

I-70 Final Supplemental Environmental Impact Statement



Interstate 70 Corridor
Kansas City to St. Louis, Missouri

Final Supplemental
Environmental Impact Statement

Submitted Pursuant to 42 U.S.C. 4332 (2)(c)

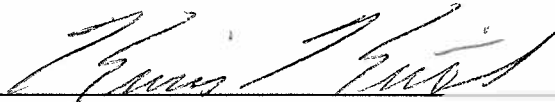
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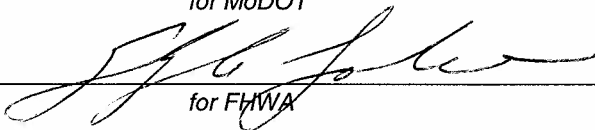
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Cooperating Agencies
U.S. Environmental Protection Agency
Department of Army Corps of Engineers
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The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) have developed this Final Supplemental Environmental Impact Statement (SEIS) after identifying truck-only lanes as a new strategy that may have merit for the I-70 Corridor between Kansas City and St. Louis. This I-70 Final SEIS evaluates if a Truck-Only Lane Strategy is viable, and if so, how reasonable alternatives for truck-only lanes alter the impacts and recommendations previously identified in the approved I-70 First and Second Tier Environmental Studies. The I-70 Study Corridor is approximately 199 miles in length.

Comments on this Final SEIS are due by June 29, 2009 and should be sent to the persons listed above.

Executive Summary

About the SEIS

The Missouri Department of Transportation (MoDOT) is looking at how best to rebuild I-70 between Independence and Lake St. Louis.

MoDOT, the Federal Highway Administration (FHWA) and their consultants are assessing the feasibility and utility of rebuilding and widening the highway with truck-only lanes.

This study is the I-70 Supplemental Environmental Impact Statement (SEIS). The I-70 SEIS is an extension of earlier efforts to study whether to improve I-70, and if so, in what way. The previous First Tier and Second Tier Environmental Studies established the need for improving I-70 and selected to improve the existing highway by rebuilding and widening it to three lanes in each direction. The I-70 SEIS does not invalidate the decisions made in the First and Second Tier Studies – those remain valid. Instead, the I-70 SEIS compares rebuilding and widening the existing highway to six lanes with the strategy of rebuilding and widening I-70 with separate truck-only lanes.

I-70 is the most important transportation corridor in Missouri, connecting the state's two largest cities and carrying more rural daily traffic than any other route. MoDOT is looking at how best to rebuild I-70 to make sure that Missouri continues supporting the state's transportation

needs and economic strength. Conceived and designed during the Eisenhower presidency in the 1950s, designers planned the highway to serve Missouri for about 20 years. In the years since, through ongoing care and maintenance,



MoDOT has been able to extend the life of this highway. However, some parts of the existing highway are 50 years old, and the need to rebuild I-70 remains and grows. The safety and economic prosperity of

Missourians depends in part, on an I-70 that grows along with the state and nation.

Chapter 1 – Purpose and Need, offers a discussion on reasons for conducting the project. **Technical Memorandum 1** provides additional detail about the Purpose and Need and is contained in the CD attached to the back cover of this document. The proposed action for the I-70 SEIS will address the same needs as the First and Second Tier Studies:

- Roadway capacity – increase roadway system capacity to meet future travel demands and to improve I-70's general operating conditions;
- 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, includ-

ing interchanges, roadway alignment and roadway cross sections;

- System preservation – Preserve the existing I-70 facility as needed to carry existing and future loads;
- Goods movement – Improve the efficiency of freight movement using I-70;
- Access to recreational facilities – Facilitate motorist's using nearby regional recreational facilities through improved accessibility; and
- National security and disaster preparedness – Improve this key corridor for moving personnel and equipment for deployment and emergency response.

About the format of the SEIS document

In the interest of trying to improve the quality of environmental documents, the I-70 study team wrote the SEIS following the FHWA's principles for quality NEPA documents. The format of this document differs greatly from the traditional EIS format, but follows the three core principles for quality NEPA documents including:

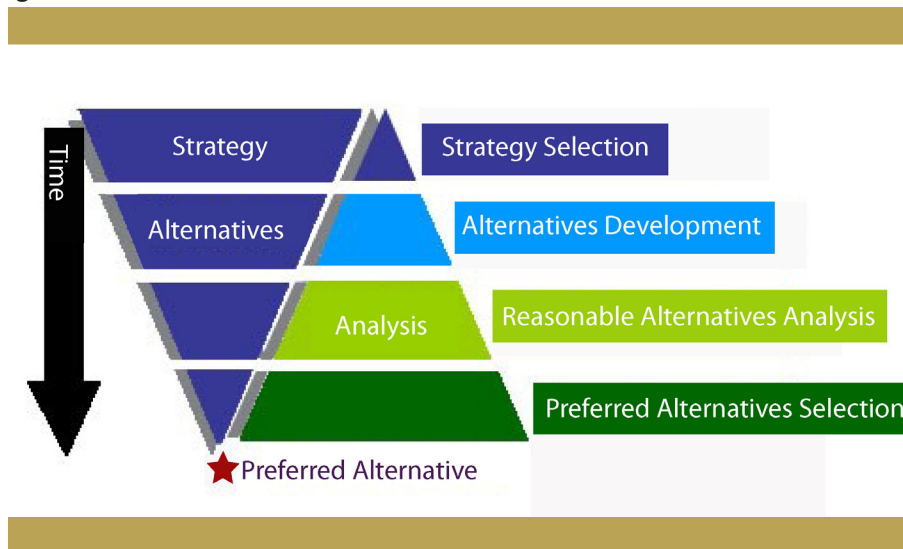
- Tell the story of the project so that the reader can easily understand what the purpose and need of the project is and describe the strengths and weaknesses of alternatives;
- Keep the document as brief as possible by using clear, concise writing, an easy-to-use format, effective graphics and visual elements, and discussion of issues and impacts in proportion to their relative importance; and
- Ensure that the document meets all legal

requirements in a way that is easy to follow for regulators and technical reviewers.

The goal of the reader-friendly document is to have a clearly written product for the reviewing resource agencies as well as the public. The SEIS utilizes a question and answer style that defines technical terms and includes graphics to more easily illustrate the completed processes and analysis. The chapters of the document discuss the information necessary to the decision-making process, highlighting those areas most affected by the project. The document summarizes the SEIS study process and references the supporting technical details. The more technical and detailed information is located in several technical memoranda contained in the CD attached to the inside of the document's back cover.

Developing and evaluating alternatives

The study team followed a process (illustrated in Figure E-1) that first compared the Truck-Only Lanes Strategy with the Widen Existing I-70 Strategy. Upon selecting a strategy, the study team developed alternatives to apply to the mainline. The team also considered how best to provide access to each of the existing interchanges. Those alternatives were compared to identify how best to implement the strategy across the 200-mile corridor, while staying within the footprint cleared during the First and Second Tier Studies. The study team then assessed the impacts of the Preferred Alternative.

Figure E-1: Evaluation Process

Selecting a strategy

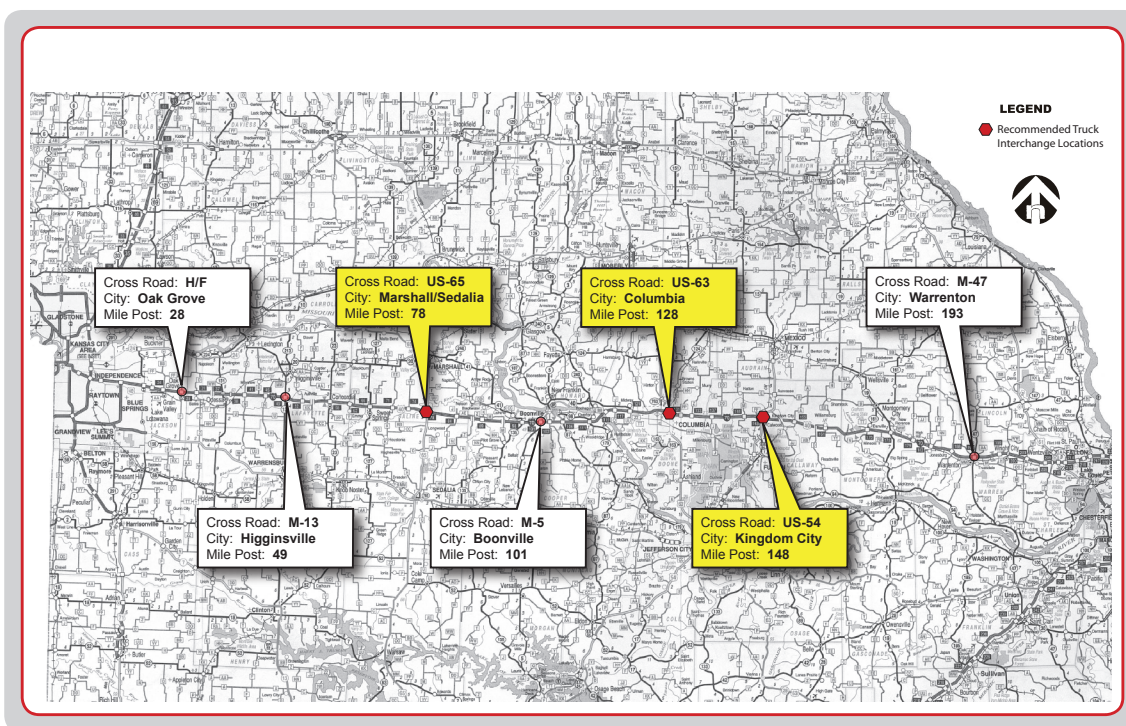
Chapter 2 – Strategy Evaluation, provides an overview of how the study team compared strategies and selected one for improving I-70. The study team developed several truck-only lane concepts before selecting one that placed two truck-only lanes on the inside and two or more general-purpose lanes on the outside in each direction of travel. They then evaluated the merits of the Truck-Only Lanes Strategy, with the strategy selected during the First Tier Environmental Study, referred to as the Widen Existing I-70 Strategy. At this stage, the study team evaluated each strategy to determine if they met the project purpose and need. Since both strategies met purpose and need, the study team performed a more detailed technical assessment and evaluation. The study team utilized evaluation factors for the following categories:

- Engineering – Cost estimates, constructability and implementation;
- Traffic – Capacity, operations, efficiencies and safety;
- Environmental – Natural, cultural and other resources;
- Social and Economic – Property impacts, land use and environmental justice.

Once the study team determined the Truck-Only Lanes Strategy merited further development, they analyzed each of the existing 56 interchanges to determine which locations might warrant new interchanges that keep trucks and cars separate. The study team determined that 15 interchanges met the preliminary criteria for consideration as a truck-car separated interchange. The study team then applied the screening criteria to these 15 locations to select the locations best suited to construct separated interchanges.

Based on the evaluation results of the 15 interchanges, the study team identified seven interchanges that had reasonable potential for truck-car separation. **Figure E-2** shows the seven interchanges that the study team deemed reasonable for truck-car separation. Based on further evaluation, the study team determined that three interchanges merited some type of truck-car separation, either full or partial, today. The selected locations included the following interchanges:

- Full separation at U.S. 65;
- Partial at U.S. 63; and
- Full at U.S. 54.

Figure E-2: Recommended Truck-Car Separated Interchange Locations

Each of these U.S. routes is centrally located and well spaced to serve long distance truck traffic between Kansas City and St. Louis. It was determined that these U.S. routes would best accommodate truck traffic and were able to carry heavier loads, including superloads, and more efficiently move freight across the state.

The remaining four interchanges may be reasonable locations for truck-car separated interchanges in the future. These interchanges included the following:

- Route H/F, Oak Grove;
- Route 13, Higginsville;
- Route 5, Boonville; and
- Route 47, Warrenton.

Technical Memorandum 2 provides further detail on the evaluation process for selecting an improvement strategy and locations for truck-car separated interchanges.

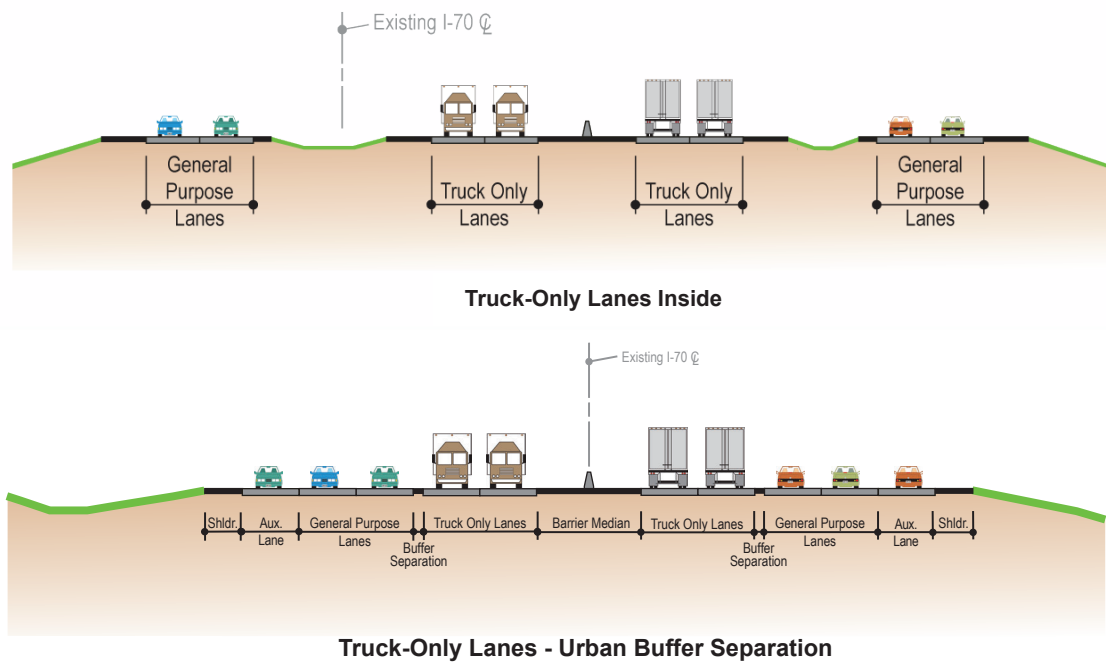
Applying the Truck-Only Lanes Strategy

Chapter 3 – Alternatives Developed, details how the study team applied the Truck-Only

Lanes Strategy to the 200-mile corridor in the form of alternatives. The process included the development of various alternatives for urban, rural and environmentally sensitive portions of the corridor. The study team developed a number of concepts – some of which the study team eliminated and others considered as reasonable for that section of the corridor. **Technical Memorandum 3** provides further information on the alternatives development and screening process.

The alternatives varied across rural, urban and environmentally sensitive areas of the corridor. At a minimum, the strategy called for placing two truck-only lanes on the inside and two general-purpose lanes on the outside in each direction separated by either a grass area or buffer separation. As shown in **Figure E-3**, on mainline I-70, the Preferred Alternative consists of the following:

- For rural areas;
 - I-70 eastbound and westbound will each carry two truck-only lanes on the inside and

Figure E-3: Rural and Urban Truck-Only Lanes Alternative

- two general-purpose lanes on the outside,
- A grass area will separate truck-only and general-purpose lanes,
- For the urban areas of Kansas City, Columbia and St. Louis;
- The Preferred Alternative utilizes two truck-only lanes in each direction, with two or more general-purpose lanes, depending on traffic levels,
- Due to the constraints of the built environment, a more narrow buffer separates truck-only lanes from general-purpose lanes,
- In the sensitive areas of Overton Bottoms and Mineola Hill;
- The Preferred Alternative carries the same number of lanes as rural sections,
- There is a more narrow separation of truck-only and general-purpose lanes to preserve cultural and environmental resources.

Likewise, applying the Truck-Only Lanes Strategy meant assessing how best to maintain

access to each of the 56 existing interchanges. At the onset of the SEIS, MoDOT determined that maintaining some type of access to each existing interchange was a requirement of any alternative considered. The study team concluded that slip ramp access between the truck-only lanes and general-purpose lanes at the majority of interchanges provided sufficient access. At three locations, U.S. 65, U.S. 63 and U.S. 54, the study team determined that slip ramp access would prove insufficient to handle the levels of truck traffic. The study team selected four other interchanges that may warrant truck-car separation in the future, if certain thresholds were triggered at the time of design or if local or private partnerships were established to complete these interchange projects. The four interchanges included Route H/F (Oak Grove), Route 13 (Higginsville), Route 5 (Boonville) and Route 47 (Warrenton). For each of the seven interchange locations,

the study team assessed five types of truck-car separated interchanges. The assessment identified what interchange types were reasonable for a given location. The study team then evaluated the impacts to the man made and natural environment for the footprint of each of these interchanges, along with the mainline.

Affected environment and environmental consequences

Chapter 4 – Affected Environment and Environmental Consequences summarizes how the reasonable alternatives for the Truck-Only Lanes Strategy would affect, in either a positive or a negative way, the natural and man made environment. The analysis includes an evaluation of one corridor-wide mainline alternative for I-70, as well as a range of reasonable truck-car separated interchanges at each of the seven potential locations.

Since the SEIS supplements the original First and Second Tier Environmental Studies, the project impacts were evaluated using a slightly modified process from a typical EIS. First, the cleared environmental footprint from the previously approved Second Tier Studies was reassessed to determine if conditions and impacts remain unchanged. The impacts determined in the previous studies were not reevaluated unless there was a change within the previously cleared right of way, such as a new home or business. Then, the additional impacts associated with the new Truck-Only Lanes Strategy were identified and assessed.

The environmental impact evaluation for the Truck-Only Lanes Alternative has been broken into mainline impacts, truck-car separated interchange impacts and corridor-wide considerations. The mainline section focuses on additional impacts within the mainline section of the I-70 Corridor. The truck-car separated interchange section discusses issues on an interchange-by-interchange basis and evaluates a combined footprint for several reasonable interchange alternatives. Corridor-wide considerations included an evaluation of factors that impact the project on a corridor-wide basis or that do not experience a change since completion of the Second Tier Studies.

For the majority of the 200-mile I-70 Corridor, the Truck-Only Lanes Alternative fits within the environmentally cleared footprint from the Second Tier Studies. However, at some areas along the I-70 Corridor, the Truck-Only Lanes Alternative will require additional right of way. Within this additional right of way, there is the potential to have impacts to the natural and man made environments. The additional right of way required is minor and is needed mainly at the truck-car separated interchange locations along the corridor. It is estimated that approximately 5,700 acres were environmentally cleared within the Second Tier Studies and the Truck-Only Lanes Alternative requires only 300 additional acres for clearance.

Figure E-4 at the end of the chapter, provides a summary of the total impacts of the Truck-Only Lanes Alternative. It includes new impacts to

the I-70 Corridor, due to the passage of time since the completion of the seven Second Tier Studies. **Figure E-4** also provides a summary of the additional impacts to the mainline of I-70 resulting from the Truck-Only Lanes Alternative. The study team did not consider the additional impacts to the mainline of I-70 to be significant. **Technical Memorandum 3** provides a more detailed description of the impacts by environmental factor within each of the seven Sections of Independent Utility.

Public and agency involvement during the SEIS

Chapter 5 – Comments and Coordination provides an overview of how the study team coordinated issues with members of the community, federal, state, and local agencies, and other interested stakeholders and groups. Study issues included the development, screening and selection of alternatives during the SEIS process. Copies of meeting documentation and materials are included in **Technical Memorandum 4**.

Understandably, many comments and concerns were collected related to the effects transportation improvements would have on the natural and visual environment, funding, safety of the traveling public, and if and how rail would be

considered in the corridor. Specifically, questions arose regarding safety, operations and enforcement, as well as how to pay for transportation improvements. While the SEIS will not select a funding option for the project, it does discuss the likely impacts of various funding mechanisms and clear them from an environmental perspective for potential use to fund the I-70 improvements. The public made a number of inquiries regarding tolling during the study process. Likewise, the public raised issues about the role that both passenger and freight rail could play in the project. Assertions were made that additional rail service could lessen environmental impacts and be a better long-term solution, especially in light of high fuel prices.

Recommending a Preferred Alternative

The I-70 SEIS is an extension of earlier efforts to study whether to improve I-70 and in what way. The I-70 SEIS does not nullify the decisions made in the First and Second Tier Studies. The SEIS allows the study team to look at the feasibility and utility of truck-only lanes compared to the previously selected Preferred

Alternative, which was to widen existing I-70 to three lanes in each direction.

The study team first compared the new Truck-Only Lanes Strategy with the Selected Strategy



from the First Tier Study, the Widen Existing I-70 Strategy. **The study team chose the Truck-Only Lanes Strategy as the Preferred Alternative, instead of the Widen Existing I-70 Strategy.** With that selection, the next step was to apply the strategy across the corridor as alternatives. The study team assessed several alternatives before recommending a Preferred Alternative that, at a minimum, provides two truck-only lanes on the inside and two general-purpose lanes on the outside for both eastbound and westbound travelers.

From the perspective of traffic and engineering, the Truck-Only Lanes Strategy compared more favorably than the Widen Existing I-70 Strategy in the key areas of freight efficiency, safety, as well as constructability and maintenance of traffic. In the following instances, truck-only lanes provided:

- Greater capacity and safety benefits over the Widen Existing I-70 Strategy;
- More responsiveness to public safety concerns about separating general-purpose vehicles from trucks;
- Improved incident management and emergency response through system redundancy;
- Flexibility to respond to emerging trends in freight movement without compromising operational conditions of general-purpose traffic;
- Potential to respond to national trends to improve freight flows and efficiency and ties in with the federal Corridors of the Future vision for I-70;
- Reinvestment opportunities for the existing I-70 system and better ability to reuse a greater percentage of existing infrastructure such as roadbed and bridges; and
- Improved maintenance of traffic during construction since the majority of construction work would not interfere with existing travel lanes.

Example Truck-Only Lanes



Figure E-4: Total Impacts of Truck-Only Lanes Alternative

Environmental Factors	Unit	SIU 1				SIU 2				SIU 3				SIU 4				SIU 5				SIU 6				SIU 7			
		Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total
Land Use	Rating	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲
Farmland Impacts																													
Prime Farmland	Acres	186.7	0	10.5	197.2	490	0	16.7	506.7	80	0	0	80	140	0	0	140	383	0	0	383	410	0	53	463	684	0	9.0	693.0
Statewide Importance	Acres	263.3	0	24.1	287.4	572	0	22.0	594.0	432	0	34.7	466.7	113	0	2.0	115.0	63.6	0	0	63.6	312	0	64	376	455	0	38.0	493.0
CRP Lands	Acres	3.6	0	0	3.6	28	26	0.17	54.17	20.7	0	7.1	27.8	0.2	0	0	0.2	0	0	0	0	8.5	0	0	8.5	0.01	0	0	0.01
Public Lands	Acres	0	0	0	0	8	5.4	0	13.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Social and Economic																													
Residents (persons)	Number	100	0	53	153	83	3	8	94	25	3	0	28	442	50	13	505	35	0	0	35	40	0	0	40	138	3	10	151
Businesses	Number	20	3	0	23	21	1	0	22	25	9	0	34	66	11	0	77	16	6	0	22	8	0	0	8	45	21	18	84
Environmental Justice Issues	Yes/No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Community Impacts	Rating	▲	NC	●	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	●	▲
Parks and Public Lands	Number	1	0	0	1	0	0	0	0	2	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0				
ROW and Displacements																													
Total Right-of-Way	Acres	469	0	48.2	517.2	1800	0	44.3	1844.3	652	0	35.5	687.5	397	0	6.05	403.05	439.6	0	0	439.6	770	0	117	887	1153	0	55.8	1208.8
Residential (partial)	Number		0	2	2	26	0	0	26		1	0	1	185	0	0	185		0	0	0	173	0	0	173		0	3	3
Residential (full)	Number	40	0	21	61	33	1	3	37	10	1	0	11	299	20	5	324	14	0	0	14	16	0	0	16	55	1	16	72
Business (partial)	Number		3	2	5	38	4	1	43		1	1	2	127	0	0	127		0	0	0		1	1	2		0	12	12
Business (full)	Number	20	3	0	23	21	1	0	22	25	9	0	34	66	11	0	77	16	6	0	22	8	0	0	8	45	21	21	87
Public Semi-public (partial)	Number		1	0	1	0	1	0	1	2	0	0	2		0	1	1	1	0	0	1	0	0	0	0		1	0	1
Public Semi-public (full)	Number	1	0	0	1	0	0	0	0	0	1	1	2	10	0	0	10	0	0	0	0	0	0	0	0	4	0	0	4
Air Quality	Rating	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●
Noise (sensitive receptors)	No. of Units	119	0	0	119	73	22	0	95	11	0	0	11	124	0	0	124	15	0	0	15	14	0	0	14	671	0	0	671
Streams & Wetlands (jurisdct'l)																													
Streams*	Lin. Ft.	19022	0	1134	20156	41560	2200	810	44570	19009	0	916	19925	18996	0	0	18996	4968	0	0	4968	27070	0	998	28068	38605	0	2840	41445
Wetlands*	Acres	10.8	0	0.03	10.83	26.9	3.58	0	30.48	6.32	0	0.05	6.37	2.76	0	0	2.76	4.85	0	0	4.85	7.65	0	0	7.65	2.73	0	0.3	3.03
Wetlands*	Acres	0.8	0	0	0.8	15.5	0	0.09	15.59	5.82	0	0	5.82	0	0	0	0	0	0	0	0	2.76	0	0	2.76	2.15	0	0	2.15
Water Quality Impacts	Type	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●
Floodplain Impacts	Acres	102.5	0	2.0	104.5	98	0	0	98	71.8	0	0	71.8	72	0	4.5	76.5	12.6	0	0	12.6	38.9	0	1.0	39.9	11.3	0	12.26	23.56
Biological Resources																													
Natural Communities (woodland)	Acres	33.7	0	5.6	39.3	294	0	5.9	299.9	230	0	12.6	242.6	143	0	5.8	148.8		0	0	0	115	0	1.8	116.8		0	8.7	8.7
Natural Communities (rangeland)	Number	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
Cultural Resources**	Number	0	0	0	0	15	0	1	16	0	0	1	1	2	0	1	3	4	0	0	4	0	0	0	0	2	0	1	3
Hazardous Material Sites***	Number	5	0	0	5	33	1	0	34	7	2	0	9	15	0	0	15	3	3	0	6	8	0	0	8		4	7	11
Visual Assessment	Rating	▲	NC	●	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	●	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲
Construction Impacts	Rating	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	NC	▲	▲	NC	●	▲
Environmental Mitigation****	Rating	●	Add'l	Add'l	●	●	Add'l	Add'l	●	●	Add'l	Add'l	●	●	Add'l	Add'l	●	●	Add'l	NC	●	●	NC	Add'l	●	●	Add'l	Add'l	●
Secondary and Cumulative	Rating	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●
Section 4(f)	Yes/ No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No

* Second Tier quantities for stream, wetland, and pond impacts are derived from the previous PJWD Summary Reports and include impacts to only those water resources that are considered jurisdictional.

** Includes only historic cultural resources with an adverse effect and potentially eligible archaeological sites that require further testing prior to design.

*** All of the hazardous material sites are considered to have a "low potential for contamination".

**** The term *Additional* indicates that the mitigation committed to in the Second Tier Studies remains valid for the SEIS and that additional impacts related to the Truck-Only Lanes Alternative requiring mitigation (e.g., wetlands, streams) will receive the same commitments to perform mitigation.

NC = No Change

NOTE: Mat fix cells of those factors for which specific information was not available, are left blank.

Benefits > Adverse Impacts
Benefits = Adverse Impacts
Benefits < Adverse Impacts

I-70 Final Supplemental EIS Table of Contents

Executive Summary

Chapter One – Purpose and Need

What is the Improve I-70 Project?	1-1
Where is the project located?	1-1
Who is leading the project?	1-1
Isn't there already a plan in place for I-70?	1-2
Why a new study?	1-2
Why do we need this project?	1-3
What happens if we do not build the project?	1-9
Is this project coordinated with other plans and studies?	1-9

Chapter Two – Strategy Evaluation

How does the SEIS process aid decision-making for I-70?	2-1
How does the SEIS process lead to a decision?	2-1
What are the strategies for improving I-70?	2-2
What does the truck-only lane strategy look like?	2-4
Which strategy makes the most sense for I-70?	2-7
If you build truck-only lanes, what happens at the existing interchanges?	2-11
What are the next steps?	2-14

Chapter Three – Alternatives Considered

How does the Truck-Only Lanes Strategy advance into project alternatives?	3-1
How do you improve the I-70 mainline with truck-only lanes?	3-1
What alternatives were considered for interchanges along the corridor?	3-7
How much would it cost to build truck-only lanes?	3-12
How will the truck-only lanes be built?	3-13

Chapter Four – Affected Environment and Environmental Consequences

How were project impacts evaluated?	4-1
Have there been changes since the Second Tier Studies?	4-2
Does the Truck-Only Lanes Alternative have any additional impacts?	4-5
What are the additional impacts to the mainline of I-70?	4-5
What happens in environmentally sensitive areas of the project?	4-7
What are the additional impacts of the truck-car separated interchanges?	4-8
What other corridor-wide considerations for the project are there?	4-17
Are there considerations for the study area that do not change as a result of the Truck-Only Lanes Alternative?	4-27
What are the total impacts of the Truck-Only Lanes Alternative?	4-29

Chapter Five – Comments and Coordination

How were the public and agencies involved in the SEIS?	5-1
How did the study team work with the public?	5-3
How did the study team work with the resource agencies?	5-4
How did the study team consult with tribes located in the study area?	5-5
How was the public provided opportunities for input?	5-5
What were public and agency questions and concerns?	5-7

Chapter Six – Recommendation of Preferred Alternative

What are the key reasons for selecting Truck-Only Lanes as the Preferred Strategy?	6-1
How would the study team implement the Preferred Alternative?	6-2
Are there any challenges with implementing the Preferred Alternative?	6-3

Chapter Seven – List of Preparers**Chapter Eight – Circulation List****Chapter Nine – Index****Appendix****Technical Memorandum 1: Verification of Purpose and Need****Technical Memorandum 2: Tier 1 Strategy Screening****Technical Memorandum 3: Tier 2 Evaluation****Technical Memorandum 4: Comments and Coordination****Technical Memorandum 5: Kansas City Origin-Destination Study****Technical Memorandum 6: St. Louis Truck Lane Corridor Study****Technical Memorandum 7: Public Hearing Transcript****List of Figures****Chapter One – Purpose and Need**

Figure 1-1: Two-Way Average Daily Traffic Comparison: Second Tier to SEIS	1-5
Figure 1-2: I-70 Truck Traffic (1994, 1998, 2000 and 2005)	1-6
Figure 1-3: Crash Rates for Current Analysis Period (2003-2007)	1-7

Chapter Two – Strategy Evaluation

Figure 2-1: Widen Existing I-70 Strategy	2-2
Figure 2-2: Rural Options for the Truck-Only Lane Strategy	2-5
Figure 2-3: Options for the Truck-Only Lane Strategy in an Urban Setting	2-6
Figure 2-4: Ability of each Strategy to Meet Purpose and Need	2-8
Figure 2-5: Evaluation of Strategies	2-9
Figure 2-6: Example of a Truck-Only Lane Slip Ramp	2-11
Figure 2-7: Example of a Truck-Car Separated Interchange	2-12
Figure 2-8: Recommended Truck-Car Separated Interchange Locations	2-13

Chapter Three – Alternatives Considered

Figure 3-1: Rural Truck-Only Lanes Alternative	3-1
Figure 3-2: Example Truck-Only Lanes Alternative in an Urban Setting	3-2
Figure 3-3: Truck-Only Lane Application at Graham Rock	3-6
Figure 3-4: Truck-Car Separated Interchange Types	3-8
Figure 3-5: Truck-Car Separated Interchange Evaluation Matrix	3-10
Figure 3-6: Project Cost Estimate Summary in 2008 Dollars (in Billions)	3-12

Chapter Four – Affected Environment and Environmental Consequences

Figure 4-1: Sections of Independent Utility along the I-70 Corridor	4-1
Figure 4-2: Summary of New Impacts	4-2
Figure 4-3: Summary of Additional I-70 Mainline Impacts	4-5

Figure 4-4: Summary of Additional Truck-Car Separated Interchange Impacts.....	4-10
Figure 4-5: Number of Truck-Only Lanes and General-Purpose Lanes	4-18
Figure 4-6: Summary of Total Truck-Only Lanes Alternative Impacts	4-31

Chapter Five – Comments and Coordination

Figure 5-1: Goals and tools	5-2
Figure 5-2: Online public meeting navigator	5-6

Chapter One

What is the Improve I-70 Project?

The Missouri Department of Transportation (MoDOT) is looking at how best to rebuild I-70 to make sure that Missouri's "Main Street" continues supporting the state's transportation needs and economic strength. Designed and built during the Eisenhower presidency in the 1950s, the highway was planned to serve Missouri for about 20 years. In the years since, through ongoing care and maintenance, MoDOT has been able to extend the life of this highway. However, some parts of the existing highway are 50 years old, and the need to rebuild I-70 remains and grows.

Where is the project located?

Interstate 70 is the spine of America's interstate highway system. As it extends through Missouri, it is the primary highway connecting the state's two largest cities: Kansas City and St. Louis. The I-70 Supplemental Environmental Impact Statement (SEIS) study area stretches from Independence (Exit 15, the I-470 interchange), to the Lake St.

Louis interchange (Exit 214). Most of the study area is a rural, four-lane interstate highway with a grass median. The parts of the study corridor within the cities of Columbia, metro Kansas City and St. Louis include three or four lanes of travel in each direction and includes concrete median barriers in many places. The 199-mile study corridor does not include I-70 within the city

limits of Kansas City and St. Louis. Improvements to I-70 within the city limits of Kansas City and St. Louis are part of other, separate projects.

Who is leading the project?

The co-lead agencies comprising the Improve I-70 study team are MoDOT and the Federal Highway Administration (FHWA). MoDOT is the state agency that owns and maintains I-70 through Missouri.

FHWA is the lead federal agency responsible for making sure that potential improvements are developed in accordance with the National

Purpose and Need

Chapter 1, Purpose and Need, explains where the project is located, who is leading it, and why I-70 needs improvement. The Purpose and Need section is in many ways the most important chapter of an Environmental Impact Statement (EIS). It establishes why the study team is proposing the project and explains to the public and decision makers that the expenditure of funds is necessary and worthwhile. **Technical Memorandum 1** provides further detail on the development of the overall purpose and basic needs detailed in this chapter.



Environmental Policy Act (NEPA) and other applicable federal regulations and standards.

Isn't there already a plan in place for I-70?

The current I-70 SEIS is an extension of earlier efforts to study whether to improve I-70 and in what ways.

The planning process started in 1999, when MoDOT and FHWA conducted a statewide feasibility study on how best to improve I-70. That study documented the condition of I-70 and how it might operate in the future by looking at how much traffic it could carry, how safe it was, and how easy it was to travel. Based on the 1999 Feasibility Study, MoDOT and FHWA decided to conduct a more detailed evaluation of I-70 improvement options. Because of the size, cost and complexity of the project, the study of possible improvements and their impacts occurred in two phases or tiers. The First Tier Environmental Impact Statement, completed in 2001, looked at a range of statewide I-70 strategies and recommended rebuilding and widening the highway.



In 2006, the study team completed the Improve I-70 Second Tier Environmental Studies.

Improve I-70 broke the highway down into seven sections and studied how rebuilding and widening I-70 would impact nature, homes, businesses and communities in each section.

After looking at the impacts in each of the seven sections, FHWA approved plans to rebuild and widen the highway to a minimum of six lanes, three in each direction, between St. Louis and Kansas City. The Improve I-70 recommendations for the highway included:

- New frontage roads at key locations;
- New interchanges and bridges at most locations;
- Wide medians in rural locations;
- A plan to keep four lanes open during construction; and
- Creating corridor enhancements and improving rest areas, now known as welcome centers, along I-70.

Why a new study?

During the I-70 SEIS, the study team will look at the feasibility and utility of one specific variation of previously approved plans to rebuild and widen the highway: truck-only lanes.

Truck-only lanes are an emerging idea to improve a highway's efficiency and safety, based in part on changes in the way shippers move freight. The study team is now looking at this idea to make sure that the best possible plan is in place for improving the highway when funding for I-70 improvements becomes available. That

means making sure that its recommendations keep up with new approaches to ensure safety and manage congestion.

At the national level, the work on I-70 improvements also extends work being done as a part of the U.S. Department of Transportation's Corridors of the Future Program. In 2006, Missouri, Illinois, Indiana and Ohio Departments of Transportation came together to develop a multi-state vision for the I-70 Corridor, based on shared transportation issues and needs. The DOTs came up with the idea of improving I-70 by building an 800-mile, four-state corridor with truck-only lanes, which would reduce traffic congestion, improve safety and expand economic growth. The study corridor extends east from I-435 in eastern Kansas City, Missouri to the Ohio/West Virginia border near Bridgeport, Ohio/Wheeling, West Virginia. The new I-70 would serve as a "Corridor of the Future" for vehicle and goods movement.

While the I-70 SEIS is coordinating with this national proposal for I-70, the SEIS will help decide if building dedicated truck lanes is the best solution for the I-70 Corridor in Missouri. This study does not undo the decisions approved in the First and Second Tier Studies. Instead, the I-70 SEIS will focus on comparing rebuilding and widening I-70 to six lanes versus rebuilding with Truck-Only Lanes. Not only does this work help create a plan that is efficient, effective and reflects public input, it also means that MoDOT has followed the federally-mandated steps needed to seek federal funds should they become available.

The I-70 SEIS does not undo the decisions made in the Improve I-70 Studies – those remain valid. The I-70 SEIS instead compares rebuilding and widening to six lanes with the option of rebuilding and widening I-70 with truck-only lanes.

The Corridors of the Future designation, and the I-70 SEIS, enable MoDOT to study the benefits and impacts of Truck-Only Lanes in more detail. Missouri's previous Improve I-70 Studies puts the state several years closer than the other three states in implementing long-term improvements. By completing this additional work, Missouri's I-70 will remain at the head of the line for more state and federal transportation funds when they become available for design and construction work.

Why do we need this project?

I-70 is the most important transportation corridor in Missouri, connecting the state's two largest cities and carrying more rural daily traffic than any other route. The safety and economic prosperity of Missourians depends, in part, on an I-70 that grows along with the state and nation. That is why MoDOT is working now to develop this plan for the future of I-70. The proposed action for the I-70 SEIS will address the same needs as the First and Second Tier Environmental Studies, including:

- Roadway capacity;
- Traffic safety;
- Roadway design features;
- System preservation;
- Goods movement;

- Access to recreational facilities; and
- National security and disaster preparedness.

As part of the federally required process, this SEIS has a formal Purpose and Need. The following describes specific purpose and need elements reviewed by the study team to make

The I-70 SEIS has the same purpose and need as the First and Second Tier Environmental Studies:

- **Roadway Capacity** – Increase roadway system capacity to meet future travel demands and to improve I-70's general operating conditions;
- **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 as needed to carry existing and future loads;
- **Goods Movement** – Improve the efficiency of freight movement using I-70;
- **Access to Recreational Facilities** – Facilitate motorists' using nearby regional recreational facilities through improved accessibility; and
- **National Security and Disaster Preparedness** – Improve this key corridor for moving personnel and equipment for deployment and emergency response.

sure that data trends and projections are still true since the conclusion of the 2006 Second Tier Studies. There have been no changes to the 2006 information related to (1) the need for access to recreation facilities and (2) national security and disaster preparedness.

Roadway Capacity - I-70 grows more and more congested each year.

I-70 is Missouri's most important transportation corridor. It connects the state's two largest cities and carries more rural traffic each day than any other route in the state. Many portions of I-70 carry more traffic than it was designed for, increasing delays and impeding traveler mobility, and more trucks and cars are traveling I-70 each day.

The study team based the need to widen I-70 in large part on projected growth in traffic over the next 25 years. To verify the previous work, the study team reviewed the previous study's base year traffic, from 2000, and updated it to 2005, the most current available data. The new traffic count information and updated projections confirmed earlier findings that, by 2030, traffic would exceed the highway's capacity in most locations along the corridor. As a result, all segments of I-70 would experience unstable traffic flows, stop-and-go conditions and heavy traffic volumes.

As shown in **Figure 1-1**, the most recent traffic counts indicate that the urban areas of the corridor, including Kansas City and St. Louis, are generally experiencing higher growth levels than projected in the travel demand modeling

Figure 1-1: Two-Way Average Daily Traffic Comparison: Second Tier to SEIS

Description	Second Tier 2000 ADT	SEIS 2005 ADT	Annual Growth (2000 -2005)	2030 Projected ADT	Annual Growth (2000-2030)
West of I-470	104,236	134,735	5.3%	134,770	1.0%
I-470 to Route-7	90,224	118,160	5.5%	124,090	1.2%
Route-7 to Oak Grove	68,635	53,590	-4.8%	101,480	0.9%
Oak Grove to Route-13	43,637	41,490	-1.0%	78,900	2.3%
Route-13 to Route-23	28,616	32,340	2.6%	68,040	3.0%
Route-23 to U.S.65	24,715	27,770	2.5%	64,760	3.1%
U.S.65 to Route-87	29,820	29,370	-0.3%	73,360	2.9%
U.S.65 to Midway	34,678	30,990	-2.2%	83,000	2.7%
Midway to U.S.63	59,714	72,860	4.1%	120,210	2.2%
U.S.63 to U.S.54	50,192	50,190	0.0%	74,140	2.9%
U.S.54 to Route-19	29,893	34,480	2.9%	69,010	3.0%
Route-19 to Route-A/Route-B	33,623	32,200	-0.9%	73,790	2.8%
From Route-A/Route-B to Route-47	28,600	31,100	1.7%	75,140	2.8%
From Route-47 to U.S.61	64,018	78,990	4.3%	110,310	2.3%
East of U.S.61	59,467	73,000	4.2%	100,360	1.8%

Source: MoDOT Transportation Management System, 2000 and 2005 traffic count data

conducted within the Second Tier Studies. These higher growth levels indicate that the urban areas of the project are growing faster than anticipated in the previous studies. It also indicates that traffic congestion issues and increased travel times may occur faster than projected along the corridor. This reinforces the need for capacity improvements on I-70.

For Columbia, some specific sections are experiencing annual growth rates of four percent, slightly higher than the projected model growth rates of 2.4 percent per year. However, the majority of sections through Columbia are generally on track with the anticipated growth trends from the Second Tier Studies.

The outlying rural areas of the corridor are largely experiencing flat to moderate growth over the same timeframe. Some specific sections are experiencing a decrease in traffic volumes. In the Second Tier Studies, the study team anticipated traffic growth for rural areas of approximately three percent per year. Year 2005 traffic data shows closer to one percent average annual growth for the corridor as a whole. The results of the data review indicate that overall rural areas along the corridor are growing slower than

anticipated in the Second Tier travel demand modeling.

The features that make I-70 the most traveled corridor in the state also make it appealing to truck traffic. Truck traffic will continue growing faster than general purpose traffic on I-70. According to MoDOT data, trucks transported more than 880 million tons within, from or to Missouri in 2006. By 2035, projections indicate that the quantity of goods transported annually by truck within, from or to Missouri will increase to 1.1 billion tons. Interstate 70 will continue carrying a large percentage of those shipments.

The Second Tier Studies traffic forecast work predicts that truck traffic will double by the year 2030 and that the overall percentage of average daily truck traffic will increase. That is an increase from an average of 9,000 to 22,000 vehicles per day. This equates to 25 to 30 percent of the average daily traffic consisting of trucks and an average annual growth rate of around three percent.

As shown in **Figure 1-2**, for the corridor as a whole, truck traffic has averaged about six

Figure 1-2: I-70 Truck Traffic (1994, 1998, 2000 and 2005)

	LOCATION				
	East of Route-13	East of U.S. 40	West of U.S. 54	West of Route-19	East of Route-47
1994 ¹	7,840	7,450	5,940	6,080	7,650
1998 ¹	8,720	8,290	9,320	8,220	8,870
2000 ²	7,980	10,200	8,500	7,700	9,660
2005 ³	9,350	22,000	11,000	10,500	15,900
Annual Percent Increase (1994 to 2005)	1.6%	10.3%	5.8%	5.1%	6.9%
Annual Percent Increase (2000 to 2005)	3.2%	16.6%	5.3%	6.4%	10.5%
Percent Trucks - 1998	21%	25%	32%	24%	22%
Percent Trucks - 2000	28%	20%	27%	26%	21%
Percent Trucks - 2005	29%	30%	22%	30%	20%

Sources:

1. Missouri Commercial Vehicle Map – 1994, 1998

2. I-70 Second Tier Environmental Studies - 2000

3. MoDOT I-70 Traffic Count Data – 2005

percent growth annually from 2000 to 2005. If this high degree of truck traffic growth continues, in the future trucks will represent a higher percentage of total travel in the corridor than originally projected. Additionally, as the amount of truck traffic continues to grow in the rural areas of the corridor, traffic operations on I-70 will continue to degrade at an increasing rate. This means that safety concerns, including severity of crashes and congestion due to speed differentials between cars and trucks will increase.

Traffic Safety – Truck-only lanes can contribute to safer traffic operations

MoDOT is constantly looking for ways to make highway travel safer. In recent years, MoDOT added guard cables to the I-70 median to help reduce the number and severity of crossover crashes. MoDOT also put in place other safety improvements such as larger signs, rumble stripes and improved striping. The installation of median guard cable has been 94 percent effective at eliminating crossover fatalities along the corridor. The improved striping and rumble stripes have contributed to a 29 percent reduction in run-off-the-road crashes. These improvements and other factors have contributed to a slight decline in average annual

total crashes along I-70 from 1995 to 2007. On a corridor-wide basis, Kansas City and St. Louis experienced decreases in crashes over the period. However, all other sections of the I-70 Corridor experienced an increase in crashes. As a result, safety is a critical need to address in the I-70 SEIS.

Maintaining I-70

The following MoDOT projects have helped maintain and improve I-70:

- Guard cable installation
- Resurfacing
- Improved striping
- Rumble stripes
- Larger signs



Figure 1-3: Crash Rates for Current Analysis Period (2003-2007)

TOTAL CRASHES	2003	2004	2005	2006	2007
Eastbound	1,422	1,585	1,530	1,303	1,393
Westbound	1,280	1,484	1,373	1,303	1,459
Total	2,702	3,069	2,903	2,606	2,852

EASTBOUND	2003	2004	2005	2006	2007
Crash Rate	111.58	122.07	116.5	98.48	Data Not Available
State Rate-Interstate	114.12	110.2	109.28	107.82	
State Rate-Freeway	113.41	111.43	109.04	106.3	

WESTBOUND	2003	2004	2005	2006	2007
Crash Rate	97.19	110.07	100.67	94.16	Data Not Available
State Rate-Interstate	114.12	110.2	109.28	107.82	
State Rate-Freeway	113.41	111.43	109.04	106.3	

Exceeds statewide crash rate for similar facilities.

Figure 1-3 shows the crash rates for I-70 from 2003 to 2007. The I-70 Corridor exceeded the statewide crash rate for similar interstates in 2004 and 2005.

Truck-only lanes offer another means for reducing the number and severity of I-70 crashes. Total crashes involving trucks are steadily increasing. Today trucks in Missouri are involved in 13 percent of all crashes and 40 percent of all fatalities on I-70. There has been a steady increase in the total number of crashes involving trucks, as well as a consistent trend in the number of injury and fatality crashes involving trucks.

MoDOT truck crash data shows that the state's top three crash types are: (1) out of control, (2) rear end, and (3) passing by changing lanes. In 2005, these three crash types accounted for over 81 percent of the truck crashes on I-70. The Federal Motor Carrier Safety Administration's latest available Large Truck Crash Facts 2003 also noted that the drivers and passengers in cars and small trucks are more than five times as likely to die in crashes than the drivers and

passengers of the large trucks they collide with. The number and severity of crashes that include both cars and trucks indicates that safety on major highways could improve by separating them.

System Preservation and Roadway Design Features – Existing I-70 was not designed to accommodate the current volume and types of vehicles

Built in the late 1950s and early 1960s, the designers of I-70 intended the highway to last 20 years. MoDOT has extended the highway's effective life through ongoing care and





maintenance. Since completing the Second Tier Studies in 2006, MoDOT resurfaced I-70 as part of the state's Smooth Roads Initiative. MoDOT also has made other safety and preservation improvements, including adding guard cables to the median, rumble stripes, improved striping and larger signs. However, these improvements do not address the fact that existing I-70 does not meet current highway design standards. Either the original Widen Existing I-70 Strategy or Truck-Only Lanes Strategy would upgrade I-70's travel lanes, median, interchanges, and vertical alignment.

Goods Movement – I-70 is vital to moving Missouri's people and goods

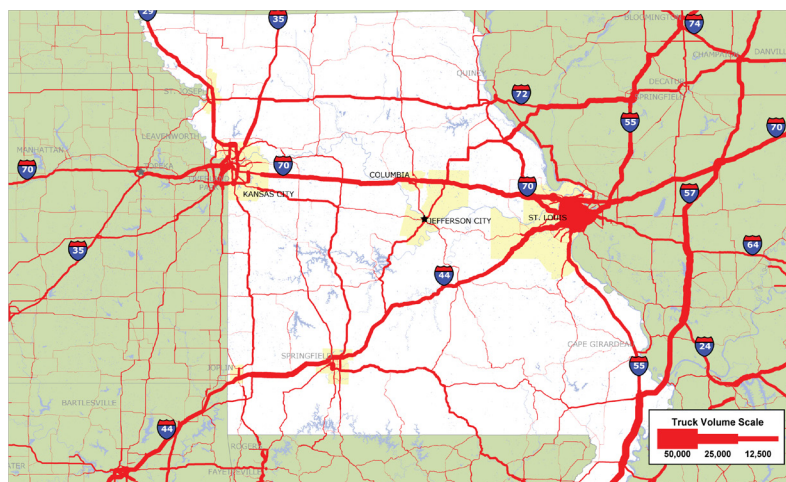
To support goods movement and commerce, I-70's condition and performance needs to improve for truck mobility, reliability and safety. The highway continues to be a major east-west route, with trucks making up 25 to 30 percent of daily traffic. A review of the trucking industry's role in Missouri's economy shows that:

- Eighty-seven percent of Missouri's communities are dependent on trucks to deliver products and raw materials.

- There are about 36,600 tractor-trailer trucks licensed in Missouri, each representing not only a job for a driver, but also jobs for those individuals who make their living maintaining or servicing those trucks.
- Trucks in Missouri pay taxes on more than 900 million gallons of fuel purchased in the state annually.
- The vast majority of Missouri's stores, restaurants, manufacturers, farmers and other businesses depend on truck deliveries to deliver and ship products.

In addition, I-70 generates \$4.3 billion in net general revenue and \$89.9 billion in gross state product. Materials continue to move into, out of, and through the state of Missouri at a growing rate. Currently, trucks and passenger vehicles must compete for the available roadway

By 2035, the quantity of goods transported annually by truck within, from or to Missouri is projected to increase to 1.1 billion tons. The map below, which projects truck flow across the state for 2020, shows that an average of 20,000 trucks will travel daily on I-70 between St. Louis and Kansas City.



Sources include: Federal Highway Administration Freight operations analysis, Missouri Department of Transportation's Tracker analysis and the First and Second Tier I-70 Studies and U.S. Census data.

capacity. Truck only lanes could offer Missouri and the nation's businesses greater efficiencies and reliability as they serve Missouri's businesses, farms and families.

What happens if we do not build the project?

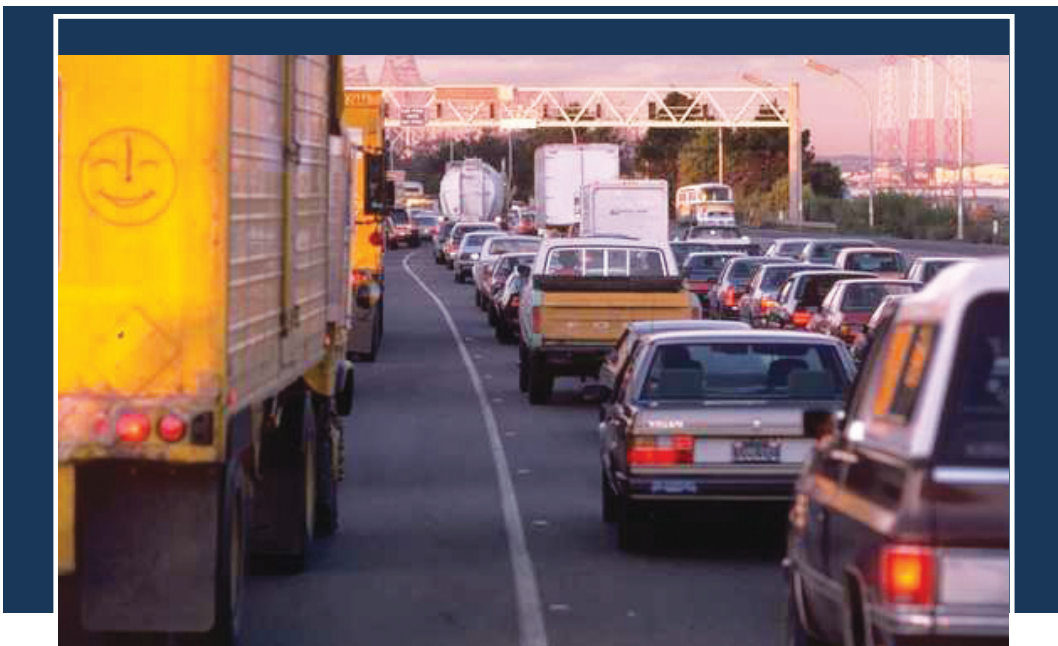
I-70 is an important corridor that is critical to our state and national economy. It generates nearly \$90 billion annually and supports nearly 25 percent of the state's jobs that are located along I-70. The U.S. Department of Transportation's designation of I-70 as a Corridor of the Future indicates the importance of the highway to national mobility and the economy.

However, traffic forecasts project that I-70 will average 70,000 vehicles per day by the year 2030 and that the volume of truck traffic will double. The increase in overall traffic, and in particular

truck traffic, will continue to tax the safety, capacity and efficiency of a highway that officials designed 50 years ago to accommodate much fewer and smaller vehicles. Design standards have become more stringent over the years. Updating the highway will ensure that I-70 meets those higher design and safety standards. Without the improvements, all segments of I-70 likely will experience an increase in stop-and-go traffic, overcrowding and backups, as well as safety challenges.

Is this project coordinated with other plans and studies?

The study team is coordinating the SEIS with several other federal and state projects. Although this coordination does not imply a MoDOT or FHWA commitment to construct these projects, it does reflect reasonably anticipated long-range improvements to corridors that connect to or parallel I-70 or may have an effect on the SEIS.



Missouri is partners with Illinois, Indiana, Ohio and the FHWA in looking at how to improve a multi-state 800-mile I-70 Corridor. The study corridor extends from I-435 on the eastern part of Kansas City, Missouri to the Ohio/West Virginia border. That's why the federal government's funding of the I-70 SEIS is being done as part of the U.S. Department of Transportation's Corridors of the Future program. The new I-70 Corridor would serve as a "Corridor of the Future" for vehicle and goods movement.

At the state level projects include:

- U.S. 36 – Widening and improving the U.S. 36 Corridor to a four-lane expressway for its entire length between I-29 and the Mississippi River.
- U.S. 50 – Widening and improving the corridor to a four-lane highway to provide an expressway facility from I-435 in Kansas City to I-44 located southwest of St. Louis.
- I-70 Improvement Study First Tier Environmental Impact Statement (FTEIS) in Jackson County – MoDOT is currently identifying and evaluating the social, economic, and environmental effects of alternative transportation improvements such as improving I-70 in Jackson County, Missouri. The study area for the FTEIS includes I-70 from the last ramp termini east of the Missouri – Kansas state line to Exit 15 at the I-470 interchange.
- U.S. 61/U.S. 40 – In 2009, the ongoing work to improve the U.S. 61/U.S. 40 interchange with I-70 and roadway corridor to the east within the St. Louis metropolitan area will



Additional Information

There is a CD attached to the back cover of this document. This CD provides additional project information, such as the Technical Memoranda.

be completed. Following the upgrade to interstate standards, these portions of U.S. 61/U.S. 40 will be designated as I-64.

- Kansas City Origin-Destination Study – Concurrent with the SEIS process in 2008, an origin-destination study was completed for the Kansas City metropolitan area. The origin-destination study consisted of surveying truckers at weigh stations along interstate routes and major highways throughout the metropolitan area to get a better understanding of where trucks are coming from and going to as they travel through and within the metropolitan area. A copy of the study is included as **Technical Memorandum 5** and is contained in the CD attached to the back cover of the document.
- St. Louis Truck Lane Corridor Study – In coordination with the SEIS, a planning level study of how truck-only lanes could travel through the St. Louis metropolitan area was conducted. This study was completed in order to provide early information on potential truck-only lane routing through St. Louis to the federal I-70 Corridors of the Future project. A copy of the study is included as **Technical Memorandum 6** and is contained in the CD attached to the back cover of the document.

Chapter Two

How does the SEIS process aid decision-making for I-70?

A Supplemental EIS considers how new circumstances, such as a new alternative, effects the decisions made in an EIS – in this instance, the Improve I-70 First and Second Tier Environmental Studies. The I-70 SEIS considers new or additional environmental impacts, based on the introduction of a new improvement strategy, and if any, the changes in the natural environment or communities.

Why are we conducting the SEIS?

MoDOT needs to make improvements to ensure that I-70 continues to serve as Missouri's "Main Street."

The study team is conducting the SEIS after identifying truck-only lanes as a new strategy that might have merit for I-70. The I-70 SEIS will evaluate if a Truck-Only Lane Strategy is viable, and if so, how truck-only lanes alter the impacts and recommendations previously identified in the First and Second Tier Studies. The I-70 SEIS will:

- Supplement previous Improve I-70 environmental documents;

- Review the formal project goals or the study's "Purpose and Need";
- Review existing conditions for significant changes since the completion of previous environmental studies;
- Develop a new Truck-Only Lanes Strategy to evaluate and compare against the Widen Existing I-70 Strategy;
- Evaluate the impacts of truck-only lanes to the natural and man-made environment;
- Provide multiple opportunities for public input, including public hearings; and
- Set the stage to seek funding to design and construct those improvements.

How does the SEIS process lead to a decision?

The decision-making process for the I-70 SEIS

involves several key steps. At each of these steps, the study team collaborates with the public, resource agencies and stakeholder groups. As discussed in **Chapter 1**, Step 1, project Purpose and Need, identified the reasons why we need the project. The remaining steps in the process include the following:

- Step 2 – Identify, compare and select a strategy for improving the entire I-70 Corridor;

Strategy Evaluation

Chapter 2, Strategy Evaluation, provides an overview of how the study team compared strategies and selected one for improving I-70. The study team evaluated the merits of a new, Truck-Only Lanes Strategy, with the strategy selected during the First Tier Environmental Study, which is referred to as the Widen Existing I-70 Strategy. At this stage, the study team evaluated each strategy to determine if they met the project purpose and need and then compared each to one another. Once the study team determined the Truck-Only Lane Strategy merited further development, they analyzed each of the existing 56 interchanges to determine which locations might warrant new, separate interchanges that keep trucks and cars separate. **Technical Memorandum 2, Tier 1 Strategy Screening**, provides further detail on the evaluation process for selecting an improvement strategy and locations for truck-car separated interchanges.

- Step 3 – Apply the selected strategy as alternatives along the corridor;
- Step 4 – Assess the impacts of the strategy to the natural and man-made environment;
- Step 5 – Recommend improvement alternatives;
- Step 6 – Document the process and receive public comment;
- Step 7 – Finalize and submit the document for formal federal approval.

Considering the worthiness of a truck-only lane strategy does not undo decisions made in the First and Second Tier Studies. Those decisions remain valid. If at any point the study team determines that Widen Existing I-70 remains the best option, the SEIS will conclude and the original decision made in the First and Second Tier Studies stay in place.

What are the strategies for improving I-70?

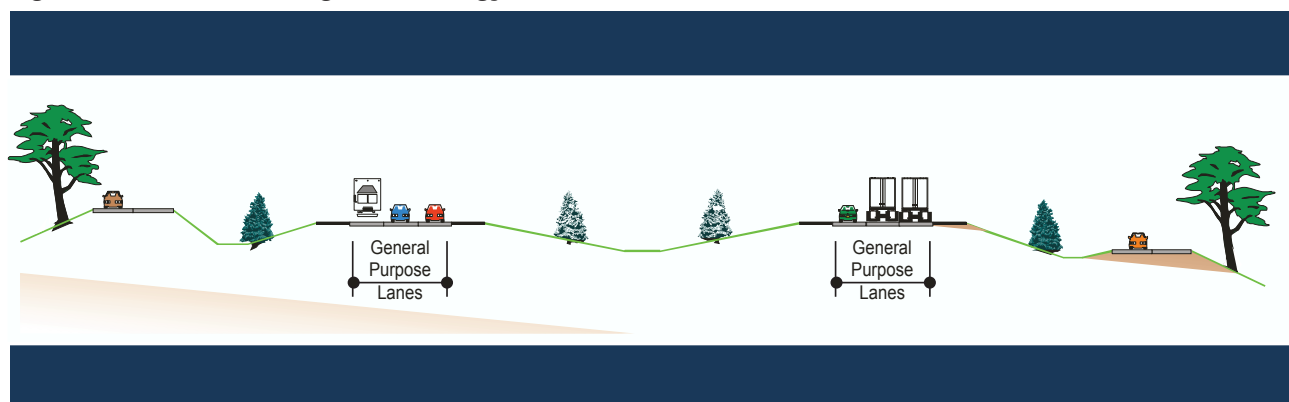
Widen Existing I-70

During the First Tier Study, FHWA and MoDOT selected to rebuild and widen existing I-70 to

six lanes. As displayed in **Figure 2-1**, this strategy, referred to as the Widen Existing I-70 Strategy, involved the improvement and total reconstruction of the existing freeway alignment. Future travel demands dictated that six lanes be provided in rural areas and eight lanes or more through Columbia and approaching Kansas City and St. Louis. This strategy included provisions for future transportation improvements within the median area in rural areas, and the ability to add capacity in the future. MoDOT and FHWA chose this strategy over others such as a new parallel facility or toll road, because the Widen Existing I-70 Strategy:

- Met the long-term travel and safety needs for the corridor;
- Responded to public concerns;
- Replaced existing I-70 pavement;
- Lowered annual maintenance;
- Reinvested in the existing system;
- Able to build in usable increments;
- Incorporated management type improvements such as Intelligent Transportation Systems;
- Improved incident management;

Figure 2-1: Widen Existing I-70 Strategy



What were the other strategies originally considered?

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.

- Incorporated a wide median to serve future transportation improvements.

Truck-Only Lanes Strategy

Dedicated truck facilities are rare across the country and no state currently has a truck-only facility similar to what is being proposed in Missouri. However, both national research and studies being conducted in other states, such as Virginia, Texas and Iowa, are all being proposed to use the inside lanes for trucks.

As envisioned by the study team, this strategy would construct two truck-only lanes and two or more general-purpose lanes in each direction along existing I-70. Concrete barriers, buffer separations or grassed areas would separate the truck-only lanes and general-purpose lanes from each other, depending on the location along the corridor. The truck-only lanes would have the following characteristics:

- Dedicated specifically for use by qualifying trucks. Qualifying trucks could include a wide range of vehicle types including semi tractor-trailers, delivery trucks and buses;
- Designed to handle the additional weight and height of heavier vehicles and potentially longer combination vehicles, such as triple-trailers;
- Designed to have slip ramps from the truck-only lanes to the general-purpose lanes to serve all interchanges;
- Designed to have their own truck-car-separated interchanges at specific locations that have heavy truck traffic and significant freight generating facilities, with separate entrance and exit ramps;
- Designed for use by all traffic during specific periods for incident management, such as lane closures for crashes or construction.

The study team intends to keep this new strategy consistent with the decisions made in the First and Second Tier Studies. The intent is to fit the Truck-Only Lanes Strategy within the limits of the previously cleared Widen Existing I-70 Strategy footprint to the extent possible. In order to do this, the Truck-Only Lanes Strategy would utilize the preserved future transportation corridor called for in the Widen Existing I-70 Strategy.

What does the truck-only lane strategy look like?

The study team considered four different options for the corridor. The options ranged from a basic restriction of trucks to the two outside lanes of the previously approved Widen Existing I-70 Strategy, to a physical separation of trucks and general-purpose traffic. As displayed in **Figure 2-2**, the rural options considered included the following:

- **Option 1** – Use the Widen Existing I-70 Strategy six-lane section and restrict all truck traffic to the two outside lanes;
- **Option 2** – Place trucks on the inside lanes and general-purpose traffic on the outside lanes using a grass separation;
- **Option 3** – Place trucks on the outside lanes and general-purpose traffic on the inside lanes using a grass separation;
- **Option 4** – Place all trucks on one side of I-70 with general-purpose lanes on the opposite side of I-70.

A variation of Option 4 included a further separation of trucks from general-purpose

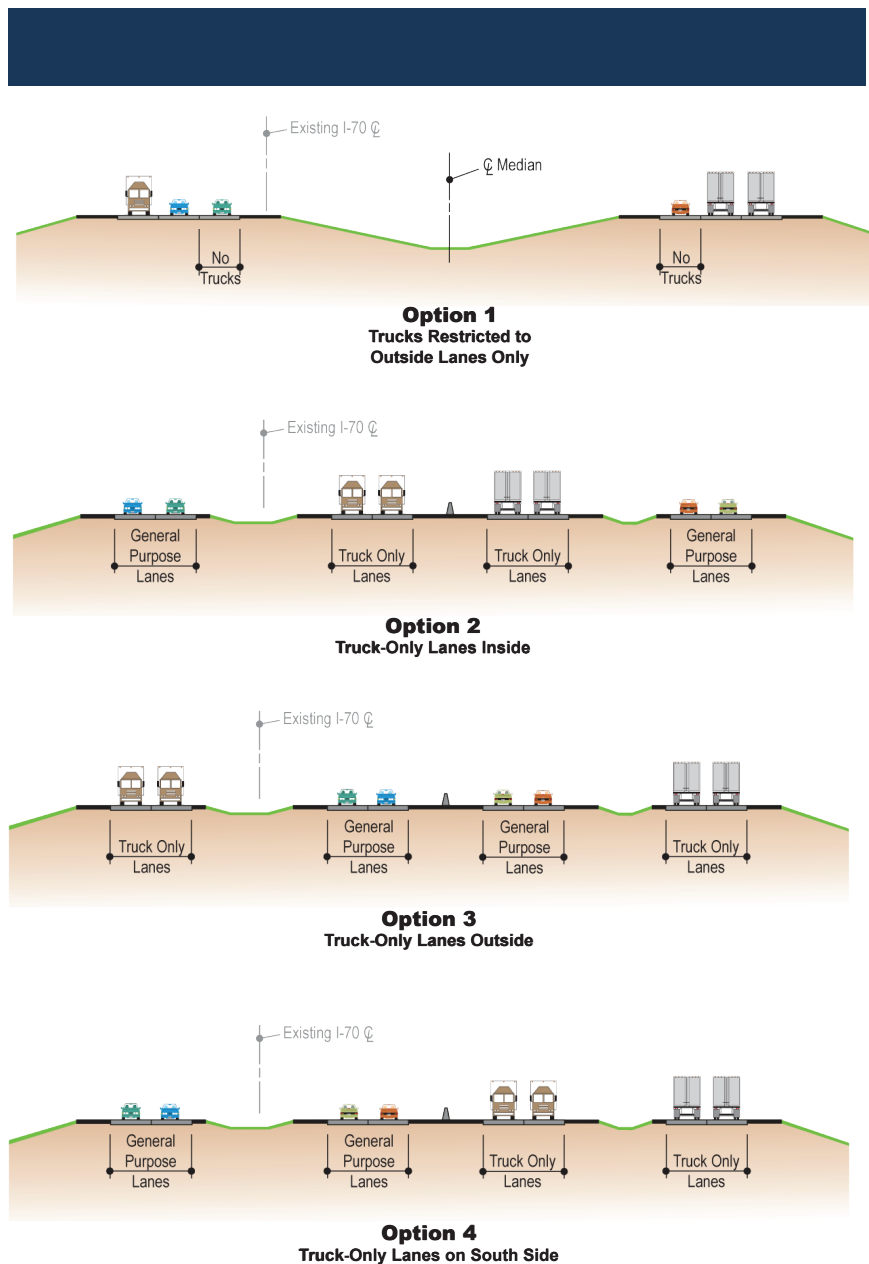
traffic by pulling the general-purpose lanes off the existing I-70 corridor at key areas of scenic interest. This separation could occur to either the north or south side of the I-70 corridor, depending on the scenic potential such as river valleys, wetlands and cultural resources. MoDOT could construct these off-alignment sections as a scenic parkway for general-purpose traffic. The truck-only lanes would continue to utilize the existing I-70 corridor.

Constructing new sections of I-70 on new alignment, as with Option 4, would result in greater impacts to the natural and manmade environment than options that remain along the existing I-70 Corridor. While new scenic parkway sections would enhance the driving experience through Missouri, it would be difficult to clear a new parkway through these scenic areas without creating significant additional impacts. It was not considered further as a reasonable option due to these drawbacks.

The study team selected to develop Option 2 in more detail as an alternative. They determined that Option 2 provided the best method for implementing the Truck-Only Lane Strategy. Reasons for the decision included the following:

- Incorporating a physical grass separation provides greater safety benefits than truck restrictions to outside lanes;
- It minimized truck-car conflicts and could reduce the severity of crashes;
- General-purpose traffic needs to exit more than truck traffic does at most interchanges;

Figure 2-2: Rural Options for the Truck-Only Lane Strategy



- Locating general-purpose traffic on the outside maintains a higher visibility for adjacent businesses and corridor interchanges;
- With trucks located on the inside and located further away from businesses and

residences along the corridor, there is less highway noise associated with heavy trucks.

Within the urban portions of the corridor – Kansas City, St. Louis and Columbia – the study team considered two variations of Option 2.



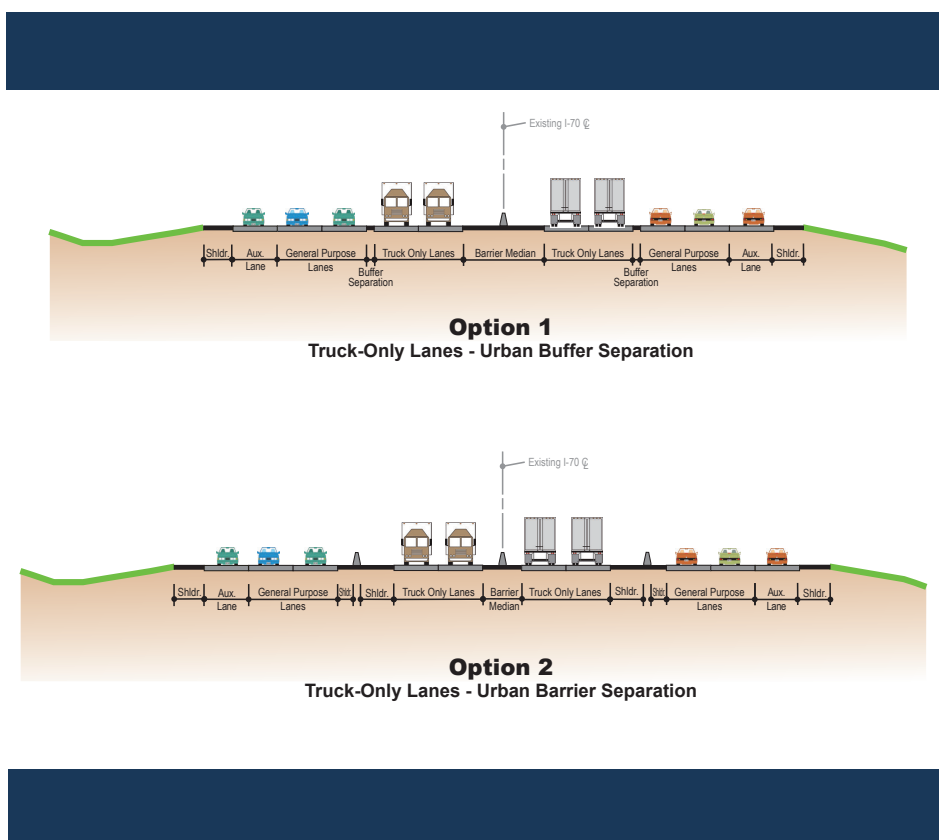
Example of Option 2 in rural setting.

As displayed in Figure 2-3, the two variations differed in how to separate the truck-only lanes from the general-purpose lanes. One variation utilized a concrete barrier separation, the other a buffer separation.

it harder for maintenance, such as snow removal and roadway repairs, and emergency vehicles, to access the truck-only lanes safely and efficiently. Additionally, the buffer separation allows greater flexibility in adjusting the distribution of lanes

The study team decided that a buffer separation would be the best method to separate the truck-only lanes from the general-purpose lanes in an urban setting. Incorporating concrete barriers and their accompanying shoulder widths would be more expensive and require higher right of way costs. This additional right of way would cause greater impacts to adjacent properties and the environment. Barrier separations could make

Figure 2-3: Options for the Truck-Only Lane Strategy in an Urban Setting



Did the study team consider other new strategies besides truck-only lanes?

Yes, the study team did consider other potential strategies besides truck-only lanes. These strategies included **improving freight rail, as well as ports and waterways**. However, the study team quickly determined that increasing rail or ports and waterways service would not alleviate the issues or needs for improving I-70. For instance, increasing rail or waterway transport of commodities would not eliminate the need to transport goods via truck, due to the differences in types of cargo.

The study team originally considered **improved passenger rail service** during the First Tier Study. At the time, it did not meet the Purpose and Need of the project due to low ridership projections. That remains true today. Additionally, a new rail line in the I-70 corridor would need to connect through farms, communities and cities, creating significant environmental and community impacts, all at a significant cost.

Although these strategies do not meet the Purpose and Need of the I-70 Corridor, MoDOT is committed to making rail and ports and waterways improvements within the state as part of the state's overall transportation program.

between truck lanes and general-purpose lanes to adapt to changing traffic patterns. A concrete barrier, however, would still separate the truck-only lanes from one another.

Which strategy makes the most sense for I-70?

How do you compare strategies?

Once the study team agreed upon the strategy of building truck-only lanes on the inside, it needed to be compared to the Widen Existing I-70 Strategy, to assess which would perform better. The first part of that comparison tested each strategy's ability to meet the project Purpose and Need. The second part of the comparison focused on a more detailed technical assessment and evaluation that tested strategies using the same criteria developed during the First Tier EIS strategy screening. If at any time the Widen Existing I-70 Strategy tested better, the evaluation would cease and the original

recommendation to rebuild and widen the existing highway would stand.








Test 1 – Purpose and Need

The first test in the SEIS screening process was to evaluate the Truck-Only Lanes Strategy's ability to meet the established Purpose and Need. **Figure 2-4** displays each element of the project Purpose and Need and indicates each strategy's ability to address it. As displayed in the figure, both strategies addressed each element of the Purpose and Need. Since both strategies address Purpose and Need, the study team continued the testing of each strategy with a more detailed assessment.

Test 2 – Performance of Each Strategy

Considering the results of the initial Purpose and Need screening, the study team performed a more detailed technical assessment and evaluation of the strategies. In order to assess and quantify each strategy, the study team

Figure 2-4: Ability of each Strategy to Meet Purpose and Need

	Roadway Capacity 	Traffic Safety 	Roadway Design Features 	System Preservation 	Move Goods Efficiently 	Access to Recreation Facilities 	National Security 
Widen Existing I-70	✓	✓	✓	✓	✓	✓	✓
Truck Only Lanes (Inside Lanes)	✓	✓	✓	✓	✓	✓	✓

utilized evaluation factors for the following categories:

- Engineering – Cost estimates, constructability, implementation
- Traffic – Capacity, operations, efficiencies, safety
- Environmental – Natural, cultural and other resources, Missouri River crossing
- Social and Economic – Property impacts, land use, environmental justice.

As with the initial screening, the study team only compared the preferred strategy from the previous First and Second Tier Environmental Studies (Widen Existing I-70) to the new Truck-only Lane Strategy.

As displayed in **Figure 2-5**, the effect of each strategy on the social and natural environments is essentially the same. The only instance where the two differ in regards to this category is that the Truck-Only Lanes Strategy would have a greater chance for secondary impacts and the Widen Existing I-70 Strategy would have a greater impact during construction on the operation of businesses located along I-70. The study team considered the remaining social and natural environment evaluation factors to be no different from one strategy to the other. This is primarily due to the study team's decision to fit the Truck-Only Lanes Strategy within the same footprint previously cleared for the Widen Existing I-70 Strategy.

From a traffic and engineering perspective, the Truck-only Lane Strategy rated better than the Widen Existing I-70 Strategy based on the following criteria:

Constructability

The Truck-Only Lanes Strategy offers simpler construction staging and an ability to maintain traffic better during construction. This is due to the ability to construct truck-only lanes “off-line” from the existing I-70. Traffic would shift to the new lanes while rehabilitating or reconstructing the existing I-70 lanes. Truck-only lanes would also require less construction coordination to effectively stage and remobilize the construction operations.

Traffic capacity and operations

The Truck-Only Lanes Strategy would provide eight travel lanes to meet future travel demands instead of six. In future years, this would also mean that a greater percentage of the highway's capacity would be available by utilizing truck-only lanes. Although each strategy would improve travel times across the state, the study team projected that truck-only lanes offered a slightly higher travel time savings (approximately 20 minutes over a No-Build condition), since it would have better long-term capacity available and would separate cars and trucks.

Travel efficiencies

Measures of travel efficiency include the amount of miles and number of hours spent

Figure 2-5: Evaluation of Strategies

EVALUATION FACTOR	UNIT	I-70 IMPROVEMENT (REASONABLE STRATEGIES)	
		Widen Existing I-70	Truck-Only Lanes (Inside Lanes)
ENGINEERING			
Capital Cost (Order of magnitude):			
- New Construction (2008 Dollars)	\$Billion	\$3.0 to \$3.5	\$3.5 to \$4.0
- Right of Way (2008 Dollars)	\$Billion	0.04 to \$0.05	0.04 to \$0.05
Total	\$Billion	\$3.04 to \$3.55	\$3.54 to \$4.05
Annual O & M and Preservation Cost	\$Million	\$10.0	\$12.0
Constructability:			
- Construction Staging	Rating	○	●
- Maintenance of Traffic (Construction Delay)	Rating	⬢	◐
Implementation	Rating	●	◑
TRAFFIC			
2030 Daily Traffic Volumes (rural/urban):	vpd	75,000/100,000	80,000/105,000
Long-Term Corridor Capacity (2030):			
- Vehicle Capacity (Directional)	vph	6,300	8,400
- V/C Ratio Rural Areas	V/C	0.75	0.61
Traffic Operations (2030)			
- % Corridor at Target LOS	Rating	●	●
- Change in KC to St. Louis Travel Time	Rating	◐	●
Travel Efficiencies (2030):			
- Change in Daily VHT (per person)	Rating	◐	●
- Change in Daily VMT	Rating	◐	◐
- Service in Trucks	Rating	◐	●
Traffic Delay During Maintenance Activities	Rating	◐	●
Change in 2030 Crashes (Total Corridor):			
- Study Corridor Crash Rate	Rating	◐	●
- Construction Work Zone Crashes	Rating	⬢	◐
Incident Management	Rating	○	●
Impact to Emergency Services	Rating	○	◐
ENVIRONMENTAL			
Natural Resource Impacts	Rating	○	○
Missouri River Impacts	Rating	○	○
Cultural Resource Impacts	Rating	○	○
Hazardous Waste Impacts	Rating	○	○
Parklands Impacts	Rating	○	○
Floodplains	Rating	○	○
Secondary Impacts	Rating	◑	⬢
Joint Development Opportunities	Rating	◐	◐
SOCIAL AND ECONOMIC			
Impacts to Existing Structures	Rating	⬢	⬢
Noise Impacts	Rating	⬢	⬢
Compatibility with Land Use	Rating	○	○
Impacts to Existing I-70 Business Operations:			
- During Construction	Rating	◑	○
- Long Term	Rating	○	○
Environmental Justice	Rating	○	○
Cost-Effectiveness			
- User Cost Savings	Rating	◐	◐
- Benefit/Cost Ratio	Rating	◐	◐
● Benefits >> Adverse Impacts ◐ Benefits > Adverse Impacts ○ Benefits = Adverse Impacts ◑ Benefits < Adverse Impacts ⬢ Benefits << Adverse Impacts			

● Benefits >> Adverse Impacts ◐ Benefits > Adverse Impacts ○ Benefits = Adverse Impacts
 ◑ Benefits < Adverse Impacts ⬢ Benefits << Adverse Impacts

traveling in the corridor each day. A decrease in travel times and an increase in miles traveled indicate greater travel efficiency. The study team's analysis indicated that for the future year 2030, both strategies would lead to more miles traveled coupled with a decrease in travel times. With a Truck-Only Lanes Strategy, however, the separation of cars and trucks would offer savings in travel time and would draw more out of distance travelers (especially long-haul trucks) to increase the amount of miles traveled on the highway.

Enhanced freight movement

The study team could design the Truck-Only Lanes Strategy in such a way that it could accommodate greater load limits and longer combination vehicles. Accommodating the greater loads and longer combinations, however, would require a change in state legislation to allow it.

Travel safety

Each strategy offers features to improve the safety of the I-70 Corridor, however, the Truck-Only Lanes Strategy would provide a greater measure of improvement. This is due mostly to the separation of trucks from general-purpose traffic that in turn reduces the frequency of crashes resulting from truck-car conflict points.

Incident management

Even though both strategies improve the ability to manage incidents, the Truck-Only Lanes Strategy offers more flexibility in handling incidents. This flexibility is the result of the redundancy offered by the strategy. During

incidents, the slip ramps provide the ability to shift traffic from the general-purpose to the truck-only lanes, or vice versa.

What strategy does the study team recommend?

In light of how it compared to the Widen Existing I-70 Strategy, the study team chose to proceed with an in-depth evaluation of the Truck-Only Lanes Strategy. The study team selected the Truck-Only Lanes Strategy over the Widen Existing I-70 Strategy because the Truck-Only Lane Strategy:

- Offered greater capacity and safety benefits;
- Responded to the public's safety concerns by separating general-purpose vehicles from trucks;
- Responded to national trends to improve freight flows and efficiency and ties in with Federal Corridors of the Future vision for I-70;
- Reinvested in existing I-70 roadway and is able to utilize a greater percentage of existing infrastructure such as existing roadbed and bridges;
- Offered improved incident management and emergency response through system redundancy;
- Provided improved maintenance of traffic during construction since the majority of work is able to be constructed "off-line"; and
- Allowed flexibility to respond to emerging trends in freight movement without compromising operational conditions of general-purpose traffic.

If you build truck-only lanes, what happens at the existing interchanges?

Early in the development of the Truck-Only Lanes Strategy, the study team decided to retain the interchange features of the Widen Existing I-70 Strategy at the majority of the interchanges along the corridor. They also determined that any improvements to I-70 should maintain access at each of the 56 interchanges. To accomplish this, trucks would access the majority of the interchanges via slip ramps as displayed in **Figure 2-6**. These slip ramps would allow trucks to move between the truck-only lanes and general-purpose lanes to enter and exit most interchanges.

At some locations in the corridor, the use of slip ramps is not prudent. At these locations, the heavy truck volumes seeking to access certain interchanges could result in truck platoons disrupting operations in the general-purpose lanes in an attempt to enter or exit I-70. At interchanges where truck movements on slip ramps would disrupt general-purpose lane operations, the study team considered providing separated interchange access for trucks and cars. **Figure 2-7** provides a snapshot of how a truck-car separated interchange might look. There are a number of ways to provide the separated access for cars and trucks at interchanges, each of which is discussed in more detail in **Chapter 3**.

Figure 2-6: Example of a Truck-Only Lane Slip Ramp



Figure 2-7: Example of a Truck-Car Separated Interchange

How did you choose locations for truck-car separated interchanges?

The study team developed and applied several criteria to evaluate where to locate separated interchanges for trucks and cars.

The following criteria were utilized to screen interchange locations:

- Interchange operational performance for traffic and safety measures;
- Access and connectivity between I-70 and other routes of national and statewide importance, such as other interstates or U.S. routes;
- Access and connectivity to freight generating facilities, intermodal facilities, freight rail corridors and other freight-related centers throughout Missouri;
- Access to truck amenities such as major truck stops, restaurants, parking, rest areas and hotels;
- Minimization of social, environmental and engineering impacts compared to the Second Tier Studies cleared footprint;
- Spacing distance between truck-car separated interchanges along the corridor;
- Tie-in with the planned Federal I-70 Corridors of the Future Study and its national goals for freight flows and efficiency.



Once the screening criteria for interchanges were established, the study team reviewed the 56 interchanges along the I-70 Corridor. The study team determined that 15 interchanges met the preliminary criteria for consideration as a truck-car separated interchange. The study team then applied more stringent screening criteria to these 15 locations to select the locations best suited to construct separated interchanges. The 15 locations considered can be reviewed within **Technical Memorandum 2, Tier 1 Strategy Screening**. The study team considered U.S. 61/U.S. 40 (Future I-64) and I-470 interchanges for potential application as truck-car separated interchanges due to the heavy truck traffic they carry and their importance as National Highway System routes. However, the study team quickly determined that it was not feasible to place truck-car separated interchanges too far into the urban limits of the project. They based this determination on the increased complexity of interchange configurations, the amount of right of way that would be required and the costs associated with building these interchanges.

Where are the recommended truck-car separated interchanges?

Based on the evaluation results of the 15 interchanges, the study team first identified seven interchanges that had reasonable potential for truck-car separation. **Figure 2-8** shows the seven interchanges that were deemed reasonable for truck-car separation. Based on the evaluation results, the study team determined that three interchanges merited truck-car separation today. The selected locations included the following interchanges:

- U.S. 65;
- U.S. 63;
- U.S. 54.

Each of these U.S. routes is centrally located and well spaced to serve long distance truck

What happens if my interchange isn't picked?

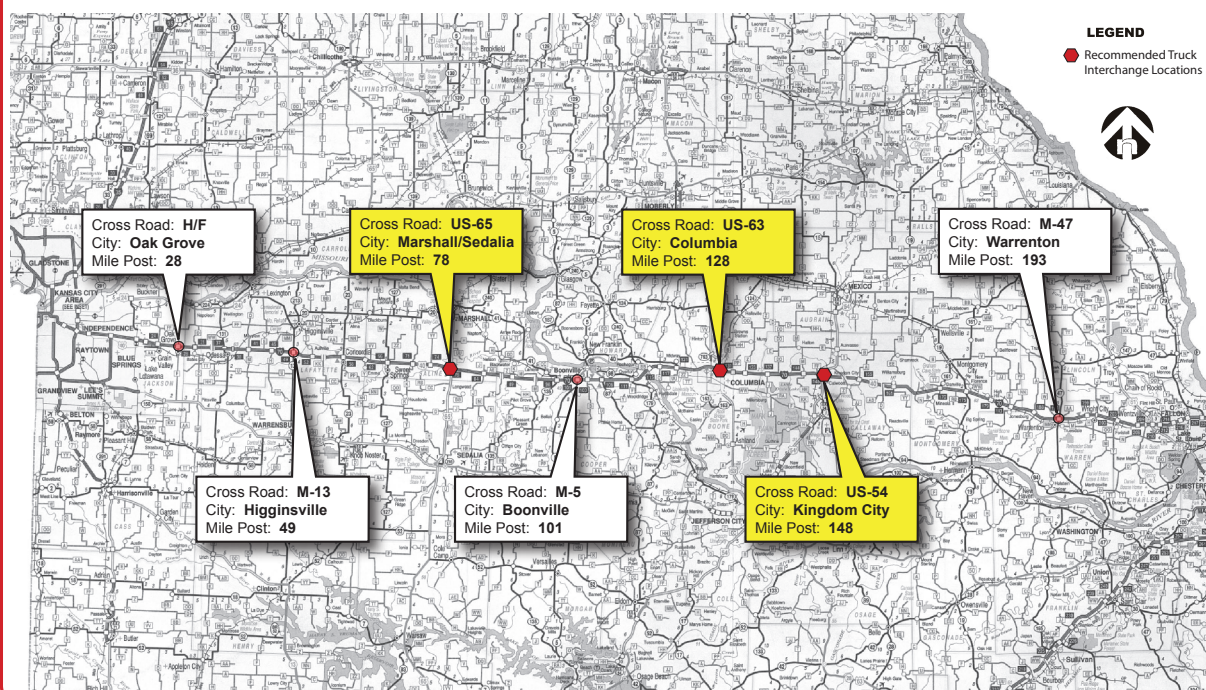
Just because the study team doesn't recommend separating cars and trucks at a given interchange today, doesn't mean that one might not be warranted in the future.

traffic between Kansas City and St. Louis. It was determined that these U.S. routes would best accommodate truck traffic and were able to carry heavier loads, including superloads, and more efficiently move freight across the state.

The remaining four interchanges may be reasonable locations for truck-car separated interchanges in the future. These interchanges included the following:

- Route H/F, Oak Grove;
- Route 13, Higginsville;
- Route 5, Boonville;
- Route 47, Warrenton.

Figure 2-8: Recommended Truck-Car Separated Interchange Locations



The study team determined that each of these interchange locations had potential as truck-car separated interchanges provided they could meet certain thresholds or if local and/or private partnerships were to complete these interchange projects. For instance, if it was determined that truck traffic volumes exceeded the slip ramp thresholds in the future, the study team could then implement truck-car separated interchanges.

Even though only three U.S. routes currently merit separated interchanges, the study team chose to clear the other four locations environmentally as part of the SEIS process. Additionally, the study team chose to assess each of the seven interchange locations to determine which interchange types offered the greatest ease of constructability, operate with satisfactory levels of service, and fit within the cleared footprint from the Second Tier Environmental Studies, to the extent possible. In this way, the study team would clear each of the seven interchange locations, allowing faster implementation to construct any or all of these interchanges at a future date.

What are the next steps?

The preferred strategy identified in this chapter, the Truck-Only Lanes Strategy, will move forward into a more detailed level of evaluation within the Second Tier Environmental Studies. **Chapter 3** discusses the various alternatives and interchange types developed by the study team as part of the SEIS process. The evaluation of social, environmental and engineering impacts of the alternatives takes place in later chapters of this document.

Chapter Three

How Does the Truck-Only Lanes Strategy advance into project alternatives?

Once the study team identified the Truck-Only Lanes Strategy as the preferred solution, the challenge became how best to apply the strategy across the 200-mile corridor. The basics of the strategy – trucks on the inside lanes, separated from the general-purpose traffic on the outside lanes – is consistent throughout the corridor. What varies is how the lanes are separated and by what distance. How it varies depends on the characteristics of that portion of the corridor. For the mainline portion of I-70, the study team looked at variations for urban, rural and environmentally sensitive parts

of the corridor. The study team considered where and how to locate truck and general-purpose traffic access at existing interchanges.

Alternatives Considered

Chapter 2 concluded with the study team's selection of the Truck-Only Lanes Strategy. **Chapter 3** details how the study team applied the Truck-Only Lanes Strategy to the 200-mile corridor in the form of alternatives. The process included the development of various alternatives for urban, rural and environmentally sensitive portions of the corridor. The study team developed a number of concepts—some of which the study team eliminated, and others considered as reasonable for that section of the corridor. Concurrent to that process the study team developed alternatives for slip-ramp access and truck-car separated interchanges. **Technical Memorandum 3, Tier 2 Evaluation**, provides further detailed information on the alternatives development and screening process. **Chapter 4** discusses the assessment of each alternative's ability to address purpose and need and its impact to the natural and man made environment.

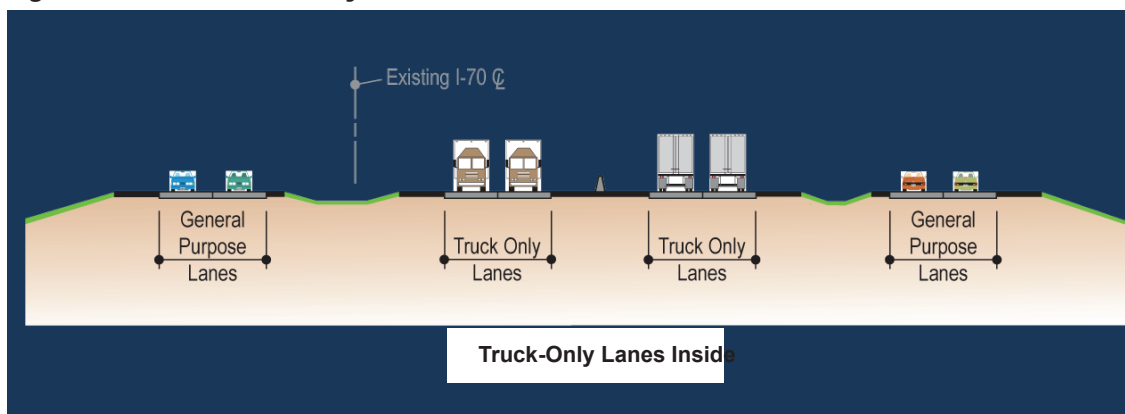
The majority of existing interchanges are accessed using slip ramps between the truck-only lanes and general-purpose lanes. At locations that merit keeping trucks and cars separated at the interchanges, the study team developed five alternative interchange configurations and selected alternatives to assess in more detail.

How do you improve the I-70 mainline with truck-only lanes?

Alternative in rural areas

The majority of the 200-mile study corridor is rural. As shown in **Figure 3-1**, within a rural setting, the alternative includes two truck-only

Figure 3-1: Rural Truck-Only Lanes Alternative



How do you maintain frontage road access along the corridor?

Maintaining existing access to residences and businesses located along the corridor is an important consideration for any improvement to I-70. Under the Truck-Only Lanes Strategy, local access roads would continue to provide access to and from existing residences and businesses along the corridor. Existing access roads would be restored or reconfigured to provide access if impacted by truck-only lanes. This would vary from the Widen Existing I-70 Strategy in that the Truck-Only Lanes Strategy would not construct continuous frontage roads across the I-70 Corridor. The value of continuous frontage roads lies in the redundancy it offers to the system during incidents or construction. The Truck-Only Lanes Strategy provides built in redundancy as general-purpose traffic could shift to the truck-only lanes or vice versa.

lanes and two general-purpose lanes in each direction, separated from each other by grassed areas. The truck-only lanes are located on the inside lanes and the general-purpose lanes are on the outside. A concrete median barrier separates the opposing truck lanes.

Alternative in urban areas

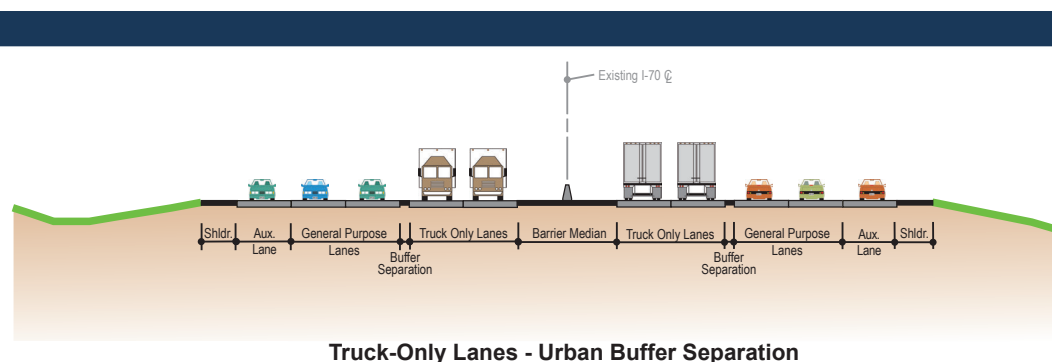
While the 200-mile study corridor is principally rural in nature, the limits of the study corridor do fall within the urban boundaries of Kansas City, Columbia and St. Louis. The application of a truck-only lanes facility within these urban areas requires a different configuration than those proposed for the rural areas. Within urban settings, such as Kansas City, Columbia, and through the Warrenton, Wright City and

Wentzville area, the truck-only lanes would remain on the inside portion of the facility. However, the number of lanes and the spacing between truck-only lanes and general-purpose lanes would vary based on congestion levels

and constraints to widening the corridor. In an urban setting, the alternative consists of two truck-only lanes and two or more general-purpose lanes each direction. The number of general-purpose lanes will vary depending on traffic needs. As displayed in **Figure 3-2**, where the area requires a narrow, constrained buffer separation, the facility could utilize a two-foot paint stripe or rumble stripe treatment, similar to those utilized for a high-occupancy vehicle (HOV) facility. As in a rural setting, a concrete median barrier would separate opposing directions of traffic in the truck-only lanes.

The study team conducted a planning-level study of the number of truck-only and general-purpose lanes needed to adequately serve the

Figure 3-2: Example Truck-Only Lanes Alternative in an Urban Setting



Do the urban sections stay within the previously cleared footprint?

In the case of the Kansas City and Columbia portions of the corridor, yes truck-only lanes would stay within the previously cleared footprint. However, through the Warrenton, Wright City and Wentzville areas the proposed urban section would not fit entirely within the footprint cleared in the Second Tier Study. There are three “pinch points” where additional right of way will be required and additional impacts will result. Details on the locations and the impacts resulting from the required widening of the footprint at these locations can be found in Chapter 4 of this document.

urban areas of the project. The SEIS does not definitively require a set number of lanes within the urban limits of the project. However, it does environmentally clear a footprint that is conservative enough to apply a truck-only lanes facility that will operate with acceptable travel conditions. The SEIS provides flexibility to determine the ultimate configuration and typical section for the truck-only lanes facility during the design phase of the project. As a result, more detailed traffic analyses will take place during the design phase in order to address any uncertainties related to the necessary number of lanes. The more detailed analysis will also better define the transition distances needed to transition from a truck-only lanes facility back to a general-purpose facility on I-70.

In the following section, the proposed alternative within each urban area is described further:

Kansas City

The proposed Truck-Only Lanes Alternative through the Kansas City area includes widening improvements that vary in number of lanes needed, based on congestion levels. As shown in **Figure 3-2**, the alternative utilizes a buffer separation between truck-only lanes and general-

purpose lanes. Within Kansas City, the limits of the I-70 study corridor end at I-470. The SEIS environmentally clears a footprint that accommodates up to five lanes in each direction of travel from I-470 to Oak Grove. Five lanes in each direction would relieve travel congestion and provide adequate transition to and from the truck-only lanes facility. By the western limits of the project at I-470, the truck-only lanes facility would transition from a truck-only lanes facility back to a general-purpose lanes facility. The ultimate typical section and required number of general-purpose lanes and truck-only lanes in each direction would be determined during the design phase of the project. The I-70 Corridor would transition from an urban section to a rural section just east of Oak Grove.

Columbia

The Columbia area of the SEIS includes the 18-mile section of I-70 between Route BB and Route Z. The majority of this section of I-70 utilizes an urban section due to right of way constraints with existing businesses and residential development.

The study team considered two means of carrying truck-only lanes through this area. One

alternative utilized the existing I-70 corridor to carry both general-purpose and truck-only lanes. The second alternative involved carrying general-purpose traffic on the existing facility and a truck-only lane bypass to the north of Columbia. The study team dismissed a truck-only lane bypass of Columbia for many of the same reasons they dismissed an I-70 bypass identified during the Second Tier Studies. Specific reasoning for eliminating the truck-only lanes bypass from consideration includes:

- Extensive additional costs;
- Significant additional impacts to the natural environment;
- Only one truck interchange would be available on the bypass (at U.S. 63);
- Secondary impacts to the U.S. 63 corridor as the only interchange from the truck-only lanes facility to Columbia would be at this location;
- Viewed unfavorably by the Columbia Advisory Group; and
- The existing corridor footprint, as established in SIU 4 of the Second Tier Environmental Studies, will allow the appropriate number of truck-only lanes in addition to the required general-purpose lanes without requiring additional right of way.

Once the study team decided that the truck-only lanes and general-purpose lanes would follow the existing I-70 corridor, they considered two design variations. These variations and the assessment that determined which would work best for Columbia are discussed in **Technical Memorandum 3, Tier 2 Evaluation**. The

design variations for carrying all general-purpose and truck-only lanes through Columbia included:

- Grade separated collector-distributor system that would transition trucks desiring to exit in Columbia from the truck-only lanes into the general-purpose lanes before entering the urban core of Columbia. Trucks not choosing to use these transitions to general-purpose lanes at the entrances to Columbia would be considered “through” trucks and would not have access to any Columbia exits, including US 63.
- Buffer separation with controlled breaks in the buffer separation prior to interchanges.

The study team eliminated the grade separated collector-distribution system due to the high volume of trucks requiring access to Columbia area interchanges.

The proposed design for truck-only lanes through the Columbia area includes two truck-only lanes and three general-purpose lanes with a buffer separation. It would operate similar to High Occupancy Vehicle lanes, in that trucks requiring access to and from interchanges would enter and exit from the truck-only lanes into the general-purpose lanes via controlled breaks in the buffer separation. Auxiliary lanes and frontage roads would also be required at many locations through the core of Columbia between Stadium Boulevard and St. Charles Road, just east of U.S. 63, to maintain acceptable travel conditions.

Warrenton, Wright City, Wentzville

The Warrenton, Wright City, Wentzville section of I-70 extends approximately 30 miles from west of Route 19 to Lake St. Louis Boulevard. This section travels through Montgomery, Warren and St. Charles counties. Similar to the Columbia section of I-70, the study team investigated an alternative to place the truck-only lanes on a bypass, to either the north or the south of the existing corridor. The study team dismissed a bypass from consideration for the following reasons:

- Compatibility with local and regional planning goals;
- Local and regional economic impacts;
- Natural resources impacts;
- Construction and maintenance costs; and
- Transportation impacts.

Instead, the study team selected a design that carries two truck-only lanes in each direction with a varied number of general-purpose lanes depending on congestion levels. From west of Route 19 to east of Routes A/B (exit 188), the study team selected a rural typical section that carries two truck-only lanes and two general-purpose lanes in each direction. From east of the Route A/B interchange to the study's eastern terminus at Lake St. Louis Boulevard, I-70 will

utilize an urban section with buffer separation between the trucks and general-purpose traffic.

The number of general-purpose lanes utilized in the urban section would vary. The limits of the I-70 study corridor end at Lake St. Louis Boulevard. However, the truck-only lanes facility could transition back to a general-purpose

facility to the west of Lake St. Louis Boulevard. There are challenges associated with the I-70 Corridor's connection to the U.S. 61/U.S. 40 Corridor (Future I-64) and how to route truck-

only lanes through this interchange area. The SEIS environmentally clears a footprint that accommodates up to four lanes in each direction from Route A/B to the Wentzville Parkway and up to five lanes in each direction from the Wentzville Parkway to Route A. The ultimate transition areas for the truck-only lanes facility and required number of general-purpose lanes and truck-only lanes in each direction would be determined during the design phase of the project.

Alternative in environmentally sensitive areas

Within the study corridor, the First and Second Tier Studies identified sensitive areas needing special focus, due to the potential for significant social and environmental impacts. For purposes

How would the I-70 Corridors of the Future program change the configuration in St. Louis?

If the federal I-70 Corridors of the Future project moves forward with an 800-mile truck-only lanes improvement for the I-70 Corridor, the transition from the truck-only lanes facility to a general-purpose lanes facility would need to be re-evaluated for additional right of way and environmental clearance at that time to provide two truck-only lanes each direction forward to the east through St. Louis.

of the SEIS, the study team continued to treat these areas as sensitive and reevaluated to assess the impacts to these areas from the Truck-Only Lanes Alternative. The sensitive areas included Overton Bottoms and Mineola Hill.

Overton Bottoms

The section described as Overton Bottoms includes the I-70 Missouri River crossing near Rocheport, Missouri. The Overton Bottoms area consists of the Overton Bottoms Conservation Area, including the Missouri River and its floodplain and river bluffs. In this area, the Truck-Only Lanes Alternative would maintain the same right of way needs and footprint as that environmentally cleared within the Second Tier Environmental Studies. No additional right of way would be required for truck-only lanes. MoDOT would construct a new four-lane companion bridge downstream (south) of the existing Missouri River Bridge. The new companion bridge would carry two truck-only lanes and two general-purpose lanes traveling eastbound, using a similar configuration to that shown for the urban truck-only lanes section with a buffer separation. The existing river bridge would then carry two truck-only lanes and

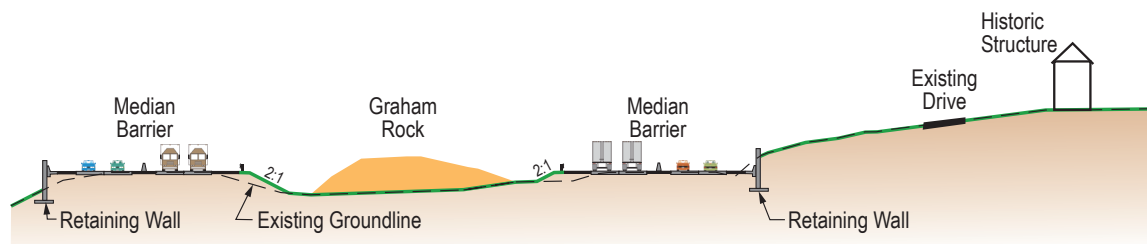
two general-purpose lanes traveling westbound. On either end of each bridge, the section would transition back to the proposed rural truck-only lanes mainline configuration.

Mineola Hill

The Mineola Hill section of I-70 lays between Routes N and J in Montgomery County. The median widens from the typical 40 feet along the I-70 Corridor to approximately 175 feet. This section of I-70 contains several environmentally and culturally sensitive areas, including the Graham Cave State Park, Graham Historic Farmstead, Graham Rock and the Loutre River Valley. In addition to the sensitive nature of this section, the terrain in the Loutre River Valley includes steeper grades than the target three percent grade adopted for the I-70 Corridor, speed differentials between passenger vehicles and trucks and higher crash rates.

As displayed in **Figure 3-3**, two truck-only lanes and two general-purpose lanes each direction are proposed to be applied through Mineola Hill to match the other rural sections of the project. Due to constraints at Graham Rock, for a short distance the section narrows to a barrier

Figure 3-3: Truck-Only Lane Application at Graham Rock



Example Slip Ramp Configuration



One slip ramp could serve several interchanges.

separation of truck-only lanes and general-purpose lanes to improve safety. Just east of Graham Rock, I-70 transitions back to the rural section with the widening south of existing I-70.

The footprint for the truck-only lanes through Mineola Hill will remain entirely within the previously cleared footprint identified in the original Second Tier Studies. This is accomplished by increasing the height of proposed retaining walls. In addition, the commitments made for the Mineola Hill area in the Second Tier Studies will be maintained in the SEIS.

What alternatives were considered for interchanges along the corridor?

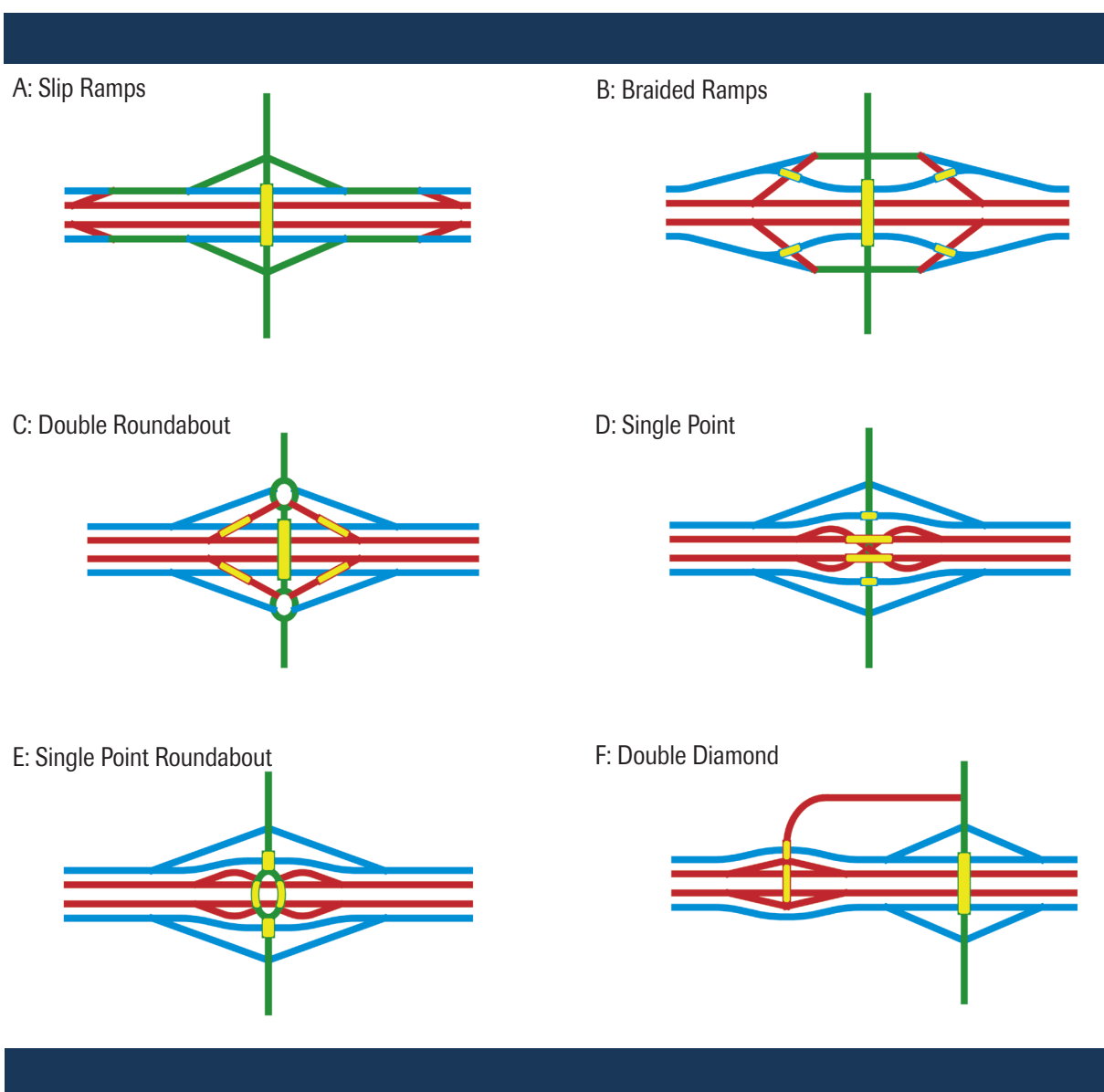
As discussed in Chapter 2, general-purpose traffic would maintain access at each of the existing interchanges. Trucks would access the majority of interchanges along the I-70 Corridor via slip ramps between the truck-only lanes and general-purpose lanes. At three locations (U.S. 65, 63 and 54) the study team proposes constructing truck-car separated interchanges.

Slip Ramp Application

Slip ramps would not be placed between every interchange along I-70. Some interchanges may

be combined and share a slip ramp system, similar to that of a collector-distributor system. A slip ramp system would be used in locations where truck traffic projected to enter and exit at the interchange would be a small percentage of the daily traffic at that interchange. They are also useful where the truck volumes are such to allow drivers to merge safely in and out of the slip ramps without causing congestion or safety concerns with the general-purpose traffic lanes. Slip ramps would not be located in areas where spacing between interchanges is insufficient to allow for slip ramps to be incorporated safely and efficiently. In an urban setting where a buffer separation between truck-only lanes and general-purpose lanes is used, slip ramps will be simple entering and exiting breaks in the buffer separation to allow movement between truck-only lanes and general-purpose lanes to access interchanges.

The SEIS is not determining specific locations for slip ramps along the corridor, but does assume there will be several slip ramp locations available within the limits of the project to access interchanges between Kansas City and St. Louis. Since the slip ramps only require merge and diverge areas between truck-only lanes and general-purpose lanes to be constructed,

Figure 3-4: Truck-Car Separated Interchange Types

their addition to the corridor does not cause additional right-of-way to be required. The slip ramps can be constructed without impacting the footprint required and cleared in the Second Tier Studies.

Truck-Car Separated Interchanges

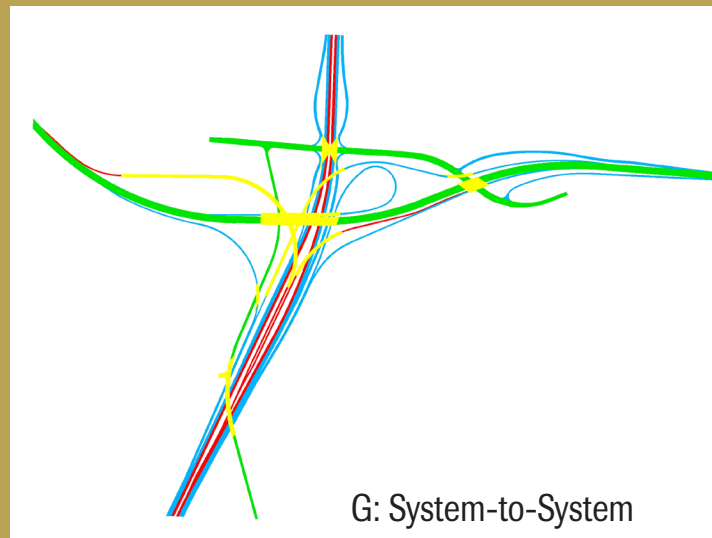
At the majority of interchanges along the corridor, the SEIS Truck-Only Lanes Alternative retains and incorporates improvements recommended and environmentally cleared during the Second Tier Studies. At interchanges with high truck volumes and access to a

significant number of freight generating facilities, MoDOT would construct a truck-car separated interchange. As illustrated in Figure 3-4, a truck-car separated interchange would consist of separate, exclusive entrance and exit ramps for trucks at an interchange. Trucks and general-purpose traffic would not mix until they merged off the mainline of I-70, on either ramps or local crossroads.

At a strategic level, the study team decided to locate truck-car separated interchanges at the U.S. routes along the corridor: U.S. 65

U.S. 63 Interchange

The U.S. 63 interchange was considered separately, since it would require a system-to-system connection between I-70 and the U.S. 63 Corridor. A system-to-system interchange has high-speed, free-flow ramps connecting the individual traffic movements and is typically used for connecting corridors with high traffic volumes. This makes adding separate ramps to exclusively serve truck traffic challenging. The Figure shows the truck-car separated interchange configuration considered at U.S. 63.



(Marshall/Sedalia), U.S. 63 (Columbia) and U.S. 54 (Kingdom City). It was determined that truck traffic could best be accommodated at these U.S. routes, which are designed to carry heavier loads, are centrally located along the corridor and could more efficiently move freight across the state. The study team selected four other interchanges that met the criteria for a truck-car separated interchange and serve as future, reasonable locations. These interchanges included Route H/F (Oak Grove), Route 13 (Higginsville), Route 5 (Boonville) and Route 47 (Warrenton). Each of these interchange locations met the criteria for consideration as a truck-car separated interchange if certain thresholds were triggered at the time of design or if local and/or private partnerships were established to complete these interchange projects.

Which Interchange Type Makes Sense at a Given Location?

The study team developed five different alternatives for truck-car separated interchanges (See Figure 3-4). Each of the interchange alternatives was applied to a given location to see which merited further study.

The study team assessed seven interchange locations. The assessment determined which interchange alternatives have the greatest ease of constructability, operate with uncongested conditions, minimize or avoid impacts to the natural and manmade environment, and fit, to the extent possible, within the cleared footprint from the Second Tier Studies. In this way, the seven interchange locations will be cleared and prepared for faster future implementation if MoDOT and FHWA chose to construct any or all of these interchanges. The SEIS process will not result in the selection of a preferred interchange alternative at each location. Instead, the SEIS results in clearing a combined footprint representing a combination of several reasonable interchange alternatives in order to leave flexibility during the design phase of the project.

Screening interchange alternatives

The study team completed a preliminary screening of the interchange alternatives by evaluating the relative effectiveness of each concept. The first step in the screening process involved an evaluation of how well each alternative addressed the purpose and need for the project. If an initial alternative did not

Screening Initial Interchange Alternatives

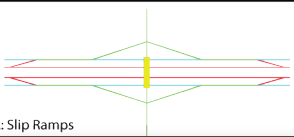
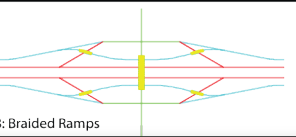
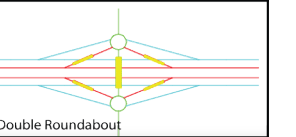
- **Constructability** – A relative measure of the ease of construction. It takes into consideration maintenance of traffic and staging/phasing during construction, construction and right of way costs for implementation, and area terrain or geometric challenges.
- **Built Environment** – An assessment of how the concept impacts the existing built environment, including impacts to existing buildings/structures, utilities, railroads, right-of-way, roadways and bridges.
- **Natural Areas** – An assessment of how the concept impacts environmental resources and natural habitat, such as grasslands, woodland and forests, wetlands, streams, threatened and endangered species and other wildlife.
- **Traffic Operations** – A relative measure of traffic operations of the interchange and if it is anticipated to operate with acceptable level of service conditions in 2030. This is a qualitative review of traffic operations using engineering judgment, rather than a detailed, quantifiable traffic analysis.
- **Consistency with Cleared Footprint** – An assessment of how each concept fits within the previously cleared Second Tier Studies construction limits, also referred to as the environmental footprint for the project.

meet the purpose and need for the project, the study team would not consider it further as a reasonable alternative.

The second step involved using other planning-level criteria incorporated from social, environmental and engineering factors, as well as input from the community. These other

criteria included generalized potential impacts to the built environment and natural areas, as well as how well an alternative addressed traffic operational needs. The criteria also considered an initial estimate of project costs and ease of construction. Additionally, since the SEIS is a supplemental to the original First and

Figure 3-5: Truck-Car Separated Interchange Evaluation Matrix

LOCATION	 A: Slip Ramps	 B: Braided Ramps	 C: Double Roundabout
Route H/F Oak Grove	▲		
Route 13 Higginsville	▲		
U.S. 65 Marshall/Sedalia		▲	▲
Route 5 Boonville	▲		
U.S. 63 Columbia			
U.S. 54 Kingdom City		▲	▲
Route 47 Warrenton	▲		

▲ = Interchange type carried forward

Second Tier Studies, the criteria considered how well an interchange alternative fit within the environmentally cleared footprint from the previous preferred alternative of rebuilding and widening to six lanes. Alternatives evaluated to have high impacts were considered a fatal flaw that ruled out the alternative from further consideration.

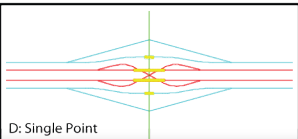
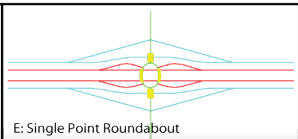
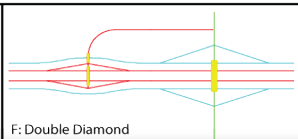
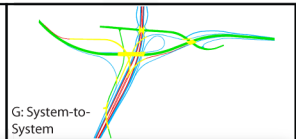
Interchange alternatives that met the purpose and need for the project and had no obvious extraordinary impacts that the study team could not resolve, advanced to the next round of more detailed development and screening within the alternatives analysis.

Which interchange alternatives advanced in the study?

Based on the alternative's ability to meet the purpose and need and other key social,

environmental and engineering criteria, the study team chose three or four truck-car separated interchange alternatives at each of the seven locations. The study team then assessed each screened alternative for their impacts to the natural, cultural and man made environment. **Chapter 4** of the SEIS documents the detailed assessment of alternatives.

For the truck-car separated interchange alternatives, the evaluation matrix in **Figure 3-5** shows those interchange alternatives deemed reasonable for a given location and those eliminated from further consideration. The decisions to eliminate certain truck-car separated interchange alternatives were based on the planning-level criteria incorporated from social, environmental and engineering factors described under Screening Initial Interchange Alternatives. The rationale for retaining or

 D: Single Point	 E: Single Point Roundabout	 F: Double Diamond	 G: System-to-System
▲	▲	▲	
▲	▲	▲	
▲	▲		
▲	▲	▲	
			▲
		▲	
▲		▲	

Engineering criteria utilized when developing alternatives

The study team developed basic engineering design criteria when creating alternatives. The study team adopted and enhanced design criteria from the previous First and Second Tier Studies to encompass additional criteria needed to accommodate truck-only lanes. The design criteria established parameters, including:

- Roadway lane and shoulder widths;
- Interchange ramp lengths;
- Speed limits;
- Bridge heights; and
- Ramp lengths for accessing or exiting from the truck-only lanes.

The study team developed general design criteria in order to better define the limits of the alternatives. Establishing the limits or “footprint” of each alternative is necessary to evaluate the effect on the corridor environment. **Technical Memorandum 3** provides additional details on engineering design criteria developed for the project. Design criteria included within the SEIS is preliminary and will be finalized during the design phase of the project.

eliminating interchange alternatives at a given location is described further in **Technical Memorandum 3**.

The SEIS does not identify a single preferred interchange alternative at each location. A combined footprint including all reasonable alternatives at each truck-car separated interchange location will be environmentally cleared to leave flexibility during the design phase.

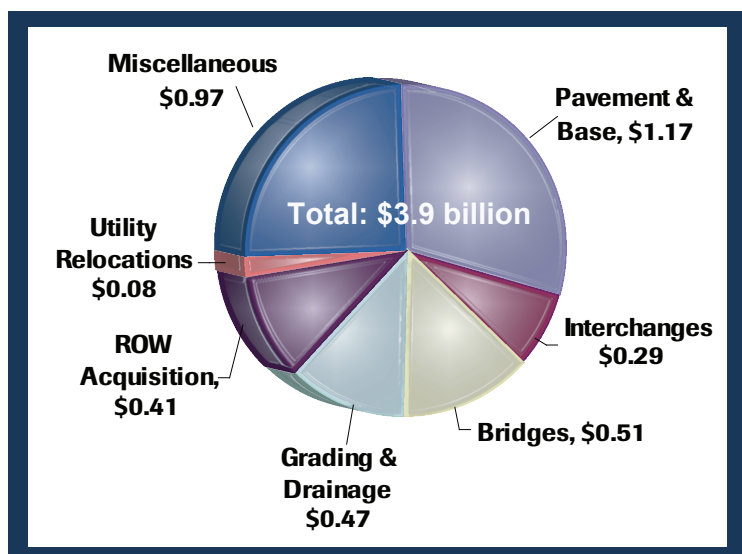
How much would it cost to build truck-only lanes?

Based on the best information available, the study team developed a construction cost estimate for the project. The construction cost estimate was developed at a planning level utilizing the cost estimate from the previous I-70 Second Tier Environmental Studies as a framework. The total project cost from the Second Tier Environmental Studies, Widen

Existing I-70, was reviewed against 2008 costs and inflated to today’s dollars to provide a comparison to the Truck-Only Lanes Alternative. The cost for the Widen Existing I-70 (six-lane widening) is \$3.5 billion in today’s dollars.

As shown in **Figure 3-6**, in comparison, the Truck-Only Lanes Alternative is estimated to cost \$3.9 billion, which is approximately 11 percent higher than the six-lane widening.

Figure 3-6: Project Cost Estimate Summary in 2008 Dollars (in Billions)



The difference in costs include the additional pavement required to make an eight-lane truck-only lanes facility versus a six-lane general-purpose facility and the additional costs of the three recommended truck-car separated interchanges at U.S. 65, U.S. 63 and U.S. 54. The cost estimate for the Truck-Only Lanes Alternative includes the costs associated with corridor enhancements, improvements to welcome centers and weigh stations, as well as billboard removal costs. Existing billboard legislation is currently being reassessed and any billboards removed by the project would have to conform to existing legislation requirements if replaced by billboard owners.

How will the truck-only lanes be built?

The Truck-Only Lanes Alternative requires a fairly simple maintenance of traffic plan compared to the original Second Tier Studies Preferred Alternative of widening to six lanes. The construction of the project would be broken into two phases. Except for short periods of time during construction activities such as bridge removals, all interchanges and lanes of traffic on I-70 would be open to traffic during construction. All traffic would use the existing I-70 lanes during construction of new lanes either to the north or to the south of I-70. Then, once the new lanes are constructed, all traffic would shift to the new lanes until the existing I-70 lanes were rehabilitated or reconstructed.



Chapter Four

How were project impacts evaluated?

Since the SEIS supplements the original First and Second Tier Studies, the study team evaluated the project impacts using a slightly modified process from a typical EIS. First, the cleared environmental footprint from the previously approved Second Tier Studies was re-assessed to determine if conditions and impacts remain unchanged. The study team did not reevaluate impacts determined in the previous studies unless there was a change within the previously cleared right of way, such as a new home or business. The additional impacts determined within the previously cleared footprint were designated as new impacts.

Next, the study team evaluated impacts within any additional right of way required by the Truck-Only Lanes Alternative. The evaluation process for additional right of way used the same impact evaluation process as the Second Tier Studies. The footprint was defined to a sufficient level of detail to encompass evaluation and clearance of

any additional impacts resulting from the Truck-Only Lanes Alternative, referred to as additional impacts.

Affected Environment and Environmental Consequences

Chapter 4 summarizes how the reasonable alternatives for the Truck-Only Lanes Strategy would affect, in either a positive or a negative way, the natural and man made environment. The analysis includes an evaluation of one corridor-wide mainline alternative for I-70, as well as a range of reasonable truck-car separated interchanges at each of the seven potential locations. **Technical Memorandum 3, the Tier 2 Evaluation**, contains more detailed information on each of the topics discussed in this chapter.

The environmental impact evaluation for the Truck-Only Lanes Alternative includes an assessment of mainline impacts, truck-car separated interchange impacts and corridor-wide considerations. The mainline section focuses on additional impacts within the mainline section of the I-70 Corridor. The truck-car interchange section discusses issues on an interchange-by-interchange basis and evaluates a combined footprint for several reasonable

interchange alternatives. The corridor-wide considerations section discusses issues that impact the entire I-70 Corridor, such as energy, corridor enhancements and funding options, as well as those corridor-wide environmental factors that do not experience changes from the Second Tier Studies.

Figure 4-1 displays the I-70 Corridor by Section of Independent Utility (SIU), as defined

Figure 4-1: Sections of Independent Utility along the I-70 Corridor

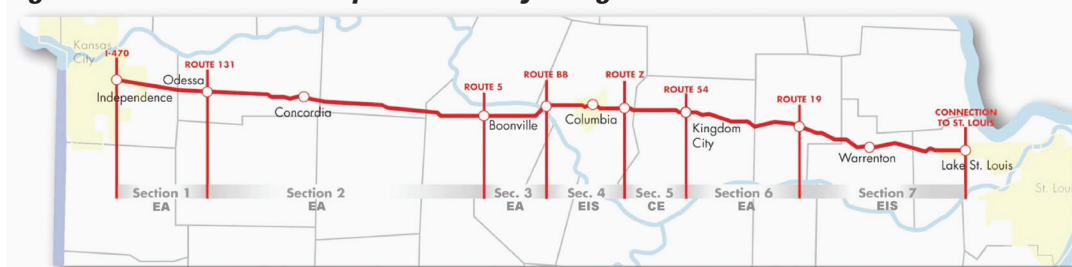


Figure 4-2: Summary of New Impacts

ENVIRONMENTAL FACTORS	UNIT	SIU 1	SIU 2	SIU 3	SIU 4	SIU 5	SIU 6	SIU 7	TOTALNEW IMPACTS
Farmland Impacts									
- Prime	Ac.	-	-	-	-	-	-	-	-
- Statewide Important	Ac.	-	-	-	-	-	-	-	-
- Conservation Reserve Program Lands	Ac.	-	26.0	-	-	-	-	-	26.0
- Wetlands Reserve Program Lands	Ac.	-	5.4	-	-	-	-	-	5.4
Social and Economic									
- Residents (Persons)	No.	-	3	3	50	-	-	3	59
- Businesses	No.	3	1	9	11	6	-	21	51
Parks and Public Lands	No.	-	-	-	-	-	-	-	-
R.O.W. & Displacement Impacts	No.	3	4	1	-	-	1	-	9
- Residential impacts (partial)	No.	-	-	1	-	-	-	-	1
- Residential impacts (full)	No.	-	1	1	22	-	-	1	22
- Business impacts (partial)									
- Business impacts (full)	No.	3	1	9	11	6	-	21	51
- Public / Semi-public (partial)	No.	1	1	-	-	-	-	1	3
- Public / Semi-public (full)	No.	-	-	1	-	-	-	-	1
Noise Impacts	Units	-	22	-	-	-	-	-	22
Stream and Wetland Impacts (jurisdictional)									
- Streams	Lin. Ft.	-	2,200	-	-	-	-	-	2,200
- Wetlands	Ac.	-	3.58	-	-	-	-	-	3.58
- Ponds	Ac.	-	-	-	-	-	-	-	-
Water Quality Impacts	Type	-	-	-	-	-	-	-	-
Floodplain Impacts	Ac.	-	-	-	-	-	-	-	-
Biological Resources									
- Natural Communities (woodland)	Ac.	-	-	-	-	-	-	-	-
- Threatened & Endangered Species	No.	-	-	-	-	-	-	-	-
Cultural Resources	No.	-	-	-	-	-	-	-	-
Hazardous Material Sites**	No.	-	1	2	-	3	-	4	10

* - Indicates no change from previous studies

** All of the hazardous material sites are considered to have a "low potential for contamination".

within the Second Tier Environmental Studies. The project impacts are discussed by SIU in order to provide easier reference back to the environmental impact analysis results of the previous studies.

Have there been changes since the Second Tier Studies?

Since the completion of the Second Tier Studies in 2006, some changes, such as new homes or businesses, have occurred in the I-70 study corridor. The study team identified and evaluated changes to the corridor to ensure

no significant new impacts will result from the proposed improvements to I-70. These new impacts will result from either the original Second Tier Studies Preferred Alternative of widening to six lanes or the new proposed Truck-Only Lanes Alternative. **Technical Memorandum 3** provides a more detailed description of the new impacts by environmental factor within each SIU.

Figure 4-2 provides a summary of the new impacts to the I-70 Corridor that occurred since the completion of the Second Tier Studies.

Since the conclusion of the Second Tier Studies, the following impact categories experienced changes that required an update within the SEIS:

- Conservation Reserve Program (CRP)/Wetlands Reserve Program (WRP) Lands;
- Residences and Businesses;
- Noise;
- Streams and Wetlands;
- Water Quality; and
- Hazardous Material Sites.

Conservation Reserve Program/Wetlands Reserve Program Lands

Within SIU 2, between Odessa and Boonville, the study team identified 26 acres of CRP and 5.4 acres of WRP land that were newly designated and beyond the acres previously cleared during the Second Tier Studies. Both programs are coordinated by the U.S. Department of Agriculture Natural Resources Conservation Service. The CRP encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as grasses, wildlife plantings and trees. In exchange, farmers receive an annual rental payment for the term of the contract.

WRP is a voluntary program offering landowners the opportunity to protect, restore and enhance wetlands on their property. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection. The newly-listed WRP lands

Are any of the new impacts significant enough to change the footprint environmentally cleared within the Second Tier Studies?

While there have been new impacts within the environmentally cleared footprint from the Second Tier Studies, these new impacts are not significant enough to result in changes to the footprint for improving I-70. However, these new impacts do need to be environmentally cleared within the SEIS as part of the environmental process for the project.

are located on the north side of I-70, west of Sweet Springs, in the 100-year floodplain of Davis Creek. The eastern WRP land covers approximately three acres within the previously cleared footprint.

Although this is an impact to WRP land, a field delineation preliminarily determined that this area does not yet meet all three criteria to be considered a jurisdictional wetland. A wetland is jurisdictional if it is regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and meets the three criteria for hydric soils, hydrology, and hydrophytic vegetation. Therefore, at this time, there is an impact to the WRP land, but not an impact to jurisdictional wetlands at this location. The western WRP land was preliminarily determined to meet all three criteria to be considered a jurisdictional wetland and covers approximately 2.4 acres within the cleared footprint.

Residences and Businesses

Figure 4-2 also shows new displacements as a result of the project, due to the construction of new residences and businesses within the previously cleared footprint. SIU 4 and SIU 7 had the greatest amount of additional impacts to new residences and businesses because of the growth and spreading out of development in recent years within the urban boundaries of

Columbia and the St. Louis metropolitan area. There was one public/semi-public impact to a new communications tower in SIU 3. None of these new displacements adversely effect historic cultural resources or result in disproportionate impacts to low income or minority populations. As with displacements within the Second Tier Studies, MoDOT will follow all regulations within the Uniform Relocation Assistance Act to help displaced persons relocate in an equitable manner.

Noise

SIU 2 shows 22 new residences with potential noise impacts due to the construction of two new developments within the previously cleared footprint near Concordia. Based on a review of the noise analysis done in the Second Tier Studies, and according to the location of the noise contour in this section of the corridor, there would be ten new apartment units and 12 new residential care facility units that would experience noise levels of 66 decibels or greater. Noise levels of 66 decibels or greater indicate that noise impacts may occur that could meet the criteria for noise mitigation. In the previous Second Tier Studies, this area was evaluated and did not meet the criteria for noise mitigation. However, during the design phase of the project, additional noise analysis will be performed to determine if noise barriers are feasible and reasonable at this location. The study will follow MoDOT's approved noise policy for mitigation of noise impacts.

Streams and Wetlands

In SIU 2, revisions were made to previous streams and wetlands impact findings due to the detection of previously unidentified streams and wetlands. One new wetland area was the western WRP land in the 100-year floodplain of Davis Creek, described above under CRP/WRP Lands. The previous SIU 2 Environmental Assessment also did not include a potentially jurisdictional forested wetland (1.18 acres) adjacent to the east side of the Blackwater River, and a potentially jurisdictional intermittent stream (2,200 linear feet) that flows into the river located on the south side of I-70. Both of these water resources are located within the previously cleared footprint. **The Technical Memorandum 3, Tier 2 Evaluation, Appendix D**, includes a summary of findings for water resources.

Water Quality

There were changes in water quality impacts to some streams and rivers within the previously cleared footprint due to the delisting of EPA-approved 2002 Missouri 303(d) List. This means that some streams and rivers previously listed with water quality issues have now been de-listed, either because their water quality has improved or regulations have changed. The streams and rivers affected by this change in listing include Davis Creek, Horseshoe Creek, Little Blue River and West Fork Sni-A-Bar Creek in SIU1 and Davis Creek in SIU 2.

Hazardous Materials Sites

There were some new impacts to potential hazardous material sites in SIU 2, 3, 5 and 7

Figure 4-3: Summary of Additional I-70 Mainline Impacts

ENVIRONMENTAL FACTORS	UNIT	AREAS OF ADDITIONAL ROW & IMPACTS			
		7 Acres Apartments	CenturyTel Campus	Veteran's Memorial Parkway	TOTAL ADDITIONAL IMPACTS
R.O.W. & Displacement Impacts					
- Add'l R.O.W. (total)	Acres	1.72	0.24	1.33	3.29
Residential impacts (partial)	Number	—	—	2	2
- Residential impacts (full)	Number of Units	12	—	—	12
- Business impacts (partial)	Number	—	1	9	10
- Business impacts (full)	Number	1	—	2	3
Social and Economic	Number	+/- 30 residents, 1 Business displacement	—	2 Business displacements	+/- 30 residents, 3 Business displacements

due to the construction of new service stations, industrial facilities and manufacturing sites. The potential sites include the following: BP Gas/Convenience Store (SIU 2), Terry's Auto/Gregory Metals & Manufacturing and Grabit 'n Go (SIU 3), Bobcat of St. Louis & Columbia, Inc., CP Marine & Auto Service and Woodland Wonders Taxidermy (SIU 5) and Mordt Tractor, The Rental Company, Phillips 66 and an industrial facility (SIU 7). All of the sites are considered to have low potential for contamination problems that would not be inordinately expensive to address during construction.

Does the Truck-Only Lanes Alternative have any additional impacts?

For the majority of the 200-mile I-70 Corridor, the Truck-Only Lanes Alternative fits within the environmentally cleared footprint from the Second Tier Studies. However, at some areas along the I-70 Corridor, the Truck-Only Lanes Alternative will require additional right of way. Within this additional right of way, the potential exists for impacts to the natural and man made environment. The additional right of way required is minor - approximately 300 acres -

and is needed mainly at the truck-car separated interchange locations along the corridor. The following sections describe the additional impacts for the mainline of I-70, at the truck-car separated interchanges and on a corridor-wide basis.

What are the additional impacts to the mainline of I-70?

As described above, the Truck-Only Lanes Alternative predominantly fits within the environmentally cleared footprint from the Second Tier Studies. However, the alternative does include some mainline sections within SIU 7 between the Warrenton, Wright City and Wentzville area to Lake St. Louis Boulevard that will require additional right of way. These areas of additional right of way are small "pinch points" only and encompass approximately three acres in total. The pinch points along the mainline of I-70 and their associated impacts are summarized in **Figure 4-3** and in the following section. **Technical Memorandum 3, Tier 2 Evaluation** describes the pinch points in detail. The Truck-Only Lanes Alternative did not result in any additional natural or cultural impacts to the pinch points.

**7 Acres Apartments, Mile Marker 207
(Westbound)**

In the vicinity of the Wentzville Parkway, the mainline for the Truck-Only Lanes Alternative requires a small increase in the project footprint of 1.72 acres (1,500 feet long by 50 feet wide). This increase is required on the westbound side of I 70 because of the railroad immediately to the south of I 70 in this location. Within this area, an apartment complex (7 Acres Apartments) is located between I 70 and the I 70 outer road (Pearce Boulevard). The additional footprint requires encroachment onto the driveway and parking areas for the apartments. Although it will not physically encroach upon the apartment buildings, it is assumed that acquisition of the apartment buildings will be necessary since the distance between the buildings and the new right of way will be approximately 25 feet. The other buildings on the parcel will be unaffected, except for the reduction in space between the buildings and the highway. As shown in Figure 4-3, this displacement of 12 apartment units would equate to the displacement of approximately 30 persons.

None of these new displacements adversely effect historic cultural resources or result in disproportionate impacts to low income or minority populations. Within the pinch point designated as the 7 Acres Apartments, one of the existing single-family structures, the Lustron House, has been identified as eligible for the National Register of Historic Places (NRHP). However, the proposed additional right of way

would require partial acquisition of the property but would not impact the building. As a result, there would continue to be no adverse effect to the Lustron House.

The previous SIU 7 EIS concluded that the apartment complex would experience a traffic noise impact. However, mitigation was not recommended because it was not determined to be reasonable. This analysis remains valid for the SEIS. Even though the traffic noise experienced at the remaining buildings may be more intense, two receivers at a single location are not enough to be reasonable for noise mitigation measures. During the design phase of the project, additional noise analysis will be performed to verify that noise barriers are not feasible and reasonable at this location.

**CenturyTel Campus, Mile Marker 211
(Westbound)**

In the northeast quadrant of the I-70/U.S. 40/61 (Future I-64) interchange, the outer road, Continental Drive, is impacted by the Truck-Only Lanes Alternative. To accommodate the proposed section for the Truck-Only Lanes Alternative, the outer road would need to be shifted approximately 15 feet to the north, thereby requiring an additional 0.24 acres of right of way. The CenturyTel Campus is located along Continental Drive. The study has determined that the relocation of the campus building is not necessary, but that the loading dock and access pathway would be impacted.

Veteran's Memorial Parkway, Mile Marker 211 (Eastbound)

This area is located in the southeast quadrant of the I-70/U.S. 40/61(Future I-64) interchange. The outer road is known as Veteran's Memorial Parkway. To accommodate the footprint for the Truck-Only Lanes Alternative, the outer road would need to be shifted approximately 15 feet to the south, thereby requiring an additional 1.33 acres of right of way along Veteran's Memorial Parkway. Land uses along the Parkway are primarily commercial. Two of these commercial buildings would likely be impacted by the Truck-Only Lanes Alternative.

While the decrease in the distance between the remaining residences and I-70 would result in higher noise levels in this area, noise walls were not recommended in the previous EIS. This conclusion remains valid for the SEIS, as it is rare for two residences at a single location to be reasonable for noise mitigation measures. During the design phase of the project, additional noise analysis will be performed to verify noise barriers are not feasible and reasonable at this location.

Lake St. Louis Boulevard (Exit 214) is the eastern limits of the Improve I-70 study corridor. As a result, the truck-only lanes facility would transition back to a general-purpose facility prior to this interchange. However, if the federal I-70 Corridors of the Future project moves forward with an 800-mile truck-only lanes improvement for the I-70 Corridor, the study team would need to reevaluate the Lake St.

Louis area for potential, additional right of way and environmental clearance at that time.

What happens in environmentally sensitive areas of the project?

As described in **Chapter 3**, Alternatives Considered, the First and Second Tier Studies identified sensitive areas needing special focus, due to the potential for significant social and environmental impacts. These areas include Overton Bottoms and Mineola Hill. As described further in the following sections, the Truck-Only Lanes Alternative stays within the environmentally cleared footprint from the Second Tier Studies in these areas and, therefore, does not result in additional impacts.

Overton Bottoms

Overton Bottoms includes the I-70 Missouri River crossing near Rocheport, Missouri. The Overton Bottoms area consists of the Overton Bottoms Conservation Area, including the Missouri River, its floodplain and river bluffs. In this area, the Truck-Only Lanes Alternative maintains the same right of way needs and footprint as that cleared by the Second Tier Studies. Truck-only lanes do not require additional right of way in this area. As a result, there are no additional impacts requiring environmental clearance in this area. In addition, commitments made within the Second Tier Studies regarding environmental mitigation such as streams, wetlands and wildlife habitat remain in place.



Mineola Hill

The Mineola Hill section of I-70 lays between Routes N and J in Montgomery County. The impacted footprint for the Truck-Only Lanes Alternative through Mineola Hill stays entirely within the previously cleared footprint identified in the Second Tier Studies (SIU 6 Environmental Assessment). The study team accomplished this by increasing the height of the proposed retaining walls. Mitigation commitments made in the original SIU 6 Environmental Assessment for sensitive resources in the Mineola Hill area would remain as commitments with the Truck-Only Lanes Alternative.

Several environmental factors that were of focus during the Second Tier Studies remain so for the SEIS. These factors include noise impacts, cultural resource impacts and construction impacts.

Noise Impacts

During preparation of the original SIU 6 EA, for SIU 6 there was concern regarding noise impacts indirectly affecting uses at Graham Cave State Park. For one quarter of a mile, the general-purpose traffic is closer to Graham Cave State Park by approximately 10 feet. While the Truck-Only Lanes Alternative places the general-purpose traffic closer to the park by roughly 10 feet, the truck traffic, which produces most of

the noise, will be approximately 14 feet further away since trucks are located on the inside lanes. This greater separation of the truck traffic should offset any increase in noise from passenger vehicles.

Cultural Resource Impacts

The conclusion of the original SIU 6 EA found that there is no impact to the historic or recreational resources located at Mineola Hill. This includes the Graham Cave State Park, Graham Rock and Graham Farmstead. These findings remain valid for the Truck-Only Lanes Alternative in the SEIS.

Construction Impacts

The conclusions of the original SIU 6 EA determined that by using generally accepted blasting practices, blasting operations could occur without presenting a hazard to the Graham Farmstead or to Graham Cave. These findings remain valid for the Truck-Only Lanes Alternative and blasting operations would follow the same accepted practices.

What are the additional impacts of the truck-car separated interchanges?

The study team evaluated impacts to additional right of way resulting from the truck-car separated interchanges using the same social, engineering and environmental evaluation process as the previous Second Tier Studies. The impact evaluation occurred on an interchange-by-interchange basis for the three recommended (U.S. 65, U.S. 63, U.S. 54) and

four potential (Route H/F, Route 13, Route 5, Route 47) interchange locations. Whereas the mainline I-70 had one corridor-wide alternative for improving I-70 with truck-only lanes, the study team evaluated the truck-car separated interchanges as a range of three to four reasonable interchange types. Then, the study team cleared a combined footprint including all reasonable interchange types. A preferred truck-car separated interchange alternative at each location was not selected in the SEIS. This selection will be made during the design phase of the project. However, the defined footprint was at a sufficient level of detail to encompass any impact that needed evaluation and clearing at each interchange location.

Chapter 3 discusses the process for determining the reasonable truck-car separated interchange types.

Figure 4-4 provides a summary of the additional impacts by truck-car separated interchange location.

The Truck-Only Lanes Alternative requires an additional 300 acres of right of way compared to the original Preferred Alternative. As a result, the following impact categories experienced additional social or environmental impacts that required evaluation within the SEIS:

- Farmland and CRP Lands;
- Residences and Businesses;
- Parks and Public Lands;
- Streams, Wetlands and Floodplains;

- Water Quality;
- Natural Communities;
- Cultural Resources; and
- Hazardous Material Sites.

Depending on which interchange alternative is selected at each location during the design phase of the project, some of the additional impacts included within the SEIS and summarized in **Figure 4-4** could be reduced or eliminated. This is due to the study team clearing a combined footprint that included several interchange alternatives at each location. **Technical Memorandum 3** provides a more detailed description of the additional impacts by interchange location.

Farmland and CRP Lands

The Truck-Only Lanes Alternative could impact an additional 89.2 acres of prime farmland. This land is located at the U.S. 65, U.S. 54, Route H/F and Route 47 interchanges and could be impacted depending on the design of the interchange selected. The majority of



Figure 4-4: Summary of Additional Truck-Car Separated Interchange Impacts

ENVIRONMENTAL FACTORS	UNIT	RECOMMENDED INTERCHANGES			POTENTIAL INTERCHANGES				TOTAL ADDITIONAL INTERCHANGE IMPACTS
		U.S. 65 (SIU 2)	U.S. 63 (SIU 4)	U.S. 54 (SIU 6)	Rte H/F (SIU 1)	Rte 13 (SIU 2)	Rte 5 (SIU 3)	Rte 47 (SIU 7)	
Land Use	Rating	-	-	-	-	-	-	-	No change
Farmland Impacts									
- Prime	Ac.	16.7	-	53.0	10.5	-	-	9.0	89.2
- Statewide Important	Ac.	8.2	2.0	64.0	24.1	13.8	34.7	38.0	184.8
- Conservation Reserve Program Lands	Ac.	-	-	-	-	0.17	7.1	-	7.27
- Wetlands Reserve Program Lands	Ac.	-	-	-	-	-	-	-	No change
Community Impacts	Rating	-	-	-	Mod.	-	-	Mod.	Moderate
Social and Economic									
- Residents (Persons)	No.	8	13	-	53	-	-	10	84
- Businesses	No.	-	-	-	-	-	-	18	18
Parks and Public Lands	No.	-	1	-	-	-	-	-	1 (Trail)
R.O.W. & Displacement Impacts									
- Add'l R.O.W. (total)	Ac.	30.5	6.05	117.0	48.2	13.8	35.5	52.5	303.55
- Residential impacts (partial)	No.	-	-	-	2	-	-	1	3
- Residential impacts (full)	No.	3	5	-	21	-	-	4	33
- Business impacts (partial)	No.	1	-	1	2	-	1	2	7
- Business impacts (full)	No.	-	-	-	-	-	-	18	18
- Public / Semi-public (partial)	No.	-	1	-	-	-	-	-	1
- Public / Semi- public (full)	No.	-	-	-	-	-	1	-	1
Air Quality Impacts	Rating	-	-	-	-	-	-	-	No change
Noise Impacts	Units	-	-	-	-	-	-	-	No change
Stream and Wetland Impacts (jurisdictional)									
- Streams	Lin. Ft.	810	-	998	1134	-	916	2840	6698
- Wetlands	Ac.	-	-	-	0.03	-	0.05	0.30	0.38
- Ponds	Ac.	-	-	-	-	0.09	-	-	0.09
Water Quality Impacts	Type	-	-	-	-	-	-	-	No change
Floodplain Impacts	Ac.	-	4.54	1.0	2.0	-	-	12.26	19.8
Biological Resources									
- Natural Communities (woodland)	Ac.	5.0	5.8	1.8	5.6	0.9	12.6	8.7	40.4
- Threatened & Endangered Species	No.	-	-	-	-	-	-	-	No change
Cultural Resources*	No.	1	1	-	-	-	1	1	4
Hazardous Material Sites**	No.	-	-	-	-	-	-	7	7
Visual Assessment	Rating	-	Mod.	-	Mod.	-	-	-	No change & Moderate
Construction Impacts	Rating	-	-	-	-	-	-	Mod.	No change & Moderate
Permits	Type	-	-	-	-	-	-	-	No change
Environmental Mitigation	***	Add'l	Add'l	Add'l	Add'l	Add'l	Add'l	Add'l	Add'l for increased quantities
Secondary & Cumulative Impacts	Rating	-	-	Minor	-	-	-	Minor	No change & minor impacts
Section 4(f) Evaluation	Yes/No change	-	Coord.	-	-	-	-	-	Coordination only

- Indicates no change or no additional impacts from previous studies.

* The sites include potentially eligible archaeological sites that require further testing prior to design phase.

** All of the hazardous material sites are considered to have a "low potential for contamination".

*** The term *Additional* indicates that the mitigation committed to in the Second Tier Studies remains valid for the SEIS and that additional impacts related to the Truck-Only Lanes Alternative requiring mitigation (e.g., wetlands, streams) will receive the same commitments to perform mitigation.

the impacts to farmland occur in relation to Interchange Type F, the Double Diamond interchange configuration. In addition, the seven interchange locations affected 184.8 acres of farmland of statewide importance. Prime farmland and farmland of statewide importance indicate agricultural land that is valuable for good farming operations. The Route 13 and Route 5 interchanges impact 7.3 acres of CRP land.

Based on a review of the previously completed farmland forms (Form CPA-106) for each SIU, it has been determined that the additional amounts of prime farmland and statewide important farmland would be relatively minimal when combined with the total impacts to farmland within the previously cleared footprint. As a result, there would be no change to the individual point scores and total point score in the Corridor Assessment Criteria (Part VI). It is also anticipated that there would be no significant change to the “Relative Value of Farmland to be Converted”, since there are relatively minimal amounts of additional farmland impacts. However, the Natural Resources Conservation Service has been contacted and will make a final determination. It is anticipated that the Cumulative Total Points would not exceed the 160-point threshold, whereby farmland protection measures or alternatives that would minimize or avoid impacts must be considered.

Residences and Businesses

The combined additional right of way required for the seven truck-car separated interchanges

total approximately 300 acres. Within this additional acreage, there is the potential to displace some residences and businesses. The largest additional residential displacement impacts occur at the Route H/F interchange in Oak Grove (21 potential displacements). A subdivision with town homes could be impacted by Interchange Type F, Double Diamond. There are also minor residential impacts at the U.S. 65 (three), U.S. 63 (five), and Route 47 (four) interchanges. Full business displacements only occur at the Route 47 interchange, requiring 18 potential business displacements. This is due to the built up nature of this interchange. The majority of the other interchange locations require some partial business impacts, but do not require the entire business to be displaced by the proposed interchange improvements. One full public/semi-public impact occurs at the Route 5 interchange, where a water tower is impacted by the proposed interchange improvements.

There are displacements within the environmental justice area specified within the Second Tier EIS for SIU 4 near the U.S. 63 interchange. Relative to these displacements, the interchange alternative proposes an additional four displacements (one multi-family and three single-family properties). Within the context of the original Second Tier EIS, the environmental justice analysis and the environmental commitments that it gave rise to, remain in effect and adequate to avoid disproportionate negative impacts in the SEIS. Environmental justice analysis and findings from

the Second Tier Studies remain valid for the SEIS and can be referenced in the SIU 4 EIS.

Parks and Public Lands

No park impacts will result from the additional right of way acquisition required for the Truck-Only Lanes Alternative. However, the land located between business and new U.S. 63 is owned by the City of Columbia. The parcels that compose this area total roughly 19 acres. This area is heavily wooded and has a section of Hinkson Creek running through it. Coordination with the Columbia Department of Parks and Recreation has revealed that there are no plans to use this land as park land. However, the major creeks in Columbia, including Hinkson Creek, are part of the city's proposed trail system. The structures proposed to support the fly-over ramps of the U.S. 63 interchange alternative are not expected to inhibit the trail system. The SEIS will maintain all environmental commitments regarding coordinating designs in the vicinity of streams to avoid any potential Section 4(f) impacts, as described further in the SIU 4 EIS from the Second Tier Studies.

Streams, Wetlands and Floodplains

Additional stream, wetland and floodplain impacts occur at the truck-car separated interchanges. In total, an additional 6,698 linear feet of streams are impacted by the Truck-Only Lanes Alternative at U.S. 65, U.S. 54, Route H/F, Route 5 and Route 47. Additional wetland impacts were minor at 0.38 acres total at Route H/F, Route 5 and Route 47. The truck-car

separated interchange alternatives would also impact an additional 19.8 acres of floodplain or floodway at U.S. 63, U.S. 54, Route H/F and Route 47. No additional WRP lands are located within the additional right of way for any of the interchange alternatives. The U.S. Army Corps of Engineers (USACE) will make a jurisdictional determination for water resource impacts as the project progresses. The stream, wetland and floodplain impacts at each interchange are summarized below.

U.S. 65 Interchange

The truck-car separated Interchange Types B and C would result in the relocation of 810 linear feet of a potentially jurisdictional stream channel (unnamed) located near the northwest quadrant of the interchange. There were no additional impacts to wetlands or floodplains at this interchange.

U.S. 63 Interchange

In the vicinity of the U.S. 63 interchange, stream, pond, and wetland impacts are limited to Hinkson Creek and its unnamed tributaries. The truck-car separated alternative (System-to-System Alternative) will increase the involvement with Hinkson Creek only in the vicinity of the proposed fly-over ramp within the parcel between business and new U.S. 63. Hinkson Creek follows a winding course through the parcel with a total stream length within the parcel of roughly 2,000 feet. Approximately 870 feet of the stream will lie directly under the fly-over ramps; however, bridge pier placement within the stream is not expected. Therefore, no additional linear feet of stream are anticipated

to be necessary. Additionally, no additional pond or wetland encroachments are expected as a result of the interchange alternative.

The Hinkson Creek floodplain extends through the existing U.S. 63 interchange. The proposed fly-over ramp of the interchange alternative will increase the project's footprint and therefore its encroachment upon the Hinkson Creek floodplain. The total additional area of 100-year floodplain within the expanded footprint is estimated to be 4.54 acres. The previous SIU 4 EIS included environmental commitments to minimize impacts to floodplains, where feasible (SIU 4 EIS commitment # 17) and to provide mitigation efforts to prevent the rise in flood elevations (SIU 4 EIS commitment # 18). These commitments are considered adequate to address the additional floodplain impacts associated with the interchange alternative.

U.S. 54 Interchange

Four potentially impacted streams were previously identified in the Wetland Delineation Survey conducted for the previous EA for SIU 6. These streams were designated as Streams 194, 414, 215 and 67. Within the additional right of way of the interchange alternatives, six additional resources were identified, including one wetland, three open water bodies/ponds, one intermittent stream and one perennial stream. The wetland and open water bodies/ponds were determined to be non-jurisdictional waters. The truck-car separated interchange



alternatives would result in combined impacts to 998 linear feet of jurisdictional streams.

The McKinney Creek floodplain is the only floodplain in SIU 6 where there would be additional impacts from the interchange alternatives (one acre). There are no regulatory floodways in SIU 6.

Route H/F Interchange

The additional right of way required for Interchange Types D and E would impact three streams (designated 14, 15 and 16) by filling additional stream length totaling 236 linear feet for roadway embankment. In addition, one pond, covering 0.09 acre, would be impacted within the additional right of way along the proposed northwest outer road; however it is potentially non-jurisdictional.

The additional right of way required for Interchange Type F would impact eight streams (designated 14, 15, 16, 18, 19, 20, 31 and 32) by filling additional stream length totaling 1,134 linear feet for roadway embankment. The additional right of way for this alternative would also impact 0.03 acre of a small potentially jurisdictional emergent wetland located on the north side of I-70, at Stream 31, near the northwest quadrant of the proposed east diamond interchange. In addition, one pond,

covering 0.09 acre, would be impacted within the additional right of way along the proposed northwest outer road of the west interchange; however it is potentially non-jurisdictional. The alternative would also impact two acres of 100-year floodplain along Horseshoe Creek.

Route 13 Interchange

The additional right of way required for Interchange Type F would impact a potentially non-jurisdictional emergent wetland covering 0.03 acre, located on the northwest frontage road of the east interchange. This is an excavated pond that has a berm around most of its perimeter with no stream channel flowing in or out. It has standing water and contains willows around a portion of the edge, but has been taken over by cattails in most of the area. This alternative would also impact 0.09 acre of the inlet area of a potentially jurisdictional pond, located on the south side of the proposed east interchange.

Route 5 Interchange

The roadway embankment in the additional right of way required for Interchange Type F would impact three streams (designated 4, 5, and North 5.5) by filling additional stream length totaling 452 linear feet. In the northeast quad of the proposed east interchange, 464 linear feet of an ephemeral stream that was not impacted in the previous study would require relocation with this alternative. In addition, one potentially jurisdictional emergent wetland (NWI designation is PFO1/PEMCh) covering 0.05 acre, near the southwest quadrant of the proposed east interchange and adjacent

to Stream 5, would be impacted within the additional right of way.

Route 47 Interchange

Interchange Type D proposes new right of way acquisition that would result in no additional stream impacts, an additional impact of 0.13 acre to the 0.14 acre emergent isolated non-jurisdictional wetland on the south side of I-70 (resulting in a complete impact to the entire wetland) and the encroachment on a portion of the pond located upslope of the wetland. This pond was created and maintained with a culvert structure. It is preliminarily considered non-jurisdictional and the entire pond would be removed, resulting in a full impact of 0.9 acre.

Interchange Type F proposes new right of way acquisition that would result in approximately 1,540 feet of additional encroachment on the Big Creek, 1,300 feet of additional encroachment on three unnamed tributaries to the Big Creek, an additional 0.10-acre impact to a jurisdictional forested wetland located on the north side of I-70 (resulting in a complete impact to the entire wetland), an additional 0.13-acre impact to the emergent isolated non-jurisdictional wetland on the south side of I-70 (resulting in a complete impact to the entire wetland), an additional 0.2 acre from linear emergent jurisdictional wetlands along I-70, and the encroachment on the entire 0.9-acre non-jurisdictional pond located between I 70 and the south outer road.

The floodplain impacts associated with the Truck-Only Lanes Alternative correspond to

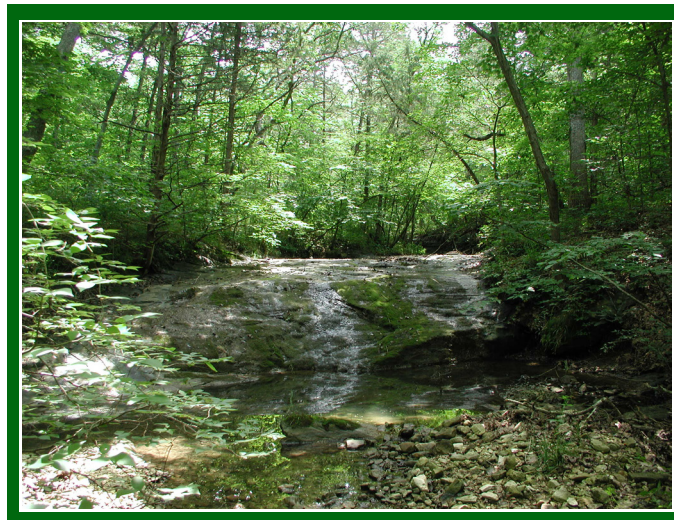
the existing culvert crossing of I 70 over the Big Creek at roughly mile marker 193. It is estimated that the encroachments will

include 2.06 acres of 100-year floodplain and 0.16 acre of floodway. For Interchange Type D, in the vicinity of Big Creek, this alternative is contained completely within the previous Preferred Alternative footprint and would have no additional impacts. For Interchange Type F, this alternative proposes additional right of way acquisition in the vicinity of the Big Creek which would result in total additional 100-year floodplain encroachment 12.26 acres. The additional encroachments are on both sides of I-70.

The details regarding these additional stream and wetland impacts and where they are located at each interchange location are described further in **Technical Memorandum 3** and within its **Appendix D, Waters of the U.S. and Preliminary Jurisdictional Wetland Determinations Summary Reports**.

Water Quality

The only change related to water quality occurs at the U.S. 63 Interchange in SIU 4. At the time of the previous SIU 4 EIS, Hinkson Creek was nominated for the 2002 303(d) List. Hinkson Creek is now included on Missouri's Proposed 2008 303(d) List. The truck-car separated interchange alternative increases the



extent of the work in the Hinkson Creek. This has the potential to negatively impact water quality.

The previous

EIS included environmental commitments to minimize the project's impact to water quality and these commitments remain valid for the SEIS. Although there would be an increase in impervious surface which would increase roadway runoff, the sediment and erosion control measures, pollution control measures, and water resource permits and certifications described in the previous EIS are adequate to minimize the project's impact to water quality.

Natural Communities

Additional impacts to natural communities, such as woodland, occur at each of the truck-car separated interchanges. In total, an additional 40.4 acres of woodland are impacted by the truck-car separated interchange alternatives. The majority of the woodland impacts occur in relation to Interchange Type F, Double Diamond, since it requires placing a second diamond interchange to the east or west of the existing interchange location. The alternatives do not impact any threatened or endangered species, based on a review of the Natural Heritage Features Inventory database.

Cultural Resources

There were no additional impacts to NRHP listed or eligible historic cultural resources as

a result of the Truck-Only Lanes Alternative. However, four potentially eligible archaeological sites were identified that require further testing prior to the design phase of the project, if it is determined that the interchange alternative selected will impact these sites. The potentially eligible archaeological sites are located at the U.S. 65, U.S. 63, Route 5 and Route 47 interchanges. A summary of the culture resource findings is provided below.

U.S. 65 Interchange

Near the southwest quadrant of the interchange, the additional right of way required for this alternative would result in additional impacts to the Younger/Swift House property, which is eligible for the NRHP. The Preferred Alternative of the Second Tier Study resulted in a partial impact to this property, with no adverse effect to the eligible buildings. The proposed additional right of way for the Truck-Only Lanes Alternative would acquire more of the property; however, the proposed right of way line is located approximately 100 feet away from the house and the NRHP boundary of the buildings. As a result, the property impacts would continue to have no adverse effect on the eligible buildings. The right of way for Interchange Types B and C would directly impact an archaeological prehistoric habitation site.

U.S. 63 Interchange

The additional right of way required for the truck-car separated interchange alternative is adjacent to an archaeological rockshelter site. Rockshelters are known to have been used as places for temporary refuge from the weather,

places to store goods and sometimes as places for burying the dead.

Route 13 Interchange

The cultural resource findings for the previous Second Tier Study included the Higginsville Sign, which was recommended as eligible for the NRHP. The sign is in the shape of a hand pointing the direction to the town of Higginsville. It is located east of the Route 13 interchange, on the north side of I-70. In the previous Second Tier Study, it was determined that there would be no adverse effect to the historic sign because its significance is not tied to a specific location and it can be moved to a new location (nearing close proximity to its original location) adjacent to a widened I-70. The same scenario continues to apply to the truck-only lanes improvements.

Route 5 and 47 Interchanges

Both Route 5 and Route 47 have interchange alternatives with right of way in close proximity to an archaeological prehistoric habitation site located at the base of a ridge slope near a creek.

Hazardous Material Sites

There were seven additional impacts to potential hazardous material sites at the Route 47 interchange. The right of way impacts at this interchange would cause impacts to properties/buildings associated with service stations or automotive activities. Four of the potential impacts are in relation to Interchange Type D, located within each of the four quadrants of the existing Route 47 interchange and include Citgo, Texaco and BP gas/service stations and

an oil changing station. Three of the potential impacts are in relation to Interchange Type F along the south outer road to I-70 and include a new strip center housing automotive repair operations, CarQuest and Warrenton Rental. All of the sites are considered to have low potential for contamination problems that would not be inordinately expensive to address during construction.

Other Impact Categories

Other impact categories shown in **Figure 4-4** above are discussed under the corridor-wide considerations for the project or under impact categories that do not experience a change as a result of the Truck-Only Lanes Alternative.

What other corridor-wide considerations for the project are there?

There are some corridor-wide environmental factors considered within the SEIS. The Second Tier Studies included some of these corridor-wide factors and required a re-assessment due to the consideration of the Truck-Only Lanes Alternative. Other factors not considered in the previous studies, such as energy and funding options, were determined to be important issues and merited consideration within the SEIS. The following sections discuss corridor-wide considerations requiring focus in the SEIS.

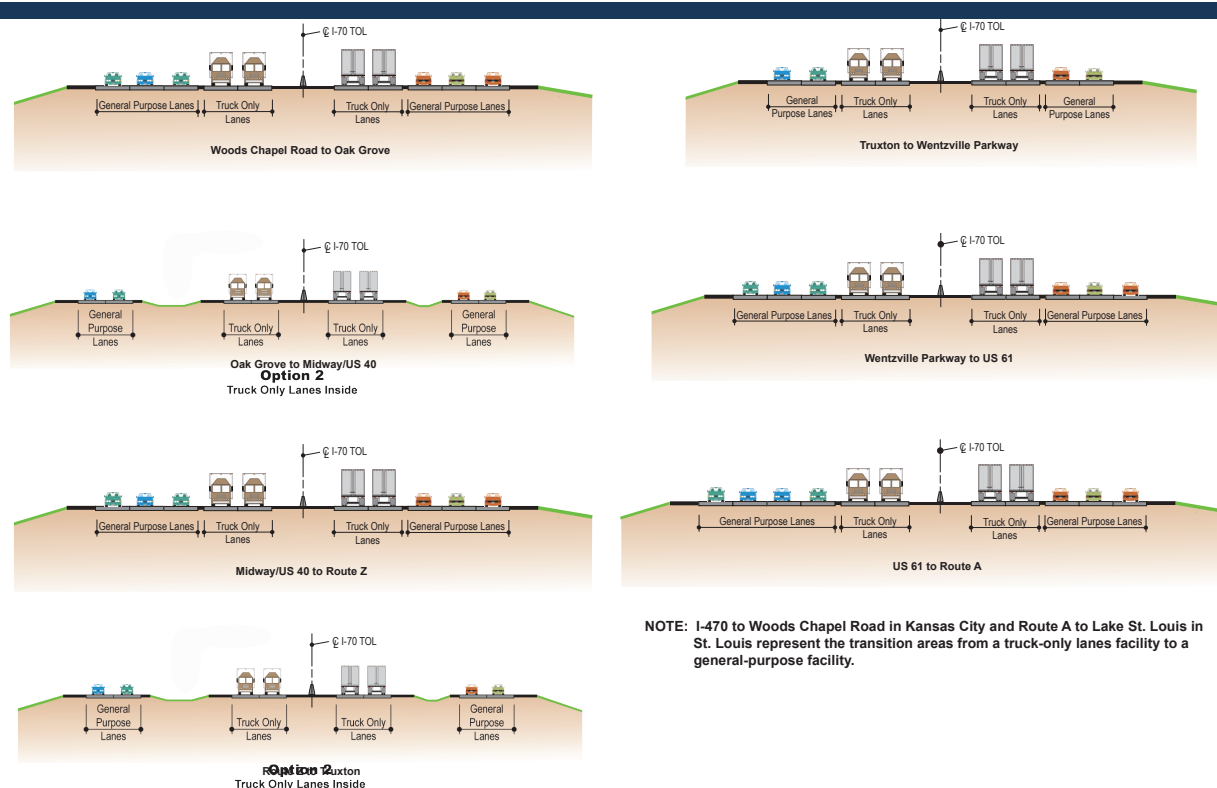
How would the truck-only lanes affect travel in the study area?

One of the critical elements to the purpose and need for the project was to provide additional

roadway capacity to minimize traffic delays and congestion along the I-70 Corridor. If no widening improvements are made to I-70, the existing roadway will be congested along the majority of the corridor during the peak periods of the day by the design year 2030.

The Truck-Only Lanes Alternative is not projected to significantly alter future traffic projections and travel patterns for trucks or general-purpose traffic over the projections developed within the Second Tier Studies. As a result, the study team used future traffic projections from the Second Tier Studies to evaluate the capacity needs of a truck-only lanes facility.

The Truck-Only Lanes Alternative includes improvements that widen the I-70 Corridor to two truck-only lanes each direction and two or more general-purpose lanes each direction. Through planning-level traffic analysis, it was determined that two truck-only lanes in each direction was adequate to serve the capacity needs of trucks traveling along the I-70 Corridor. However, some sections of the general-purpose lanes within the urban sections of the project require more than two general-purpose lanes each direction to serve traffic operations effectively. The study team performed a planning-level traffic assessment to determine the potential number of general-purpose lanes each direction in the urban areas of Kansas City, Columbia and St. Louis. **Figure 4-5** shows the number of general-purpose lanes and the number of truck-only lanes assumed in

Figure 4-5: Number of Truck-Only Lanes and General-Purpose Lanes

the SEIS across the I-70 Corridor. The SEIS does not definitively require a set number of lanes within the urban limits of the project. However, it does environmentally clear a footprint that is conservative enough to apply a truck-only lanes facility that will operate with acceptable travel conditions. The SEIS provides flexibility to determine the ultimate configuration and typical section for the truck-only lanes facility during the design phase of the project. This flexibility will allow MoDOT to incorporate emerging trends in freight movement and technology advances that could affect the configuration of the truck lanes. These advances could include congestion management of the lanes during peak hours within the urban limits or different treatments for separation areas between trucks and general-purpose traffic lanes. As a result, more detailed traffic analyses will take place during the design phase in order

to address any uncertainties related to the necessary number of lanes. The more detailed analysis will also better define the transition distances needed to transition from a truck-only lanes facility back to a general-purpose facility on I-70.

The study team did not perform a detailed traffic operational assessment of the truck-car separated interchanges at the seven locations as part of the SEIS. However, the study team did perform a planning level assessment of the traffic operations of the various truck-car separated configurations using 2030 interchange build volumes from the Second Tier Environmental Studies. Once a specific truck-car separated interchange type is selected during the design phase of the project, a more detailed traffic evaluation would be conducted at that time during a break-in-access study.

What is the project's effect on energy and commitment of resources?

The study team accounts for energy considerations when evaluating alternatives to improve I-70 including the energy consumed during normal operation and maintenance. Transportation usage consumes the most rapidly depleting form of energy – petroleum. It also accounts for a major portion of overall energy consumption. Generally, transportation-related energy consumption is separated into two main categories, including the energy consumed to move a vehicle and the remaining energy required to operate the overall transportation system.

The energy consumed to move a vehicle is divided into traffic and facility factors. Traffic-related factors include the volume of traffic, speed and composition of vehicle types. Facility-related factors include roadway grades, curvature and speed change cycles. Since facility-related factors have a minor effect on direct energy consumption, they are generally considered insignificant and are omitted from consideration.

The energy needed to operate the transportation system encompasses all the energy resources used indirectly in building and operating a transportation system. This includes energy for construction and maintenance of the facility and manufacturing and maintenance of the vehicles.

The potential effects that a transportation system may have on energy use and availability in the area it serves should also be considered. For example, a shift in population density, land use

or transportation patterns may be fostered, or induced by a project. This will have an impact on energy demand, supply and distribution within the region. This type of energy consumption is considered negligible because development might take place anyway, or will occur somewhere else in the region.

An expenditure of energy will be necessary for the construction of any new roadway within the project area. There is no notable difference in energy impacts for any of the alternatives under consideration. The commitment of energy resources is based on the judgment that highway users will benefit from the highway improvements. As such, the initial energy expenditure is expected to be compensated over time with the improvements in traffic flow and travel time savings.

The No-Build Alternative for I-70 will not require any additional energy expenditures for construction, but the fuel energy consumed by traffic congestion will continue to increase. As traffic volumes increase under the No-Build Alternative, it is expected that energy consumption would also increase. Energy usage for maintenance activities would also be expected to increase under the No-Build Alternative, as the facility continues to deteriorate. Further, the number of vehicle miles traveled is expected to increase slightly with the improvements to I-70, since it may attract some traffic from parallel corridors. However, vehicle hours traveled are expected to decrease, due to the relief of congestion. Under this scenario, similar

distances will be traveled, but travel times will be reduced.

There are a variety of potential measures that could reduce energy consumption from construction. As a project advances in design, and more detail is available on construction needs and activities, additional analysis will help to identify specific measures and approaches for reducing energy consumption during construction. Potential measures could include:

- Construction materials reuse and recycling;
- Turning off equipment during non-use to reduce energy consumption caused by idling;
- Constructing during off-peak travel times to minimize stops and delay, maximizing fuel efficiency; and
- To the extent practical, scheduling construction activities during daytime hours or during summer months when daylight hours are longest to minimize the need for artificial light.

What is the project's effect on emissions?

Virtually all human activities have an impact on the environment, and transportation is no exception. Transportation is a source of greenhouse gas emissions, and contributes to global warming through the burning of petroleum-based fuel. Any process that burns fossil fuel releases carbon dioxide (CO₂) into the air. Carbon dioxide is the primary greenhouse gas emitted by vehicles.

Changes in CO₂ emissions from fossil fuel combustion are influenced by many long-

term and short-term factors, including population and economic growth, energy price fluctuations, technological changes and seasonal temperatures. On an annual basis, the overall consumption of fossil fuels in the United States generally fluctuates in response to changes in general economic conditions, energy prices, weather and the availability of non-fossil alternatives. Over time, carbon emissions increase with population growth. The population, as well as the number of miles being driven, has grown and is expected to continue growing, but standards for vehicle fuel efficiency have not changed since 1991. However, in recent years a change in Corporate Average Fuel Economy standards of 35 mpg by 2020 for cars and light trucks has been initiated but has not yet moved forward.

Future carbon emissions for a particular project are difficult to estimate because such a wide variety of factors could influence carbon emissions by 2030. Some of the factors that could change between now and 2030 include government regulations, price and availability of fuel and alternative energy sources, and vehicle technology (such as electric hybrid or fuel cell vehicles). If historic and recent transportation trends continue, CO₂ emissions will continue to increase.

Most of the focus for reducing greenhouse gas is on improved vehicle efficiency and low-carbon fuel. However, there are measures related to infrastructure that could reduce greenhouse gas emissions over the long-term, such as:

- Replacing aging infrastructure in existing corridors. The Truck-Only Lanes Alternative will upgrade an existing facility instead of creating a new transportation corridor.
- Increasing efficiency of transportation systems. Minimizing congestion and stop-and-go conditions will help to reduce the inefficient use of energy. Separating trucks from passenger vehicles and adding capacity to the corridor will help minimize congestion and stop-and-go travel conditions.
- Implementing congestion management techniques. There are a wide-range of scenarios for managing congestion levels which can include congestion pricing through tolls during peak-periods to encourage off-peak driving.

Potential measures for reducing adverse impacts resulting from the project could include:

- Construct with materials and build systems that meet efficiency standards for equipment and lighting design;
- Recycle build materials, such as concrete, from project;
- Use sustainable energy to provide electricity for lighting and other operational demands;
- Plant vegetation to absorb or offset carbon emissions; and
- Promote emissions reduction.

What is the project's effect on wildlife crossings?

Highways are characteristically long, linear features in the environment. As such, they can restrict wildlife movements, effect wildlife through the breakup of habitat and can be

sources of road mortality that could threaten some wildlife populations. There is concern about the increasing animal mortality rates (e.g. white-tailed deer) due to vehicular traffic, and the resulting property damage and potential animal and human injury that can occur. The median barrier separation between opposing directions of truck traffic proposed within the Truck-Only Lanes Alternative results in a barrier to wildlife crossings.

However, the I-70 Corridor does not create an insurmountable barrier to wildlife movements by fragmenting habitat areas. In this region of the country, there are no large migratory groups, such as moose or elk, which travel traditional corridors in mass migration as they do in the western states. Therefore, the I-70 SEIS will not incorporate dedicated wildlife crossings built specifically for animal movement, but serve no other project purpose, into the corridor improvements.

Instead, a viable alternative is to encourage wildlife to use areas under bridges at stream crossings as wildlife passages. Vegetative plantings on the terraces adjacent to the stream banks can provide the connectivity that is needed to encourage a large number of animal species to utilize these vegetative corridors as passageways. Culverts can also provide passageways for some aquatic and amphibious species and some smaller mammals, depending on water levels in the culvert. Other enhancements to improve wildlife crossings included bridge stream corridors with habitat enhancement plantings

and special roadside habitat ditches designed to meander and flow at variable slopes. The Second Tier Environmental Studies included a Corridor Enhancement Plan that provided guidance on potential habitat enhancement and wildlife corridors and the findings of that plan remain valid for the SEIS. The Corridor Enhancement Plan is available upon request.

Additionally, the final determination regarding the type of median barrier separation will occur during the design phase of the project. The design phase could consider replacement of concrete barriers with steel bars in green median, under-road passages, barriers/fencing outside the traffic lanes, etc. Any wildlife enhancements considered during the design phase would be located within the right of way required for the Truck-Only Lanes Alternative.

When determining the ultimate type of barrier treatment, the study team will also take into consideration the safety of opposing directions of truck traffic to prevent or minimize crossover crashes and the amount of additional right of way that would have to be environmentally cleared and purchased to alter the median barrier widths and treatment.

Are there opportunities for joint development on I-70?

Opportunities for joint development of the I-70 Corridor and the right of way available will become more important with the development of alternative energy sources, such as electric, hydrogen and natural gas transmission lines. Intelligent Transportation Systems (ITS) can also

take advantage of available right of way for new technologies. The Truck-Only Lanes Alternative does not preclude the use of the available right of way for any of these options.

MoDOT developed a Rest Area Study as a part of the Second Tier Studies, that provided details of the amenities and general design of the proposed rest areas, designated as welcome centers, along the I-70 Corridor. Additionally, the study recommended consolidating the four rest areas to three welcome centers and identified where to relocate these welcome centers.

In 2008, MoDOT updated the study. As a result, the decisions made regarding the location of the three welcome centers has changed. The westernmost would be located around mile marker 33 (Bates City) area, the central one at or near the current Boonville rest area at mile marker 104 and the easternmost at or around the 179 to 189 mile marker between Jonesburg and Warrenton. The study also discussed the availability of truck parking and made recommendations for future parking needs. MoDOT's plan to convert those rest areas eliminated as welcome centers to facilities for truck-only parking is contingent upon the interstate alignment. All new welcome centers will offer approximately 50 truck parking spaces. Combined, the new welcome centers and truck-only parking facilities would provide approximately 447 public truck parking spaces along the corridor. MoDOT would provide signage to welcome centers and truck-only

parking, similar to the signage provided for interchanges served by slip ramps.

For the SEIS, the recommendations will remain the same as that in MoDOT's latest welcome center plan. However, there may be opportunities for additional truck amenities at the welcome centers, including access to utilities and ITS information.

As part of the I-70 Corridor Enhancement Plan, enhancement measures were discussed as possible non-traditional transportation related compensation beyond any required mitigation. Corridor enhancements could include items such as aesthetic additions to roadway and bridges, pedestrian amenities, wildlife crossing corridors and landscaping. Joint development of the corridor could provide the opportunity for more than just a transportation link; it could also be part of the state's tourism and recreation resources. The Corridor Enhancement Plan recommendations from the previous studies remain part of the I-70 SEIS.

What are the indirect and cumulative effects of the project?

When a project has direct impacts, they occur at the same time and place. The project can also cause secondary or indirect impacts that can occur later in time, removed in distance from the project. These types of indirect impacts can often be reasonably foreseeable. Cumulative effects are effects on the environment that result from the incremental impact of the project when added to other past, present and reasonably foreseeable future actions, regardless of what

agency or person undertakes such other actions. In evaluating secondary and cumulative impacts of the proposed project, project activities by others within or near the study area merits consideration.

Secondary or cumulative impacts may include increases in traffic volumes outside the study corridor; or changes in population, housing, employment, tax base or other land use changes. The SEIS focuses on only those additional secondary and cumulative impacts based on the evaluation of the Truck-Only Lanes Alternative.

For this project, the corridor includes I-70 from Kansas City to St. Louis, approximately 200 miles. The width for evaluation is resource dependent. The study team does not expect the land use type to change since interchanges typically draw commercial development; however, the layout of Interchange Type F (separate diamond interchanges for general-purpose traffic and truck-only lanes traffic) could have an effect on the development pattern. Because there are two diamond interchanges with connecting frontage roads, additional development may be a secondary impact of this concept. Some businesses may feel that being located near one of the diamond interchanges versus the other is either an advantage or a disadvantage and see this concept as a secondary impact. However, the access provided between the diamond interchanges and the appropriate signage can help to alleviate visibility concerns.

The selected funding mechanism for I-70 could result in some possible secondary impacts. An

additional sales tax, fuel tax or tolls all provide the opportunity to generate additional revenue to fund improvements to I-70. However, the financial impact of these funding mechanisms could be considered a secondary impact of the project. Each funding mechanism has different impacts on the public. A sales tax is applied most broadly to the most individuals throughout the state, whenever a purchase is made to which sales tax is collected. A fuel tax is applied to the public that purchases fuel in Missouri. Both fuel and sales taxes could potentially be paid by persons that seldom or never use the I-70 Corridor. A toll is applied most narrowly, and only to those who travel on the facility. The SEIS will not select a specific funding mechanism for the I-70 project, but does consider the potential social and environmental impacts related to funding I-70 improvements.

The portions of the population most likely affected by an additional tax or user fee such as tolls are low-income individuals. The benefits of the project improvements in terms of decreasing drive times and alleviating congestion could offset any additional financial impact. None of the funding mechanisms are expected to have a disproportionate impact on any low-income or minority populations. The Second Tier Studies performed a more detailed environmental justice assessment of potential impacts to low income and minority populations and found that the populations along the I-70 Corridor would not suffer a disproportionate amount of impact from the project.

Another possible secondary impact would be the potential diversion of traffic from I-70 to competing routes if tolling was implemented. In Missouri, U.S. 50 and U.S. 36 could experience additional traffic due to traffic shifts from I-70 to avoid tolls. On a national level, the same could be said for national corridors such as I-80 and I-40. However, the amount of out-of-distance travel plays heavily into the desire and efficiency of avoiding tolls. Studies have found that often the traffic shifts to other corridors to avoid tolls are temporary in nature. The traffic typically shifts back over time, due to other benefits such as travel time and distance savings.

Another possible secondary impact relates to the projected amount of truck traffic. Truck traffic could be drawn from other routes, such as I-40 or I-80, in order to use a state-of-the-art truck-only lanes facility. The trucks could potentially realize benefits and increased efficiencies using the I-70 truck-only lanes, which could also affect the businesses and services located along the I-70 Corridor. The SEIS projects traffic to increase within a range of 15 to 20 percent compared to making no widening improvements to the I-70 Corridor.

The urban areas present a challenge in transitioning from a truck-only lanes typical section to the general-purpose lane typical section. There could be secondary impacts related to truck traffic dispersion within the metropolitan areas. The I-70 Truck-Only Lanes Alternative currently ends within the urban limits of Kansas City and St. Louis. This could result in secondary impacts due to this

What are the options to pay for the project?

There is a range of funding options that could be possible to pay for improvements to I-70. A funding option will not be selected as part of the SEIS, but the document will consider the impacts to the natural and manmade environment from applying various funding options. Within the SEIS, fuel taxes, sales taxes and tolling were considered to be possible funding mechanisms available to finance improvements to the I-70 Corridor.

Fuel Tax - For many years, fuel taxes and other revenues from highway users have been a primary source of funds for federal and state transportation programs. A fuel tax has been an attractive funding option because the revenues from fuel taxes are linked with highway use. The federal tax on gasoline is 18.4 cents per gallon. Missouri currently levies a 17-cent per gallon state tax on all fuels used for vehicle transportation, primarily gasoline and diesel fuel. This makes the total fuel tax for Missouri approximately 36 cents per gallon. This compares to a national average per state of 48.4 cents per gallon, giving Missouri the sixth lowest fuel tax in the nation.

Tolls - Tolls represent a way of paying to build and rebuild roads through a direct user fee. Tolls provide a dedicated revenue stream to cover roadway and bridge implementation costs, as well as operation and maintenance costs to continue to provide a high standard of care throughout the life of a facility. Drivers who use the toll facility benefit directly from their user fees through an enhanced and improved roadway system. Additionally, drivers who choose to use alternate, toll-free routes benefit from the congestion relief offered by the toll facility. Non-users are not required to contribute financially to a toll facility that they do not use; only those direct users of the toll system have to pay for its implementation costs. Tolls also provide a way to ensure that out-of-state users pay their share of the infrastructure costs. Toll roads can accelerate the availability of start-up funding and, in many cases, make the system available sooner to the public. In addition, the variable rates per mile for various vehicle classes allow pricing to reflect the users' variable wear and tear on the facility as well. Heavy trucks, for instance, cause greater pavement and bridge wear and can contribute more to congestion than do automobiles.

Sales Tax - A sales tax is a tax that is to be collected by retailers and certain service providers at the time of purchase. The sales tax has become a politically feasible option for local areas looking to finance major transportation initiatives. This type of funding enables revenue to be dedicated for specified improvements. In addition, the sales tax would have a wide (statewide) base. The small increment in the tax rate is barely perceived on individual purchases, but when applied to a large number of items, it can generate substantial revenues to fund project costs.

transition and in how trucks disperse. A Kansas City Origin-Destination Study was conducted concurrent with the SEIS process in 2008. A copy of the study is available on CD for review as **Technical Memorandum 5**. An origin-destination study is planned for the St. Louis metropolitan area in 2009. Origin-destination studies help provide a better understanding of how and where trucks are routing through the metropolitan areas.

In addition, there is currently state legislation prohibiting trucks from using the inside left lane when a highway has six or more lanes. This prohibition will need to be considered during the design phase of the project as the

ultimate configuration for a truck-only lanes facility is designed. A change in legislation may be required to implement the Truck-Only Lanes Alternative. However, the configuration for the Truck-Only Lanes Alternative shows a physical separation or a buffer separation between truck-only lanes and general-purpose lanes, which is different from a general six-lane typical section. For this type of truck-only lanes facility, the corridor would operate more safely and efficiently with trucks located on the inside. Reasons for dismissing the option of restricting trucks to right lanes is shown in **Chapter 2** under the heading What Does the Truck-Only Lanes Strategy Look Like and within **Technical Memorandum 2, Tier 1 Strategy Screening**.

The transition areas, from the truck-only lanes section to solely general-purpose lanes, are designed to allow for the adequate and efficient flow of traffic into and out of the truck-only lanes facility. The study team does not anticipate that truck-only lanes will cause trucks to disperse differently once they arrive in the urban areas. If the Federal Corridors of the Future I-70 project were to select truck-only lanes for the 800-mile I-70 Corridor from Kansas City, Missouri to the Ohio-West Virginia border, this would not be an issue in the St. Louis area, as the truck-only lanes would continue on to the east. In order to better understand the impacts of carrying truck-only lanes through the St. Louis metropolitan area, a St. Louis Truck Lanes Corridor Study was conducted concurrent with the SEIS process. This study was done at a planning-level of detail and further study would need to be completed to environmentally clear any routes through the St. Louis area. A copy of the study is available for review as **Technical Memorandum 6**.

What are the effects of the funding options for improving I-70?

Funding for improvement to I-70 has not yet been identified. There are a range of initiatives at both the state and federal level to fund highway improvements. MoDOT does not have a preferred funding method, but is preparing to hit the ground running with design and construction when those funds become available. The SEIS evaluated the general impacts of a range of funding sources, including fuel tax, tolling and sales tax, but it does not

make a recommendation for a preferred funding method.

Some users of the transportation system could consider the use of fuel tax as a source for funding transportation improvements to be a user fee. Traditionally, the environmental impacts of the use of fuel tax funds are included in the transportation studies required prior to the construction of transportation improvements. Fuel tax, as a funding option, is not considered to have a disproportionate impact to any segment of the population, and would not have a disproportionate impact along the I-70 corridor. Fuel tax in Missouri has not typically been applied to fund a specific corridor, but rather has been allocated across the entire Missouri transportation system. It is possible to enact a fuel tax that would be used exclusively to pay for I-70 improvements. However, this could mean that a user could potentially pay fuel taxes for improvements to a roadway that they seldom or never use.

If toll plazas are a part of a toll facility, social and environmental impacts regarding the location of the plazas will need to be evaluated. Environmental factors to consider in location of plazas include soil disturbance and erosion, impacts to wetlands, water quality from runoff and noise and air quality impacts. There can also be health and safety issues due to noise and air impacts for employees at the toll plaza. Lighting at the toll plaza can also adversely impact nearby development and should be considered during site selection. However,

the implementation of new technology, such as electronic toll collection and open-road tolling, has increased public convenience and user satisfaction levels with tolls. It has also eliminated the environmental concerns related to locating a physical toll plaza. It has been assumed in this SEIS that if toll financing is ultimately chosen as the financing mechanism that the system would be entirely electronic and not result in any additional natural environmental impacts. If alternative collection systems are chosen, such as traditional toll booths, then an additional environmental evaluation will need to be completed on those collection locations.

The I-70 corridor has been developed over time and is mostly rural in nature. In Boone County and within the City of Columbia, select residential settlement pockets near existing I-70 exhibit a proportionately greater percentage of low-income and minority populations. Along with an older housing stock, these predominately urbanized sections are characterized by lower contract rents and lower owner-occupied housing stock values. The proposed I-70 project is not the cause for growth and development pressures already experienced in this region, and failure to improve I-70 is not an alternative that will markedly improve the quality of neighborhoods. Tolling and the project design would deliver offsetting benefits to the neighborhoods that have been burdened historically by the regional transportation system. Tolling would not be expected to have

a disproportionate impact to any low-income or minority population.

Because of the wide, statewide base for a sales tax, environmental impacts would be minimal and would not affect disproportionately any particular segment of the states' population. However, it can mean that people are paying sales taxes on a roadway they rarely or never use. This can be somewhat offset by people benefiting from the goods and services these roadways provide, via the transport of freight.

Are there considerations for the study area that do not change as a result of the Truck-Only Lanes Alternative?

The federal government requires that an EIS consider a specific set of environmental factors in order to complete the environmental process for a project. For the SEIS, some of these environmental factors do not experience a change in impacts from the findings of the Second Tier Studies. For these environmental factors, the analyses and commitments made in the Second Tier Studies remain valid and will be carried forward as part of the SEIS.

The following section provides a listing of the environmental factors that have not changed as a result of the Truck-Only Lanes Alternative.

Air quality impacts

The Second Tier Studies assessed air quality impacts within the project footprint. Air quality was of special consideration within the

urban areas of the corridor within SIU 1 in Kansas City and SIU 7 in St. Louis. Within the Second Tier Studies, it was determined that the improvements to the I-70 Corridor would not significantly impact the air quality of the two metropolitan areas and result in the need for air quality mitigation. Since the Truck-Only Lanes Alternative remains within the environmentally cleared footprint from the Second Tier Studies and does not project to attract significantly more general-purpose or truck traffic than previously anticipated, air quality would still not be significantly impacted.

Noise impacts

During the Second Tier Studies, the study team conducted noise studies for each SIU to assess the potential noise impacts to residences and other sensitive receptors, such as parks, along the corridor. Since the Truck-Only Lanes Alternative remains within the environmentally cleared footprint from the Second Tier Studies and is not projected to attract significantly more traffic than previously estimated, additional noise impacts were not found to result. A few localized areas, including the Mineola Hill area and the potential truck-car separated interchange locations, were reevaluated to ensure no additional impacts resulted from the Truck-Only Lanes Alternative. It was determined that the original noise study findings were still valid and that with trucks on the inside lanes, noise impacts to this area may be slightly reduced. However, the noise study findings will be reevaluated within the design phase of the project to verify there are no additional

noise impacts that meet the criteria for noise mitigation.

Study area demographics

The study team developed demographic evaluation factors such as population, employment and housing characteristics using Census 2000 information for the Second Tier Studies. At this time, Census 2000 is still the latest data available for the project. As a result, the findings for study area demographics remain the same as that conducted for the Second Tier Studies.

Visual and aesthetic impacts

Since the Truck-Only Lanes Alternative remains within the environmentally cleared footprint from the Second Tier Studies, the study team does not anticipate it would significantly alter the findings related to visual and aesthetic impacts from the Second Tier Studies.

Commitments made related to the visual and aesthetic quality of the corridor remain valid, including the I-70 Corridor Enhancement Plan and the I-70 Rest Area Study.

Permit requirements

In the Second Tier Studies, the study team identified permits required as part of the project. The permits identified will still be valid for the SEIS and it will maintain any commitments made related to obtaining permits during the design phase of the project.

Environmental mitigation

In the Second Tier Studies, the study team identified commitments to mitigate impacts

to environmental resources, such as streams and wetlands. The mitigation commitments identified will still be valid for the SEIS.

Construction impacts

The best management practices related to constructing the project described in the Second Tier Studies will remain valid within the SEIS. Any commitments made related to mitigation for construction impacts will be upheld in the SEIS.

What are the total impacts of the Truck-Only Lanes Alternative?

Figure 4-6 presents a summary of the total impacts of the Truck-Only Lanes Alternative for the entire 200-mile I-70 Corridor. This includes impacts within the environmentally cleared footprint of the Second Tier Environmental Studies, as well as new impacts within that previous footprint, due to the passage of time. It also includes the additional impacts that result specifically from the Truck-Only Lanes Alternative and its new right of way.

While the Truck-Only Lanes Alternative does result in approximately 300 additional acres of right of way than the Preferred Alternative from the Second Tier Studies, the additional benefits of a truck-only lanes facility on I-70 outweighs the additional impacts. Chapter 6, Recommendation of the Preferred Alternative, provides a summary of the key reasons for selecting the Truck-Only Lanes Alternative as the Preferred Alternative for the I-70 Corridor.

Only Practicable Alternative Finding

The SEIS requires that a finding be made for wetlands and floodplains for the Preferred Alternative for the project. This is referred to as the Only Practicable Alternative Finding.

What is the finding for wetlands?

The Preferred Alternative, the Truck-Only Lanes Alternative, would affect 65.97 acres of potentially jurisdictional wetlands. As discussed in the SEIS, there are no other practicable alternatives to the proposed action that would adequately serve the purpose and need of the proposed project. Following coordination with the U.S. Army Corps of Engineers (USACE) and other resource agencies, MoDOT will compensate for unavoidable wetland losses by utilizing appropriate mitigation strategies such as restoration, enhancement, creation, mitigation banking or in-lieu fees in a manner that will ensure no net loss of function or acreage as a result of this project. Compensatory mitigation sites will be held in public ownership or in an ownership arrangement suitable to both the USACE and the Missouri Department of Natural Resources (MDNR) (if a Memorandum of Understanding between MoDOT and MDNR, Management of Wetland Mitigation Lands Agreement, or a similar agreement is in force at the time of 404 permit authorization) and in a manner consistent with Section 4 of Executive Order 11990.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the Preferred Alternative includes all practicable measures to minimize harm to wetlands that may result from such action.

What is the finding for floodplains?

In order to provide travel lanes for the Preferred Alternative, it is necessary to locate the new travel lanes within and through the floodplains of the tributaries identified in the Second Tier Studies, as well as those identified within the SEIS Technical Memorandum 3, Tier 2 Evaluation, as they relate to the additional floodplain impacts resulting from the Truck-Only Lanes Alternative. A total of 426.86 acres of floodplain will be affected by the Preferred Alternative. The Preferred Alternative was determined to provide the best solution to existing roadway deficiencies and future traffic volumes, to best accommodate community access and growth and to have a lower environmental impact than other alternatives considered.

The crossings of all base floodplains will be designed and constructed in compliance with applicable floodplain regulations, including Executive Order 11988. During the design process, a detailed hydraulic analysis of the flows and water surface elevations will be made in accordance with the requirements of the Federal Emergency Management Agency and the USACE. This analysis will ensure the absence of any encroachments upon regulatory floodways so that the 100-year flood discharge may be conveyed without increasing the base flood elevation more than a specified amount. The Preferred Alternative would not result in a loss of regulatory floodway capacity or a one-foot cumulative rise resulting from all proposed activities conducted within the base floodplain. The Preferred Alternative would conform to applicable state of Missouri and local floodplain protection standards, and the required floodplain development permits would be obtained during the design phase.

Based upon the above considerations, and for the reasons stated in this SEIS, the FHWA determines that the Preferred Alternative is the only practicable alternative.

Figure 4-6: Total Impacts of Truck-Only Lanes Alternative

Environmental Factors	Unit	SIU 1				SIU 2				SIU 3				SIU 4				SIU 5				SIU 6				SIU 7				
		Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	Second Tier Impacts	New Since Second Tier	Add'l due to TOL	TOL total	
Land Use	Rating	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	
Farmland Impacts																														
Prime Farmland	Acres	186.7	0	10.5	197.2	490	0	16.7	506.7	80	0	0	80	140	0	0	140	383	0	0	383	410	0	53	463	684	0	9.0	693.0	
Statewide Importance	Acres	263.3	0	24.1	287.4	572	0	22.0	594.0	432	0	34.7	466.7	113	0	2.0	115.0	63.6	0	0	63.6	312	0	64	376	455	0	38.0	493.0	
CRP Lands	Acres	3.6	0	0	3.6	28	26	0.17	54.17	20.7	0	7.1	27.8	0.2	0	0	0.2	0	0	0	0	8.5	0	0	8.5	0.01	0	0	0.01	
Wetlands	Acres	0	0	0	0	8	5.4	0	13.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Social and Economic																														
Residents (persons)	Number	100	0	53	153	83	3	8	94	25	3	0	28	442	50	13	505	35	0	0	35	40	0	0	40	138	3	10	151	
Businesses	Number	20	3	0	23	21	1	0	22	25	9	0	34	66	11	0	77	16	6	0	22	8	0	0	8	45	21	18	84	
Environmental Justice Issues	Yes/No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Community Impacts	Rating	➡	NC	●	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	●	➡	
Parks and Public Lands	Number	1	0	0	1	0	0	0	0	2	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0					
ROW and Displacements																														
Total Right-of-Way	Acres	469	0	48.2	517.2	1800	0	44.3	1844.3	652	0	35.5	687.5	397	0	6.05	403.05	439.6	0	0	439.6	770	0	117	887	1153	0	55.8	1208.8	
Residential (partial)	Number		0	2	2	26	0	0	26		1	0	1	185	0	0	185		0	0	0	173	0	0	173		0	3	3	
Residential (full)	Number	40	0	21	61	33	1	3	37	10	1	0	11	299	20	5	324	14	0	0	14	16	0	0	16	55	1	16	72	
Business (partial)	Number		3	2	5	38	4	1	43		1	1	2	127	0	0	127		0	0	0		1	1	2		0	12	12	
Business (full)	Number	20	3	0	23	21	1	0	22	25	9	0	34	66	11	0	77	16	6	0	22	8	0	0	8	45	21	21	87	
Public Semi-public (partial)	Number		1	0	1	0	1	0	1	2	0	0	2		0	1	1	1	0	0	1	0	0	0	0		1	0	1	
Public Semi-public (full)	Number	1	0	0	1	0	0	0	0	0	1	1	2	10	0	0	10	0	0	0	0	0	0	0	0	4	0	0	4	
Air Quality	Rating	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●
Noise (sensitive receptors)	No. of Units	119	0	0	119	73	22	0	95	11	0	0	11	124	0	0	124	15	0	0	15	14	0	0	14	671	0	0	671	
Streams & Wetlands (jurisdct'l)																														
Streams*	Lin. Ft.	19022	0	1134	20156	41560	2200	810	44570	19009	0	916	19925	18996	0	0	18996	4968	0	0	4968	27070	0	998	28068	38605	0	2840	41445	
Wetlands*	Acres	10.8	0	0.03	10.83	26.9	3.58	0	30.48	6.32	0	0.05	6.37	2.76	0	0	2.76	4.85	0	0	4.85	7.65	0	0	7.65	2.73	0	0.3	3.03	
Wetlands*	Acres	0.8	0	0	0.8	15.5	0	0.09	15.59	5.82	0	0	5.82	0	0	0	0	0	0	0	0	2.76	0	0	2.76	2.15	0	0	2.15	
Water Quality Impacts	Type	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●
Floodplain Impacts	Acres	102.5	0	2.0	104.5	98	0	0	98	71.8	0	0	71.8	72	0	4.5	76.5	12.6	0	0	12.6	38.9	0	1.0	39.9	11.3	0	12.26	23.56	
Biological Resources																														
Natural Communities (woodland)	Acres	33.7	0	5.6	39.3	294	0	5.9	299.9	230	0	12.6	242.6	143	0	5.8	148.8		0	0	0	115	0	1.8	116.8		0	8.7	8.7	
Natural Communities (rangeland)	Number	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	
Cultural Resources**	Number	0	0	0	0	15	0	1	16	0	0	1	1	2	0	1	3	4	0	0	4	0	0	0	0	2	0	1	3	
Hazardous Material Sites***	Number	5	0	0	5	33	1	0	34	7	2	0	9	15	0	0	15	3	3	0	6	8	0	0	8		4	7	11	
Visual Assessment	Rating	➡	NC	●	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	●	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡
Construction Impacts	Rating	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	➡	➡	NC	NC	●	➡
Environmental Mitigation****	Rating	●	Add'l	Add'l	●	●	Add'l	Add'l	●	●	Add'l	Add'l	●	●	Add'l	Add'l	●	●	Add'l	NC	●	●	NC	Add'l	●	●	Add'l	Add'l	●	●
Secondary and Cumulative	Rating	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●	NC	NC	●	●
Section 4(f)	Yes/ No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No

* Second Tier quantities for stream, wetland, and pond impacts are derived from the previous PJWD Summary Reports and include impacts to only those water resources that are considered jurisdictional.

** Includes only historic cultural resources with an adverse effect and potentially eligible archaeological sites that require further testing prior to design.

*** All of the hazardous material sites are considered to have a "low potential for contamination".

**** The term *Additional* indicates that the mitigation committed to in the Second Tier Studies remains valid for the SEIS and that additional impacts related to the Truck-Only Lanes Alternative requiring mitigation (e.g., wetlands, streams) will receive the same commitments to perform mitigation.

NC = No Change

NOTE: Mat fix cells of those factors for which specific information was not available, are left blank.

Benefits > Adverse Impacts

Benefits = Adverse Impacts

Benefits < Adverse Impacts

Chapter Five

How were the public and agencies involved in the SEIS?

The agency and public involvement process was created to ensure that the community and agencies that serve community interests have input into the ideas, evaluations and recommendations that result from the environmental decision-making process. The public involvement and agency coordination process used several tools to include as many people as possible in the process and to make certain the communities were informed and understood the project.

The public and interested stakeholders were involved in the project through advisory groups that met a combined four times, 24 total meetings with various stakeholder groups, three open-house style public meetings, three “listening” sessions held in conjunction with an online public meeting and three public hearings related to the comment period for the Draft SEIS, with an online public hearing component via the project Web site. Additionally, the study team posted a project informational video to the You Tube video-hosting Web site. MoDOT also updated the project Web site previously created for early Improve I-70 Studies at www.ImproveI70.org, to include information about the SEIS and truck-only lanes.

The study team contacted traditional print as well as broadcast media and generated media releases for the public meetings and Internet-based outreach activities. Advertisements to

publicize the public and online meetings and hearings were purchased in 13 newspapers across the corridor. Additionally, legal notices were posted in six newspapers to announce the availability of the Draft SEIS and public hearing dates.

Agencies were involved through in-person meetings with the

study team. Three meetings with the Study Management Group (SMG), consisting of resource agency personnel, were held to discuss background information on the Truck-Only Lanes Alternative, as well as sensitive areas in the corridor with significant environmental resources.

What were the goals for involving the public and resource agencies?

The study team focused the public involvement process on obtaining community input in developing a recommendation that addresses identified community needs, desires and concerns. Specific public involvement goals included:

- Helping the public understand the environmental decision-making process;
- Help the public and resource agencies understand how the SEIS and Truck-Only

Comments and Coordination

Chapter 5 provides an overview of how the study team coordinated issues with members of the community, federal, state, and local agencies, and other interested stakeholders and groups. Study issues included the development, screening and selection of alternatives during the SEIS process. Copies of meeting documentation and materials are included in **Technical Memorandum 4**, attached to the SEIS.

- Lanes Strategy fit with the previous First and Second Tier Studies;
- Gathering meaningful public input on the Truck-Only Lanes Strategy; and
- Creating sustainable support for the recommendations and findings in the SEIS.

The study team established an agency coordination plan, in concurrence with the requirements of SAFETEA-LU Section 6002. The Agency Coordination Plan (included in **Technical Memorandum 4**) identified how the study team would solicit and consider input from the agencies. The study team structured the Agency Coordination Plan to:

- Identify early coordination efforts;

SAFETEA-LU

SAFETEA-LU is the acronym for the **Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users**. **SAFETEA-LU** was the federal transportation bill passed in 2005. **Section 6002** of the bill provided additional requirements for streamlining the environmental decision-making process, including a formalized coordination plan with the local, state and federal governmental agencies.

- Identify agencies that would want to continue cooperation or participation in agency coordination efforts such as the I-70 Study Management Group; and
- Establish the timing and form for agency involvement.

Figure 5-1: Goals and tools

Public Involvement Goal	Public Involvement Tools
Help the public understand the SEIS and how truck-only lanes fit with previous I-70 studies	Media Relations Web Site Newspaper Inserts Meetings Truck-Only Lanes Video
Gather meaningful public input on the Truck-Only Lanes Strategy	All of the above, plus: Advisory Committees Public Meetings On-line Public Meeting Project-related Blog
Create sustainable support for the recommendations for the final preferred strategy	All of the above, plus: Public Hearing Online Public Hearing
Agency Coordination Goal	Agency Coordination Tools
Identify early coordination efforts	Scoping meeting
Identify resource agencies that would want to continue cooperation or participation in agency coordination effort	Reconvene Study Management Group Letters of interest seeking cooperative and participating agencies
Establish the timing and form for agency involvement	Agency Coordination Plan identifies collaboration points Environmental Methodologies Tech Memo Agency comment letters

How did the team meet public involvement goals?

The study team followed the successful Public Involvement Plan implemented during the previous I-70 studies to guide how technical experts like engineers and transportation and environmental planners would obtain and use input from the public. The public involvement process involved talking with property owners and citizens in the corridor, key stakeholders, community

organizations, elected officials and other members of the public interested in the study. **Figure 5-1** provides a summary of the tools the study team used to implement the public involvement and agency coordination plans.



How did the study team work with the public?

The community had a large and important stake in the development of the study, its recommendations, and outcomes.

Stakeholder meetings

The study team identified several groups and organizations as key stakeholders. Their involvement was due to their proximity to the project, their role in the community, or past involvement with previous First and Second Tier Studies. The study team met with these key stakeholder groups to discuss the project Purpose and Need and preliminary truck-only lanes concepts:

- Missouri Motor Carriers Association;
 - Missouri Petroleum Marketers and Convenience Store Association;
 - Owner-Operator Independent Drivers Association (OOIDA);
 - Scenic Missouri;
 - Sierra Club;
 - Columbia Area Transportation Study Organization (CATSO);
 - St. Charles County; and
 - Representative Chuck Gatschenberger and citizens from St. Charles County.
-
- ### **Advisory groups**
- The study team reconvened two local advisory groups that had participated in the previous I-70 studies. The study team identified the need for continued coordination with these groups to fulfill a promise made during the previous studies to involve them as new information developed and due to the potential for additional impacts in sensitive areas in their local communities. Those two advisory groups were the Columbia Advisory Group and the Kingdom City Highway Coalition.
- ### **Columbia Advisory Group**
- This group consisted of elected and professional staff from the city, county and other local
- The City of Columbia and Boone County;
 - East-West Gateway Coordinating Council;
 - Missouri Farm Bureau;
 - Freight Efficiencies PIE;
 - Fulton Chamber of Commerce;
 - Mid-America Regional Council (MARC) Total Transportation Policy Committee;
 - MARC Goods Movement Committee;
 - Missouri Highway Patrol;

agencies in and around the Columbia metropolitan area as well as representatives from the business community, retail establishments, and neighborhood and environmental groups. This group met four times throughout the study process. Discussions centered on general truck-only lane strategies, the project purpose and need and Columbia-specific truck-only lane alternative strategies.

Kingdom City Highway Coalition

The Kingdom City Highway Coalition, a group of local citizens and business owners that came together because of concerns to potential impacts to the I-70/U.S. 54 interchange, has been coordinated extensively throughout the previous I-70 studies. The study team met with the coalition to provide an overview of the SEIS study and the Truck-Only Lanes Strategy. A second meeting with the coalition occurred after preparation of the Draft SEIS document to share the preliminary findings of the study.

How did the study team work with the resource agencies?

The Study Management Group (SMG) reconvened from the previous First and Second Tier Studies to resume coordination with resource agency personnel. In the previous studies, the SMG met periodically to discuss issues occurring in sensitive areas such as Overton Bottoms and the Loutre River Valley. The SMG included representatives from the Missouri Department of Natural Resources, Missouri Department of Conservation, U.S. Army Corps of Engineers, the Natural

Resources Conservation Service, U.S. Fish and Wildlife Service and the U.S. Environmental Protection Agency.

The study team held the first SMG meeting pertaining to the SEIS to discuss background information on the study and the Truck-Only Lanes Strategy as well as the study team's reasons for initiating the SEIS process. The group discussed several areas of the I-70 Corridor with significant environmental resources and other details of the SEIS study. A second meeting was held with this group to discuss the purpose and need for the project and more detail on the truck-only lane strategies. The SMG met a third time prior to the public hearing to discuss the identified preferred alternative and their comments on the Draft SEIS.

Which agencies played a key role in the Study Management Group?

The Study Management Group periodically held progress meetings during the SEIS. Staff from the following resource agencies played an active role in the collaborative decision-making process:

- Missouri Department of Natural Resources;
- Missouri Department of Conservation
- U.S. Army Corps of Engineers;
- Natural Resources Conservation Service;
- U.S. Fish and Wildlife Service; and
- Environmental Protection Agency.

Technical Memorandum 4 contains summaries of each SMG meeting.

How did the study team consult with tribes located in the study area?

The Federal Highway Administration coordinated with the following tribes in order to inform them of the project and invite their participation: Iowa Tribe of Kansas and Nebraska; Iowa Tribe of Oklahoma; Omaha Tribe of Nebraska; Osage Tribe, Oklahoma; Otoe-Missouria Tribe of Indians, Oklahoma; Sac & Fox Nation, Oklahoma; Sac & Fox Nation of Missouri in Kansas and Nebraska; Sac & Fox Nation of the Mississippi in Iowa and Kaw Tribe of Oklahoma. In relation to the SEIS, no comment letters were received from any of the tribes located in the study area. During the previous Second Tier Environmental Studies, comment letters were received from several of the tribes indicating that while they had no specific concerns with the proposed project, they wanted to be informed if sensitive remains or funerary objects were encountered during the construction phase of the project.



How was the public provided opportunities for input?

Public open house meetings

In April 2008, the study team held public meetings in an open house-type format at three locations across the I-70 Corridor. These meetings were held in Warrenton, Columbia and Concordia, Missouri. Each meeting consisted of showing the project video, a review of the purpose and need for the project, exhibits providing information on the project background and a hands-on display demonstrating how truck-only lanes could operate.

Internet-based outreach

The study team utilized three separate Internet-based initiatives to help ensure a wide range of public engagement opportunities. Those Internet initiatives included a project Website, project videos and an online public meeting.

Project Web site

The study team updated www.improveI70.org from the earlier Improve I-70 Studies to include information about the SEIS and truck-only

lanes. The updated Web site included a broad range of informational fact sheets, along with the project video, which addressed specific questions and issues raised by the public and stakeholders.

Project video posting

MoDOT posted the project video on the You Tube video hosting Web site. This generated approximately 8,200 views of the video, which discussed the project's

Figure 5-2: Online public meeting navigator

needs and possible concepts. MoDOT also initiated a project-related blog to give the public an opportunity to discuss the Truck-Only Lanes Alternative and the project video.

Online public meeting

The study team hosted an online public meeting to update the public on progress through the summer of 2008. **Figure 5-2** shows the online meeting navigator. The meeting provided information about the project and findings to date, the opportunity to ask questions and complete a survey and the opportunity to follow links that provided detailed information on the NEPA process, the role of freight on I-70 and findings from the First and Second Tier Studies.

Other methods of outreach

The study team created eleven fact sheets to provide background information, study information and to help answer questions and concerns raised during the development of the Draft SEIS. The fact sheets were available at stakeholder and advisory group meetings, public events and posted to the project Web site. Fact

sheets covered topics such as:

- Economic importance;
- Environmental process;
- Frequently asked questions;
- Glossary of terms;
- Project history;
- Freight and passenger rail;
- Rising fuel costs;
- The study schedule;
- Study boundaries;
- Truck-only lanes; and
- What is a "SEIS?"

In addition, the study team was in contact with print and broadcast media throughout the course of the study. Media releases were generated for the public meetings and the online public meeting to publicize the time, location and topics to be covered. Media contacts included magazines, industry Web sites, daily and weekly newspapers, television stations, broadcast radio stations, stakeholder Web sites and satellite radio channels. **Technical Memorandum 4** includes a full listing of all media contacts made during the SEIS.



Distribution of Draft SEIS

The Federal Highway Administration had the Notice of Availability for the I-70 Draft SEIS published in the Federal Register (Vol. 74, No. 19) on January 30, 2009. The comment period for the Draft ended on March 16, 2009.

The study team distributed 90 hard copies and 120 electronic copies via CD to the document circulation list, which is included as Chapter 8 of the SEIS. The Draft SEIS was also available for review via the project Web site, www.ImproveI70.org.

Public Hearing

The required public hearing was scheduled during the formal 45-day review period of the Draft SEIS. The study team conducted the hearing in three locations along the I-70 Corridor, following a similar approach to the first round of public meetings. The hearing locations were Warrenton, Columbia and Blue Springs, Missouri. The study team also incorporated an online component to the public hearing process via the project Web site. The hearings provided information about the project,

discussed the identified preferred alternative and provided the opportunity to ask questions and provide comments on the findings of the Draft SEIS.

Approximately 97 people attended the open house hearings. The online component of the public hearing generated 169 comments and viewers downloaded it nearly twice as many times.

What were public and agency questions and concerns?

Early Coordination

Through early coordination efforts, the study team was able to collect many comments and concerns. Much of what was identified early on related to the effects transportation improvements would have on the natural and visual environment, funding, safety on I-70 and if and how rail would be considered in the corridor. Specifically, questions arose regarding safety, operations and enforcement, as well as how to pay for transportation improvements. While the SEIS will not select a funding option

for the project, it does discuss the likely impacts of various funding mechanisms and clear them from an environmental perspective for potential use to fund the I-70 improvements. The public made a number of inquiries regarding tolling and other potential revenue sources during the study process. Likewise, the public raised issues about the role that both passenger and freight rail could play in the project. Assertions were made that additional rail service could lessen environmental impacts and be a better long-term solution especially in light of high fuel prices.

Comments on Draft SEIS

The study team also received a number of comments and concerns during the 45-day public comment period for the Draft SEIS. The issues and concerns raised by federal, state and local resource agencies, as well as those raised by stakeholder organizations and the general public are summarized below. **Technical Memorandum 4, Comments and Coordination**, contains copies of all letters received during the comment period for the Draft SEIS and provides responses to those comments. **Technical Memorandum 7**, which contains the official transcript of the Public Hearing, provides verbatim comments received during the public hearings, online hearing, email and various other sources during the formal comment period on the Draft SEIS.

Resource Agencies

Throughout the SEIS process, the study team met and closely worked with the SMG to identify and address the group's questions and

concerns. By the time that the SEIS reached the 45-day comment period, few issues remained unresolved. One issue that SMG member agencies did raise during the comment period concerned the design criteria for the Truck-Only Lanes Strategy slip ramps and interchanges. A second concern expressed during the comment period was how the design of the facility could impede wildlife from safely crossing the facility.

One issue raised about the design features of the truck-only lanes concerned a desire to see a more precise location of slip ramps, exact number of lanes required in a given section and general questions about design criteria. In each of these instances, the study team went into enough design detail to establish an environmental footprint to clear during the SEIS. Due to the unique nature of the Truck-Only Lanes Alternative, MoDOT commissioned a separate study that assesses freight movement and related design issues with truck-only lanes. The results of that study, currently underway, and the SEIS will enable MoDOT to better identify appropriate standards for a truck-only



lane facility when the project moves into the design phase.

The concern regarding wildlife focused on how the median barrier separating the truck lanes could impede wildlife safely crossing the facility. SMG members noted that any highway posed a barrier to wildlife movement. In the case of I-70 design, the concrete barrier separating the truck lanes posed an acute risk to wildlife safety. The study team responded that during the design phase, MoDOT will consider this issue, along with the safety of truck traffic to prevent or minimize crossover crashes, as well as the amount of additional right of way that special median barrier treatments would require, when selecting appropriate barrier treatments.

Stakeholder Organizations and General Public

There were several recurring themes, questions and concerns raised by the public and stakeholder organizations, including the following:

Safety:

- Safety concerns about how trucks and cars interact at slip ramps
- Enforcement of trucks in truck-only lanes and/or cars utilizing truck-only lanes
- Discussions of recent implementation of Missouri law keeping trucks to right-hand lanes in lieu of building separate lanes

Environmental and right of way:

- Aesthetic treatments to I-70
- Treatment/removal of billboards

- Concerns about increased noise and pollution created by additional trucks
- Concerns that improvements will attract more truck traffic
- Individual property impacts/requests for changes in alignments at specific locations due to property impacts

Funding:

- Strong sentiments for and against tolling
- Payment for improvements to I-70
- Questions about MoDOT's process for prioritizing projects

General comments:

- Concern that truck-only lanes would benefit only a segment of the population
- Desire for alternatives for ways to get trucks off the highway altogether via alternate routes or transportation modes
- Preference for rail improvements over roadway improvements
- General support/dislike for the project
- Concerns about impacts at project termini (Kansas City and St. Louis)
- Questions about why the study did not choose the option of restricting trucks to the right lanes of the original six-lane roadway section

Technical Memorandum 4, Comments and Coordination, contains the study team's responses to each of these comments and concerns.

Chapter Six

The I-70 SEIS is an extension of earlier efforts to study whether to improve I-70 and in what way. The I-70 SEIS does not undo the decisions made in the First and Second Tier Studies. The SEIS allows the study team to look at the feasibility and utility of truck-only lanes compared to the previously selected Preferred Alternative, which was to widen existing I-70 to three lanes in each direction.

The study team first compared the new Truck-Only Lanes Strategy with the Selected Strategy from the First Tier Study, the Widen Existing I-70 Strategy. The study team determined that the Truck-Only Lanes Strategy was a preferred improvement strategy compared to the Widen Existing I-70 Strategy. With that selection, the next step was to apply the strategy across the corridor as alternatives. The study team assessed several alternatives before recommending a Preferred Alternative that, at a minimum, provides two truck-only lanes on the inside and two general-purpose lanes on the outside for both eastbound and westbound travelers.

What are the key reasons for selecting Truck-Only Lanes as the Preferred Strategy?

As a first step, the study team compared a Truck-Only Lanes Strategy with the Preferred Alternative selected during the First Tier

Study—the Widen Existing I-70 Strategy.

Both strategies adequately addressed the key elements of purpose and need, so the study team performed a more detailed technical assessment and evaluation of strategies. At the more detailed level of screening, both strategies had similar effects on the both the man made and natural environment.

Recommendation of Preferred Alternative

The study team determined that the Truck-Only Lanes Strategy was a preferred improvement strategy compared to the Widen Existing I-70 Strategy. Chapter 6 discusses the study team's Preferred Alternative and the key reasons for recommending the Truck-Only Lanes Strategy for I-70.

From the perspective of traffic and engineering, the Truck-Only Lanes Strategy compared more favorably than the Widen Existing I-70 Strategy in the key areas of freight efficiency, safety, constructability and maintenance of traffic during construction. In the following instances, truck-only lanes provided:

- Greater capacity and safety benefits over the Widen Existing I-70 Strategy;
- Better responsiveness to public safety concerns about separating general-purpose vehicles from trucks;
- Improved incident management and emergency response through system redundancy;
- Flexibility to respond to emerging trends in freight movement without compromising operational conditions of general-purpose traffic;
- Potential to respond to national trends to improve freight flows and efficiency and ties in with the federal Corridors of the Future vision for I-70;

- Reinvestment opportunities for the existing I-70 system and better ability to reuse a greater percentage of existing infrastructure such as roadbed and bridges; and
- Improved maintenance of traffic during construction since the majority of construction work would not interfere with existing travel lanes.

How would the study team implement the Preferred Alternative?

The study team recommends implementing the Truck-Only Lanes Strategy as the Preferred Alternative. Due to the varied characteristics of the 200-mile corridor, the study team developed and assessed a series of alternatives for applying truck-only lanes to the mainline of I-70. The alternatives varied across rural, urban and environmentally sensitive areas of the corridor.

On mainline I-70, the Preferred Alternative consists of the following:

- For rural areas;
 - I-70 eastbound and westbound will each carry two truck-only lanes on the inside and two general-purpose lanes on the outside,
 - A grass area will separate truck-only and general-purpose lanes,
- For the urban areas of Kansas City, Columbia and St. Louis;
 - The Preferred Alternative utilizes two truck-only lanes in each direction on the inside and a minimum of two general-purpose lanes on the outside, with additional general-purpose lanes being added as traffic levels increase,
 - Due to the constraints of the built environment, a more narrow buffer separates truck-only lanes from general-purpose lanes,





- In the sensitive areas of Overton Bottoms and Mineola Hill;
 - The Preferred Alternative carries the same number of lanes as rural sections,
 - There is a more narrow separation of truck-only and general-purpose lanes to preserve cultural and environmental resources.

Also, applying the Truck-Only Lanes Strategy meant assessing how best to maintain access to each of the 56 existing interchanges. At the onset of the SEIS, the study team determined that maintaining some type of access to each existing interchange was a requirement of any alternative considered. The study team concluded that slip ramp access between the truck-only lanes and general-purpose lanes at the majority of interchanges provided sufficient access. At three locations, U.S. 65, U.S. 63 and U.S. 54, the study team determined that slip ramp access would prove insufficient to handle the levels of truck traffic. Instead, MoDOT would construct truck-car separated

interchanges at those three locations. The study team evaluated four other potential interchanges (Route H/F, Route 13, Route 5 and Route 47) as truck-car separated interchanges during the SEIS. Although not selected for development as truck-car separated interchanges at this time, each interchange may warrant development as a truck-car separated interchange in the future.

Are there any challenges with implementing the Preferred Alternative?

Funding

MoDOT spends money each year on I-70, conducting maintenance activities and making limited improvements. In the past five years, MoDOT spent about \$87 million on the rural portions of I-70, and that general level of spending will likely continue to increase into the future. In addition to maintenance and continued resurfacing projects, in recent years motorists have seen installation of guard cable

barriers in the median of I-70 to improve safety and more projects of this type are on the horizon.

Preliminary estimates indicate that the Truck-Only Lanes Strategy would cost between \$3.5 and \$4 billion in today's dollars to implement. While that may seem a daunting figure, it is also somewhat deceiving. That is because at current funding levels, MoDOT will make major improvements to I-70 gradually over the course of many years.

The question is not so much how to find three to four billion dollars, but rather, how best to fund the improvements over time with the money available. Major widening and reconstruction of I-70 will require increases in state and federal funding beyond MoDOT's current levels. With transportation funding a moving target at both the state and federal level, it is unclear how much of the Improve I-70 program will see implementation in the coming years. Having a plan in place now, however, will ensure that any improvements made in the coming years are compatible with the long-term vision of I-70.

Ultimately, MoDOT will implement the long-term program of I-70 improvements to the extent it can afford with the funds available.

Identifying the true benefits of Truck-Only Lanes

The idea of separating trucks from other vehicles on interstates and highways is gaining national attention. Currently, however, there are no dedicated U.S. highways for trucks. Missouri

and its Corridors of the Future partner states, plus other states such as Georgia and Texas, are studying the need for truck-only lanes and the possibility of enhanced safety and improved overall traffic flow. Although the study team anticipates benefits such as enhanced safety, system redundancy for incident management, increased efficiency and lower travel times for passenger vehicle and truck travel, there is no empirical data available to know how effectively this type of facility will function. Determining the appropriate design and safety criteria for the truck-only lanes facility during the design phase of the project will be an important factor.

Influence of the Corridors of the Future Program

The Corridors of the Future Program has the potential to extend truck-only lanes across an 800-mile corridor, from Kansas City to the Ohio/West Virginia border. A multi-state corridor such as this would offer much greater efficiencies for freight carriers using a truck-only lanes facility. If the federal government and the other partnering state DOTs choose to adopt a Truck-Only Lanes Strategy for the multi-state corridor, MoDOT will need to reevaluate how to apply the strategy through the St. Louis metro area. This reevaluation would include a more detailed assessment of the strategy and its potential impacts to the St. Louis area. Likewise, if Kansas ever chose to participate with the other I-70 Corridor states, MoDOT would need to assess how to link truck-only lanes to the Kansas Turnpike. This would likely involve a study jointly sponsored by MoDOT,

the Mid-America Regional Council, the Kansas Department of Transportation and the Kansas Turnpike Authority program to evaluate how to apply a truck-only lane facility in the Kansas City metro area that links with the Kansas Turnpike.

Fluctuations in fuel costs

Gas prices have recently undergone drastic fluctuations, recently hitting historic highs before plummeting back to under \$2 per gallon. When gas prices hit these highs, highway travel dropped. What is unclear is whether the drop in travel will continue or if it will rebound as gas prices decrease. Historically, increases in fuel costs temporarily reduce miles driven, but over time, people adapt and travel resumes and then increases. Traffic volumes on I-70 would have to drop by as much as 75 percent to eliminate congestion in some locations. Even if traffic were to drop significantly, I-70's aging foundation still would need rebuilding.

Chapter Seven

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Index

A

Access management
2 - 3

Agency coordination
5 -1, 2, 3

B

Biological resources
4 - 2, 10

Braided ramps
3 - 8

Bypass
3 - 4, 5

C

Constructability
E - 3, 8
2 - 8, 14
3 - 9, 10
6 - 1

Corridor enhancement
1 - 2
3 - 13
4 - 1, 22, 23, 28

Cost
E - 3
1 - 2
2 - 6, 7, 8, 12
3 - 4, 5, 10, 12, 13
4 - 25
5 - 6
6 - 4, 5

Crash data
1 - 7

D

Demographics
4 - 28

E

Economy
1 - 8, 9
4 - 20

Emissions
4 - 20, 21

Energy
4 - 1, 17, 19, 20, 21, 22

F

Farmland
4 - 2, 9, 10, 11

First tier EIS
2 - 7

Floodplain
3 - 6
4 - 2, 3, 4, 7, 9, 10, 12, 13, 14, 15, 30

Fuel tax
4 - 24, 25, 26

G

Graham Cave State Park
3 - 6
4 - 8

Graham Historic Farmstead
3 - 6

Graham Rock
3 - 6, 7
4 - 8

H

Habitat

3 - 10

4 - 7, 16, 21, 22

hazardous material

4 - 4, 9, 10, 16

High Occupancy Vehicle (HOV)

2 - 3

3 - 2, 4

I

Impacts

E -2, 3, 6, 7

1 - 2, 3

2 - 1, 2, 4, 6, 7, 8, 12, 14

3 - 3, 4, 5, 6, 9, 10, 11

4 - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,

16, 17, 18, 19, 21, 23, 24, 25, 26, 27, 28, 29, 30

5 - 3, 4, 8, 9

6 - 4

7 - 1

Intelligent Transportation Systems (ITS)

2 - 2, 3

4 - 22

J

Joint development

4 - 22, 23

K

L

Land use

E - 3

2 - 8

4 - 7, 10, 19, 23

Level of Service (LOS)

3 - 10

Loutre River

3 - 6

5 - 4

M

Mineola Hill

E - 5

3 - 6, 7

4 - 7, 8, 28

6 - 3

Missouri River

2 - 8

3 - 6

4 - 7

N

Natural communities

4 - 2, 9, 10, 15

Noise

2 - 5

4 - 2, 3, 4, 6, 7, 8, 26, 28

5 - 9

O

Overton Bottoms

E - 5

3 - 6

4 - 7

5 - 4

6 - 3

P

Parks

4 - 2, 9, 10, 12, 28

Preferred Alternative

E - 2, 4, 5, 7, 8
3 - 11, 13
4 - 2, 9, 15, 16, 29, 30
5 - 4, 7
6 - 1, 2, 3, 5

Preferred strategy

2 - 8, 14
5 - 2
6 - 1

Public involvement

5 - 1, 2, 3
7 - 1, 2, 3

Q

R

Reasonable alternatives

E - 6
3 - 12
4 - 1

Right of way

E - 6
2 - 6, 12
3 - 3, 4, 5, 6, 8, 10
4 - 1, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 22, 29
5 - 9

S

Safety

E - 1, 3, 7, 8
1 - 2, 3, 4, 6, 7, 8, 9
2 - 2, 3, 4, 8, 10, 12
3 - 7
4 - 22, 26

5 - 7, 9

6 - 1, 4

Sales tax

4 - 24, 25, 26, 27

Second Tier Studies

E - 1, 2, 6, 7
1 - 3, 4, 5, 8
2 - 1, 2, 4, 12
3 - 4, 5, 7, 8, 9, 10, 11, 12, 13
4 - 1, 2, 3, 4, 5, 7, 8, 10, 12, 17, 22, 24, 27, 28,
29, 30
5 - 2, 3, 4, 6
6 - 1

Secondary impacts

2 - 8
3 - 4
4 - 23, 24

Section 4(f)

4 - 10, 12

Section of Independent Utility (SIU)

3 - 4
4 - 1, 2, 3, 4, 5, 6, 8, 10, 11, 12, 13, 15, 28
7 - 2, 3

Slip ramps

2 - 3, 10, 11
3 - 1, 7, 8
4 - 23
5 - 8, 9

T

Toll

E - 7

2 - 2, 3

4 - 21, 24, 25, 26, 27

5 - 8, 9

Traffic

E - 1, 3, 4, 5, 8

1 - 2, 3, 4, 5, 6, 8, 9

2 - 3, 4, 5, 7, 8, 10, 12, 13, 14

3 - 1, 2, 3, 4, 5, 7, 8, 9, 10, 13

4 - 6, 8, 17, 18, 19, 21, 22, 23, 24, 26, 28, 30

6 - 1, 2, 3, 4, 5

5 - 9

Travel efficiency

2 - 8, 10

U

V

W

Water quality

4 - 2, 3, 7, 9, 10, 12, 14, 26, 29, 30

Wetlands

2 - 4

3 - 10

4 - 2, 4, 3, 7, 9, 10, 12, 14, 26, 29, 30

X

Y

Z