee Road	3.651	0.34	2	2/10	AC	1975
Bedford Avenue	4.005	0.44	2	2/10	AC	1975
16th Avenue	4.534	0.56	2	2/10	AC	1975
M-210/Armour Road	5.131	0.30	2	2/10	AC	1975
I-35/70 Eastbound						
NE Corner – 10th Street	2.717		2	12/8	AC	1994
I-35/70 Westbound						
10th Street – NE Corner	249.447		2	12/8	AC	1994

Source: Missouri Department of Transportation, 2003.
Shaded numbers indicate deficiency.
AC indicates asphaltic concrete pavement.

Roadway design features currently existing along I-29/35 were based on the prevailing design standards at the time of the original freeway construction. This section of I-29/35 was originally constructed between 1952 and 1958, prior to the designation of the interstate system. Today's geometric design standards are different than they were in the 1950s. Narrow shoulder widths make driving conditions uncomfortable and provide little room for incident management efforts during crashes or breakdowns.

The design speed on I-29/35 varies with geometric conditions along the corridor. North of the project limits, the design speed for I-29/35 is 70 mph. From M-210/Armour Road to the CBD Loop, the design speed is typically 60 mph. Within the CBD Loop, the typical design speed is 50 mph. In this instance, the transition of design speeds downward is desirable given the close spacing of ramps in the CBD Loop.

Even with varying design speeds, there are still a number of vertical or horizontal deficiencies. Vertical and horizontal deficiencies within the study corridor are illustrated in Figure I-3. The vertical deficiencies occur at locations where the mainline grade exceeds the current standard at the northeast corner of the CBD loop and on the Paseo Boulevard ramps. The horizontal deficiencies relate to conditions where the horizontal curves on the I-29/35 mainline do not meet the standards. Horizontal deficiencies are located on the northbound lanes in the northeast corner of the CBD loop and near the Paseo Boulevard ramps.

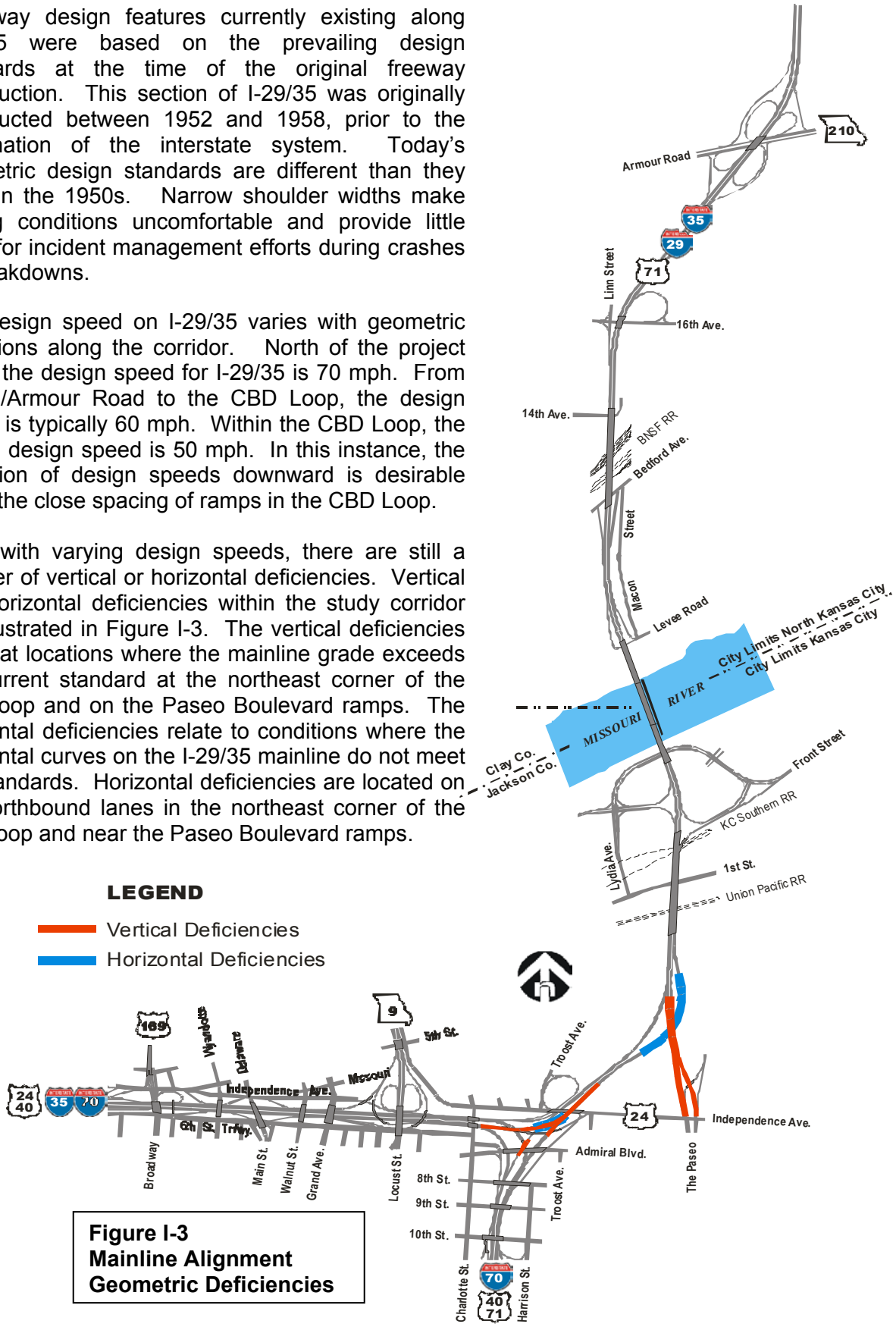


Figure I-3
Mainline Alignment
Geometric Deficiencies

b. Bridge Design Features

There are 34 bridges in the study corridor. Some bridges, particularly on the north side of the CBD loop, have been re-decked and rehabilitated. Table I-2 lists the bridge number, location, type, length, width, vertical clearance, year built, and sufficiency rating for each bridge in the corridor. A sufficiency rating is the output of a formula that considers structural adequacy and functional obsolescence. Twenty-one of the bridges located in the study corridor were built in the 1950s.

Table I-2
Description of Existing Bridges

Bridge No.	Location	Type	Length (ft)	Width (ft)	Vertical Clearance	Year Built	Sufficiency Rating
L07914	I-29/35 over M-210/Armour Rd.	Stringer/Multi BM	246	90.7	**14'-11"**	1953	87.8
L07904	I-29/35 over 16th Avenue	Stringer/Multi BM	161	82.8	14'-6"	1953	89.7
L07894	I-29/35 over CB&Q RR	Stringer/Multi BM	1,397	82.8	**16'-0"**	1953	**71.7**
L07345	I-29/35 over Missouri River	Suspension	1,832	59.5	18'-2"	1954	**51.4**
L-936R	Admiral Blvd over I-70	Box Beam	509	72.3	**14'-11"**	1959	91.9
A4223	Delaware (Main) over I-35/70	Stringer/Multi BM	373	70.0	16'-6"	1985	93.1
A4224	Grand Ave over I-35/70	Girder & Floorbeam	251	89.3	16'-6"	1990	91.9
L07823	Independence over I-35	Girder & Floorbeam	287	60.9	**15'-3"**	1953	**77.5**
L-937	8th Street over I-70	Box Beam	448	56.3	20'-2"	1959	**76.7**
L-938	9th Street over I-70	Box Beam	264	56.3	20'-2"	1958	**76.2**
L09391	10th Street over I-70	Box Beam	253	56.3	**15'-2"**	1959	**61.7**
L-494R1	Walnut Street over I-35/70	Stringer/Multi BM	232	54.7	18'-5"	1954	**75.6**
L-492R1	Wyandotte Street over I-35/70	Stringer/Multi BM	225	64.7	**16'-5"**	1954	**75.9**
A1131R	I-29/35 over Service Street	Box Beam	261	46.8	16'-7"	1970	80.4
L-934-3R	I-29/35 N over I-35 S	Box Beam	392	25.8	**14'-10"**	1958	**77.7**
L07884	I-29/35 over Dora/Guinotte	Stringer/Multi BM	1,449	90.8	18'-2"	1953	86.4
A1130R	I-29/35 over I-70	Box Beam	394	34.3	**15'-2"**	1970	**79.8**
A1133R	I-29/35 over Service Street	Slab	541	32.3	21'-0"	1970	80.3
L04893	I-70 E over Bluff Street	Stringer/Multi BM	78	42.7	14'-9"	1953	**59.1**
L-781R2	I-35/70 E over Charlotte Road	Stringer/Multi BM	69	58.8	**13'-9"**	1953	90.5
L-935R	I-70 over I-35/70	Box Beam	150	34.8	**14'-9"**	1958	84.7
L-781R2	I-35/70 W over Charlotte Road	Stringer/Multi BM	69	58.8	**13'-9"**	1953	90.8
L04893	I-70 W over Bluff Street	Stringer/Multi BM	83	42.9	14'-9"	1953	**79.5**
A44571	M-9 N over I-35/70	Stringer/Multi BM	416	41.5	28'-6"	1985	94.5
A41121	M-9 S over I-35/70	Stringer/Multi BM	415	41.5	28'-6"	1985	93.5
A32762	I-29/35 to Front Street	Stringer/Multi BM	101	27.8	Not Available	1973	84.4
A4113	M-9 S Ramp to I-35/70 W	Slab	140	24.7	**16'-2"**	1985	97.3
A4115	M-9 S to I-35/70 over I-70	Stringer/Multi BM	344	24.7	16'-7"	1985	95.1
A4114	Ramp to N M-9 over I-35/70	Stringer/Multi BM	257	24.7	**16'-2"**	1985	94.4
L-490R2	US 169 over I-35/70	Box Beam	127	93.9	**15'-3"**	1954	88.2
L-786	The Paseo over Ramp to N I-29/35	Frame	54	28.8	**15'-1"**	1953	88.7
L07872	The Paseo over N I-29/35	Stringer/Multi BM	207	29.2	**15'-1"**	1953	**72.8**
A5658	I-70 E (Lewis & Clark Viaduct)	Stringer/Multi BM	4,487	43.9	17'-11"	1998	**73.8**
A-507R1	I-70 W (Lewis & Clark Viaduct)	Stringer/Multi BM	4,336	47.8	18'-0"	1960	**79.5**

[1]ACRONYMS: Bridge codes: SLAB = Continuous Slab; STRG = Stringer/multi Beam or Girder; GIRD = Girder and Floorbeam; T-BM = Tee Beam; BB = Box Beam or Multi-Girder or Single Girder; FRAM = Frame; CST = City or County Cross Street; RP = Ramp.
Source: Missouri Department of Transportation, 2003.
Shaded numbers indicate deficiency.

Bridges are typically designed to last 75 years and a number of the bridges in the study corridor are approximately 50 years old. Fifteen of the bridges do not meet current vertical clearance requirements. Many of the bridges also have narrow shoulder widths.

Fourteen of the bridges have sufficiency ratings less than 80 and greater than 50. Bridges with sufficiency ratings within this range may qualify for partial federal bridge replacement funds provided there is documentation that replacement is more cost effective than rehabilitation. Other funding mechanisms may also be available for this project.

The I-29/35 bridge over the Missouri River (I-29/35 Paseo Bridge – bridge number L07345) is over 50 years of age. The bridge has a sufficiency rating of just over 50. Maintenance problems have been a concern on this bridge. In January 2003, the bridge was closed for several weeks, as maintenance was required to replace the hold-down linkage of the bridge suspension system, which had fractured. A larger bridge rehabilitation occurred in 2005 which required closure of the I-29/35 Paseo Bridge for less than four months. The completion of this maintenance rehabilitation extended the bridge's service life 10 to 15 years. At the end of that time it is anticipated that the bridge deck will need replacement and the structural steel floor system will need rehabilitation.

c. Interchange Design Features

The following is a description of the existing interchanges that provide access to I-29/35 and land uses in the area. The interchanges are identified from north to south along the corridor.

M-210/Armour Road – The existing M-210/Armour Road interchange deficiencies include a tight cloverleaf interchange with short merge and diverge sections on M-210/Armour Road and short weave sections on I-29/35. There are also short weave sections on M-210/Armour Road. High traffic volumes exceed the capacity of the interchange. The existing geometric layout of the ramps are too compact and tight. Inefficient design creates the opportunity for queue back-ups onto I-29/35.

M-210/Armour Road Interchange

16th Avenue – The existing 16th Avenue interchange is a partial interchange with access to-and-from the south only. Deficiencies include the northbound exit ramp is a loop ramp with a short radius and the southbound entrance ramp is a standard diamond ramp with excessive merge distance that may be mistaken for an additional through lane. Ramp terminal control includes a yield at the northbound to westbound off-ramp terminal and a 3-way stop at the southbound on-ramp terminal.

16th Avenue Interchange

Bedford Avenue – The existing Bedford interchange is a reversed split diamond with the Levee Road Interchange with access between the two provided via Macon Street. Both the northbound exit ramp and the southbound entrance ramp are traditional diamond ramp configurations. There is a continuous auxiliary lane on I-29/35 between the Bedford Avenue Interchange and the Levee Road Interchange. Ramp terminal control includes a stop for the northbound exit ramp and no control for the southbound entrance ramp. Close proximity of the northbound exit ramp and Macon Street creates inefficient operations and unsafe traffic conditions.

Bedford Avenue Interchange

Levee Road – The existing Levee Road Interchange is a half-diamond to-and-from the north. The interchange is a reversed split diamond with the Bedford Avenue Interchange with access between the two provided via Macon Street. There is a continuous auxiliary lane on I-29/35 between the Bedford Avenue Interchange and the Levee Road Interchange. There is no ramp terminal control for either the southbound exit ramp or northbound entrance ramp.

Levee Road Interchange

Front Street – The interchange is a folded diamond connected by a re-routed Front Street under the Paseo Bridge. This configuration results in a loss of route continuity at Front Street. Traffic flow is impacted by short radius curves and steep grades on the ramps. The southbound ramp terminal is a four-way signal controlled intersection. The northbound ramp terminal is a "T" intersection that is signal controlled.

Front Street Interchange

Paseo Boulevard – The Paseo Boulevard Interchange provides partial access to and from the north to I-29/35. Southbound freeway access is accommodated in the northeast corner of the CBD Loop along US 24/Independence Avenue. This interchange requires lane shifts to be made by I-29/35 through traffic. Currently, traffic priority is given to Paseo traffic as it enters and exits from the left. Paseo Boulevard northbound entrance ramp becomes a through lane over the Missouri River while one of the two northbound I-29/35 lanes is dropped at the Front Street Interchange requiring a traffic lane shift that results in lower vehicle capacity. Southbound traffic operations mirror the northbound movements. A lane is added at Front Street and one lane from the mainline is then dropped at the Paseo Boulevard Interchange also requiring a traffic shift resulting in lower vehicle capacity. The ramp terminals at Paseo intersect with US 24/Independence Avenue and are signal controlled.

Paseo Boulevard Interchange

Northeast Corner Downtown CBD Loop – The CBD Loop is the terminus of I-29. A half interchange is provided at US 24/ Independence Avenue. This interchange provides access from eastbound I-35/70 (north side of Loop) to Independence Avenue and from northbound I-70 (east side of Loop) to Independence Avenue. Access to westbound I-35/70 (north side of Loop) from Independence Avenue and the Columbus Park neighborhood is also provided. The on-ramp is a tight loop configuration. The off-ramp from I-35/70 ends at an awkward intersection controlled by three independent traffic signals.

Northeast Corner Downtown CBD Loop Interchange

M-9 – The M-9 interchange is a directional interchange which serves traffic movement between M-9 and I-35/70. The freeway movement from I-35 southbound / I-70/US 24 westbound to M-9 northbound is not served by the M-9 interchange. The existing M-9 interchange deficiencies include tight loop ramps with short merge and diverge sections and short weave sections on the collector-distributor road that connects to Independence Avenue located west of the interchange. This interchange provides access between the CBD and North Kansas City via the M-9/Heart of America Bridge.

M-9 Interchange

US 169 (Broadway) – The existing Broadway interchange is an unconventional interchange that provides the connection between US 169 and I-35/70, and provides local downtown traffic access to US 169 over the Missouri River. There are large numbers of vehicles competing for the limited capacity of this interchange resulting in the traffic delays. The northbound to westbound loop ramp has a tight radius and there are numerous locations of short weaving sections and short acceleration and deceleration lanes.

US 169 (Broadway) Interchange

2. IMPROVE TRAFFIC SAFETY

Crash statistics[1] were reviewed over a five-year period from 2000 to 2004. Based on this data, crash rates are calculated as shown in Table I-3. The five-year statewide average crash rate on similar urban interstate facilities is 141 crashes per hundred million vehicle miles traveled. Crash rates in the study corridor are above the five-year statewide average rate for all of the mainline sections. Sections having accident rates over twice as high as the statewide average include M-210/Armour Road to 16th Avenue, Front Street to Paseo Boulevard, and sections of the north side of the CBD Loop.

Table I-3
Crash Rates for I-29/35 Mainline
(2000 – 2004)

Mainline Section	Southbound Crash Rate (HMVMT)	Northbound Crash Rate (HMVMT)	Compared to Statewide Average Rate	Compared to Statewide Average Rate
I-29/35 Corridor			**SB**	**NB**
North of M-210/Armour Road to north of 16th Avenue	715	391	5.1	2.8
North of 16th Avenue to north of Bedford Ave.	191	189	1.4	1.3
North of Bedford Ave. to north of Front Street	155	275	1.1	1.9
North of Front Street to north of Paseo Blvd.	609	925	4.3	6.6
North of Paseo Blvd. to north of Independence Ave.	375	325	2.7	2.3
I-35/70 Corridor			**WB**	**EB**
North of Independence Ave. to west of Grand Ave.	407	352	2.9	2.5
West of Grand Ave. to west of Broadway	1129	747	8.0	5.3

Statewide Average equals 141.04 for urban interstates. Number of crashes per hundred million vehicle miles traveled (HMVMT).
Source: MoDOT, 2006.

[1] Accident statistics and safety data summarized or presented in this Section are protected under federal law. See Appendix A.

Table I-4 shows the breakdown of crash types for each mainline section. Only four fatal crashes occurred in the Study Corridor over a five-year period. This is most likely due to the congested conditions and slow travel speeds in the corridor. The greatest number of accidents occurred on the north side of the CBD Loop in the segment located west of Grand Avenue. Approximately 25% more crashes occurred in the northbound/eastbound direction than the southbound/westbound direction.

Table I-4
Average Annual Number of Crashes for I-29/35 Mainline Southbound/Northbound
(2000 – 2004)

Mainline Section	Property Damage	Injury	Fatal	Total
I-29/35 Corridor	**SB / NB**	**SB / NB**	**SB / NB**	**SB / NB**
North of M-210/Armour Road to north of 16th Avenue	245 / 190	63 / 41	0 / 0	308 / 231
North of 16th Avenue to north of Bedford Ave.	64 / 72	25 / 24	1 / 1	91 / 97
North of Bedford Ave. to north of Front Street	60 / 108	16 / 27	0 / 1	76 / 136
North of Front Street to north of Paseo Blvd.	192 / 307	63 / 73	0 / 0	255 / 380
North of Paseo Blvd. to north of Independence Ave.	134 / 117	41 / 32	0 / 0	175 / 149
I-35/70 Corridor	**WB / EB**	**WB / EB**	**WB / EB**	**WB / EB**
North of Independence Ave. to west of Grand Ave.	152 / 128	46 / 39	0 / 0	198 / 167
West of Grand Ave. to west of Broadway	197 / 204	59 / 56	0 / 1	256 / 261
Total	**2171**	**605**	**4**	**2780**

Source: MoDOT, 2006.

If the existing conditions were perpetuated, maintaining the existing freeway would expose motorists to the same crash risk or rate that currently exists. The maintenance of the existing freeway "as is" is called the "No-Build" Alternative. To forecast the No-Build Alternative's future year 2030 number of crashes, the assumption was made that the future I-29/35 corridor crash rates would not change. Because the No-Build Alternative would keep the facility as is, no substantial improvements to safety would occur to reduce the crash rates. Because the rate at which the crashes occur remains the same as existing, but the amount of traffic using the facility increases, the total amount of crashes would be expected to increase over time for the No-Build Alternative. Table I-5 indicates the forecasted total amount of crashes by type for the No-Build Alternative in year 2030.

Table I-5
No-Build Alternative Forecasted Average Annual Number of Crashes
(Year 2030)

Mainline Section	Property Damage	Injury	Fatal	Total
I-29/35 Corridor	**SB / NB**	**SB / NB**	**SB / NB**	**SB / NB**
North of M-210/Armour Road to north of 16th Street	80 / 53	203 / 211	0 / 0	283 / 264
North of 16th Street to north of Bedford Ave.	20 / 23	48 / 44	0 / 0	68 / 67
North of Bedford Ave. to north of River Front Rd.	31 / 39	65 / 121	0 / 0	96 / 160
North of River Front Rd. to north of Paseo Blvd.	38 / 107	139 / 380	1 / 0	178 / 487
North of Paseo Blvd. to north of Independence Ave.	25 / 32	65 / 67	0 / 0	90 / 99
I-35/70 Corridor	**WB / EB**	**WB / EB**	**WB / EB**	**WB / EB**
North of Independence Ave. to west of Grand Ave.	46 / 64	156 / 177	0 / 0	202 / 241
West of Grand Ave. to west of Broadway	92 / 58	261 / 234	1 / 0	354 / 292
Total	**708**	**2,171**	**2**	**2,881**

Source: HNTB Corporation, 2004.

3. IMPROVE INTERSTATE SYSTEM LINKAGE ACROSS THE MISSOURI RIVER

Interstate 29/35 and US 71 is a north-south highway which provides a major connection over the Missouri River connecting the northern portion of the metropolitan region with the southern portion and with the Kansas City, Missouri CBD. Interstate 29 and I-35 also provide an important north-south link through the middle of the United States. Across the nation, I-29 passes through the cities of Kansas City, Missouri; Council Bluffs, Iowa; Sioux City, Iowa; Sioux Falls, South Dakota; Fargo, North Dakota; and Grand Forks, North Dakota culminating at the Canadian border. Interstate 35 also serves north-south travel and extends from Duluth, Minnesota to Laredo, Texas. Interstate 35 passes through the cities of Minneapolis-St. Paul, Minnesota; Des Moines, Iowa; Kansas City, Missouri; Wichita, Kansas; Oklahoma City, Oklahoma; Dallas-Fort Worth, Texas; Austin, Texas; and San Antonio, Texas. US 71 serves north-south travel and extends from Canadian border through the cities of Kansas City, Missouri; Joplin, Missouri; Fayetteville, Arkansas; Texarkana, Arkansas; Shreveport, Louisiana and Alexandria, Louisiana. .

4. PROVIDE SUFFICIENT VEHICLE CAPACITY AND IMPROVE TRAFFIC OPERATION

The existing average daily traffic volume at the Missouri River bridge crossing is 94,468 (MoDOT, 2005). The daily volume is composed of 46,573 southbound motorists and 47,895 northbound motorists using two lanes in each direction. Table I-6 presents the existing and forecasted daily two-way traffic demand at key locations along the study corridor under a No-Build condition. The travel demand forecast for I-29/35 was performed for MoDOT using Mid-America Regional Council's (MARC's) travel demand model. The forecast year for the demand model is the year 2030 which enables forecasts to be developed for a time horizon that is approximately 20 years after project construction. The results indicate that the current travel demand exceeds capacity in the I-29/35 Corridor, and that travel demand is anticipated to increase through the year 2030, further worsening the existing congested conditions.

Table I-6
Existing (2003) and Forecasted (2030)
Daily Two-Way Traffic Demand

Location	Existing	2030 No-Build
I-29/35 Corridor		
I-29/35 Split to M-210/Armour Rd.	92,774	101,111
M-210/Armour Rd. to 16th Ave.	85,281	94,771
16th Ave. to Bedford Ave.	91,278	100,240
Bedford Ave. to Levee Rd.	99,092	107,526
Levee Rd. to Front St.	92,875	101,981
Front St. to Paseo Blvd.	98,134	108,370
Paseo Blvd. to US 24/Independence Ave.	77,497	85,232
I-35/70 Corridor		
I-29/35 to M-9	96,080	104,949
Broadway off-ramp to Broadway on-ramp	88,850	101,065

Source: Cambridge Systematics, Regional Travel Demand Model

Existing peak hour volume ranges and directional distribution for the study corridor are given in Table I-7.

The ability to provide a more efficient transportation facility is an integral component of I-29/35 improvements. Within the downtown area, the freeway loop must accommodate vehicles accessing the CBD as well as vehicles traveling through the area. Currently, there are seven interchanges on I-29/35 over a 3.2-mile (5.2-kilometer) distance from M-210/Armour Road to US

24/Independence Avenue in the northeast corner of the CBD Loop. This represents an average interchange spacing of 0.45 miles/interchange (0.74 kilometers/interchange). Closely spaced interchanges that lack sufficient merging, diverging and weaving distances can impede traffic flow. During peak travel periods a lack of capacity on ramps and at ramp terminals results in traffic congestion spilling back onto the I-29/35 mainline. In addition, a system-to-system interchange between I-29/35 and I-70 exists which does not provide adequate lane capacity.

Table I-7
Year 2003 Two-Way Peak Hour Traffic Demand and Directional Distribution

Sub corridor	No. of Lanes	Year 2003 AM Peak Hour Volume Range	Year 2003 PM Peak Hour Volume Range	AM Peak Hour Directional Distribution	PM Peak Hour Directional Distribution
I-29/35 Corridor	**SB/NB**			**SB Peak**	**NB Peak**
M-210/Armour Road to the I-29/35 Paseo Bridge	2 / 2	6,154 – 7,078	7,285 – 8,056	62%	59%
The I-29/35 Paseo Bridge to Paseo Boulevard	2 / 2	6,717 – 7,588	7,340 – 7,820	57%	54%
Paseo Boulevard to I-70	2 / 2	6,235	5,112	54%	51%
I-35/70 Corridor				**WB Peak**	**EB Peak**
I-29 to US 169 (Broadway)[1]	3 / 3	5,388 – 6,319	5,232 – 6,297	58%	53%

Source: HNTB Corporation, 2003. [1]Directional distribution data presented in WB peak in the morning and EB peak in the afternoon.

A lack of lane continuity negatively impacts traffic operation and results in congestion. The northbound movement from downtown is served by two lanes of traffic. While an additional lane is added from Paseo Boulevard, the outside lane is dropped at Front Street. A similar situation exists for the southbound movement where an outside lane is added at Front Street but the inside lane is dropped at Paseo Boulevard. Both lane drops require merging travel movements, limit vehicle capacity and result in traffic congestion during peak travel times.

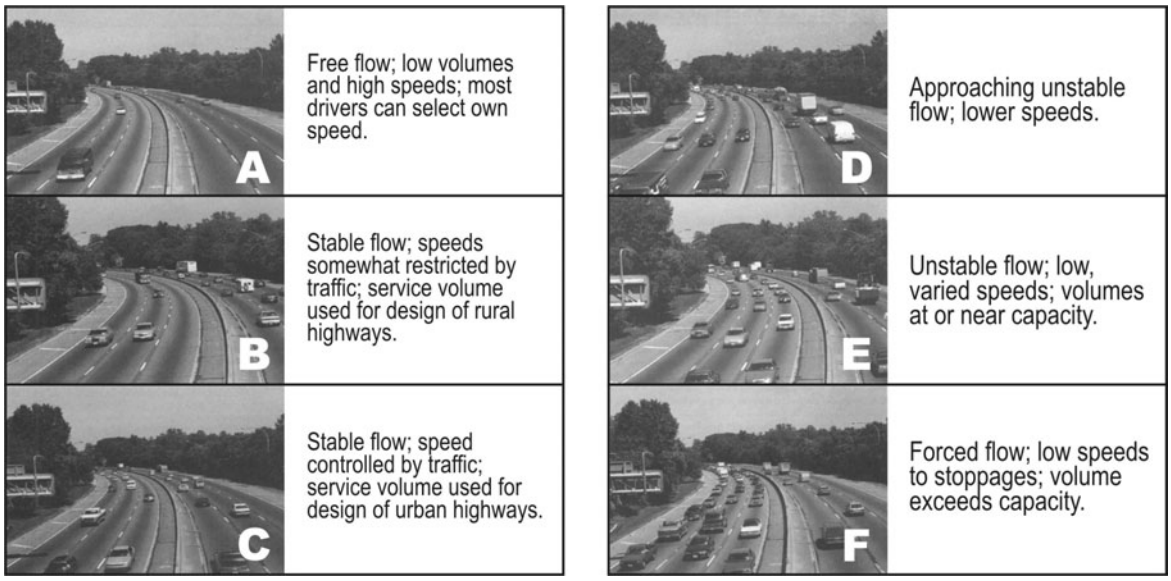
Traffic operational problems also exist within the interchanges at the arterial intersections causing congestion and delay. Poor traffic operation occurs at the following ramp terminal intersections: I-29/35 and M-210/Armour Road, Broadway and 5th Street and Broadway and 6th Street. Often, the intersections do not perform well during peak hours due to high volumes of motorists exceeding the capacity of the interchange intersections and the close proximity of other arterial intersections adding traffic delays and congestion to the system.

The existing corridor has traffic operation problems due to many interchange access points spaced close together, tight weaving and short merging and diverging areas. Undesirable weaving areas and merge/diverge areas exist at the following interchange areas: M-210/ Armour Road, 16th Avenue, Bedford Avenue, Levee Road, Front Street, Paseo Boulevard and I-29/35/70 merge to US 24/Independence Avenue. The operational problems are due to high volumes of motorists traveling at interstate speeds while using the low-speed interchange design. In general, the tight, low-speed ramps do not provide enough ramp weave and merge distance or deceleration distance, causing congestion.

Traffic operational characteristics were identified by completing an analysis of roadway capacity and operations for the freeway mainline, weaving sections, merging/diverging areas and interchange intersections within the I-29/35 Corridor. Level of service (LOS) is a qualitative measure used by transportation planners and engineers to characterize the operational conditions within a traffic stream and its perception by motorists. It is a means of evaluating traffic conditions that would be encountered by a driver traveling through an intersection, interchange or open section of roadway under peak-hour traffic volume conditions. The greater the traffic density on a highway, the lower the LOS. Letters A through F are used to denote

LOS, with LOS A being the most favorable driving condition, LOS D or E considered acceptable during peak travel times in urban settings and LOS F representing a failure of traffic operations. These definitions of LOS (Table I-8) are consistent with the *Highway Capacity Manual 2000,* written by the Transportation Research Board.

Table I-8
Level of Service Characteristics for Freeways



Source: *Highway Capacity Manual 2000*, Transportation Research Board.

A LOS value for highway operational efficiency is calculated for specific roadway sections based on such characteristics as number of lanes, lane width, divided or undivided traffic flow, availability of roadway shoulders, travel speed, traffic composition and other factors. Once a roadway segment's capacity is calculated, a comparison between the volume of traffic anticipated to travel on a roadway segment and its specific capacity results in a determination of LOS. When high traffic volumes result in a LOS E or F, the options of increasing highway capacity or making operational improvements are often considered.

An analysis of the LOS of freeway mainline sections (see Figure I-4) located between interchange areas for the AM and PM peak hours of travel is shown in Table I-9. Table I-9 indicates the existing (year 2003) peak hour LOS for the I-29/35 Study Corridor. The results indicate that many of the mainline freeway sections located between interchange areas are operating at LOS F.

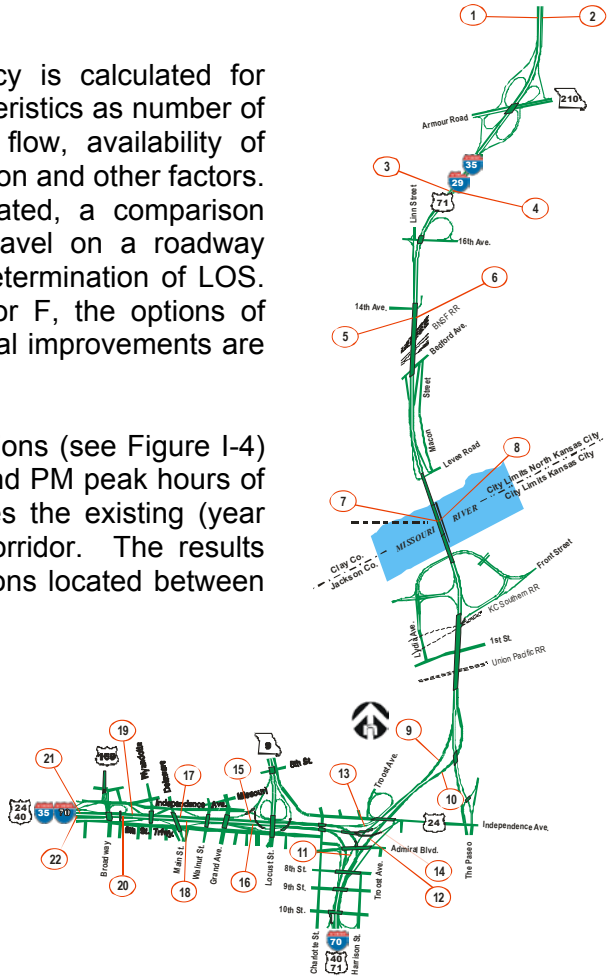


Figure I-4
Year 2030 Peak Hour
Mainline LOS Analysis Sections

Table I-9
I-29/35 Current (2003) Peak Hour Mainline LOS
(AM and PM Peak Hour)

ID	Location	SB/WB No. of Lanes	NB/EB No. of Lanes	AM Peak Hour LOS	PM Peak Hour LOS
I-29/35 Corridor				**SB / NB**	**SB / NB**
1/2	I-29/35 Split to M-210/Armour Rd.	2 + auxiliary	2 + auxiliary	D / B	C / D
3/4	M-210/Armour Rd. to 16th Avenue	2	2	E / C	D / **F**
5/6	16th Avenue to Bedford Ave.	2	2	E / C	D / **F**
7/8	Levee Rd. to Front Street	2	2	E / D	D / **E**
9/10	Paseo Blvd. to US 24/Independence Ave.	2	2	D / D	D / C
11/12	I-29/35 to I-70	1	2	E / B	C / B
I-35/70 Corridor				**WB/EB**	**WB/EB**
13/14	US 24/Independence Ave. to WB I-70/I-29/35 NB	1	1	**F** / C	D / C
15/16	US 24/Independence Ave. exit to M-9 entrance	3	3	C / B	C / C
17/18	Main St. exit to Main St. entrance	3	3	D / C	C / C
19/20	Broadway exit to Broadway entrance	3	3	C / C	C / C
21/22	I-35/70 west of Broadway	2	2	B / B	C / A

Note: Level of service information based on *Highway Capacity Manual 2000*, Transportation Research Board.
ID's are linked to Figure I-4. **Shaded letters** indicate deficiency.
Source: HNTB Corporation, 2003.

Table I-10
I-29/35 Forecasted (2030) No-Build Peak Hour Mainline LOS

ID	Location	No-Build	
		AM LOS AM Volume	PM LOS PM Volume
I-29/35 Corridor		**SB/NB**	**SB/NB**
1/2	I-29/35 Split to M-210/Armour Rd.	D / B 4680 / 2130	C / E 3160 / 5630
3/4	M-210/Armour Rd. to 16th Ave.	**E/** C 4170 / 2580	E/ **F** 3250 / 4690
5/6	16th Ave. to Bedford Ave.	**F** / D 4420 / 2800	E / **F** 3450 / 4810
7/8	Levee Rd. to Front St.	**F** / D 4250 / 3110	E / **F** 3500 / 4530
9/10	Paseo Blvd. to US 24/Independence Ave.	E/ D 3650 / 3170	D / D 2690 / 2870
11/12	I-29/35 to I-70	E / B 1970 / 1680	D / B 1370 / 1670
I-35/70 Corridor		**WB / EB**	**WB / EB**
13/14	US 24/Independence Ave. to WB I-70/I-29/35 NB	**F** / D 2040 / 1490	E / C 1750 / 1200
15/16	US 24/Independence Ave. exit to M-9 entrance	D / B 3370 / 2040	C / C 2550 / 2960
17/18	Main St. exit to Main St. entrance	D / C 3520 / 2720	C / D 2830 / 3220
19/20	Broadway exit to Broadway entrance	D / D 3130 / 3150	D / C 3280 / 2760
21/22	I-35/70 west of Broadway	C / E 1690 / 3150	C / E 1860 / 2760

Note: Level of service information based on *Highway Capacity Manual 2000*, Transportation Research Board.
ID's are linked to Figure I-4. **Shaded letters** indicate deficiency.
Source: HNTB Corporation, 2003.

The existing mainline capacity does not adequately accommodate existing demand. The capacity of I-29/35 limits the volume of traffic that can move through the project corridor. Even without a change in corridor capacity, a small increase in the volume of traffic is projected to occur during the peak hours of travel. Because of a limited freeway capacity and high traffic demands, the peak congested travel periods would be expected to become longer.

Future LOS and traffic demand for the mainline sections of I-29/35 are given in Table I-10. The table shows mainline sections that are anticipated to have traffic operations that exceed LOS E or F by the year 2030. As the table indicates, the future No-Build scenario is expected to have LOS E or F conditions on 15 of the 40 (38 percent) study segments.

5. IMPROVE ACCESS TO KANSAS CITY CBD AND OTHER MAJOR ACTIVITY CENTERS

The current mix of land uses in the study corridor includes manufacturing, office, institutional, airport operation, parks and open space, and residential. The study corridor provides the link between land uses on each side of the Missouri River. The most land-intensive use north of the Missouri River is the KCI Airport. The highest density development in the Kansas City region is the CBD located at the southern end of the study corridor.

The CBD contains large office centers, government centers, cultural institutions and is the center of the metropolitan convention and tourism industry. New residential development has been constructed in the CBD adding an important component to the vitality of the area. The CBD has good access from the freeway loop and radial freeways. However, operational and capacity issues previously discussed are affecting this access.

North of the CBD Loop is the River Market area and the Columbus Park neighborhood. The River Market contains unique shopping, restaurants, a farmers market, the Steamboat Arabia attraction, offices and residences. Columbus Park is an established neighborhood with a multi-cultural heritage. Also in this area is Guinotte Manor, which is a public housing site. Previous highway projects such as the construction of I-70 and M-9 have reduced access and created physical barriers separating these locations.

Berkley Park, located along the Missouri River, is a site of city-wide festivals and events. Access to Berkley Park from I-29/35 is important to the use of this park. The Isle of Capri Casino that utilizes this interchange access is also located along the Missouri River adjacent to I-29/35/US 71. A new mixed-use development is slated for a 55-acre tract of land located directly south of Berkley Park. And additional in-fill residential and mixed-use development is anticipated in the River Market and Columbus Park neighborhoods. The Isle of Capri is planning an expansion of its existing facilities which include a new entrance, a 1,000-car garage addition, a new main entrance structure and interior renovations.

Industrial land uses are located along the study corridor on the north side of the Missouri River. This area is categorized by heavy industrial uses. Residential land uses are located north of M-210/Armour Road. M-210 is primarily a commercial corridor and the North Kansas City Hospital is also located along M-210/Armour Road. An improved facility is needed with flatter grades for truck acceleration/deceleration to and from I-29/35, as well as good access to medical facilities.

Residential and commercial development in the areas located north of the Missouri River have increased over the last decade leading to increased travel volumes and traffic congestion. Area growth is anticipated to continue and further increase the level of travel within the study corridor and reinforce the need to provide quality travel access to land use activities located both north and south of the Missouri River.

The proposed action will improve access to the CBD. In the downtown area, a number of recently completed land use studies, including the Downtown Land Use and Development Plan (City Plan) and the Downtown Corridor Development Strategy (SASAKI Plan) have identified the importance of access into the CBD. Specific major employment anchors identified include the convention center, a new downtown arena and entertainment district, and a new performing arts center located adjacent to the south side of the CBD Loop. Both of these plans support the idea of the downtown area as a destination with a primary focus on maintaining access to the CBD and less emphasis on moving traffic at high speed around the CBD Loop. These plans also promote improving connectivity between the River Market area and the CBD by examining ways to reduce the barrier between these two areas resulting from I-35/70 on the north side of the CBD Loop.

6. FACILITATE THE MOVEMENT OF TRUCKS

Interstate 29/35 connects the regional airport, rail and truck facilities. The Kansas City International Airport (KCI) is the major airport serving much of a four state area. KCI is located to the north of the project limits along I-29. KCI is a major passenger air terminal and is also a major air cargo airport.

In the Kansas City region, major industrial facilities are located along both sides of the Missouri River. Many of these are centrally located and have a primary freeway access to I-29/35. In addition, this area is served by rail and barges. Major rail facilities served by I-29/35 include rail switching yards and truck/rail or truck/barge intermodal terminals. Major industrial sites include the Northeast Industrial District and Blue Valley Industrial District. In addition, four major intermodal facilities can be accessed from the Front Street and M-210/Armour Road interchanges with I-29/35.

Interstate 29/35 serves a large number of truck movements. The volume and percentage of trucks along the study corridor are listed in Table I-11. Truck traffic utilizes I-29/35 as a major crossing point of the Missouri River because of its access to industrial sites and intermodal freight facilities.

Table I-11
Truck Traffic Percentages

Segment	Truck Percent
I-29/35, Paseo Bridge	10.0%
I-35/70, North Leg of Loop	10.6%
I-35/70, East Leg of Loop	10.6%

Source: MoDOT, District 4

The I-29/35 Study Corridor is part of the I-35 Trade Corridor that extends from Duluth, Minnesota to Laredo, Texas. A report entitled *I-35 Trade Corridor Study: Recommended Corridor Investment Strategies* investigated the entire 1,500 mile (2,500 kilometer) long route to assess the need for improvements to I-35 resulting from the North American Free Trade Agreement (NAFTA).

Since 1994, when NAFTA went into effect, the central section of the U.S. has become an increasingly important travel corridor for trade among the United States, Mexico and Canada. Interstate 35 is the only interstate highway serving these three nations through the central United States, and it carries a greater percentage of U.S. – Mexico trade than any other U.S. interstate highway.[2]

[2] Interstate 35 Trade Corridor Study: Recommended Corridor Investment Strategies, Texas DOT and I-35 Steering Committee, (1999), p. I-1.

The recommended investment strategy described in the study included improving the mobility of the corridor thereby developing a special roadway to serve as a "NAFTA Truckway". The recommended strategy included the following components:

- Widening of I-35 in critical locations
- Application of Intelligent Transportation Systems, including Commercial Vehicle Operations
- Urban congestion relief

C. Related Plans or Studies

1. RECOMMENDATIONS FROM THE NORTHLAND~DOWNTOWN MAJOR INVESTMENT STUDY (2002)

Through the metropolitan transportation planning process for the Kansas City area, the completed Northland~Downtown MIS defined the general concept and scope of the necessary multi-modal transportation investments to meet the transportation needs within the study corridor. In January 2002, following the recommendation of the Steering and Advisory Committees, the Total Transportation Policy Committee of MARC approved the preferred strategy recommendation for adoption into the updated long-range transportation plan.

A preferred improvement strategy for better transportation system linkage across the Missouri River was selected following an evaluation of various strategies. A combination of inter-modal transportation improvements was recommended as follows:

- ***Highway Recommendations***
  - *US 169/Downtown Connection –*
    - ✓ Construct 5th/6th Street and Broadway intersection improvements by the city of Kansas City and MoDOT.
    - ✓ Analyze improving the connection with direct flyover ramps between the Broadway Bridge and I-35 or the downtown street system.
  - *I-29 Corridor –*
    - ✓ Reconstruct and upgrade existing interchanges, with or without I-29 mainline improvements:
      - M-210/Armour Road Interchange
      - North Oak Trafficway Interchange
      - US 169 Interchange
      - Tiffany Springs Interchange
    - ✓ Widen and upgrade I-29/35 mainline lanes from US 169 to the Downtown Loop to generally provide an eight-lane section with auxiliary lanes as needed, including a new four-lane companion bridge to the I-29/35 Paseo Bridge.
    - ✓ Reconstruct and upgrade existing interchanges along with the I-29 mainline improvements:
      - Paseo Boulevard Interchange
      - Front Street Interchange
      - Levee Road Interchange
      - Bedford Avenue Interchange

- 16th Avenue Interchange
- Parvin Road Interchange
- I-35 Interchange
- Davidson Road Interchange
- Vivion Road Interchange

- *Downtown Loop Enhancements* –
  - ✓ Improve direct access into and out of downtown with new connections to the northeast corner (i.e., Charlotte and Harrison Frontage Roads).
  - ✓ Further consider enhancements to the north and south legs of the Loop, such as decking over the freeway and/or access management improvements.
  - ✓ Coordinate Loop enhancements with the I-70 Major Investment Study.
- *ITS Improvements* – Include variable-message signing on US 169/M-9 Corridors for travel route information as part of MoDOT and KDOT's joint Intelligent Transportation System Scout project.
- *Travel Demand Management Policies* – Implement MARC's regional transportation demand management policies and tools in the Northland~Downtown MIS Corridor.

- ***Bicycle/Pedestrian Recommendation***
  - *Missouri River Crossing* –
    - ✓ Include bike/pedestrian crossing on the existing Heart of America Bridge (short-term).
    - ✓ Construct new bike/pedestrian crossing in combination with the future fixed guideway transit bridge crossing.
  - *Access Across I-29* – Include provisions for pedestrian and bicycle access across I-29 as part of future interchange improvements (see Highway Recommendation).

- ***Transit Recommendations***
  - *Bus Service* – Expand existing bus service in the Northland including:
    - ✓ More frequent service on existing routes and new service on new routes.
    - ✓ Additional transit centers and park-and-ride lots.
    - ✓ Sufficient bus maintenance capacity to support new and expanded service.
  - *Fixed Guideway Transit (Light Rail or Bus Rapid Transit)* –
    - ✓ Implement an initial, first stage fixed guideway transit line from the vicinity of I-29 and US 169 to Downtown, where it would connect with one or more other lines to form a regional system. Further consideration would be given to the transit technology – LRT or BRT – and to candidate alignments and station locations. The transit line would utilize an exclusive Missouri River bridge located immediately east of the Heart of America bridge.
    - ✓ Continue planning for a future extension of fixed guideway transit along the Line Creek alignment to the KCI Airport.

- ✓ Update the City of Kansas City Major Street Plan to further indicate the conceptual fixed guideway alignment from Downtown to KCI and continue corridor preservation actions.

- *Joint Development Opportunities* – Consider space provisions for fixed guideway transit as part of the North Oak Trafficway Interchange, pedestrians, and park-and-ride lots.

2. I-70 MAJOR INVESTMENT STUDY

A major investment study for the I-70 Corridor was completed in 2004. The study corridor was defined to include I-70 from approximately the Missouri/Kansas state line eastward 28 miles to Oak Grove, Missouri. As such, it included a general examination of the CBD freeway loop.

The purpose of the project was…"to improve safety, accessibility and system efficiency, increasing modal choice, maintaining mobility, restoring and maintaining existing infrastructure and preserving or enhancing the built and natural environment."

As part of the MIS planning process, a no-build and four build strategy packages were developed and compared. The MIS strategy included a recommendation to reduce the number of access points and eliminate weaving sections in the CBD freeway loop. The recommendations are consistent with a number of concepts shown in the Northland~Downtown MIS and included example conceptual engineering concepts illustrating potential access modifications on the north, south and east sides of the CBD Loop. The I-70 MIS also included conceptual recommendations to improve traffic operation on the CBD freeway loop.

3. KANSAS CITY FOCUS

FOCUS (Forging Our Comprehensive Urban Strategy) is Kansas City's comprehensive land use plan. The approved plan for the Northland proposes to improve connections between activity centers for all modes of travel, encourage less auto-oriented development and higher densities to increase the potential for public transit. The plan also places a higher priority on infill development and discourages the continued sprawl to the north. The FOCUS plan highlights the importance of maintaining close ties between the Northland and Downtown.

4. SMART MOVES TRANSIT PLAN

Smart Moves is a proposed regional transit initiative of MARC, KCATA, Johnson County Transit and Unified Government Transit. The initiative promotes the construction of transit centers. It includes new types of service to meet transit needs in the seven county Kansas City region. A service called Rapid Rider (a service similar to BRT) was shown to operate from the CBD across the M-9/Heart of America Bridge into North Kansas City. Freeway express service, called Freeway Flyer, was shown to operate on both I-29 and I-35 and would utilize the section of I-29/35 south of M-210/Armour Road to access the CBD. Funding for this initiative is being explored.

5. METROGREEN

MetroGreen is a plan that identifies potential greenway corridors throughout the Kansas City metropolitan area. The plan proposes completion of a comprehensive system of greenways, trails and open spaces for auto-alternative travel. Initiated in 1991, implementation of MetroGreen would ultimately link residents to more than 1,400 miles of bicycle and pedestrian corridors. Within the I-29/35 Study Corridor, proposed greenways follow the levees on both sides of the Missouri River. As part of the Centennial Parkway, a greenway is planned to extend along the Paseo Boulevard from the south, up to US 24/Independence Avenue, then

east to Chestnut Trafficway and north to the Missouri River and the Chouteau Bridge Missouri River crossing. Other Metrogreen routes include Cliff Drive and 12th Street.

6. DOWNTOWN CORRIDOR DEVELOPMENT STRATEGY

This plan was prepared for the Civic Council of Greater Kansas City in 2001 and is being updated at this time. It identifies future development opportunities, open space amenities, new destinations, and connections between these places. It also identifies policies and strategies that are necessary to implement these recommendations.

7. DOWNTOWN LAND USE AND DEVELOPMENT PLAN

This plan was prepared for and adopted by the City of Kansas City, Missouri in 2003, and builds on previous plan recommendations and strategies identified for improving the downtown area. This plan consolidated these recommendations into a cohesive framework plan to guide the City's future land use decisions and prioritize capital improvement investments.

8. BROADWAY CORRIDOR ENHANCEMENT PROGRAM

This plan outlined specific recommendations for revitalizing the physical appearance of a 5-mile section of the Broadway Corridor that generally follows the US 169 Highway alignment from Briarcliff Parkway south over the Broadway Bridge and along the Broadway Boulevard alignment through Downtown Kansas City. Emphasis was placed on the important role this corridor serves as a gateway into Downtown and the Northland, and the need to beautify and enhance its appearance to reflect the surrounding context and the multi-modal transportation systems located adjacent to this corridor.

Several projects identified in this study have recently been implemented utilizing Federal transportation enhancement funds, including the construction of large "gateway" monuments at the M-9/US 169 Highway Interchange and at the 5th Street/Broadway intersection in Downtown Kansas City, construction of aesthetic lighting for the Broadway Bridge, and construction of landscape enhancements along the corridor directly across from the Wheeler Downtown Airport.

9. MISSOURI RIVER BRIDGE BEAUTIFICATION PROGRAM

This plan outlined specific design recommendations for beautifying and lighting five existing bridges over the Missouri River including the Broadway, Hannibal, ASB, Heart of America, and the Paseo Bridges. Three of these projects have recently been completed utilizing a combination of public and private funding. The Broadway and Heart of America Bridge lighting improvements were constructed using primarily Federal transportation enhancement funding. The Paseo Bridge lighting was constructed with private funding provided by the community. The purpose of the project was to highlight these civic assets, improve their physical appearance, and celebrate the important role these bridges play in connecting the greater Kansas City community.

10. 5th STREET/BROADWAY STUDY

The City of Kansas City, Missouri prepared a study describing short-term geometric improvements for the 5th Street/Broadway intersection.

D. Planned System Improvements

In the Kansas City metropolitan region, other projects are under construction or being planned that connect to the section of I-29/35 under study in this EIS. These projects are as follows:

- ***ITS Scout*** is a regional program led by MoDOT and KDOT to improve roadway efficiency and safety in and around the Kansas City region through implementation of intelligent transportation systems (ITS) technologies. This regional ITS program includes planned closed-circuit television camera locations along major freeway corridors, providing real-time video feeds to the Transportation Operations Center. Technology and systems improvements also include: motorist assist roadway patrols, real-time traffic information, toll-free traffic-information hotline, expanded direct media tie-in program, ramp metering, traffic sensors, and dynamic message boards.

- ***Rehabilitation of the I-29/35 Paseo Bridge over the Missouri River*** was completed in 2005. A *Bridge Evaluation Report* and *Inspection Report* of the I-29/35 Paseo Bridge completed in 2003 concluded that the I-29/35 Paseo Bridge was in sound structural condition and fully capable of carrying traffic for another 50 years, provided that certain rehabilitation and maintenance activities are performed. In the investigation, the consultant found no evidence that the bridge is substandard in its basic structural elements.

  A decision was made by MoDOT to complete rehabilitation activities for the I-29/35 Paseo Bridge that would extend the bridge's service for 10 to 15 years. At that time another major maintenance project would be needed to reconstruct the structural steel floor system to accommodate one direction of traffic, if the existing bridge is to remain in use, and to construct a new slab. The major tasks completed within the I-29/35 Paseo Bridge rehabilitation included minor repairs to the bridge deck, repainting the bridge, replacing deteriorated steel, wrapping the cables and replacing the permanent lighting system. The 2005 rehabilitation was awarded and has been completed for approximately $8 million. The project required a closure of the bridge in order for the rehabilitation to be completed. The decision to replace the bridge deck and other measures that would extend the bridge's service life an additional 35 years will be considered and compared to replacement options as part of this EIS.

- ***The Riverfront Heritage Trail*** is a bi-state eighteen mile long multi-use corridor of green spaces, pedestrian and bicycle paths now being constructed along the Missouri River. The trail will connect both Kansas City, Missouri and Kansas City, Kansas downtowns and adjacent areas like the River Market and City Market, Berkley Riverfront Park, West Bottoms and Kemper Arena, Westside and Southwest Boulevard, Union Station, Crown Center, and Penn Valley Park and Liberty Memorial with Armourdale, Strawberry Hill and Huron Park in Kansas City, Kansas.

  Also included is a pedestrian bridge linking the River Market area to the riverfront, the trail, and a new interpretive site showcasing Kansas City's first settlement. This trail is slated to be the centerpiece of *MetroGreen*, a metro-wide network of trails and greenways. In the vicinity of I-29/35, the trail has been constructed and follows the south bank of the Missouri River going under the existing I-29/35 Paseo Bridge. It is also identified with posted signs and sidewalk markers along 4th Street under the US 169/Broadway Bridge, and along Wyandotte Street over I-29/35.