

Interstate 70 Corridor Kansas City to St. Louis, Missouri

DRAFT First Tier Environmental Impact Statement


Submitted Pursuant to 42 U.S.C. 4332 (2)(c)
and 49 U.S.C. 303 by the

**U.S. Department of Transportation
Federal Highway Administration
and
Missouri Department of Transportation**

Cooperating Agencies
**Department of Army Corps of Engineers
United States Coast Guard**

7/30/01

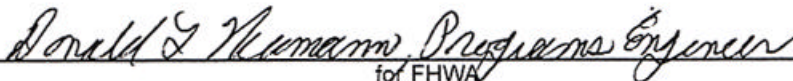
date of approval



for MoDOT

7/26/01

date of approval



for FHWA

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) are preparing to improve the Interstate 70 (I-70) Corridor in Missouri, between Kansas City and St. Louis, to meet the current and future needs of this highly important transportation facility. The I-70 Study Corridor is approximately ten (10) miles (16.1 km) wide (5 miles [8.0 km] either side of existing I-70) and is 199 miles (320.3 km) in length.

The following persons may be contacted for additional information concerning this document:

Mr. Don Neumann
Programs Coordinator
Federal Highway Administration
209 Adams Street
Jefferson City, MO 65102
(573)638-2620

Mr. Kevin Keith
Chief Engineer
Missouri Dept. of Transportation
P.O. Box 270
Jefferson City, MO 65102
(573)751-4606

Comments on this First Tier Draft EIS are due by **September 25, 2001**, and should be sent to the persons listed above.

SUMMARY

The Missouri Department of Transportation and the Federal Highway Administration are proposing to construct improvements to Interstate 70 between the metropolitan areas of Kansas City and St. Louis to meet the current and future transportation-related needs of this corridor. In compliance with the National Environmental Policy Act, this first tier environmental impact statement has been prepared to aid in determining the most appropriate type of improvement concept for I-70. This section presents a summary of the initial improvement strategies considered, the recommended preferred strategy and its various features, and a summary of issues needing further study and consideration. This summary also identifies necessary steps in the tiered process and the general scope of the second tier studies to follow.

A. Description of I-70 Improvements

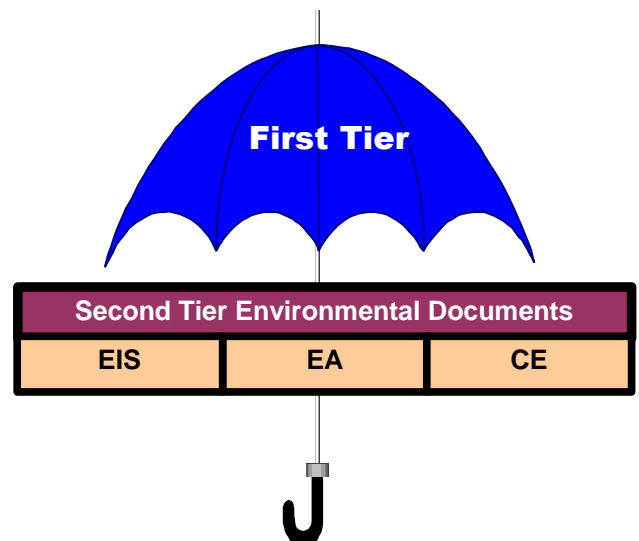
In Missouri, I-70 is a multi-lane, divided and fully access-controlled interstate. The proposed action seeks the most effective approach to improving I-70 in Missouri, including the development of alternative strategies, which will meet the future needs of this corridor. The study corridor has been generally defined as a 10-mile-wide band centered on I-70. Termini for the corridor consist of connections to the interstate highway systems of the respective metropolitan areas. In the Kansas City area, this logical connection would be the I-470 interchange (Exit 15). The eastern terminus would be a system connection to the existing or planned highway system including possibly I-64 (currently US 40 and US 61), Route 370 or I-70 near Lake St. Louis where the existing four-lane to six-lane transition occurs. The I-70 Study Corridor is shown in Exhibit 1.

B. Tiered Environmental Process

Tiering refers to addressing broad programs and issues in initial analyses, and analyzing more specific proposals and impacts in subsequent second tier studies. The tiered process enables a decision-making process that focuses on issues that are ripe for decision and reduces repetition in environmental documentation. First tier decisions frame and narrow the scope of second tier studies and related decisions.

One way to imagine the tiered process is as an umbrella. In this study, the umbrella extends approximately 200 miles (321.9 km) from Kansas City to St. Louis and represents the overall improvement strategy.

The umbrella covers all subsequent detailed project level studies of shorter sections, which may take the form of environmental impact statements, environmental assessments or categorical exclusions. The I-70 first tier study broadly analyzes the 200-mile (321.9 km) I-70 corridor. The second tier studies will analyze shorter sections but to greater detail. Second tier studies result in traditional project level environmental documents such as EISs, EAs or CEs.

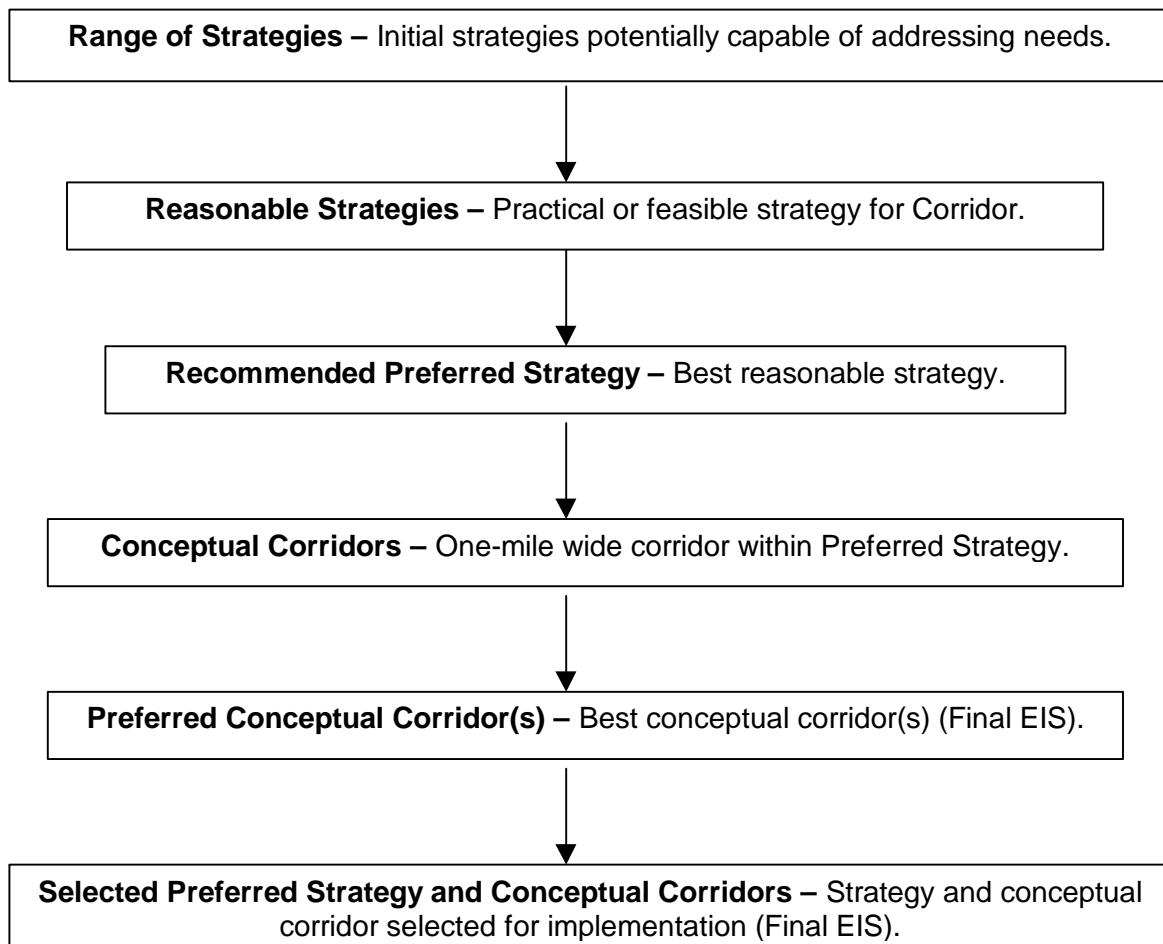


C. I-70 First Tier Approach

The first tier EIS will produce the following outcomes:

- **Approval of general concept** (i.e., preferred strategy) for improving I-70, including a prioritization plan for the corridor.
- Identification of the **Sections of Independent Utility** for the second tier studies, including an action plan for the completion of the environmental process.
- **Documentation** that can be referenced by second tier studies to eliminate repetitiveness and record the first tier decision.
- Development of **agency and public consensus** for the overall improvement plan.

Exhibit 2 shows the process of developing public/agency consensus through progressively more detailed identification of engineering and environmental impacts of improvement strategies. Definitions of the improvement strategies, in ascending level of detail, utilized by this study include:



D. Purpose and Need for I-70 Improvements

The goal of I-70 improvements is to provide a safe, efficient, environmentally sound and cost-effective transportation facility that responds to corridor needs as well as the expectations of a national interstate. The project's purpose and need can be summarized as follows:

Purpose and Need Statement



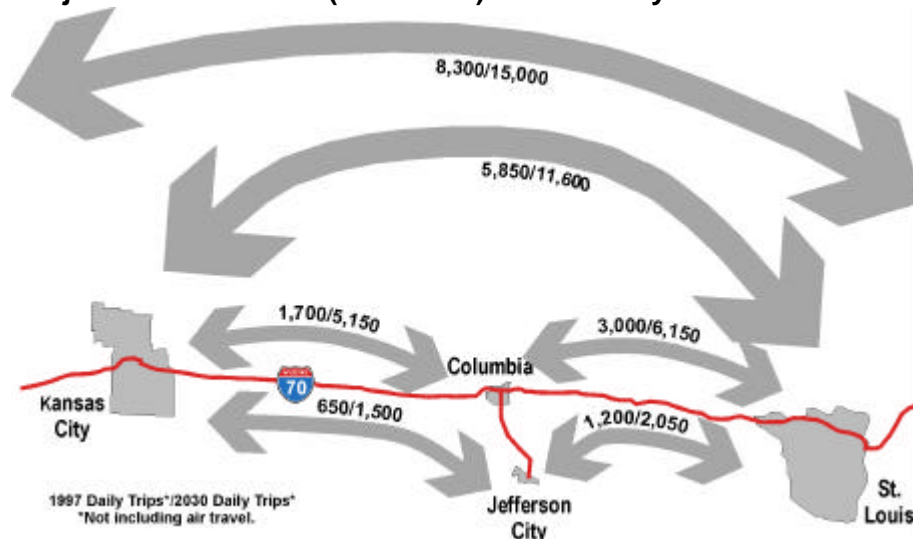
- **Roadway Capacity** – Increase roadway system capacity in accordance with the projected travel demands to improve the general operating conditions of I-70.
- **Traffic Safety** – Reduce the number and severity of traffic-related accidents occurring along I-70 between Kansas City and St. Louis.
- **Roadway Design Features** – Upgrade current roadway design features along I-70, including interchanges, roadway alignment and roadway cross sections.
- **System Preservation** – Preserve the existing I-70 facility through continued and ongoing rehabilitation and maintenance activities of pavement and bridges.
- **Goods Movement** – Improve the efficiency of freight movements using the I-70 corridor.
- **Access to Recreational Facilities** – Facilitate the usage by motorists of nearby regional recreational facilities through improved accessibility.

E. Summary of Initial Improvement Strategies

a. Study Corridor Travel Characteristics

A review of the corridor's travel markets was performed. By knowing the general travel patterns and forecasted growth markets, causes of transportation-related problems can be identified and the ability of improvement concepts to serve the current and emerging travel markets can be tested. Figure 1 shows the major travel patterns within the corridor.

Figure 1: Major Travel Patterns (1997/2030) in I-70 Study Corridor



I-70 is a major east-west route that accommodates a significant volume of daily truck traffic. Commodities are moved into, out of, and through the state at a growing rate, and trucks and passenger vehicles share available roadway capacity. Freight movement encompasses all modes of transportation. Each mode available for the movement of goods, specifically rail, air, and water, have a market niche that in some ways compete with trucking but are not able to totally meet the need for over-road transport and delivery of products.

The primary mode of transportation used to move outbound goods from Missouri is rail (40.9 percent), followed closely by trucks, which account for 38 percent of the goods shipped out of Missouri. Trucks account for a similar percentage of inward bound freight (35.2 percent). Due to the market-driven nature of the freight transportation system and the constraints of the various modes, it is not anticipated that a measurable shift of freight from trucks to other modes could be reasonably accomplished to positively affect the overall travel demands on I-70.

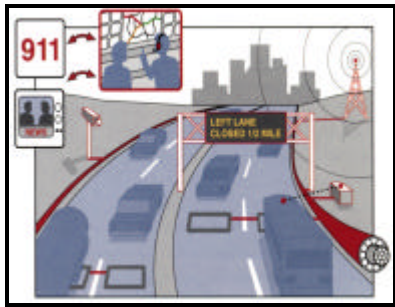
b. Summary of Initial Improvement Strategies

In compliance with federal regulations requiring the consideration of all reasonable strategies, a full set of improvement concepts was considered for the I-70 Study Corridor. Based on the understanding of the current and projected transportation needs of the corridor, as defined in the purpose and need statement, the following initial strategies were identified for potential application to the I-70 corridor. Initially, four-lane improvements to US 36 and US 50, which parallel I-70 across the state, were considered as a surrogate to improving I-70. These alternate routes would not solve the problems on I-70 but were included in the base condition.



Strategy No. 1 (“No-Build”)

Preserve the existing I-70 freeway by completing rehabilitation and performing ongoing maintenance without adding new lanes or capacity.



Strategy No. 2 (Transportation System and Demand Management)

Manage the demand and volume of traffic on I-70 through such programs as park-and-ride lots, variable message signs and other traveler information tools and intelligent transportation systems.



Strategy No. 3 (Widen Existing I-70)

Improve existing I-70 by adding lanes and reconstructing the existing roadway to enhance safety and performance, including improved access management.

**Strategy No. 4 (New Parallel Facility)**

Build a new parallel four-lane freeway or truckway close to and parallel with I-70, and improve access management at existing I-70 interchanges.

**Strategy No. 5 (New Parallel Toll Road)**

Build a new four-lane parallel toll road close to and parallel with I-70, and improve access management at existing I-70 interchanges.

**Strategy No. 6 (High-Occupancy Vehicle Lanes)**

Improve performance of I-70 through special new lanes reserved for high-occupancy or multi-person vehicles.

**Strategy No. 7 (High-Speed Passenger Rail)**

Use high-speed passenger rail between Kansas City and St. Louis to alleviate some of the traffic pressure on I-70.

c. Reasonable Strategies

An initial screening was conducted to identify those strategies that could be reasonably applied to the corridor (see Table 1). This process entailed evaluating the ability of each strategy to meet the corridor needs (i.e., purpose and need), in coordination with public and agency input.

Several strategies would clearly not be able to solve the problems of the study corridor as standalone improvements, but are worthy of further consideration.

- The No-Build Strategy was carried forward as a comparison for other strategies.
- TSM/TDM would adequately enhance operations only if combined with other improvements.
- High-speed passenger rail would provide benefits, due to the conversion of highway traffic to an alternative mode. However, like TSM/TDM, high-speed rail alone would not improve daily, recurring congestion experienced in the corridor.

- The High-Occupancy Vehicle Lanes Strategy would not improve operations due to the highly dispersed nature of the origination and destination points for daily I-70 travel.

Table 1: Initial Strategy Screening

	Roadway Capacity	Traffic Safety	Roadway Design Features	System Preservation	Move Goods Efficiently	Access to Recreation Facilities
Strategy No. 1 No-Build				✓		
Strategy No. 2 TSM/TDM		✓ ²		✓	✓ ³	
Strategy No. 3 I-70 Widening	✓	✓	✓	✓	✓	✓
Strategy No. 4 New Parallel Facility	✓	✓	✓	✓	✓	✓
Strategy No. 5 New Parallel Toll Road	✓	✓	✓	✓	✓	✓
Strategy No. 6 HOV Lanes				✓		
Strategy No. 7 High Speed Rail	✓ ¹			✓		

NOTES:

- ① Expansion of existing rail service between Kansas City and St. Louis could increase daily ridership to 2,600 persons in 2030.
- ② Improvements could be implemented in localized areas to reduce accidents.
- ③ Weigh-in-Motion scales and commercial vehicle operations (CVO) measures could improve truck efficiencies.

Table 2 identifies strategies recommended for more detailed evaluation.

Table 2: Recommended Reasonable Strategies

Strategy	Carry Strategy Forward for More Detailed Evaluation (Reasonable Strategies)	Eliminate Strategy from Further Consideration as Standalone Strategy
Strategy No. 1 (No-Build)	✓	
Strategy No. 2 (TSM/TDM)		✓
Strategy No. 3 (Widen Existing I-70)	✓	
Strategy No. 4 (New Parallel Facility)	✓	
Strategy No. 5 (New Parallel Toll Road)	✓	
Strategy No. 6 (HOV Lanes)		✓
Strategy No. 7 (High-Speed Rail)		✓







F. Summary of Major Impacts of Reasonable Strategies

An overall comparison of the engineering and traffic characteristics of each reasonable strategy was performed based on more detailed definition and assessment of their transportation impacts. This evaluation was performed in concert with a general assessment of the environmental and socio-economic impacts of each strategy as presented in Chapter IV – Environmental Consequences. Exhibit 3 summarizes evaluation factors reflecting engineering, traffic, environmental and social and economic issues that were assessed and quantified for each of the reasonable strategies.

a. Effectiveness in Accomplishing Purpose and Need

Table 3 presents a summary of the effectiveness of the reasonable strategies in accomplishing the Purpose and Need.

Table 3: Purpose and Need Summary for Reasonable Strategies

Purpose and Need	Reasonable Strategies		
	Strategy No. 3 (Widen Existing I-70)	Strategy No. 4 (New Parallel Facility)	Strategy No. 5 (New Parallel Toll Road)
	<ul style="list-style-type: none"> ✓ Provides new capacity as warranted based on future travel demands. ✓ Provides ability to add additional capacity in the future as travel demands continue to grow. ✓ Includes provisions for future transportation improvements within the median area. 	<ul style="list-style-type: none"> ✓ Provides a total of eight lanes, thereby providing greater long-term capacity. ✓ Includes provisions for future transportation improvements within the median area. ✓ Additional system capacity via passenger rail within the median could be added more readily due to superior compatibility with criteria – milder grades and curves. 	<ul style="list-style-type: none"> ✓ Provides a total of eight lanes, thereby providing greater long-term capacity. ✓ Includes provisions for future transportation improvements within the median area. ✓ Additional system capacity via passenger rail within the median could be added more readily due to superior compatibility with criteria – milder grades and curves.
	<ul style="list-style-type: none"> ✓ Would enhance the safety of the I-70 roadway system. ✓ All I-70 traffic, interstate and locally oriented travel, would realize the same accident enhancements. 	<ul style="list-style-type: none"> ✓ Would enhance the safety of the I-70 roadway system, but primarily on the new route. ✓ Would provide the best overall accident rate improvement due to the new parallel highway construction and its superior safety features. ✓ The degree of overall safety improvement depends on the amount of diverted traffic to the parallel route. ✓ Emergency access to new route would need to be addressed. 	<ul style="list-style-type: none"> ✓ Would enhance the safety of the I-70 roadway system, but primarily on the new route. ✓ Would provide the best overall accident rate improvement due to the new parallel highway construction and its superior safety features. ✓ Would provide less reduction in accidents due to lower diversion of traffic to new route. ✓ Emergency access to new route would need to be addressed.
	<ul style="list-style-type: none"> ✓ Would replace the existing I-70 roadway, in its entirety, with a new configuration that would meet current standards for freeway construction. 	<ul style="list-style-type: none"> ✓ Additional construction would be necessary to upgrade the existing facility I-70. 	<ul style="list-style-type: none"> ✓ Additional construction would be necessary to upgrade the existing facility I-70.
	<ul style="list-style-type: none"> ✓ Would solely replace the existing I-70 infrastructure in its entirety. ✓ Would best provide for the preservation of the existing corridor beyond 2030. 	<ul style="list-style-type: none"> ✓ An additional bridge and replacement program would be necessary to preserve the existing I-70 infrastructure. ✓ Adds more freeway lanes and right-of-way to maintain. 	<ul style="list-style-type: none"> ✓ An additional bridge and replacement program would be necessary to preserve the existing I-70 infrastructure. ✓ Adds more freeway lanes and right-of-way to maintain. ✓ Requires additional operation costs for toll collection.
	<ul style="list-style-type: none"> ✓ Would improve the efficiency of freight movements. ✓ Operational options include prohibiting trucks from inside lane. 	<ul style="list-style-type: none"> ✓ Would improve the efficiency of freight movements. ✓ Could provide the best service to trucks with higher speeds. 	<ul style="list-style-type: none"> ✓ Would improve the efficiency of freight movements. ✓ Degree of improved service to trucks would depend on diverted truck volumes, estimated at around 20 to 30 percent.
	<ul style="list-style-type: none"> ✓ Would equally provide improved access to recreational facilities. 	<ul style="list-style-type: none"> ✓ Would equally provide improved access to recreational facilities. 	<ul style="list-style-type: none"> ✓ Would equally provide improved access to recreational facilities.

b. Comparison of Overall Benefits and Impacts

Each of the strategies would have varying degrees of adverse impacts and benefits. On a number of the impact issues, none of the strategies differentiate themselves (see Exhibit 3). However, for each of the major evaluation factors, there are distinguishing factors or issues, summarized in Table 4, which support the identification of a preferred strategy.

Table 4: Summary of Issues for Reasonable Strategies

Major Categories (Evaluation Factors)	Distinguishing Factors or Issues
Engineering	<ul style="list-style-type: none"> ✓ Capital Cost (Order of Magnitude) – Relocation strategies would be approximately 10% to 15% less expensive. However, this would depend on the extent of access management accomplished at the existing I-70 interchanges. ✓ Annual O&M and Preservation Costs – Widen Existing I-70 Strategy would save approximately \$22M per year over the relocation strategies (\$302M from 2001 to 2030). ✓ Implementation – The Widen Existing I-70 Strategy would be the most flexible and responsive strategy for addressing the immediate and growing needs of the corridor as they become evident. ✓ Constructability – Relocation strategies would not impact existing I-70 traffic operations during construction.
Traffic	<ul style="list-style-type: none"> ✓ Change in Travel Time (2030) – Relocation strategies would reduce corridor travel times an additional 20 minutes or so over the Widen Existing I-70 Strategy. (Additional travel time savings along the corridor would be due to higher operating speed assumptions with the parallel route strategies.) ✓ Incident Management – The relocation strategies would provide superior alternative routing for incident management for long-distance travel.
Environmental	<ul style="list-style-type: none"> ✓ Natural Resources Impacts – The relocation strategies would directly impact roughly seven times the amount of forests, five times the amount of wetlands and two to three times the amount of farmland as the Widen Existing Strategy. ✓ Secondary and Cumulative Impacts – The Widen Existing I-70 Strategy would expand a corridor where impacts to the natural environment have already occurred and the relatively magnitude of new impacts would be less measurable.
Social and Economic	<ul style="list-style-type: none"> ✓ Impacts to Existing Structures – It is estimated that up to 120 to 150 displacements would occur in the rural interchange areas with the Widen Existing I-70 Strategy. However, the majority of these same displacements would occur with the relocation strategies due to access management upgrades along the existing I-70 roadway. ✓ Impacts to I-70 Business Operations – Widen Existing I-70 Strategy would impact adjacent businesses temporarily during construction. ✓ Cost-Effectiveness – New Parallel Toll Road Strategy would not be solely financially feasible.

c. Public and Agency Participation and Comment


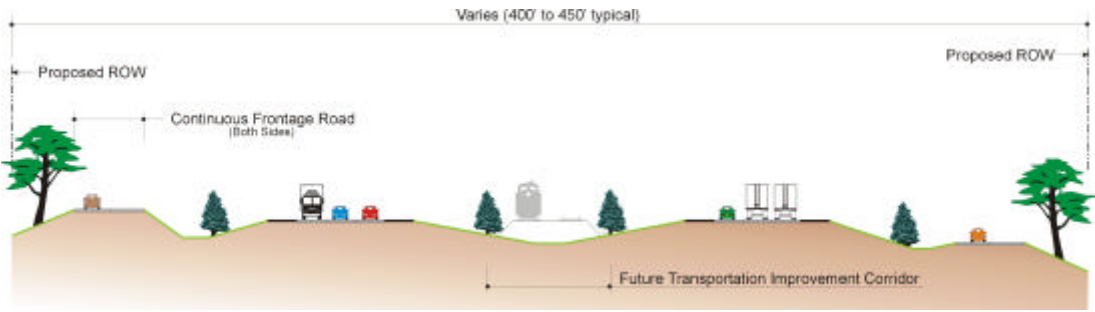
Two general messages may be drawn from public involvement:

- **Concern for Safety** - The clearest message is that the experience of driving on I-70 elicits strong concerns from Missourians. Missourians are uniformly concerned for their safety when traveling on I-70.
- **Improvement Strategy Preference** – The preponderance of public input suggests a preference for widening the existing I-70. In general, the public expressed a higher degree of opposition to building a new parallel facility.

G. Recommended Preferred Strategy

Strategy No. 3 (Widen Existing I-70) is the recommended preferred strategy. This strategy is recommended for the following reasons:

- Meets the long-term travel and safety needs for the corridor.
- Responds to public concerns.
- Replaces existing I-70 pavement.
- Lower annual maintenance.
- Reinvests in existing system.
- Buildable in usable increments.
- Incorporates management type improvements such as ITS.
- Improved incident management.

Recommended Preferred Strategy:	Characteristics and Issues:
<p>Strategy No. 3 (Widen Existing I-70)</p>  <p><i>"Rebuild and reconstruct existing I-70 on its current alignment"</i></p>	<ul style="list-style-type: none"> • Urban area options (local relocations): <ul style="list-style-type: none"> ✓ Columbia ✓ Warrenton/Wright City/Wentzville • Rural area options: <ul style="list-style-type: none"> ✓ Widening to the north or south • Interchanges: <ul style="list-style-type: none"> ✓ Access management ✓ Relocations/displacements • Special study areas: <ul style="list-style-type: none"> ✓ Overton Bottoms ✓ Mineola Hill • ITS implementation • Maintenance of traffic
 <p>Features of a Modern I-70:</p> <ul style="list-style-type: none"> • Expanded right-of-way, typically 400 to 500 feet wide. • Six lanes in rural areas (roughly 80 percent of corridor). • Eight to ten lanes in urban areas (roughly 20 percent of corridor). • Future Transportation Improvement Corridor (in rural areas only). • Improved interchanges with enhanced access management. • A corridor plan for environmental enhancements. • Continuous frontage roads on both sides. 	

H. Features of Preferred Strategy

a. Roadway Characteristics

As part of the evaluation of the reasonable strategies, several optional means of adding lanes to I-70 were identified. Through a review of the benefits of each of these options, recommended roadway design standards were identified. Figures 4 through 6 show the standards for the typical rural widening, urban widening and local relocation applications.

Figure 4: Rural I-70 Widening Typical Section

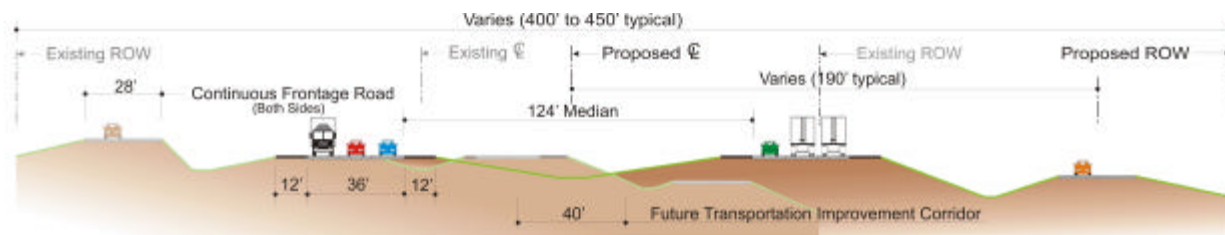


Figure 5: Local I-70 Relocation Typical Section

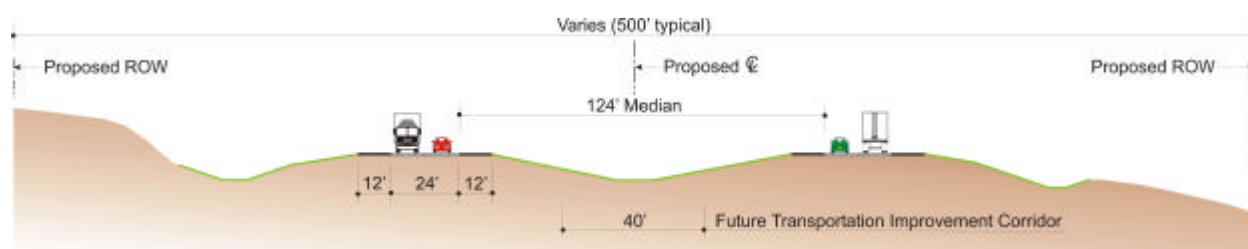
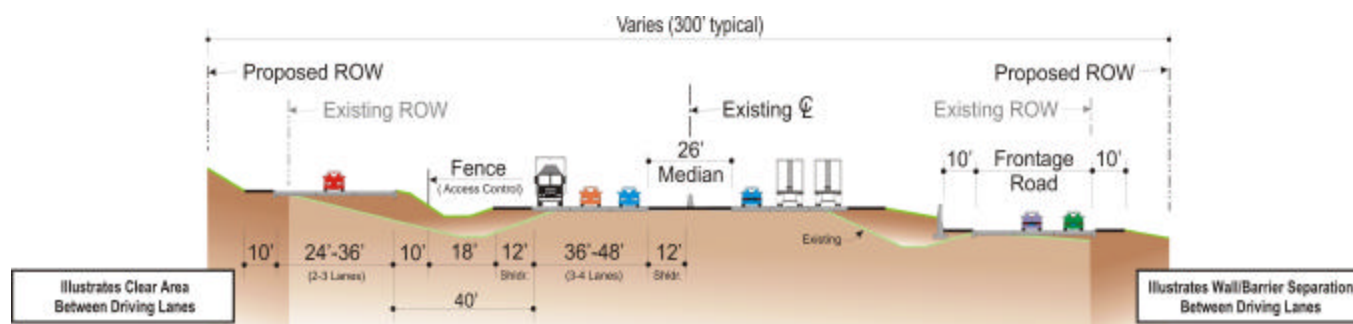


Figure 6: Urban I-70 Widening With Frontage Roads Typical Section

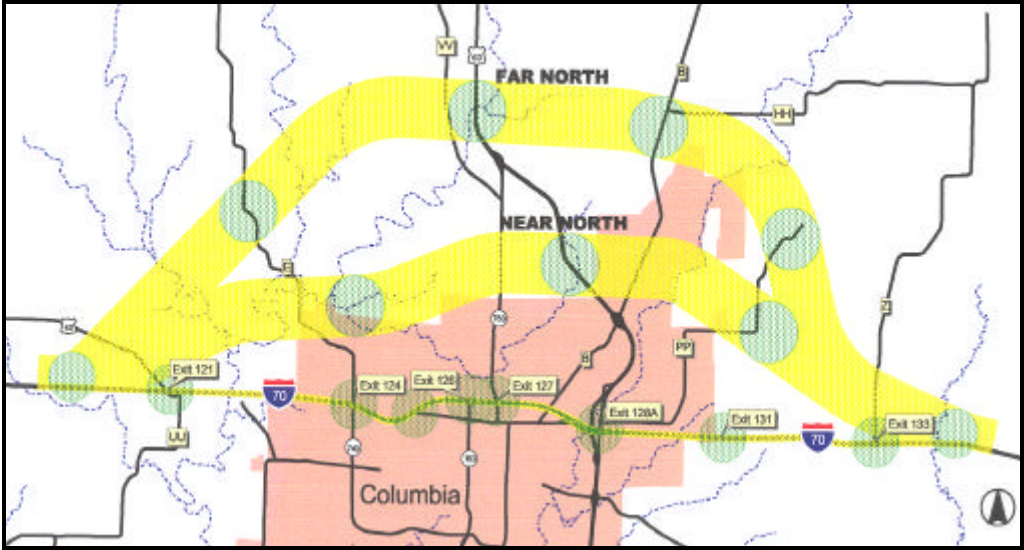


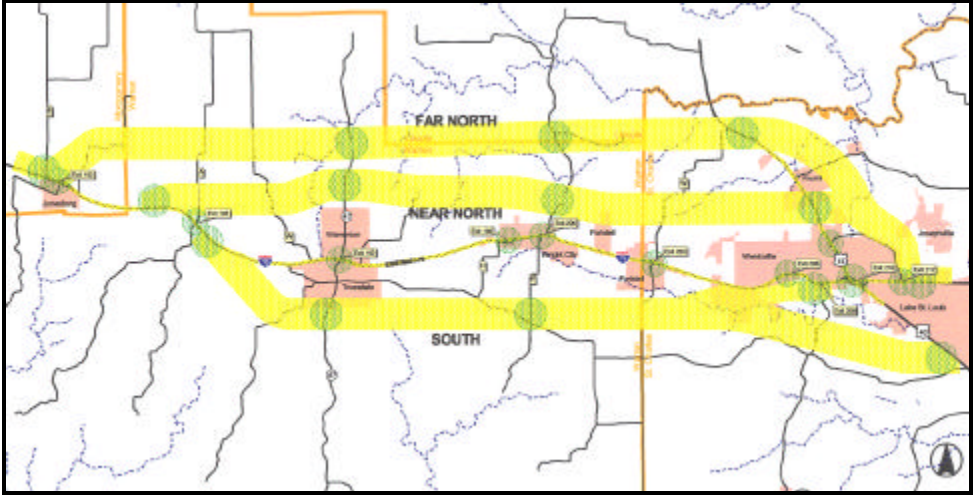
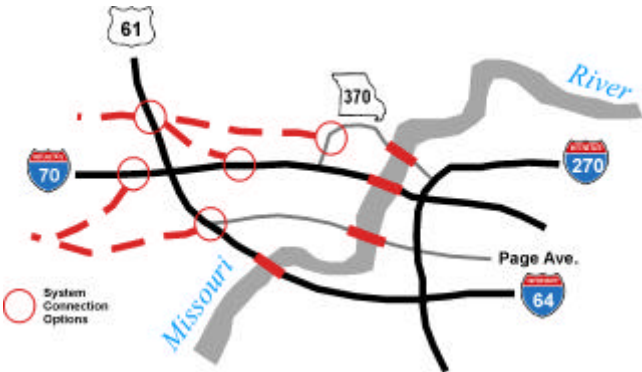
The study corridor can be divided into five distinct areas according to the nature of the existing roadway section and the adjoining land use and development. Table 5 summarizes these five areas. Figure 7 presents improvement recommendations and options for each of these areas.

Table 5: Limits of Urban and Rural Areas within Study Corridor

Name of Area	General Type of Roadway	Begin Location (Exit No.)	End Location (Exit No.)	Approx. Length (Miles)
Kansas City	Urban	I-470 (Exit 15) – Western Terminus	Grain Valley (Exit 24)	9
Rural (West)	Rural	Grain Valley (Exit 24)	Rocheport (Exit 115)	91
Columbia	Urban	Rocheport (Exit 115)	Route Z (Exit 133)	18
Rural (East)	Rural	Route Z (Exit 133)	Jonesburg (Exit 188)	55
Warrenton/Wright City/Wentzville	Urban	Jonesburg (Exit 188)	Lake St. Louis (Exit 214) Eastern Terminus	26

Figure 7: Summary of Features for the Widen Existing I-70 Strategy

Kansas City Area	<p>Relocation Options: None.</p> <p>Type of Widening: Urban (Figure 6).</p> <p>No. of Lanes: Eight through lanes with auxiliary lanes between Woods Chapel (Exit No. 18) to I-470 (Exit No. 15).</p> <p>Widening Configuration: Centered along existing I-70 alignment, but shifts of centerline either slightly north or south may be identified through more detailed investigation as part of the second tier studies. (See Exhibit 4.)</p> <p>Termini: I-470 (Exit No. 18) to Grain Valley (Exit No. 24).</p> <p>Comments: The western end of the improvements would tie into I-470. At a minimum, six-lane widening would be necessary from the existing four- to six-lane transition at Route 7. Capacity improvements beyond the six-lane widening would be subject to the ongoing I-70 Major Investment Study – a study currently being conducted by MoDOT for I-70 within the Kansas City Metropolitan Area. The eastern end would transition from an urban section to a rural section just east of Grain Valley. Continued coordination with the Mid-America Regional Council (MARC) is needed as part of the second tier study.</p>
Rural (West) Area	<p>Relocation Options: None.</p> <p>Type of Widening: Rural (Figure 4).</p> <p>No. of Lanes: Six lanes.</p> <p>Widening Configuration: Widen to the north or south as per Exhibit 4.</p> <p>Termini: Grain Valley (Exit No. 24) to Rocheport (Exit No. 115).</p> <p>Comments: Relocation options were considered in the vicinity of Overton Bottoms (i.e., Missouri River crossing) but the preferred conceptual corridor consists of widening along the existing I-70 alignment. Continued coordination with MARC would be needed for those areas in the metropolitan planning boundary.</p>
Columbia Area	<p>Relocation Options:</p>  <ul style="list-style-type: none"> • Far North Conceptual Corridor • Near North Conceptual Corridor • Existing Conceptual Corridor <p>Type of Widening: Rural (Figure 4) west and east of Columbia and Urban (Figure 6) or Local Relocation (Figure 5) through Columbia.</p> <p>No. of Lanes: Six lanes in rural sections. Six lanes plus two-lane frontage roads in Columbia (Existing Conceptual Corridor) or four-lane relocation (Far North or Near North Conceptual Corridor).</p> <p>Widening Configuration: Rural widening to the north or south per Exhibit 4. For the Existing Conceptual Corridor, widening would be centered along the existing I-70 alignment, but shifts of the centerline either to the north or south may be identified through more detailed investigation as part of the second tier studies.</p> <p>Termini: Rocheport (Exit No. 115) to Route Z (Exit No. 133).</p> <p>Comments: The Far North Conceptual Corridor would not attract sufficient traffic due to out-of-distance travel. This option may not be considered further as part of the Second Tier Study for this area. With the Near North Conceptual Corridor, improvements to the existing I-70 roadway would be needed. Continued coordination with the Columbia Area Transportation Study Organization (CATSO) is needed as part of the second tier study.</p>

Rural (East) Area	<p>Relocation Options: None except for the Mineola Hill Area.</p> <p>Type of Widening: Rural (Figure 4).</p> <p>No. of Lanes: Six lanes.</p> <p>Widening Configuration: Widen to the north or south as per Exhibit 4.</p> <p>Termini: Route Z (Exit No. 133) to Jonesburg (Exit No. 188).</p> <p>Comments: Relocation options have been identified near Mineola Hill to avoid impacts to adjacent environmental and cultural resources, if necessary. Further study of these relocation options at Mineola Hill would need to be considered as part of the second tier studies for this area.</p>
Warrenton/Wright City/Wentzville Area	<p>Relocation Options:</p>  <ul style="list-style-type: none"> • Far North Conceptual Corridor • Near North Conceptual Corridor • Existing Conceptual Corridor • South Conceptual Corridor <p>Type of Widening: Rural (Figure 4) west of Warrenton (Exit No. 193) and Urban (Figure 6) or Local Relocation (Figure 5) through Warrenton, Wright City and Wentzville.</p> <p>No. of Lanes: Six lanes in rural section. For Existing Conceptual Corridor, eight lanes from Warrenton (Exit No. 193) to Route Z (Exit No. 209) and ten lanes from Route Z to the east. Four-lane relocation.</p> <p>Widening Configuration: Rural widening to the north or south per Exhibit 4. For the Existing Conceptual Corridor, widening would be centered along the existing I-70 alignment, but shifts of the centerline either to the north or south may be identified through more detailed investigation as part of the second tier studies.</p> <p>Termini: Jonesburg (Exit No. 188) to connection to St. Louis highway system. Optional eastern connections include US 61 or I-70 near Lake St. Louis. A connection to Route 370 would not attract additional traffic. The I-70 improvements would need to extend to the existing four-lane to six-lane transition near Lake St. Louis.</p>  <p>Comments: The Far North and Near North Conceptual Corridor would not attract enough traffic, due to out-of-distance travel, to offer sufficient travel benefits over the Existing Conceptual Corridor to warrant further consideration. These options should not be considered further as part of the Second Tier Study for this area. With the South Conceptual Corridor, improvements to the existing I-70 roadway would be needed. Continued coordination with the East-West Gateway Coordinating Council (EWGCC) is needed as part of the second tier study.</p>

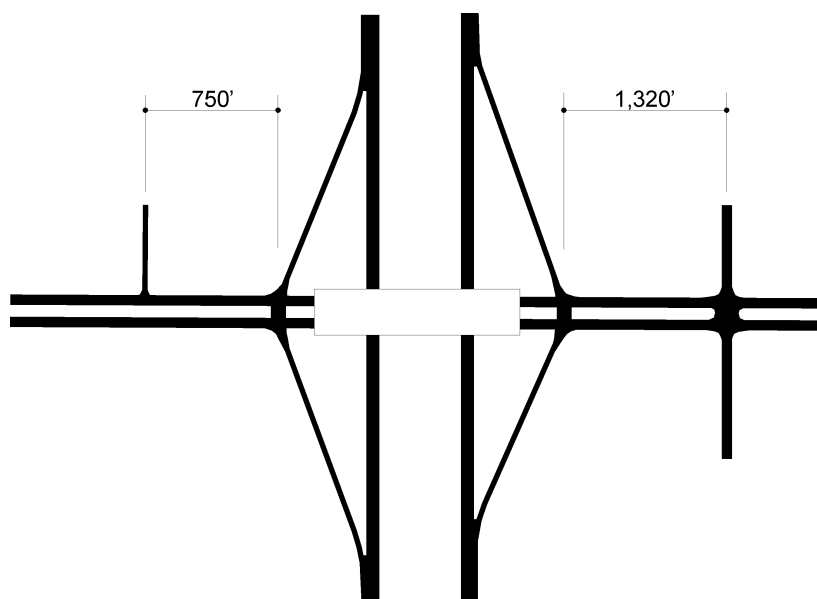
b. Access Management

Access management involves the thoughtful planning and design of points of access to the public roadway system to maximize the efficiency and safety of the roadway. Sound application of access management can have a significant beneficial impact on safety and the ability of a roadway to successfully carry traffic. MoDOT's goals in implementing a comprehensive set of standards for access management include the following:

- Improved roadway safety.
- Improved traffic operations.
- Protection of past investments in the roadway system.
- Creation of better conditions for non-automobile modes of transportation.

Due to the widening of the roadway associated with the Widen Existing I-70 Strategy, all interchanges would need to be reconstructed. To the extent possible, all interchanges would be reconstructed in accordance with MoDOT's access management guidelines. Conceptual layouts of possible interchange improvements have been completed for a representative set of rural interchanges. As a representation of the types of interchange concepts likely to be implemented with the Widen I-70 Strategy, this set of typical rural interchanges was identified to better characterize the types and magnitude of potential impacts at the interchange locations. These layouts are in concept only and are subject to change and further refinement through the second tier studies and subsequent design development.

Figure 8: Typical Access Management Improvements for I-70 Interchanges



c. Maintenance of Traffic

Maintenance of traffic during construction is a significant issue. This issue has been one of the more influential considerations in the recommended typical section for the roadway widening. Given the magnitude of the construction costs for the I-70 improvements and the other competing priorities within the state, the potential exists for construction to extend through a number of years. It was therefore essential that this issue be considered appropriately in the determination of the best type and location of the I-70 improvements.

MoDOT intends to maintain the existing four lanes along I-70 during the construction of the improvements. These existing lanes should be maintained with limited interference from adjacent construction zones.

Improvements would be staged or phased to limit the amount of detouring of through traffic. Shifting the existing I-70 centerline a sufficient distance to either the north or south would provide the ability to construct three of the six new lanes without impacting the existing I-70 roadway. The limited extent of alignment adjustments would also promote the avoidance of the existing lanes during construction. Therefore, for the most part, the I-70 mainline improvements would be constructed without interfering with the existing travel lanes.

Highlights of the maintenance of traffic plan for the study corridor include:

- **Interchanges** – Detouring of crossroad and turning traffic would be necessary at each interchange during construction. Temporary ramp connections to the I-70 mainline would be necessary during each mainline construction phases. As an option, depending on the circumstances of the individual interchange, it may be advantageous to close the interchange during construction to accelerate the construction process.
- **Mineola Hill** – Due to the tight physical constraints of this area, special staging of construction would likely be required to avoid the adjacent resources. Mainline detouring would likely be necessary. Additional construction staging investigations need to be performed through this area during the second tier studies.
- **Urban Areas** - In the urban areas of the study corridor, maintenance of traffic during construction would be measurably more difficult. The separation of construction areas from the existing road would not be possible. Construction would need to be staged with possible detouring and temporary construction provisions. Additional investigations of this issue need to be performed in the second tier studies in the urban areas.
- **Workzone Management** - Advanced workzone strategies should be used for traffic management throughout the course of construction activities. Portable ITS technologies would aid in advanced warning and monitoring of work zone conditions.

Figure 9: Existing Condition Maintenance of Traffic Plan

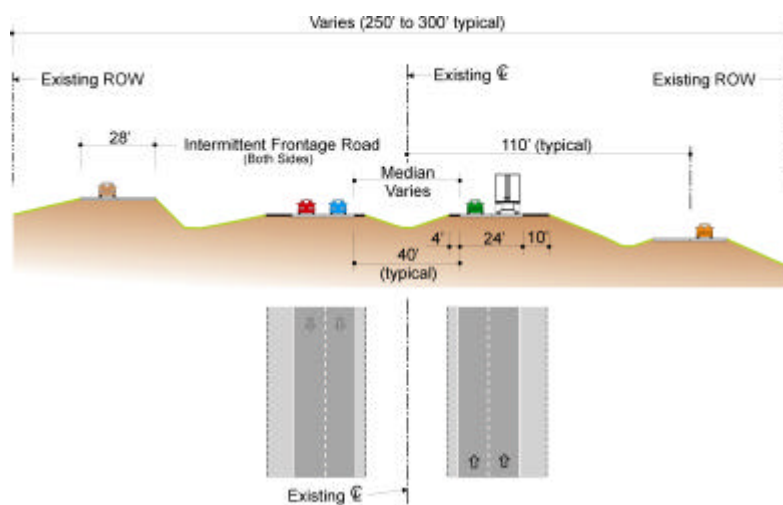


Figure 10: Phase I Maintenance of Traffic Plan

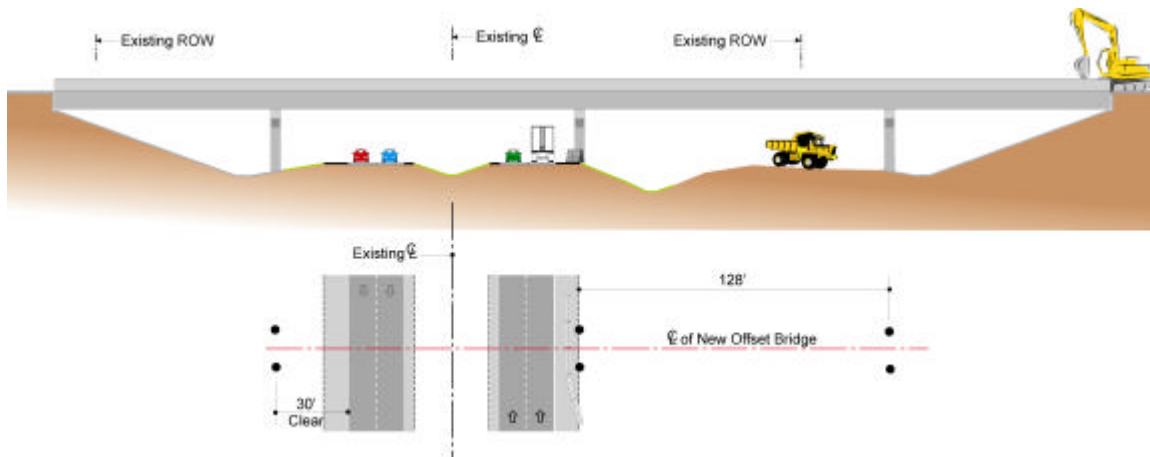


Figure 11: Phase II Maintenance of Traffic Plan

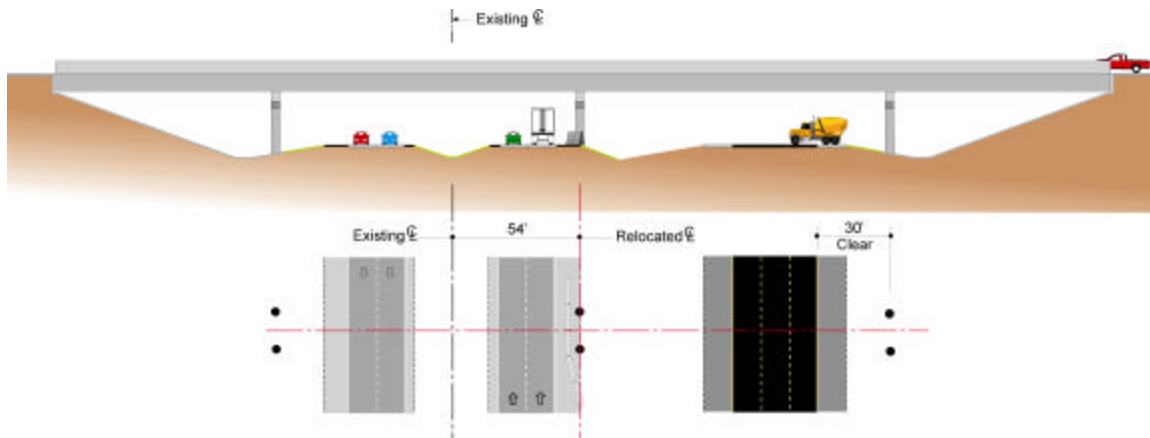


Figure 12: Phase III Maintenance of Traffic Plan

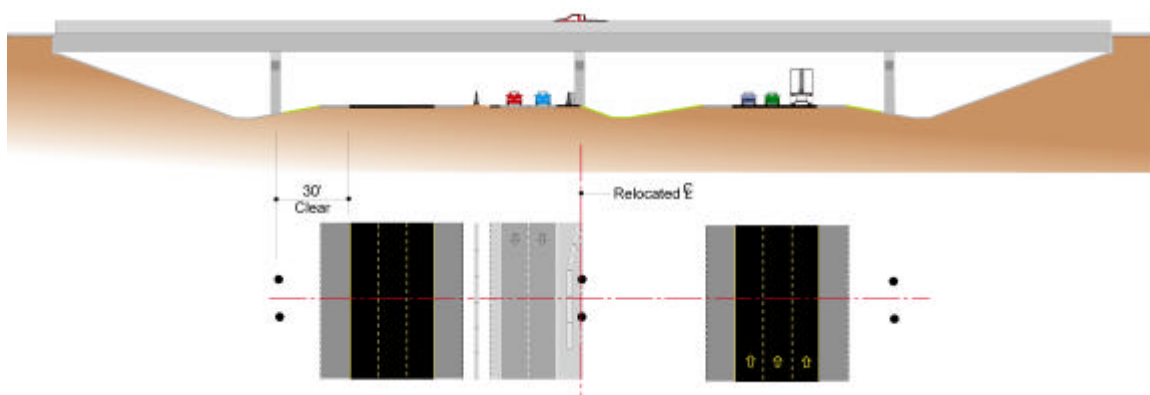
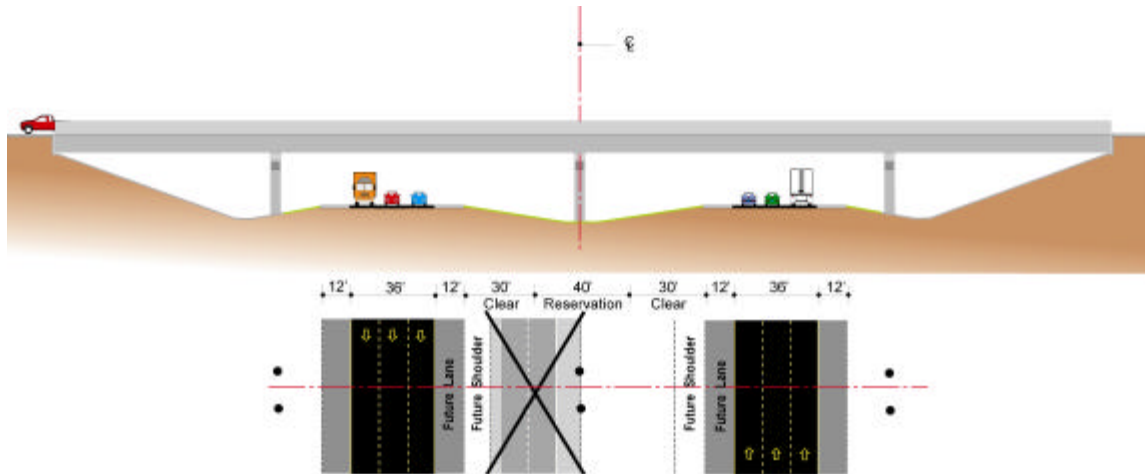


Figure 13: Phase IV Maintenance of Traffic Plan



I. Summary of Issues

a. Environmental Impacts

Through a comprehensive review of the potentially affected environment and environmental consequences, no known issues were identified that would necessarily preclude or prevent the implementation of the Widen Existing I-70 Strategy. However, there are a number of environmental issues that will need further investigation as part of second tier studies. These investigations will need to include considerations of avoidance, minimization of impacts, and appropriate mitigation. As part of either the second tier studies or the subsequent design development, regulatory and construction permits will be required. Necessary regulatory permits include Section 404 of the Clean Water Act, administered by the US Army Corps of Engineers, and Section 9 and Section 10 of the Rivers and Harbors Act, administered by the US Coast Guard and the Corps, respectively. Construction will adhere to existing agreements between MoDOT and the Missouri Department of Natural Resources, which include a water pollution control program and established best management practices.

A summary of the environmental impact issues includes:

- **Noise Impacts** – In the rural areas, the project has the potential to create noise impact to adjacent receptors due to widening the right-of-way. Relocation options around the Columbia and Warrenton/Wright City/Wentzville areas would introduce highway noise where such noise does not exist. Additional investigation of potential noise impacts and mitigation measures, if any, will need to be conducted in the second tier studies.
- **Parklands, Wildlife Refuges, Recreation Areas and Public Lands** – Potential impacts by the project to several existing or planned parklands, or other public lands, have been identified. Each of these sites will need to be studied further as part of the second tier studies, including a Section 4(f) evaluation if impacted. Section 6(f) evaluations will need to be conducted accordingly during these subsequent studies. A number of parklands were identified in the relocation corridors around the Columbia and Warrenton/Wright City/Wentzville areas. However, options exist to avoid these sites.

- ✓ KATY Trail State Park
 - ✓ Harriman Hill Access Area on the Lamine River
 - ✓ Big Muddy National Wildlife Refuge
 - ✓ Overton Bottoms Conservation Area
 - ✓ Graham Cave State Park
- **Prime Farmland** – The project would impact prime farmland. More detailed assessments and estimates of the impacts will need to be performed in the second tier studies, including the Farmland Conversion Impact Rating for Corridor Type Projects.
 - **Water Quality** – The current water quality conditions would continue with the project.
 - **Floodplains** – Several floodplains would be crossed by the project. With the exception of the possible relocations of the Columbia and Warrenton/Wright City/Wentzville areas, I-70 already crosses these floodplains. The project would entail in general the replacement in kind of all existing I-70 floodplain crossings. Major floodplain crossings and floodplain complexes include:
 - ✓ Blackwater River
 - ✓ Lamine River
 - ✓ Missouri River
 - ✓ Loutre River
 - **Wetlands** – Impacts to wetlands would occur. Additional study and delineation of existing wetland resources will need to be performed during the second tier studies. Special attention will need to be given to the Overton Bottoms area and the other major floodplain crossings.
 - **Terrestrial and Aquatic Communities** – Sensitive biological resources potentially impacted by the project that require more detailed study include:
 - ✓ Buffalo grass (located near Boonville rest area)
 - ✓ Blacknose shiner (located near Whetstone Creek)
 - **Threatened and Endangered Species** – No known sites would be impacted by the project. However, informal consultation with the US Fish and Wildlife Service should continue during the second tier studies.
 - **Historic and Archeological Resources** – Twenty archaeological sites, two National Register properties, and ten cemeteries are located within the vicinity of the existing I-70 right-of-way. It has been determined that each of these sites would not be directly impacted by the project. Additional study and coordination will be necessary for each of these sites, including the Graham Farmstead located at Mineola Hill.
 - **Hazardous Waste Sites** – No known hazardous waste sites would be impacted.

b. Social and Economic Impacts

I-70 has created a development spine across the state that has grown in intensity and breadth. It is anticipated that the Widen I-70 Strategy would continue this development trend, and to some extent, accelerate its growth due to the improved access provided at the interchanges and the slightly higher traffic volumes.

As part of the second tier studies and subsequent design development, additional consideration will need to be given to the direct impacts of the project to adjacent properties and structures, particularly at the interchange areas. Additional studies at each interchange area will be needed to minimize the direct impacts of the project to existing residences and businesses. Furthermore, considerations will need to be given to maintenance of traffic during construction to minimize the temporal impacts of construction on adjacent businesses.

c. Corridor Enhancement Plan

The programmatic improvement of the I-70 Study Corridor, entailing the rebuilding of the existing I-70 infrastructure, provides the opportunity to incorporate an overall corridor enhancement plan to increase the benefits of the transportation investments to the natural environment and the I-70 travelers. The joint development of the corridor through a collaboration and partnership of a number of federal, state, and local agencies would further accentuate and enhance the investments of the parties through an aggregation of the investments' individual benefits. Combined and joint development of the corridor can promote the corridor as more than just a transportation link, but a vital part of the state's tourism and recreation resources.

Potential elements of the corridor enhancement plan include:

- Development of an agency consortium to devise and carry out the plan.
- Landscaping and beautification including the consideration of native and contextual habitat enhancements at key areas such as the major floodplain crossings (Blackwater River, Lamine River, Missouri River and Loutre River).
- Wildlife mitigation and wetland mitigation plan, including special considerations for wildlife passage across the corridor such as at major floodplain areas or other highly traveled areas.
- A coordinated plan to showcase Missouri – its history and natural resources – at rest areas and tourist centers, including information kiosks and general information.
- Specific joint development projects including:
 - ✓ Overton Bottoms – Items include joint and coordinated construction, a tourist/information center, wetland mitigation, bike and pedestrian access to the KATY Trail via a new Missouri River bridge, recreational trails in the floodplain, and billboard controls.
 - ✓ Mineola Hill – Items include billboard controls and rest area enhancements including information about the history of the area.

J. Unresolved Issues

a. Sections of Independent Utility

MoDOT is committed to performing the second tier studies identified in this first tier EIS. These second tier studies will be necessary to further study and define the improvements to I-70 such that more detailed analyses of the environmental impacts can be performed to more precisely quantify the impacts of the project. The limits and scope of these second tier studies need to be defined to layout the planned program for the continued analysis of the I-70 improvements.

A practical approach to defining the limits and extent of the second tier studies is to undertake a series of projects which all fit into and are consistent with the overall purpose and need for the I-70 First Tier EIS Corridor. In order to approach this in a realistic manner, the entire corridor should be broken into manageable sections for more detailed environmental studies. Each of these sections can be referred to as a Section of Independent Utility, or a SIU.

A given Section of Independent Utility may be in place for several years before an adjacent section is completed and open to traffic. Hence, the concept of having independent utility. Each section would be independent, useful, and stand on its own merits within the framework of this First Tier EIS. The process of defining these sections involves identifying or framing a highway project that meets a number of principles and criteria.

A FHWA memorandum dated November 5, 1993 provides information to guide the establishment of logical termini for a proposed project (or action). It refers to concepts and objectives contained in existing regulations. Three general principles are outlined in the FHWA regulations that are to be used to frame or define a highway project. In order to ensure meaningful evaluation of alternatives, and to avoid commitments to related transportation improvements before they are fully evaluated, each SIU should permit a proposed action to be evaluated in an environmental document that shall:

- 1) *Connect logical termini and be of sufficient length to address environmental matters on a broad scope;*
- 2) *Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and,*
- 3) *Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.*

Furthermore, the logical termini for project development are defined as rational end points for (1) a transportation improvement and (2) a review of the environmental impacts.

Through the First Tier EIS process for the I-70 Study Corridor, a number of project-specific and unique issues have been identified that influence and affect the SIU determination. These issues include the following:

- **Environmentally Sensitive Areas** – Overton Bottoms and Mineola Hill should not be bisected by SIU termini.
- **Conceptual Corridors** – The Columbia and Warrenton/Wright City/Wentzville Areas each have a range of conceptual corridor options that need to be encompassed by an SIU.
- **Study Corridor Termini** – The western and eastern most SIU need to match the end termini for this study – connections to the highway systems in Kansas City and St. Louis.
- **Highway System Connectivity** – Major north-south highway corridors that connect with the I-70 Study Corridor are defined as those corridors that are included in the National Highway System, provide mobility and access across the Missouri River, or have committed and programmed improvements in the Long-Range Transportation Plan. These corridors provide potentially logical termini for the SIU. Major corridors that connect with the I-70 Study Corridor include Route 131, Route 13, Route 23, US 65, Route 5, US 63, US 54, Route 19, Route 47, and US 61.

In addition to the unique aspects of the corridor, it is desirable for the organization of the SIUs to be flexible to be responsive to the dynamics of the Purpose and Need for the improvements and to mesh with the goals and priorities of other coordinating agencies. Flexibility should be provided in the SIUs to respond to roadway capacity needs as they continue to develop, to address isolated safety issues that need to be improved, and to replace elements of the highway infrastructure when total reconstruction is economically necessary. SIU limits should further reflect, to the extent practicable, the jurisdictional limits of partnering agencies, such as MARC, CATSO, and EWGCC.

In consideration of the unique aspects of the I-70 Study Corridor, and in consultation with the cooperating agencies, seven individual SIU have been identified (see Exhibit 5) for the subsequent refinement of the improvements and processing of the environmental consequences. The minimum requirements for the overall SIU definition entail an organization with individual SIU that span or encompass the following: the Kansas City urbanized area, Overton Bottoms, the Columbia urbanized area, Mineola Hill, and the Warrenton/Wright City/Wentzville urbanized area. Within the more rural areas of the corridor, outside of those geographic areas listed above, considerable flexibility exists for the SIU organization. Ultimately, highway system connectivity and consolidation of second tier studies into manageable pieces was the overriding justification for the recommended SIU plan.

These SIU are presented for review and comment as part of this Draft First Tier EIS.

b. Scope of Second Tier Studies

Federal regulations regarding the application of NEPA provide project sponsors flexibility for the environmental processing of capital improvements, such as the implementation of the Widen Existing I-70 Strategy. The determination of the appropriate type of environmental process to be utilized for each individual SIU depends on the nature of the improvements and the anticipation of the degree and significance of the potential impacts of the improvements. Three types of environmental processes are available – Categorical Exclusion (CE), Environmental Assessment (EA) and Environmental Impact Statement (EIS). These processes are defined as follows:

- **Categorical Exclusion (CE)** – Improvements are categorically excluded in FHWA regulations from the NEPA process (i.e., EA or EIS considerations) due to the typical nature of the improvements. A public and agency coordination process will be provided to document the process of refining the improvements and avoiding and minimizing impacts to natural and social resources.
- **Environmental Assessment (EA)** – Study of alternatives and environmental consequences will be performed and documented to determine the significance of the potential impacts. Based on the findings of this First Tier EIS, these impacts are not considered at this time to be significant. Should it be determined upon the conclusion of the EA that significant impacts would occur, an EIS will be performed. A public and agency coordination process, including a public hearing, will be provided to refine the improvements and consider avoidance, minimization and mitigation of environmental consequences.
- **Environmental Impact Statement (EIS)** – The range of alternatives is broad with high variability of environmental consequences. The yet to be defined environmental consequences are anticipated at this time to be potentially significant such that a more comprehensive alternatives analysis and public/agency process is warranted. A public and agency coordination process, including a location public hearing, will be provided to refine the improvements and consider avoidance, minimization and mitigation of environmental consequences.

This First Tier EIS provides guidance on the nature of the improvements and the potential significance of environmental resources and social impact issues potentially impacted by the Preferred Strategy. This guidance provides support for the determination of the appropriate type of second tier study for each SIU. This First Tier EIS further documents the commitments of MoDOT and FHWA to provide corridor-wide impact coordination, impact mitigation and considerations of corridor enhancements. This document provides agencies and communities assurances that corridor-based considerations will be fulfilled and appropriate special considerations will be provided for each of the second tier studies.

In a similar fashion, the degree of subsequent engineering analyses will vary depending on the type of second tier study. For the CE and EA sections, the next steps in the engineering analyses will consist of initiation of **preliminary engineering** activities at a greater level of detail to define more specifically the proposed interchange layouts and changes to access control in and around the interchanges. This greater level of engineering detail will allow for more specific recognition and coordination of impacts to the adjacent natural and social environments and the completion of required permit processes. For the EIS sections, alternatives analyses will be performed using **route location engineering** in sufficient detail to evaluate the range of impacts for the various alternatives.

Table 6 presents the recommended type of second tier study for each of the seven SIU. In addition, this summary presents the recommended scope of the second tier study and special considerations that will be a part of each SIU. This table summarizes the next steps for the more detailed engineering analyses and environmental processing for each SIU to be implemented by MoDOT upon the completion of this First Tier EIS. Though these logical termini consist of interchange connections, the terminal interchange would be included as a whole in one of the adjoining SIU. These steps are presented for review and comment as part of this First Tier EIS.

Table 6: Summary of Second Tier Studies

SIU No.	Termini		SIU Length (Miles)	Second Tier Study	Scope of Study	Special Considerations
	From	To				
1	KC Freeway System	Route 131 (Odessa)	35	EA	<ul style="list-style-type: none"> ✓ Preliminary Engineering ✓ Interchange Layouts ✓ Public Involvement and Coordination ✓ Design Right-of-way Hearings ✓ Agency Coordination ✓ Permits 	<ul style="list-style-type: none"> • Minimum improvements consist of six-lane widening from Odessa to existing four to six-lane transition near Route 7. • Additional capacity improvements (eight-lane widening) depend on I-70 MIS currently underway. • Coordination with MARC is required. • Odessa interchanges would be included.
2	Route 131 (Odessa)	Route 5 (Boonville)	64	CE	<ul style="list-style-type: none"> ✓ Preliminary Engineering ✓ Interchange Layouts ✓ Public Involvement and Coordination ✓ Design Right-of-way Hearings ✓ Agency Coordination ✓ Permits 	<ul style="list-style-type: none"> • Coordination with agencies for potential impacts to the Harriman Hill Access Area on the Lamine River.

3	Route 5 (Boonville)	Route BB (Rocheport)	14	EA	<ul style="list-style-type: none"> ✓ Preliminary Engineering ✓ Interchange Layouts ✓ Additional Studies of Improvements through Missouri River Floodplain ✓ Public Involvement and Coordination ✓ Location Hearings ✓ Design Right-of-way Hearings ✓ Agency Coordination ✓ Permits 	<ul style="list-style-type: none"> • Continued coordination of improvements and impacts in the Missouri River floodplain, including joint development opportunities. • Route 5 interchange would be included.
4	Route BB (Rocheport)	Route Z (East of Columbia)	18	EIS	<ul style="list-style-type: none"> ✓ Route Location Engineering and Alternatives Analysis ✓ Interchange Layouts ✓ Public Involvement and Coordination ✓ Location Hearings ✓ Agency Coordination 	<ul style="list-style-type: none"> • Alternatives analysis will include the Existing and Near North Conceptual Corridors. • Coordination with CATSO is required.
5	Route Z (East of Columbia)	US 54 (Kingdom City)	15	CE	<ul style="list-style-type: none"> ✓ Preliminary Engineering ✓ Interchange Layouts ✓ Public Involvement and Coordination ✓ Design Right-of-way Hearings ✓ Agency Coordination ✓ Permits 	
6	US 54 (Kingdom City)	Route 19 (Montgomery City)	27	EA	<ul style="list-style-type: none"> ✓ Route Location Engineering and Alternatives Analysis ✓ Interchange Layouts ✓ Additional Studies of Improvements through Loutre Valley ✓ Public Involvement and Coordination ✓ Location Hearings ✓ Agency Coordination 	<ul style="list-style-type: none"> • Continued coordination of improvements and impacts in the Loutre Valley area, including joint development opportunities. • US 54 interchange would be included, including optional interchange layouts.
7	Route 19 (Montgomery City)	STL Freeway System	35	EIS	<ul style="list-style-type: none"> ✓ Route Location Engineering and Alternatives Analysis ✓ Interchange Layouts ✓ Public Involvement and Coordination ✓ Location Hearings ✓ Agency Coordination 	<ul style="list-style-type: none"> • Alternatives analysis will include the Existing, Far North, Near North and Southern Conceptual Corridors. • Optional freeway system connections will be evaluated. • Minimum improvements consist of six-lane widening up to the existing four to six-lane transition near Lake St. Louis. • Coordination with EWGCC is required. • Route 19 interchange would be included.

c. Public and Agency Coordination

During the implementation of the second tier studies for the I-70 Study Corridor, public and agency coordination will need to continue. These activities will entail corridor-wide and SIU coordination.

- **Corridor-Wide** – MoDOT is committed to the continued ongoing coordination of the preferred strategy with the appropriate agencies including the continued development and implementation of the corridor enhancement plan.
- **SIU** – MoDOT is committed to the continued ongoing coordination of each SIU with the appropriate agencies, including location public hearings for SIU No. 4, No. 6 and No. 7. Community-based public involvement activities will be conducted for all second tier studies. Coordination with the Metropolitan Planning Organizations and Regional Planning Organizations will be provided in accordance with the SIU delineations.

d. Implementation Plan

The SIU delineation of the Study Corridor is necessary to define the limits and scope of the second tier studies. The SIU define the geographic limits of the second tier studies in accordance with the established SIU criteria as applied to the findings of this First Tier EIS. These individual, autonomous studies may then be processed separate from one another, yet in consistency with the overall strategy for the Corridor. The timing and sequencing of the second tier studies by MoDOT, and any subsequent design development and construction activities, depends of the available funding and other statewide priorities. The SIU delineation is not intended to imply a sequence or prioritization for implementation.

As part of MoDOT's Long-Range Transportation Plan development, a subsequent document known as the Missouri Transportation Investment Strategy was created to consider the fiscal realities of transportation investments within the state. A strategy was developed to clarify the state's transportation investment goals and to ensure that the state's transportation investments support the priorities and needs identified through the long-range planning process. The investment goals identified in MoTIS provide guidance for establishing SIU priorities for the I-70 Study Corridor. These goals include:

- Enhance safety and security
- Take care of the existing system
- Relieve congestion
- Broaden access to opportunity and essential services
- Facilitate the efficient movement of goods
- Ensure Missouri's continued economic competitiveness
- Protect Missouri's environment and natural resources
- Enhance the quality of our communities

The prioritization and subsequent implementation of the I-70 improvements by MoDOT will be conducted in accordance with the MoDOT goals. Sequencing of the individual SIUs will be responsive to the current and emerging needs of the Corridor. Under these conditions, six-lane widening improvements in the rural SIUs would not likely be provided until the urban SIUs have been completed. However, rural SIUs may be given a higher priority due to other considerations, such as safety or system preservation, but could be constructed as four-lane improvements yet in the ultimate configuration (thereby allowing future six-lane widening when traffic conditions dictate additional lanes).

