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1.0 Introduction

Interstate 70 (I-70) extends across the diverse landscapes and urban centers of the United States from Baltimore, Maryland west to Cove Fort, Utah. This 2,153-mile transportation corridor has become a critical link for the movement of people and commercial freight. St. Louis, Missouri and the adjoining communities in the bi-state St. Louis Metropolitan Area comprise one of the major urban centers on I-70. Constructed in the 1950s with an anticipated design life of approximately 20 years, much of the I-70 corridor is in need of a long-term solution to mounting deterioration concerns and service capacity problems. Upgrades and expansion of this 50-year-old system is and has been the subject of several national and regional studies across the United States including the “Improve I-70” effort in Missouri.

A Corridors of the Future Program (COF) project will soon be initiated by the Federal Highway Administration and will include the study of approximately 800 miles of I-70 across Ohio, Indiana, Illinois and Missouri. This study represents a shared vision for the corridor to reduce congestion, improve safety, facilitate commerce and expand regional economic growth. A key element of this vision will be truck-only lanes which will expand the functionality, safety and service life of this critical corridor. This coordinated effort has also led to a supplemental study of the “Improve I-70” effort in Missouri. A Supplemental Environmental Impact Statement (SEIS) has been initiated by the Missouri Department of Transportation (MoDOT) to re-evaluate the original environmental analysis and discuss the impacts and possible implementation of truck-only lanes.

Should truck-only lanes be implemented along the proposed four-state I-70 corridor, it will be important to plan for routing of the truck-only lanes corridor through the St. Louis Metropolitan Area. MoDOT and its partners will need to identify a logical route that supports freight movement while minimizing impacts to the surrounding community. This technical memorandum, prepared to summarize the St. Louis Truck Lane Corridor Study, provides a preliminary evaluation of potential existing routes that could be used to extend truck-only lanes through the St. Louis Metropolitan Area. The following information is provided in this memorandum:

- Background on the I-70 truck-only lanes proposal, which is part of the Corridors of the Future Program and the I-70 Statewide SEIS Study.
- Identification of the objectives of this St. Louis I-70 Truck Lane Corridor Study.
- Discussion of existing environmental, roadway, traffic and safety conditions along major existing routes through the St. Louis Metropolitan Area.
- Identification and initial screening of a wide number of potential routes for truck-only lanes through the area. Emphasis will be placed on examining the feasibility of allowing longer combination vehicles (LCV) to travel the potential routes.
• Identification and preliminary evaluation of three alternative routes for truck-only lanes. This includes discussion of environmental (human and natural) and engineering related issues.
• Discussion of next steps, which would likely include detailed analysis and identification of a proposed truck-only lanes route if the overall four-state truck-only lanes project moves forward.

2.0 Background

2.1 Corridors of the Future Program (COF)

Interstate 70 and the I-270 beltways through and around St. Louis are part of an 800-mile segment of I-70 (from Kansas City, Missouri through Missouri, Illinois, Indiana and Ohio to the West Virginia border) selected by the USDOT as one of the six U.S. Interstate corridors designated as a “Corridor of the Future”. These corridors were selected and designated based on a national competition under the USDOT’s “National Strategy to Reduce Congestion on America’s Transportation Network”. This initiative is based on the belief that there exist innovative strategies to more efficiently and effectively reduce gridlock, improve the flow of people and goods, and thereby improve the quality of life and economic competitiveness of the nation.

The Missouri, Indiana, Illinois and Ohio DOTs jointly submitted the COF application. The application described the corridor’s congestion, safety issues, safety needs and the economic

Figure 2: Corridors of the Future National Map

benefits. The application focused on developing a truck-only lanes corridor through these four cooperating states along I-70 as an innovative solution to addressing the problem of congestion along the corridor. In addition to receiving the designation, USDOT provided the four cooperating states with $3 million to fund a feasibility study to further evaluate the concept of truck-only lanes as a solution to reduce congestion, improve mobility and safety and to enhance the economic development of the region.

If successful, the Four-State Truck Only Lane (FSTOL) Program will produce the following benefits:

- Improve public safety by separating freight and passenger vehicles.
- Separate long-haul freight traffic away from commuter congested parallel corridors in the four cooperating states.
- Combined truck and rail intermodal facilities will improve freight transfers enabling more efficient movement of goods over longer distances. Such facilities are under development in Missouri and Ohio.
- Standardize state regulations for load, length and speed over the entire corridor thereby improving efficiency without compromising safety or damaging infrastructure.
- Avoid rail bottlenecks in Chicago by providing intermodal options for time-sensitive long haul east-west rail freight.
- Provide unique financing options for infrastructure that segregates truck and passenger vehicles.
- Enable unique private sector investment incentives.
- Provide a testing ground for new evolving trucking technologies, electronic traffic management and freight movement.

The Four-State Truck Only Lane (FSTOL) Program is scheduled to begin in the first half of 2009. It will include extensive public and stakeholder involvement. It will further evaluate the feasibility of the truck-only lanes concept as an innovative solution to improve mobility, improve safety for trucks and passenger vehicles, as well as provide a more in-depth analysis of the potential for innovative funding including public-private partnerships for its construction and operation.

2.2 Improve I-70

The Improve I-70 Study in Missouri was an Environmental Impact Study (I-70 EIS) evaluating the best methods for improving the movement of goods and people while replacing a deteriorating infrastructure between Kansas City and St. Louis, Missouri. This effort, led by MoDOT, in cooperation with the Federal Highway Administration (FHWA), conducted a statewide feasibility study to analyze how best to improve travel conditions along the interstate. Conclusions made in the 1999 feasibility study provided the foundation for the first of two I-70 corridor studies: the First Tier Environmental Impact Statement (EIS) completed in 2001 analyzed a broad range of statewide solutions for the interstate and recommended a general improvement strategy; and the Second Tier study, known collectively as “Improve I-70”, was completed in 2006. The Second Tier study analyzed more specifically the recommended improvement strategies and their impacts to the corridor.
Recommendations emerging from MoDOT’s 2006 Second Tier study included:

- Construct a minimum of six lanes (three in each direction) between Kansas City and St. Louis.
- Construct frontage roads along I-70 at key locations. Frontage roads could accommodate interstate traffic, should the highway be temporarily closed for any reason.
- Redesign and rebuild interchanges in the corridor and rebuild the vast majority of interstate bridges.

Relying on conclusions made in the 2006 Second Tier EIS and ongoing studies associated with a broader FSTOL, MoDOT and FHWA have initiated a 12-month Supplemental Environmental Impact Statement (SEIS) to further evaluate possible improvement strategies presented in the 2006 Improve I-70 EIS. This ongoing SEIS will consider new and/or additional environmental impacts based on the introduction of new improvement options and major changes in the natural environment or communities. Specifically, the I-70 SEIS will evaluate if and how truck-only lanes alter the impacts and recommendations previously identified through the 2006 Improve I-70 EIS process. The I-70 SEIS will:

- Supplement previous I-70 environmental documents.
- Establish formal project goals (called “Purpose and Need”).
- Review existing conditions for significant changes since the completion of previous Improve I-70 studies.
- Evaluate the impacts of truck-only lanes to the natural and man-made environment.
- Provide multiple opportunities for public input, including public hearings.
- Recommend options for improvements.
- Set the stage to seek funding to design and construct those improvements.
- Evaluate the possibility of tolling portions of the corridor.
- Submit as a draft document for public comment, finalize, and resubmit for formal federal approval, called a “Record of Decision”.

### 2.3 Why Dedicated Truck-Only Lanes are the Proposed Approach

Heavy truck traffic along much of I-70 contributes to both congestion and increased crash severity. Some rural parts of the corridor carry a 40 percent truck/60 percent passenger car mix. Developing dedicated truck-only lanes along this approximate 800-mile corridor is considered an innovative and a viable solution to reduce congestion and improve mobility and safety through both the urban and rural areas of the corridor. The separation of truck traffic from passenger vehicular traffic is a viable strategy that would improve the flow of goods and encourage commerce and economic growth throughout the Midwest and the nation.

Separating trucks from passenger cars:

- Improves safety (e.g. conflicts and fatalities will be reduced)
• Reduces congestion (e.g. vehicles accelerate and decelerate at different speeds)

The truck-only lanes concept also calls for further improving mobility by incorporating Intelligent Transportation Systems (ITS) into the truck-only lanes corridor. The following concepts will be evaluated and incorporated to further improve efficiencies and produce an innovative corridor:

• Advanced Traffic Management Systems
• Traveler Information
• Emergency Management
• Weigh-in-Motion / Virtual Weigh-in-Motion
• Vehicle Infrastructure Integration (VII)
• Electronic Tolling / Congestion Pricing
• Roadside Parking

As part of future planning efforts, the evaluation of proposed truck-only lane routes through St. Louis would be further evaluated as part of a broader planning effort based on or pursuant to the guidelines of the National Environmental Policy Act (NEPA). Based on logical termini, the level of analysis used in this feasibility study was derived from the need to evaluate the general constructability constraints of each corridor. While the natural and man-made attributes of each corridor were considered qualitatively; potential impacts, delineations, assessments and surveys commonly conducted for NEPA documents were not performed. This feasibility study provides information and analysis on how freight traffic using a potential truck-only lanes system on I-70 between Kansas City and St. Louis would travel through the St. Louis area to reach other statewide and national destinations.

2.4 Configuration of Truck-Only Lanes:

The configuration of truck-only lanes through the St. Louis Metropolitan Area would conform to those proposed in the I-70 SEIS for the rest of Missouri. The urban areas would consist of two 12-foot truck-only lanes with a 2-foot double strip buffer zone separation from the general purpose lanes as shown in Figure 4. Outer roads may have to be adjusted and extensive use of retaining walls would be needed to minimize right of way needs.
The eastern rural limits of the study area in western Illinois would use the rural section consisting of separate roadbeds separated by a 30-foot grass median as shown in Figure 5. This roughly matches the rural configuration for the I-70 SEIS in Missouri.

Major river bridges would require separate parallel structures or bridge widening depending on the bridge type.

When changing routes at system to system interchanges the truck-only lanes would be provided their own ramps to keep them separate from general purpose lanes. Access to local interchanges would require the trucks to merge into general purpose lanes but may be limited to truck merging zones to minimize conflicts.

3.0 Objectives and Goals of the St. Louis I-70 Feasibility Study

The objective of the St. Louis Feasibility Study is to provide a preliminary evaluation of potential routes for truck-only lanes through the St. Louis Metropolitan Area. This analysis also considers how freight traffic would disperse to other interstate facilities in St. Louis from the proposed I-70 truck-only lanes system. Once in St. Louis, travelers have the option of continuing on I-70 east or west, traveling north on I-55 toward Chicago, Illinois or south toward Memphis, Tennessee, traveling on I-44 southwest to Joplin, Missouri, or traveling on U.S. 40/I-64 east into southern Illinois. Combined with the I-70 connections at the I-255 and I-270 innerbelts that encircle St. Louis, there are multiple options for I-70 travelers to connect to each of these interstates. This feasibility study evaluates potential truck-only lanes routes based on:

- The connection of I-70 in Madison County, Illinois east of downtown St. Louis and St. Charles County west of downtown St. Louis.
- The technical feasibility of implementing the truck-only lanes route given the local terrain and physical constraints along with a focus on longer combination vehicles (LCV) that have weight restrictions in Missouri.
- The degree of efficient connectivity to other interstate facilities in St. Louis.
- The proximity to existing truck intermodal stations.
- Impacts to the man-made and natural environment.

In support of the FSTOL vision, the purpose and need of the I-70 SEIS, and the objectives of this feasibility study identified above, the goal of this study is to identify and evaluate three reasonable alternative routes through the St. Louis Metropolitan Area using the proposed truck-only lanes. Following this feasibility study, the next step would likely include a more in depth evaluation of each of three proposed corridors in the attempt to identify a proposed route.

The evaluation and selection of dedicated truck-only lane routes includes review of numerous factors. The origin and destination of truck traffic in the St. Louis area is considered to make access to a new facility as convenient as possible. Congestion and safety issues will also be considered. The routes chosen for truck-only lanes need to consider the current and planned locations for intermodal facilities and industrial growth. Potentially, this new facility could provide an incentive for establishing new trucking support facilities, such as “Freight Villages”, in the metropolitan area.

Overall, the construction on the truck-only lanes is an opportunity to attract and direct economic growth to the metropolitan area. Other corridor communities (such as Kansas City’s new Center Point Intermodal Facility and Columbus, Ohio’s Rickenbacker Intermodal Center) have
embraced the concept and are in the process of developing or expanding major intermodal facilities that will link to the truck-only lanes and create a synergistic economic impact for their regions.

4.0 Existing Conditions

4.1 General Social and Economic Setting

Interstate 70 in Missouri provides a global connection to the center of America. St. Louis is located at the crossroad of I-55, I-44 and I-64. Kansas City is located at the crossroads of three of the nation's major interstates: I-29, I-35 and I-70. Both cities are located along the nation's largest navigable inland waterway - the Missouri/Mississippi River System.

**Truck and Freight Flows**

According to the FHWA Freight Analysis Framework Data sets provided on the FHWA web site, [http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm](http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm), 68 percent by weight and 74 percent by value of freight traveling in, out or through Missouri is by highway. Growth in highway tonnage is expected to continue as the major mode of transportation. Highway tonnage growth is projected to grow 75 percent in volume to 71 percent and 191 percent in value to 74 percent in 2020.

**Trading Partners**

Illinois, Kansas and Ohio are among Missouri's top four trading partners. In 2002 trade with Illinois represented 24 percent of the tonnage and 19 percent of the value; trade with Kansas represented 14 percent of the tonnage and 10 percent of the value; and trade with Ohio representing five percent of the value of Missouri's total trade.

**Economic Impacts for St. Louis**

Transportation is one of a number of costs that every business, industry and manufacturer must evaluate in deciding where to locate. If all other factors (such as available work force, raw materials, developable land, etc.) are equal, a business will locate where the cost for transportation is the lowest. Safety and efficiency improvements to the 800-mile segment of the I-70 corridor can improve the economic competitiveness of the corridor by reducing the costs to travel along it. The economic health and growth of the Midwest and in the St. Louis Metropolitan Area is dependent on the I-70 corridor operating safely and efficiently, with minimal congestion. As has been stated, trucks carry the majority of the value of freight through Missouri and the Midwest. The significance of I-70 is its connectivity to broader Midwest markets, manufacturing centers and major economic trading partners. Its congestion and safety problems impact businesses and citizens and governments along the entire length of the corridor in addition to each major metropolitan area along its route. It is therefore important that improvements to I-70 are approached as a system-wide or corridor-wide improvement as well as improvements to specific urban locations.
In general, economic wealth is created by producing or adding value to goods and services that are exported outside the region. For the St. Louis Metropolitan Area to grow economically, critical commerce corridors such as I-70 must offer businesses efficient mobility to reach markets beyond the metropolitan area. By improving the 800-mile I-70 corridor as a whole, businesses and industries would be attracted to the region. Offering them an innovative, state-of-the-art facility that incorporates technology would encourage businesses to select the I-70 corridor when locating or expanding their business. The St. Louis Metropolitan Area would benefit by participating in a corridor-wide solution by becoming a potential distribution and manufacturing hub for the goods traveling along this corridor.

**Air Travel Connections to the Corridor**
The Lambert-St. Louis International Airport is located along I-70 and is the Nation’s 48th largest air cargo airport. In 2005 it handled approximately 595 million pounds of cargo and 6.85 million passengers.

### 4.2 General Environmental Setting

**Topography**
The St. Louis area lies generally on bluffs and terraces that rise 100-200 feet above the western banks of the Mississippi River and the Missouri River. Much of the area is fertile and gently rolling prairie featuring low hills and broad, shallow valleys.

**Geology**
Mississippian limestone and dolomite underlie the St. Louis area. The St. Louis area exhibits karst topography with numerous sinkholes and caves, and although most of the caves have been sealed shut, many springs are visible along the Mississippi riverfront. St. Louis is just north of the New Madrid Seismic Zone which in 1811-12 produced a series of earthquakes that are the largest known in the contiguous United States. Seismologists estimate 90 percent probability of a magnitude 6.0 earthquake by 2040 and 7-10 percent probability of a magnitude 8.0 earthquake.

**Communities**
The East-West Gateway Council of Governments is the metropolitan planning organization (MPO) for the St. Louis area. The East-West Gateway Council consists of the City of St. Louis, St. Charles County, St. Louis County, Franklin County and Jefferson County in Missouri along with Madison County, Monroe County and St. Clair County in Illinois. This region includes approximately 2.5 million residents. There are approximately 200 principal local government
units within the jurisdiction of the MPO. The City of St. Louis has a population of approximately 350,000 and is divided into 79 neighborhoods. These neighborhoods have no legal standing, although some neighborhood associations administer grants or hold veto power over historic district development.

**Built Environment**

The built environment within the St. Louis area includes rural, urban, older and newer suburban, recreation and preservation land uses. As expected, the highest density development is found closer to the center of the region in the City of St. Louis. For most of the corridors under consideration, the built environment is denser on the Missouri side of the Mississippi River than the Illinois side. The corridors under consideration have a diverse mix of adjacent land uses including:

- Residential development including single family homes, apartment complexes, nursing homes and mobile home communities
- Retail development including large retail shopping areas and strip commercial development
- Large and small scale industrial development and warehouse facilities
- Office parks and office buildings
- Community facilities including schools, colleges, hospitals, police and fire stations, parks and recreation facilities
- Historic sites and districts

**Natural Environment**

Key natural environmental features in the St. Louis area are predominantly found along the Mississippi and Missouri Rivers and associated tributaries running throughout the region. Various preservation/conservation areas are also scattered throughout the area. Key features to consider include:

- Large flood zones associated with the Mississippi and Missouri Rivers and their various tributaries including substantial wetland areas
- Areas of steep slopes which tend to be more prevalent on the Missouri side of the region, especially to the west and south
- Active farmland in the outlying parts of the region
- Large pockets of forested land along several of the routes under consideration

The East-West Gateway is part of an air quality non-attainment area for the eight-hour ozone standard and the fine particulate matter (2.5 microns) standard. Over the past ten years, air quality in the St. Louis area has steadily improved due in large part to the implementation of several control programs. However, any transportation improvements like a truck-only lanes corridor would be subject to air quality conformity determinations and other air quality impact analysis.

**4.3 Roadway Conditions**

*This report contains information that is protected from disclosure by federal law, 23 USC Section 409 and the Missouri Open records law (Sunshine Act), Section 610.021 RSMo.*

The I-70 corridor is congested and is the location of many fatal crashes. In 2004, the 800-mile I-70 Corridor of the Future project area had:
• Over 10,000 crashes
• 18 percent of all crashes involved trucks
• 36 percent of crashes involving trucks were fatal to passenger car occupants
• 2.3 million vehicle hours of incident-induced delay

Congestion along the corridor is primarily in the major urban areas along the corridor. Texas Transportation Institute (TTI) in its 2005 analysis estimated that in urban areas, the cost of congestion was $1,000/year, 54 hours of delay, and 38 gallons of fuel per traveler. Table 1 was provided to USDOT as part of the Corridors of the Future Project application to explain the cost of urban congestion along the four state I-70 corridor.

Table 1: I-70 Congestion through Major Cities 2003

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>Travel Delay (1,000 Hours)</th>
<th>Excess Fuel Consumed (1,000 Gallons)</th>
<th>Overall Congestion Cost in Million $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kansas City, KS/MO</td>
<td>13,874</td>
<td>9,095</td>
<td>$235</td>
</tr>
<tr>
<td>St. Louis, MO/IL</td>
<td>39,936</td>
<td>26,362</td>
<td>$675</td>
</tr>
<tr>
<td>Indianapolis, IN</td>
<td>21,358</td>
<td>14,032</td>
<td>$362</td>
</tr>
<tr>
<td>Dayton, OH</td>
<td>4,438</td>
<td>2,836</td>
<td>$ 75</td>
</tr>
<tr>
<td>Columbus, OH</td>
<td>18,550</td>
<td>11,507</td>
<td>$314</td>
</tr>
</tbody>
</table>

Source: TTI Urban Mobility Report, 2004 and 2005

Figure 7: 2020 Congestion in Major urban Areas along the I-70 Corridor

Source: WSA Utilizing 2004 HPMS data, 2006
Figure 7 also included in the COF application, presents a visual analysis of congestion growth in four of the urban areas along the 800-mile proposed project corridor.

Figure 8 shows that in addition to the urbanized areas of the corridor, Ohio and Missouri have the highest concentration of crashes per Million Vehicle Miles Travelled (MVMT) of the states in the I-70 corridor. This shows that even in non-congested areas, such as rural Missouri, there are factors that may cause congestion and delay, thus compromising the reliability of travel on I-70 in 2030. The figure also shows that high concentrations of crash incidents make the corridor subject to crash induced delay in high-growth areas such as central Ohio, Indianapolis and St. Louis.

![Figure 8: Year 2004 Crash “Hot-Spots” on I-70 Relative to Expected Growth in Employment Density](image)

Source: WSA Generated Map Utilizing 2004 HPMS and State Level Crash Data

**St. Louis Roadway Conditions and Intermodal Facilities**

The Phase IV traffic and safety screening analysis conducted for this project investigates the St. Louis Metropolitan Area and its interstate and freeway beltway system (I-70, I-270, I-64, I-255, I-55, and State Route 370). This analysis provides a high level look at potential areas of concern related to congestion in the form of freeway lane density, weight restricted bridges and crash rates.

**Freeway Density**

The Highway Capacity Manual (HCM) describes the basic freeway capacity as 2,200 passenger cars per hour per lane (pcphpl) for freeways with four lanes and 2,300 pcphpl for freeways with six or more lanes. For this analysis, a passenger car equivalent factor of 1.5 was used based on Chapter 3 of the HCM. The freeway Annual Average Daily Traffic (AADT) and heavy vehicle volumes were collected from the 2005 Illinois East St. Louis traffic count maps, Illinois DOT website, the 2006 Missouri Statewide traffic count map, and 2007 traffic data provided by MoDOT.
Table 2 illustrates I-70, I-270, and I-64/U.S. 40/U.S. 61 corridors each have areas where traffic density exceeds the defined capacity. Potential congested areas along I-70 include from State Route 79 to Riverview Avenue, from the McKinley Bridge to I-64, I-270, and I-64/U.S. 40/U.S. 61 between I-270 and Grand Avenue.

Table 2: Density Analysis

<table>
<thead>
<tr>
<th>Route</th>
<th>State</th>
<th>Begin</th>
<th>End</th>
<th>Through Lanes</th>
<th>AADT 2005 - 2007</th>
<th>Passenger Vehicles</th>
<th>Trucks</th>
<th>Truck Percentage</th>
<th>Density pcppl</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-70 MO</td>
<td>US 61/US 40</td>
<td>St. Rte. 79</td>
<td>6</td>
<td>117,999</td>
<td>104,642</td>
<td>13,357</td>
<td>11.3%</td>
<td>2,078</td>
<td></td>
</tr>
<tr>
<td>I-70 MO</td>
<td>St. Rte. 79</td>
<td>St. Rte. 370</td>
<td>6</td>
<td>151,749</td>
<td>134,524</td>
<td>17,225</td>
<td>11.4%</td>
<td>2,673</td>
<td></td>
</tr>
<tr>
<td>I-70 MO</td>
<td>St. Rte. 370</td>
<td>Earth City</td>
<td>6</td>
<td>154,117</td>
<td>136,623</td>
<td>17,494</td>
<td>11.4%</td>
<td>2,714</td>
<td></td>
</tr>
<tr>
<td>I-70 MO</td>
<td>Earth City</td>
<td>I-270</td>
<td>8</td>
<td>160,940</td>
<td>142,449</td>
<td>18,491</td>
<td>11.5%</td>
<td>2,127</td>
<td></td>
</tr>
<tr>
<td>I-70 MO</td>
<td>I-270</td>
<td>I-170</td>
<td>6</td>
<td>153,558</td>
<td>136,128</td>
<td>17,430</td>
<td>11.4%</td>
<td>2,705</td>
<td></td>
</tr>
<tr>
<td>I-70 MO</td>
<td>I-170</td>
<td>Riverview</td>
<td>6</td>
<td>157,159</td>
<td>139,320</td>
<td>17,839</td>
<td>11.4%</td>
<td>2,768</td>
<td></td>
</tr>
<tr>
<td>I-70 MO</td>
<td>Riverview</td>
<td>McKinley Bridge</td>
<td>6</td>
<td>118,963</td>
<td>105,459</td>
<td>13,504</td>
<td>11.4%</td>
<td>2,095</td>
<td></td>
</tr>
<tr>
<td>I-70 MO</td>
<td>McKinley Bridge</td>
<td>I-55</td>
<td>4</td>
<td>100,571</td>
<td>89,156</td>
<td>11,415</td>
<td>11.4%</td>
<td>2,657</td>
<td></td>
</tr>
<tr>
<td>I-70 IL</td>
<td>I-64</td>
<td>I-270</td>
<td>6</td>
<td>121,800</td>
<td>102,200</td>
<td>19,600</td>
<td>16.1%</td>
<td>1,645</td>
<td></td>
</tr>
<tr>
<td>I-746/US61</td>
<td>MO</td>
<td>I-70</td>
<td>4</td>
<td>65,700</td>
<td>56,450</td>
<td>9,250</td>
<td>14.1%</td>
<td>1,172</td>
<td></td>
</tr>
<tr>
<td>I-746/US61</td>
<td>MO</td>
<td>St. Rte. 94</td>
<td>4</td>
<td>45,261</td>
<td>39,050</td>
<td>6,211</td>
<td>13.7%</td>
<td>1,209</td>
<td></td>
</tr>
<tr>
<td>I-64/US61</td>
<td>MO</td>
<td>St. Rte. 94</td>
<td>4</td>
<td>133,389</td>
<td>125,273</td>
<td>8,116</td>
<td>6.1%</td>
<td>2,291</td>
<td></td>
</tr>
<tr>
<td>I-64/US61</td>
<td>MO</td>
<td>I-270</td>
<td>6</td>
<td>164,384</td>
<td>145,726</td>
<td>18,658</td>
<td>11.4%</td>
<td>2,895</td>
<td></td>
</tr>
<tr>
<td>I-64/US61</td>
<td>MO</td>
<td>I-170</td>
<td>8</td>
<td>174,283</td>
<td>154,500</td>
<td>19,783</td>
<td>11.4%</td>
<td>2,302</td>
<td></td>
</tr>
<tr>
<td>I-64/US61</td>
<td>MO</td>
<td>Grand Ave</td>
<td>6</td>
<td>94,525</td>
<td>83,795</td>
<td>10,730</td>
<td>11.4%</td>
<td>1,665</td>
<td></td>
</tr>
<tr>
<td>I-64 IL</td>
<td>I-70</td>
<td>I-255</td>
<td>6</td>
<td>69,000</td>
<td>61,050</td>
<td>7,950</td>
<td>11.5%</td>
<td>1,216</td>
<td></td>
</tr>
<tr>
<td>I-270 MO</td>
<td>I-70</td>
<td>I-64</td>
<td>8</td>
<td>220,260</td>
<td>195,259</td>
<td>25,001</td>
<td>11.4%</td>
<td>2,910</td>
<td></td>
</tr>
<tr>
<td>I-270 MO</td>
<td>I-70</td>
<td>St. Rte. 370</td>
<td>8</td>
<td>189,139</td>
<td>167,673</td>
<td>21,466</td>
<td>11.3%</td>
<td>2,498</td>
<td></td>
</tr>
<tr>
<td>I-270 MO</td>
<td>St. Rte. 370</td>
<td>US 67</td>
<td>8</td>
<td>185,557</td>
<td>164,498</td>
<td>21,059</td>
<td>11.3%</td>
<td>2,451</td>
<td></td>
</tr>
<tr>
<td>I-270 MO</td>
<td>US 67</td>
<td>Lilac Rd</td>
<td>6</td>
<td>133,645</td>
<td>118,475</td>
<td>15,170</td>
<td>11.4%</td>
<td>2,354</td>
<td></td>
</tr>
<tr>
<td>I-270 MO</td>
<td>Lilac Rd</td>
<td>State Line</td>
<td>4</td>
<td>63,877</td>
<td>56,627</td>
<td>7,250</td>
<td>11.3%</td>
<td>1,688</td>
<td></td>
</tr>
<tr>
<td>I-270 IL</td>
<td>State Line</td>
<td>I-255</td>
<td>4</td>
<td>54,700</td>
<td>43,500</td>
<td>11,200</td>
<td>20.5%</td>
<td>1,508</td>
<td></td>
</tr>
<tr>
<td>I-270 IL</td>
<td>I-255</td>
<td>I-70</td>
<td>4</td>
<td>51,100</td>
<td>41,550</td>
<td>9,550</td>
<td>18.7%</td>
<td>1,397</td>
<td></td>
</tr>
<tr>
<td>St. Rte. 370</td>
<td>MO</td>
<td>I-70</td>
<td>6</td>
<td>63,713</td>
<td>56,584</td>
<td>7,129</td>
<td>11.2%</td>
<td>1,121</td>
<td></td>
</tr>
<tr>
<td>I-255 IL</td>
<td>I-64</td>
<td>I-70</td>
<td>6</td>
<td>47,800</td>
<td>40,900</td>
<td>6,900</td>
<td>14.4%</td>
<td>854</td>
<td></td>
</tr>
<tr>
<td>I-255 IL</td>
<td>I-70</td>
<td>I-270</td>
<td>6</td>
<td>44,300</td>
<td>39,200</td>
<td>5,100</td>
<td>11.5%</td>
<td>781</td>
<td></td>
</tr>
</tbody>
</table>

Source: MoDOT and IDOT
1. Does not include auxiliary lanes between interchanges.
3. Passenger car per hour per lane - assumes a ten percent peak hour factor and a 1.5 passenger car equivalent. Freeway Capacity (HCM Chapter 3) is 2200 (4-lane) and 2300 (6 or more lanes) pcppl.
Bridge Data

Bridge data provided by MoDOT indicated several weight restricted bridges are present. Two bridges on I-70 have weight restrictions and nine bridges cross over I-70 with weight restrictions. Interstate 270 has two weight restricted bridges and is crossed by 16 weight restricted bridges. The I-64/U.S. 40/U.S. 61 corridor has nine weight restricted bridges and is crossed by ten weight restricted bridges. Current upgrades to the I-64/U.S. 40/U.S. 61 corridor may remedy the restricted bridges along this route.

Legacy 2035 identifies all state maintained deficient bridges. The type of deficiency is not specified which may include shoulder widths, lane widths, vertical clearance, weight restrictions or other needed enhancements.

Crash Data

Based on the crash data received from MoDOT and IDOT, the crash rate was calculated and compared to the statewide average. More detailed data may provide insight into crash hot spots or segments along each route which may be below the statewide interstate crash rate.

In Missouri and Illinois, both directions of I-70 exhibit a crash rate that is higher than the statewide crash rate for interstates. Likewise, the crash rate on I-64 exceeds the statewide crash rate for interstates in both travel directions. Only the crash rate for the eastbound direction of I-270 is higher than the statewide crash rate. (Shown in Table 3 and Table 4).

A review of the 2006 Five Percent Report for Missouri and Illinois identified the top five percent of locations with the most severe safety needs. There are 21 locations with severe safety needs in the St. Louis area.

<table>
<thead>
<tr>
<th>Travelway</th>
<th>Begin Log</th>
<th>End Log</th>
<th># of Crashes</th>
<th>Crashes Per Mile</th>
<th>Average Volume</th>
<th>Crash Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-70 E</td>
<td>0.00</td>
<td>41.28</td>
<td>1542</td>
<td>37.36</td>
<td>69,691</td>
<td>147</td>
</tr>
<tr>
<td>I-70 W</td>
<td>210.26</td>
<td>251.54</td>
<td>1797</td>
<td>43.53</td>
<td>69,691</td>
<td>171</td>
</tr>
<tr>
<td>St. Rte. 370 E</td>
<td>0.00</td>
<td>12.97</td>
<td>77</td>
<td>5.94</td>
<td>31,857</td>
<td>51</td>
</tr>
<tr>
<td>St. Rte. 370 W</td>
<td>0.00</td>
<td>12.68</td>
<td>74</td>
<td>5.84</td>
<td>31,857</td>
<td>50</td>
</tr>
<tr>
<td>I-270 E</td>
<td>12.64</td>
<td>35.30</td>
<td>1093</td>
<td>48.23</td>
<td>91,075</td>
<td>145</td>
</tr>
<tr>
<td>I-270 W</td>
<td>0.45</td>
<td>23.32</td>
<td>793</td>
<td>34.69</td>
<td>91,075</td>
<td>104</td>
</tr>
<tr>
<td>I-64 E</td>
<td>2.76</td>
<td>15.10</td>
<td>484</td>
<td>39.23</td>
<td>70,823</td>
<td>152</td>
</tr>
<tr>
<td>I-64 W</td>
<td>0.21</td>
<td>12.55</td>
<td>482</td>
<td>39.07</td>
<td>70,823</td>
<td>151</td>
</tr>
</tbody>
</table>

Source: MoDOT, Missouri 2006 Statewide Interstate Crash Rate is 107

<table>
<thead>
<tr>
<th>Travelway</th>
<th>Begin Log</th>
<th>End Log</th>
<th># of Crashes</th>
<th>Crashes Per Mile</th>
<th>Average Volume</th>
<th>Crash Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-70</td>
<td>0</td>
<td>22</td>
<td>611</td>
<td>27.77</td>
<td>57,500</td>
<td>132</td>
</tr>
<tr>
<td>I-270</td>
<td>0</td>
<td>20</td>
<td>226</td>
<td>11.30</td>
<td>55,500</td>
<td>56</td>
</tr>
<tr>
<td>I-255</td>
<td>20</td>
<td>35</td>
<td>111</td>
<td>7.40</td>
<td>47,900</td>
<td>42</td>
</tr>
<tr>
<td>I-64</td>
<td>3</td>
<td>8</td>
<td>119</td>
<td>23.80</td>
<td>56,600</td>
<td>115</td>
</tr>
</tbody>
</table>

Source: East-West Gateway Council of Governments
Freight Data

The St. Louis Metropolitan Area has many freight industries dispersed within its boundaries. The freight efficiency of the region is variably influenced by truck parking demand, availability of food and amenities, as well as location, and proximity to regional freight shippers/receivers. The Study Team identified freight generating facilities within the eight county East-West Gateway study area. The freight generating facilities information came from the TRANSEARCH Freight Locator database purchased by MoDOT and the Illinois Commerce Commission. In addition to identifying local freight industries that generate significant freight volume, the Study Team identified intermodal transfer locations and truck stops inside the study area. The locations of these facilities are shown in **Figure 9**.

**Figure 9: Truck Facility Locations**

Source: Transearch Freight Locator Database
## Table 5: Truck Amenities

<table>
<thead>
<tr>
<th>City (Map I.D.)</th>
<th>State</th>
<th>Name</th>
<th>Intersecting Roads</th>
<th>Overnight Parking</th>
<th>Number of Spaces</th>
<th>Restaurant</th>
<th>Hotel</th>
<th>Showers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alorton (1)</td>
<td>IL</td>
<td>Flying J Travel Plaza</td>
<td>I-255 and IL 15</td>
<td>Y</td>
<td>150+</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Belleville (2)</td>
<td>IL</td>
<td>Gas Mart</td>
<td>IL 159</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Belleville (3)</td>
<td>IL</td>
<td>Gas Mart</td>
<td>IL 159</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>East St. Louis (4)</td>
<td>IL</td>
<td>Pilot Travel Center</td>
<td>I-55 and I-70</td>
<td>Y</td>
<td>150+</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Granite City (5)</td>
<td>IL</td>
<td>Flying J Travel Plaza</td>
<td>I-270 and IL 111</td>
<td>Y</td>
<td>150+</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Hartford (6)</td>
<td>IL</td>
<td>Piasa Pantry</td>
<td>IL 3 and Piasa Lane</td>
<td>Y</td>
<td>5-24</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Livingston (7)</td>
<td>IL</td>
<td>Meyer's BP</td>
<td>I-55</td>
<td>Y</td>
<td>5-24</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Troy (8)</td>
<td>IL</td>
<td>Pilot Travel Center</td>
<td>I-55 and I-70</td>
<td>Y</td>
<td>150+</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Troy (9)</td>
<td>IL</td>
<td>Travel Centers of America</td>
<td>I-55 and I-70</td>
<td>Y</td>
<td>85-149</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Bamhart (10)</td>
<td>MO</td>
<td>Express Mart</td>
<td>I-55 and St. Rte. M</td>
<td>Y</td>
<td>5-24</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Bridgeton (11)</td>
<td>MO</td>
<td>MPC</td>
<td>I-70 and St. Rte. 180</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Eureka (12)</td>
<td>MO</td>
<td>Shell</td>
<td>I-44 and Old Hwy 66</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Fenton (13)</td>
<td>MO</td>
<td>MPC</td>
<td>I-44 and St. Rte. 141</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Fenton (14)</td>
<td>MO</td>
<td>Road Ranger</td>
<td>I-44 and I-270</td>
<td>Y ($)</td>
<td>5-24</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Herculaneum (15)</td>
<td>MO</td>
<td>Quik Trip</td>
<td>I-55 and McNutt Rd.</td>
<td>Y</td>
<td>25-84</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Larimore (16)</td>
<td>MO</td>
<td>Quik Trip</td>
<td>I-270 and Lilac Ave</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Larimore (17)</td>
<td>MO</td>
<td>Westland Travel Center</td>
<td>I-270 and Lilac Ave</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pevely (18)</td>
<td>MO</td>
<td>Mr. Fuel</td>
<td>I-55 and CR Z</td>
<td>Y</td>
<td>25-84</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Pevely (19)</td>
<td>MO</td>
<td>I-55 Motor Plaza</td>
<td>I-55 and CR Z</td>
<td>Y</td>
<td>25-84</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>St. Louis (20)</td>
<td>MO</td>
<td>MPC</td>
<td>Chouteau Ave</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>St. Louis (21)</td>
<td>MO</td>
<td>Christy's Fuel</td>
<td>Hall St.</td>
<td>Y ($)</td>
<td>5-24</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>St. Louis (22)</td>
<td>MO</td>
<td>Go West Mart</td>
<td>I-70 and Broadway</td>
<td>N</td>
<td>-</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>St. Louis (23)</td>
<td>MO</td>
<td>Gas Mart</td>
<td>I-70 and E Grand</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>St. Louis (24)</td>
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<td>North Broadway Truck Stop</td>
<td>I-70 and Branch St.</td>
<td>Y</td>
<td>5-24</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>St. Louis (25)</td>
<td>MO</td>
<td>Naes Fuel and Wash</td>
<td>I-70 and Madison</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>St. Peters (26)</td>
<td>MO</td>
<td>Quik Trip</td>
<td>I-70 and Mid Rivers</td>
<td>Y</td>
<td>25-84</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Sullivan (27)</td>
<td>MO</td>
<td>Flying J Travel Plaza</td>
<td>I-44 and St. Rte. 185</td>
<td>Y</td>
<td>150+</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Sunset Hills (28)</td>
<td>MO</td>
<td>Alcorn Food Mart</td>
<td>I-270 and US 30</td>
<td>N</td>
<td>-</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Villa Ridge (29)</td>
<td>MO</td>
<td>Mr. Fuel</td>
<td>I-44 and St. Rte. 100</td>
<td>Y</td>
<td>5-24</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Wentzville (30)</td>
<td>MO</td>
<td>Wentzville Philips 66</td>
<td>I-70 and US 40/61</td>
<td>Y</td>
<td>5-24</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

$ - Fee may be charged
During preliminary evaluation of potential routes, the Study Team first identified all of the truck stops inside the study area and developed a matrix of available amenities at each location. The truck stops were identified using the 2007 National Truck Stop Directory “The Truckers Friend” and are described in Table 5.

Once all of the truck stop and freight facilities were identified and mapped, the Study Team assessed Heavy Commercial Average Daily Truck (HCADT) counts, gathered from Missouri DOT and Illinois DOT to verify the most widely used freight corridors in the region.

4.4 Traffic Growth

Trucks generally comprise 20 to 30 percent of all traffic volume. In some of the rural areas, trucks comprise up to 40 percent of the traffic volume. Projections are that truck traffic will double on I-70 by 2030, with approximately 3.5 percent growth per year. Passenger vehicle volumes are anticipated to grow by approximately one percent per year. Projections indicate that many segments of I-70 in Missouri can be expected to operate at unacceptable levels of service by the year 2030. This will result in unstable traffic flows, stop-and-go conditions and traffic volumes over the roadway's capacity. Freight growth along I-70 is shown in Figure 10.

![Figure 10: Freight Growth along 800 Mile I-70 Corridor](image)

Interstate 70 extends across central Missouri 250 miles connecting its two largest cities, Kansas City and St. Louis. Traffic volumes exceed 100,000 vehicles per day (VPD) in certain locations
I-70 SEIS St. Louis I-70 Truck Lane Corridor Study

in Kansas City and St. Louis and reach 70,000 VPD in Columbia. Rural portions have volumes of 25,000 to 30,000 VPD. Several segments of I-70 experience traffic volumes of 130,000 to 160,000 average daily traffic (ADT).

According to the average daily truck counts discussed earlier, the most widely used freeway segments in the study area for commercial freight are located on I-270 from I-70 east to State Route 67 and on I-270 just north of I-64. I-270 (in particular the east-west segments between State Route 370 and the MO/IL line) is the predominant goods movement segment in the region, especially for interstate freight. The next heaviest commercial truck route is I-64 between I-70 and Grand Avenue, and on I-70 between I-55 and I-64.

5.0 Developing Alternatives

The Study Team looked at several route segments that would make up the most likely corridor for truck-only lanes through St. Louis. The following is a brief description of some of the most logical truck-only lane corridors to connect I-70 near Wentzville with I-70 in Illinois.

I-270
Ideally, an east-west truck-only lanes facility through St. Louis would accommodate a significant daily truck volume, provide efficient access to the region’s freight industries and intermodal transfer facilities that produce more than 16 million tons of freight annually, exhibit limited congestion, and offer sufficient truck stop amenities along the corridor. Therefore, one of the most logical east-west routes through the study area is the northern segment of I-270. This section of interstate carries more than 15,000 trucks daily in Missouri and 11,000 trucks daily in Illinois. It also provides east-west access to St. Louis, bypasses the central city and provides more than 150 truck parking spaces at three truck stops.

State Route 370
One possible alternative to this northern route alignment would include State Route 370 connecting I-70 to I-270 and crossing the Missouri River in St. Charles County. This route does not include any additional truck parking or amenities for truck operators. However, it would allow drivers to bypass the intersection of the I-70 and I-270 freeways, which currently accommodates nearly 35,000 trucks daily, and provides better opportunities for future freight centric development. There are two improvements underway that will add truck amenities and increase the traffic on State Route 370. The county of St. Charles is currently planning an I-70 Relief Route that will connect State Routes 79 and 370 with improved principal arterial roadway. This arterial roadway will parallel I-70 to the north and will consist of improved segments of Salt River Road, Route C, Mid Rivers Mall Drive, and Spencer Road. When complete this improved connection would shift 10-15 percent of the traffic currently using I-70 to State Route 370. The second improvement is a very large mixed-use development along State Route 370 known as Premier 370. Premier 370 will be an 835 acre business park located along State Route 370 between the I-70 interchange and the Missouri River. This mixed-use facility will provide significant industrial, light industrial, and warehouse facilities along this underdeveloped corridor. Figure 11 shows the proposed Premier 370 development and Spencer Road where the I-70 Relief Route connects to State Route 370.
I-70 to I-70/I-55
Another route alignment alternative follows I-70 into St. Louis, joins with I-55 as it crosses the Mississippi River into Illinois, and meets up with I-70 on the eastern side of the study area. This route provides numerous truck stops with many available amenities for truck operators. There are seven truck stops on the Missouri segment of this route that have nearby restaurants, hotels and showers, but very little parking (some require an overnight fee). In addition to the Missouri segment, there are three truck stops on the Illinois section of this route offering the same amenities and more than 400 truck parking spaces. This route alternative also provides excellent access to many of St. Louis’ intermodal transfer and freight generating facilities located near the central city. HCADT counts on this route are more than 11,000 in Missouri and approximately 9,000 in Illinois.

I-70 to I-64 to I-70/I-55 to I-70
There is also a southern route alignment. The route follows I-70 into the study area from the west until it connects with I-64 at Wentzville and travels into central St. Louis. Then it meets with I-55 to cross the Mississippi River and connects with I-70 on the eastern side of the study area. This route alternative offers only one truck stop in Missouri at Wentzville. This location offers adequate amenities and 524 truck parking spaces. There are three supplementary truck stops on the Illinois section of this route that offer adequate amenities and more than 400 truck parking spaces. It provides moderate access to St. Louis’ intermodal transfer and freight generating facilities located near the central city. HCADT counts on this southern alternative are variable compared to its northern counterpart. Counts are significantly lower (8,116) on I-64 outside the I-270 beltway. Conversely, HCADT counts are higher (nearly 20,000) on I-64 approaching the central city. This southern alignment may better serve the regional freight
community of St. Louis, as it would easily accommodate freight traffic on the southern half of St. Louis.

In the future, once State Route 364 is extended to I-64 (40/61), this route should be evaluated as an additional possible connection to I-270/I-70 for truck-only lanes.

| Figure 12: Potential Routes |

**Split East/West Movements along I-70 and I-270**
An alternative option carries truck movements on separate routes through the St. Louis Metropolitan Area. This option includes an eastbound and westbound split on freight movements using truck-only lanes. Truck-only lanes east-bound freight movements would use the I-70 to I-270 to I-70 route. This rationalization is based on the understanding that most trucks entering St. Louis on I-70 and continuing east of I-270 will want to remain on I-70 in St. Louis. The westbound movements would utilize the I-70 to New Mississippi River Bridge to I-70 route. This option allows trucks the option to access I-44, I-55, I-64, and I-70. The eastbound truck-only lanes provide more than 150 truck parking spaces at three truck stops with restaurants and hotels available. This route carries more than 15,000 trucks daily in Missouri and 11,000 trucks daily in Illinois according the HCADT counts. The westbound truck-only lanes route offers ten truck stops with nearby restaurants, hotels and showers available. There are more than 400 truck parking spaces available although some require an overnight fee. HCADT counts on this route include more than 11,000 in Missouri and approximately 9,000 in Illinois.

**6.0 Initial Screening Criteria and Potential Corridors**
Once key routes were identified, they were combined into different combinations to make up possible corridors. These potential truck-only lane corridors were then put through an initial screening criteria processes to eliminate those with critical flaws.

The existing conditions study was preceded by the establishment of initial screening criteria. The initial screening criteria (see below) for preliminary corridors were recommended to determine which transportation corridors would be included in the “first tier” of analysis and data collection for the St. Louis Truck Lane Corridor Study. A matrix comparing the initial screening criteria to potential corridors in the St. Louis Metropolitan Area is shown below in Table 6.
map illustrating the potential corridors in the metropolitan area that were considered is shown in Figure 12.

### Table 6: Screening Criteria

<table>
<thead>
<tr>
<th>Potential Truck-Only Lane Transportation Corridors in the Metropolitan Area</th>
<th>Connect I-70 in St. Charles County, MO to I-70 in Madison County, IL</th>
<th>Existing or LRTP</th>
<th>Mississippi &amp; Missouri River Crossings</th>
<th>Limited Access Roadways</th>
<th>Roadways Within State/Federal Jurisdiction</th>
<th>Minimal Excess Travel Distance</th>
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</thead>
<tbody>
<tr>
<td>I-70 to PSB to I-70</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
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<td>I-70 to NMRB to I-70</td>
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<td>Y</td>
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<tr>
<td>I-70 to I-270N to I-70</td>
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<tr>
<td>I-70 to I-64 to I-55 to U.S. 40 to I-70</td>
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<td>Y</td>
<td>Y</td>
<td>N</td>
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<tr>
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<td>I-70 to I-64 to SB I-270 to NB I-55 to NB I-55 to U.S. 40 to I-70</td>
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<tr>
<td>I-70 to St. Rte. 370 to I-270 to I-70</td>
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<td>Y</td>
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<tr>
<td>I-70 to NB I-55 to U.S. 40 to I-70</td>
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<td>Y</td>
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<tr>
<td>I-70 to SB I-270 to I-64 to NB I-55 to I-70</td>
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<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>I-70 to SB I-270 to I-64 to NB I-55 to U.S. 40 to I-70</td>
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<td>Y</td>
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<tr>
<td>I-70 to SB I-270 to NB I-255 to NB I-55 to I-70</td>
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<tr>
<td>I-70 to SB I-270 to NB I-255 to NB I-55 to U.S. 40 to I-70</td>
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<tr>
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<td>I-70 to SB I-270 to NB I-55 to U.S. 40 to I-70</td>
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<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

**Notes:**
- I-70, I-55, and I-64 all cross the Poplar Street Bridge (PSB) over the Mississippi River
- I-70/I-55 diverge from I-64 at Illinois Highway 3
- I-70 and I-55 share roadway until I-270/I-55/I-70 split
- I-55 refers to I-55/I-70
- The New Mississippi River Bridge (NMRB) will be located approximately one mile north of the Martin Luther King Bridge
- I-70 will cross NMRB and connect to I-70 in Illinois

- Routes considered for inclusion in these corridors included all freeways or near freeway facilities that provided east-west movement through the metropolitan area.
- The study limits were limited to the counties making up the metropolitan area of St. Louis as defined by the Local Metropolitan Planning Organization (MPO) East-West Gateway. The limits of East-West Gateway, shown in Figure 13, include the following jurisdictions:
  - City of St. Louis, Missouri
  - Franklin County, Missouri
  - Jefferson County, Missouri
  - St. Charles County, Missouri
- St. Louis County, Missouri
- Madison County, Illinois
- Monroe County, Illinois
- St. Clair County, Illinois

- The corridors should connect to I-70 in St. Charles County, Missouri and to I-70 in Madison County, Illinois. These limits match those of the I-70 SEIS and provide adequate connectivity to the outer belt freeways. This effectively eliminated most, if not all, of Franklin, Jefferson and Monroe counties.

- The route should consist of existing roadways or those within the East-West Gateway Long Range Transportation Plan (LRTP). This study constraint eliminates major changes to the overall transportation network that would have collective or collateral impacts much greater than those of the truck-only lanes concept and is therefore outside the scope of this study.

- The route should include an available and viable Mississippi River and Missouri River crossing. Adding new crossing locations would have collective and collateral impacts outside of adding truck-only lanes and is therefore outside the scope of this study.

- The route should consist primarily of limited access roadways (existing or planned). At-grade intersection limitations of local roadways would encourage the truck to leave the truck-only lanes and use other surface streets and highways.

- The route should be under state and/or federal jurisdiction. The basic purpose of improving interstate commerce makes the consistent statutory regulation of state and federal facilities preferable.

- The route must minimize excess or adverse travel. Excess or adverse travel would encourage long haul trucks to leave the truck-only lanes corridor to pursue a more direct route defeating the safety and operations benefits of truck-only lanes.
Figure 13: Potential Routes Map
6.1 Potential Corridors

All of the identified potential truck-only lanes corridors were considered and evaluated against the screening criteria.

All of the potential corridors in the study area consist of existing roadways or planned roadways within the East-West Gateway LRTP, include an available or viable Mississippi River and Missouri River crossing, and consist of roadways that are under state and/or federal jurisdiction. No potential corridors were eliminated for further evaluation based on these three screening criteria.

All of the potential corridors in the study area connect I-70 in St. Charles County, Missouri to the west and I-70 in Madison County, Illinois to the east, except two. The two routes that do not are the I-70 to I-64 route and the I-70 to I-64 to U.S. 50 route. These three potential corridors were eliminated for further evaluation.

Seven of the potential corridors in the study area are not limited access roadways (existing or planned) with five or less at-grade intersections and thus were eliminated for further evaluation. These seven potential corridors are:

- I-70 to I-64 to I-55 to U.S. 40 to I-70
- I-70 to I-64 to SB I-270 to NB I-255 to NB I-55 to U.S. 40 to I-70
- I-70 to I-64 to SB I-270 to NB I-55 to U.S. 40 to I-70
- I-70 to NB I-55 to U.S. 40 to I-70
- I-70 to SB I-270 to I-64 to NB I-55 to U.S. 40 to I-70
- I-70 to SB I-270 to NB I-255 to NB I-55 to U.S. 40 to I-70
- I-70 to SB I-270 to NB I-55 to U.S. 40 to I-70

Nine of the potential corridors in the study area also require access and adverse travel and thus were eliminated for further evaluation. These nine potential corridors are:

- I-70 to I-64 to SB I-270 to I-44 to NB I-55 to I-70
- I-70 to I-64 to SB I-270 to NB I-255 to NB I-55 to I-70
- I-70 to I-64 to SB I-270 to NB I-55 to U.S. 40 to I-70
- I-70 to I-64 to SB I-270 to NB I-55 to I-70
- I-70 to I-64 to SB I-270 to NB I-55 to U.S. 40 to I-70
- I-70 to SB I-270 to NB I-255 to NB I-55 to I-70
- I-70 to SB I-270 to NB I-255 to NB I-55 to U.S. 40 to I-70
- I-70 to SB I-270 to NB I-55 to I-70
- I-70 to SB I-270 to NB I-55 to U.S. 40 to I-70

Corridors, including the Poplar Street Bridge and I-70 adjacent to the St. Louis Arch, were eliminated due to the complexity of the bridges, ramps, depressed urban freeway and right of way acquisition.

I-64 from I-270 to downtown St. Louis is currently undergoing a $535 million upgrade and reconstruction project. When complete this improvement will lessen congestion on I-64 and parallel routes such as I-70 and the north segment of I-270. This improved I-64 corridor was eliminated as an option for the following reasons:
• The current $535 million reconfiguration is incompatible with truck-only lanes.
• It would be impractical to reconfigure the newly upgraded route when other routes could benefit from the new infrastructure associated with truck-only lanes.
• All easily available right of way and reasonable use of retaining walls have been utilized with the current upgrade making the right of way impacts excessive.
• I-64 passes through downtown on a stacked highway or viaduct making the addition of truck-only lanes impractical. (Figure 14)

Figure 14: Downtown St. Louis Restrictions

As presented above, there also may be the opportunity to place the east and west bound truck-only lanes on separate corridors. This eastbound/westbound split option would decrease the impacts and costs to a single corridor. While this would lessen the impacts on a single corridor, it was eliminated for the following reasons:

• It would not provide return truck-only lane facilities for trucks with origins or designations within the City.
• It would require two separate corridors be cleared.
• It would increase the number of impacted interchanges.
• It would require twice the number of major river crossings than other routes.

7.0 Corridor Evaluation

7.1 Three Reasonable Alternative Corridors

As a result of the screening process, the three following corridors were identified for further evaluation:

• I-70 to the New Mississippi River Bridge to I-70
• I-70 to I-270 to I-70
• I-70 to State Route 370 to I-270 to I-70
The key engineering issues of these three most likely corridors from the previous screening process are discussed in the following narrative. These routes all begin west of St. Louis at Route A in St. Charles County, Missouri where the truck-only lanes transition from a rural to urban section. All three corridors head east where they tie back into the rural section of I-70 on the Illinois side at the I-70/I-270 interchange in Madison County, Illinois.

**I-70 to NMRB to I-70**
The alternative begins in the urbanized corridor along I-70. Just north of Lake St. Louis, a railroad infringes upon the footprint. The Single Point Urban Interchange (SPUI) at I-70 and Belleau Creek Road would need to be rebuilt due to the infringement on the retaining walls.

![Figure 15: SPUI at I-70 and Belleau Creek Road (T. R. Hughes Boulevard)](http://maps.live.com)

The I-70/State Route 370 interchange would require reconfiguration under all alternatives. Under this alternative the reconfiguration would focus on the west to east legs. The alignment proceeds along the heavily urbanized I-70 corridor through the City of St. Charles, including through the recently built SPUI at Route 94 (First Capitol Drive). I-70 crosses the Missouri River on twin truss bridges with relatively short viaducts and proceeds through an urbanized area of St. Louis County to the I-70/I-270 directional interchange. This is one of the most heavily used and largest interchanges in Missouri. Substantial modifications would be needed to allow truck-only lanes to pass through.

From the I-270/I-70 interchange in St. Louis County, the corridor passes by Lambert-St. Louis International Airport to the I-70/I-170 interchange. This interchange incorporates a dual track crossing of Metrolink, the St. Louis light rail facility, which limits the available footprint for truck-only lanes. The Metrolink parallels I-70 to the east and continues to limit the available footprint for truck-only lanes. This directional interchange may need further evaluation due to these restrictions. The corridor continues eastward on I-70 to Cass Avenue in the City of St. Louis, where it would cross the New Mississippi River Bridge (NMRB) into Illinois. It rejoins the
existing alignment of I-70 as shown on MoDOT’s displays for the NMRB and proceeds northeast to the I-70/I-270 interchange under Phase 2 of the interchange improvements.

Through St. Louis County and the City of St. Louis, the corridor is fully urbanized. Interchanges are closely spaced, particularly near downtown St. Louis.

To the east, in the city, the SPUI at Florissant Road is underneath I-70, but cannot be widened without reconstruction. In this area outer roads and ramps frequently mix and merge. There are braided ramps west of Florissant Road. Existing retaining walls and substandard ramps are common. Numerous overpasses and underpasses would require attention, many of which are at severe skews with unusual crossing geometries. For example, some intersections are built over I-70. Widening I-70 for truck-only lanes would require more of these intersections to be built over I-70 or removed. Multiple-lane structures are common.

The section of I-70 just north of downtown St. Louis is one of the oldest parts of the city. The utilities are complex, poorly documented, and difficult to assess. Steam lines, tunnels and caves are common. The local street patterns (several different grid systems were used in laying out the streets, all were laid out parallel to the Mississippi River, but not parallel to each other) do not lend themselves to expansion of the I-70 footprint. Offsetting the outer roads would require skewed intersections and would present design and construction issues. Improvements would need to be coordinated with the work now being designed as part of the NMRB project, which would add pavement to I-70 in the downtown area, as well as an interchange to connect I-70 from the north to I-70 to the south and the new I-70 to the east.

Modifications to the directional interchange with I-55 and I-270 at Cass Avenue for the NMRB would need to be made to accommodate the truck-only lanes. The NMRB is not wide enough to receive the truck-only lanes, so this option would require the construction of a second bridge.

Figure 16: I-70 New Mississippi River Bridge Crossing in Downtown St. Louis

In Illinois, the corridor passes over floodplain and associated wetlands to the connection with I-70. The interchange would require rework, but should not require an entirely new directional interchange. The corridor touches the Cahokia Mounds State Historic Site.
East of the Cahokia Mounds, the corridor passes through a mostly undeveloped area. The I-255/I-270 directional interchange would require some reconfiguration to accommodate the truck-only lanes. The corridor passes twin rest areas. The U.S. 40/I-70 interchange would need some reconfiguration for truck-only lanes construction. North of this interchange, I-70 passes through a mostly rural area to the interchange with I-270.

**I-70 to I-270N to I-70**

This corridor is the same as the previous corridor from Route A in St. Charles County to the I-70/I-270 interchange. Some reconfiguration of the I-70/I-270 interchange would be required, focusing on the west and north legs.

The corridor turns north in this interchange and travels along urbanized I-70 to the I-70/State Route 370 interchange. Modifications would have to be made principally to the southwest and northeast legs of this interchange.

The corridor then passes along the urbanized section of I-270. It passes through the I-170 directional interchange, which would require some modification. Eastward from Lilac Avenue the median opens up and I-270 becomes less urbanized.

I-270 crosses the Mississippi River on a girder bridge into Illinois. It crosses rural Chouteau Island, which it leaves via dual truss bridges over the Chain of Rocks Canal. Neither of these crossings have any excess lane capacity. I-270 then proceeds eastward across an area composed of farmland and scattered developments to the interchange with I-70.

**I-70 to State Route 370 to I-270 Route**

This alternative is the same as the previous, except that State Route 370 is used. The I-70/State Route 370 interchange would require some configuration, focusing on the west and north legs.

On the State Route 370 corridor, the corridor passes through rural, undeveloped Missouri River floodplain until it nears the urbanized area along the Missouri River east of Elm. It crosses the Missouri River on two identical bridge systems composed of girder viaducts interrupted by a truss bridge over the navigable waterway. State Route 370 rises from the river to the interchange with I-270 as it passes over undeveloped floodplain. A railroad passes through the interchange with an overpass on the northwest leg and a series of underpasses on the northeast leg. The overpass is skewed.

The interchange with I-270 would require some configuration focusing on the northeast and northwest legs. From that interchange, the corridor is the same as the previous corridor.
Reasonable Alternative Routes within the East-West Gateway
I-70 SEIS - St. Louis

Potential Routes
- I-70 to State Route 370 to I-270 to I-70
- I-70 to I-270 to I-70
- I-70 to New Mississippi River Bridge to I-70

Highways
- State Route
- Interstate Highway
- US Highway

Figure 17: Reasonable Alternative Corridors
7.2 Evaluation of Reasonable Alternatives

After reasonable corridors were identified based on the updated needs identified in the I-70 SEIS revised Purpose and Need, local plans, identified key environmental issues, and study goals and objectives, a further evaluation of the corridors was conducted. (Table 7)

Corridors were evaluated for existing traffic and crash conditions (freight and non-freight), roadway and bridge infrastructure deficiencies, hazardous roadway sections, current and future environmental and transportation issues as they relate to area freight, as well as existing impediments to efficient freight movements through the area, such as weight and height restrictions. The “second tier” evaluation criteria included the following:

- Environmental “Red Flags”
- Secondary and Cumulative Impacts
- Clearly Evident ROW Issues
- 4(f)/ 6(f) Potential Impacts
- Meets Purpose & Need for SEIS/COF
- High Congestion Routes
- River Bridge Capacity/Widening Ability
- Consistency with Preferred Roadway/Bridge Templates (typicals)
- High Accident Locations
- Route Continuity
- Relative Cost
- Proximity/Access to Freight Centers/Intermodal Facilities
- Travel Time/Distance
- Truck Percentage on Corridors
- National Freight Flows through St. Louis
- Legal Restrictions

### Table 7: Corridor Evaluation

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<thead>
<tr>
<th>Corridor</th>
<th>Environmental Criteria</th>
<th>Engineering Criteria</th>
<th>Economic Criteria</th>
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</tr>
<tr>
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<td>☒ - ☐ ☐</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend
- S&C – Secondary and Cumulative
- Positive Strong Impacts
- Positive Medium Impacts
- Neutral Impacts
- Negative Medium Impacts
- Negative Strong Impacts
Table 8: Relative Impact Summary

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<thead>
<tr>
<th>Alternative Route</th>
<th>I-70</th>
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<th>I-70 to Rte 370 to I-270</th>
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<tr>
<td>Commercial Sites</td>
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<td>🚧</td>
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</tbody>
</table>

Cost for adding Truck Only Lanes does not include rebuilding existing infrastructure.

**I-70 to NMRB to I-70 Route**

**Red Flags**
The I-70 to NMRB to I-70 route has strong potential negative environmental impacts to the surrounding area. There are two environmental red flags along the route; wetlands and Cahokia Mounds State Historic Site. There are potential wetlands in the western portion of the route associated with the Missouri River that the route crosses and potential wetlands in the eastern portion of the route in Illinois. There is a substantial wetland complex on the north side of the route across from the Cahokia Mounds State Historic Site. The Cahokia Mounds State Historic Site is a 2,200-acre area adjacent to the route near Collinsville, Illinois. The Cahokia Mounds are the remains of the most sophisticated prehistoric native civilization north of Mexico. In addition to a Illinois State Historic Site, the Cahokia Mounds have been designated a World Heritage Site by United Nations Educational, Scientific, and Cultural Organization and a U.S. National Historic Landmark.

**Secondary and Cumulative Impacts**
Secondary and cumulative impacts may occur outside of the I-70 right of way and be generated because of changes in development patterns, as a result of the I-70 to NMRB to I-70 route being chosen as the proposed truck-only lanes route. The western portion of the route in St. Charles County, MO and the eastern portion in Madison County, IL are primarily rural areas. Secondary impacts could occur in these rural areas as a result of the construction of interchanges providing truck facilities. Secondary impacts are unlikely to occur in the middle portion of the route because it runs through a highly developed urban area. However, cumulative impacts could occur in the urban area as a result of right of way acquisition. If the I-70 to NMRB to I-70 were chosen as the proposed truck-only lanes route, right of way would need to be acquired for the truck-only lanes. Right of way acquired for the truck-only lanes would be added to previous right of way acquired through this area from previous roadway construction, including the original construction of I-70 and the construction of the NMRB.
Cumulative impacts could also occur to the Cahokia Mounds State Historic Site. This site has been previously disturbed by roadway construction and if this route was chosen as the proposed truck-only lanes route the site could be impacted again. If any of the routes are chosen as the proposed truck-only lanes route, cumulative impacts to floodplains could occur as a result of additional bridge crossings.

**Right of Way**
The I-70 to NMRB to I-70 route has the most substantial right of way impacts of the three corridors studied. This corridor would have more than four times the residential impacts and 2.25 times the commercial impacts when compared to the corridor with the fewest right of way impacts. Impacts to sensitive locations would include four churches, two schools, the Lambert-St. Louis Airport Terminal, Lambert-St. Louis Air National Guard buildings, a State of Missouri correctional facility, and five cemeteries. The estimated right of way cost for the I-70 to NMRB to I-70 route would be the highest with 2.5 times the impacts of the lowest right of way impact. **Table 8** provides a relative cost summary of each route. Right of way cost calculations are in **Appendix C**.

**Section 4(f) and Section 6(f)**
The I-70 to NMRB to I-70 route could impact ten parks that would be protected under Section 4(f) and potentially under Section 6(f).

**I-70 Corridors of the Future Purpose and Need (COF P&N)**
The I-70 to NMRB to I-70 route would have a negative impact on the goals outlined in the COF P&N. The goal of the I-70 COF is to safely and efficiently move long haul freight along the four state I-70 corridor with a minimum impact and interaction to general purpose vehicles. The negative impact for the I-70 corridor occurs at two locations; the NMRB and the reversible lanes in downtown St. Louis. The constrained geometry, high costs and complex structures at the NMRB may require a decrease in the number of truck-only lanes or the need to temporary combine truck-only lanes with general purpose lanes. The reversible lanes currently located along I-70 are not compatible with truck-only lanes because general purpose traffic accessing these reversible lanes would have to cross the truck-only lanes.

**Congestion**
I-70 to NMRB to I-70 route has strong potential negative impacts on congested locations. This route travels through areas with some of the heaviest lane densities. There are four areas where the lane density is ten percent higher than the Highway Capacity Manual (HCM) definition of capacity. These four sections with a severe lane density are between State Route 79 and State Route 370; State Route 370 and Earth City; I-270 and I-170; and I-170 and Riverview.

**Bridge Capacity**
Major bridges on the I-70 to NMRB to I-70 route include the Blanchette Bridge carrying I-70 over the Missouri River and the NMRB, now under design.

The Blanchette Bridge is composed of twin five-lane structures. This section of I-70 is one of the most heavily traveled highways in the state. There is no excess capacity. An additional bridge would have to be built to convey the truck-only lanes.

The NMRB is being designed to carry four lanes, with design accommodations for a companion bridge to be built in the future. MoDOT has detailed information at [http://www.newriverbridge.org/](http://www.newriverbridge.org/). Truck-only lanes would require an additional bridge. Whether
this bridge is the companion bridge now planned or a third structure does not affect the present study.

**Template Consistency**
The I-70 to NMRB to I-70 route passes through some of the most built-up areas in the St. Louis area, particularly as downtown St. Louis is approached. Here the freeway is depressed below grade making it impractical to add truck-only lanes.

The reversible lanes generate a number of questions that cannot be answered within the bounds of this study. Among them are:

- Are the reversible lanes still needed given changes in traffic patterns from their time of construction, when urban density was greater and before I-270 was built?
- How will truck-only lanes be compatible with reversible lanes? What sort of weaving sections are required, and where?
- How do the reversible lanes coordinate with the NMRB?

The Study Team has assumed that the reversible lanes will be removed. If the reversible lanes are retained, then the footprint will be much wider than we have shown. Right of way takings, environmental impacts, street relocations and ramp reconstructions will be much higher than we have indicated.

Template consistency will be difficult to maintain as the bridges are approached. The number of lanes may need to be reduced below the typical section.

Railroads also provide challenges to template consistency. Metrolink lines run through the I-70/I-170 interchange and parallel I-70 just east of that interchange. There is additional railroad infringement on the footprint which will have to be closely studied to determine the best response.

**High Accident Locations**
The I-70 to NMRB to I-70 route has a crash rate higher than the statewide average crash rate. This route passes through ten locations on Missouri’s or Illinois’ top five percent of locations with the most severe safety needs.

**Route Continuity**
The I-70 to NMRB to I-70 route provides the greatest route continuity, as the driver is on I-70 throughout.

**Relative Cost**
The I-70 to NMRB to I-70 route is by far the most expensive to construct (Appendix B). Table 8 provides a cost summary of each route.
Freight/Intermodal Sites
The I-70 to NMRB to I-70 route has strong positive impacts. Numerous freight sites and four intermodal sites near downtown St. Louis would be served by this route. In addition, freight sites near I-70 on connecting roads such as I-44, I-64 and Page Avenue would also experience some benefit. This route would also serve Lambert-St. Louis International Airport and the freight sites near Earth City.

Travel Time/Distance
The I-70 to NMRB to I-70 route has medium negative travel time impacts. This route is roughly five miles longer than the other two routes. The overall travel time would be slightly longer as a result. The longer travel time is compounded by a slower traffic flow and I-70 speed limit reductions near I-170 to the downtown area. This route would also use three interchange ramps which tend to operate at slower speeds.

Truck Percentage
The I-70 to NMRB to I-70 route has a neutral impact to truck percentage. This route’s longer travel distances may limit the number of trucks that divert to this route and increase the truck percentages on the general purpose lanes and decrease it on the truck-only lanes.

National Freight Flows
The I-70 to NMRB to I-70 route has a neutral impact to national freight flows. Based on the I-70 SEIS Freight White Paper, portions of this route would serve the major national freight flows through Missouri between Memphis and states to the west as well as the Chicago to the gulf ports routes.

Legal Restrictions
The legal restrictions across this corridor are consistent with other freeways within St. Louis (Appendix C). State law restricting trucks from the left lane on a six-lane freeway will require modification.

I-70 to I-270 to I-70 Route

Red Flags
The I-70 to I-270 to I-70 route has medium to strong negative environmental impacts to the surrounding area. Potential wetlands and floodplains represent the largest natural environmental issue of concern.

Secondary Impacts
Secondary impacts may occur outside of the I-70 right of way and be generated because of changes in development patterns, as a result of the I-70 to I-270 to I-70 route being chosen as the proposed truck-only lanes route. The western portion of the route in St. Charles County, MO and the eastern end in Madison County, IL are primarily rural areas. Secondary impacts could occur in these rural areas as a result of the construction of interchanges providing truck facilities. If any of the routes are chosen as the proposed truck-only lanes route, secondary impacts to floodplains could occur as a result of additional bridge crossings.

Right of Way
The I-70 to I-270 to I-70 route would have the second most substantial right of way impacts of the three corridors studied. This corridor would have approximately 1.5 times the residential impacts and commercial impacts when compared to the corridor with the fewest right of way
impacts. Impacts to sensitive locations would include a quarry, three schools, a mobile home park, and a cemetery. The estimated right of way cost for the I-70 to 270 to I-70 route would be the second highest at approximately 50 percent more than the corridor with the lowest right of way costs. Table 8 provides a relative cost summary of each route. Right of way cost calculations are in Appendix C.

Section 4(f) and Section 6(f)
The I-70 to I-270 to I-70 route could impact four parks that potentially would be protected under Section 4(f) and potentially Section 6(f).

I-70 Corridors of the Future Purpose and Need (COF P&N)
The I-70 to I-270 to I-70 route would have a neutral or no impact to the goal outlined in the COF P&N. The goal of the I-70 COF is to safely and efficiently move long haul freight along the four state I-70 corridor with a minimum impact and interaction to general purpose vehicles. The urban section with a two-foot buffer would still allow a minimum amount of interaction between cars and trucks which prevents this section from having a positive impact on the purpose and need but the interaction should be small enough to prevent a negative impact.

Congestion
The I-70 to I-270 to I-70 route has medium potential negative impacts on congested locations. This route avoids many high-lane density sections of I-70; however, it passes through areas with moderate lane density issues. This route still travels through the severe density locations between State Route 79 and State Route 370 as well as between State Route 370 and Earth City. I-270 has moderate lane density concerns between I-70 and Lilac Road due to lane densities that are higher than the Highway Capacity Manual definition of “at capacity”.

Bridge Capacity
The I-70 to I-270 to I-70 route also crosses the Blanchette Bridge (see above). Additionally this route crosses the Mississippi River on a girder structure, and the Chain of Rocks Canal on twin truss bridges. None of these structures have excess capacity and all will require parallel structures to be constructed.

Template Consistency
The I-70 to I-270 to I-70 route passes through urbanized areas in St. Charles County, particularly as the Missouri River is approached in St. Charles County and between State Route 370 and New Halls Ferry Road in north St. Louis County. There are several areas of railroad encroachment. Template consistency will be difficult to maintain as the bridges are approached. The number of lanes or median widths may need to be reduced to allow construction.

High Accident Locations
The I-70 to I-270 to I-70 route has a crash rate higher than the statewide average crash rate along the portions of I-70 and I-270 in Missouri covered by this route. I-270 in Illinois is below
the statewide average crash rate. This route passes through eight locations on Missouri’s or Illinois’ top five percent of locations with the most severe safety needs.

Route Continuity
Two route changes are required, one from I-70 to I-270, and then back to I-70.

Relative Cost
The I-70 to I-270 to I-70 route is significantly less expensive than the I-70 to NMRB to I-70 route, but more expensive than the I-70 to State Route 370 to I-270 to I-70 route to construct (Appendix B). Table 8 provides a cost summary of each route.

Freight/Intermodal Sites
The I-70 to I-270 to I-70 route has neutral to positive impacts. This route would miss the large concentration of freight and intermodal sites near downtown, but would serve the freight sites near I-270 and U.S. 67. This route would serve Lambert-St. Louis International Airport and the freight sites near Earth City.

Travel Time/Distance
The I-70 to I-270 to I-70 route has strong positive travel time impacts. This route is the most direct route. Travel time would be expected to be slightly faster. This route would require using one interstate ramp at I-70 and I-270.

Truck Percentage
The I-70 to I-270 to I-70 route has a neutral impact to truck percentages. Based on freight and intermodal site locations, a substantial shift in the local truck movements is not likely.

National Freight Flows
The I-70 to I-270 to I-70 route has medium positive impacts to national freight flows. This route will serve over half of the national freight flows through the state of Missouri on the entire 60-plus mile route through St. Louis.

Legal Restrictions
The legal restrictions across this corridor are consistent with other freeways within St. Louis (Appendix C). State law restricting trucks from the left lane on a six-lane freeway will require modification.

I-70 to State Route 370 to I-270 to I-70 Route

Red Flags
The I-70 to State Route 370 to I-270 to I-70 route has medium to strong negative environmental impacts to the surrounding area. Potential wetlands and floodplains represent the largest natural environmental issue of concern.

Secondary and Cumulative Impacts
Secondary and cumulative impacts may occur outside of the I-70 right of way and be generated because of changes in development patterns, as a result of the I-70 to State Route 370 to I-270 to I-70 route being chosen as the proposed truck-only lanes route. The western portion of the route in St. Charles County, MO, the area along State Route 370, and the eastern portion in Madison County, IL are primarily rural areas. Secondary impacts could occur in these rural areas as a result of the construction of interchanges providing truck facilities. If any of the
routes are chosen as the proposed truck-only lanes route, cumulative impacts to floodplains could occur as a result of additional bridge crossings.

**Right of Way**
The I-70 to State Route 370 to I-270 to I-70 corridor would have the fewest substantial right of way impacts of the three corridors studied. This corridor would have fewer than a hundred residential impacts which is approximately one-third less residences than the corridor with the second fewest impacts. Commercial impacts would also have approximately one-third fewer impacts. Impacts to sensitive locations would include a quarry, four schools, and a mobile home park. The estimated right of way cost for the I-70 State Route 370 to I-270 to I-70 route would be the lowest at approximately one-third less than the corridor with the second lowest cost. Table 8 provides a relative cost summary of each route. Right of way cost calculations are in Appendix C.

**Section 4(f) and Section 6(f)**
The I-70 to State Route 370 to I-270 to I-70 route could impact five parks that potentially could be protected under Section 4(f) and potentially Section 6(f).

**Corridors of the Future Purpose and Need (COF P&N)**
The I-70 to State Route 370 to I-270 to I-70 route would have a neutral or no impact to the goal outlined in the COF P&N. The goal of the I-70 COF is to safely and efficiently move long haul freight along the four state I-70 corridor with a minimum impact and interaction to general purpose vehicles. The urban section with a two-foot buffer would still allow a minimum amount of interaction between cars and trucks which prevents this section from having a positive impact on the purpose and need but the interaction should be small enough to prevent a negative impact.

**Congestion**
The I-70 to State Route 370 to I-270 to I-70 route has neutral to some negative potential impacts on congested locations. This route bypasses most of the congested areas, in particular the I-70 section between State Route 370 and Earth City and the I-270 section between I-70 and State Route 370. This route still travels through the severe density locations between State Route 79 and State Route 370 and the moderate density location on I-270 from State Route 370 to Lilac Road.

**Bridge Capacity**
The I-70 to State Route 370 to I-270 to I-70 route crosses the Missouri River on the Discovery Bridge, composed of twin bridges, and the Mississippi River on the same bridges as on the I-70 to I-270 to I-70 route. Each of the twin State Route 370 bridges carries three lanes. Two additional lanes are possible on each bridge. However, using these lanes for truck-only lanes would eliminate general purpose expansion on these bridges. Therefore, the Study Team...
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has assumed that an additional bridge would be required for truck-only lanes in the cost estimates. The validity of this assumption should be tested in a more refined study.

Template Consistency
Template consistency is easier to maintain on this route than on the previous, as the route passes through the undeveloped floodplain. Again, the template will be difficult to maintain as the bridges are approached.

High Accident Locations
The I-70 to State Route 370 to I-270 to I-70 route has a crash rate higher than the statewide average crash rate along the portions of I-70 and I-270 in Missouri covered by this route. I-270 in Illinois and State Route 370 are below the statewide average crash rate. This route passes through seven locations on Missouri’s or Illinois’ top five percent of locations with the most severe safety needs.

Route Continuity
The I-70 to State Route 370 to I-270 to I-70 route has the greatest number of route changes (three).

Relative Cost
The I-70 to State Route 370 to I-270 to I-70 route is by far the least expensive to construct (Appendix B). Table 8 provides a cost summary of each route.

Freight/Intermodal Sites
The I-70 to State Route 370 to I-270 to I-70 route has neutral to slightly positive impacts. This route would also miss the freight and intermodal sites near downtown, but serve the freight sites near I-270 and U.S. 67. This route would serve Lambert-St. Louis International Airport and the freight sites near Earth City less conveniently.

Travel Time/Distance
The I-70 to State Route 370 to I-270 to I-70 route has strong positive travel time impacts. This route is less than a mile longer than the I-70 to I-270 to I-70 route. The travel time on this slightly longer distance may be off set by the smoother traffic flows from lower lane density. The route would use the interchange ramps located at I-70 and State Route 370 as well as the ramps at State Route 370 and I-270. This route has distance and interchange usage that are slightly more than the I-70 to I-270 to I-70 route; however, lower and more consistent lane density may even out the route’s travel time compared to the I-70 to I-270 to I-70 route.

Truck Percentage
The I-70 to State Route 370 to I-270 to I-70 route has neutral impact to truck percentages. Based on freight and intermodal site locations, a substantial shift in the local truck movements is not likely.

National Freight Flows
The I-70 to State Route 370 to I-270 to I-70 route has medium positive impacts to national freight flows. This route will serve over half of the national freight flows through the state of Missouri on the entire 60-plus mile route through St. Louis.
Legal Restrictions
The legal restrictions across this corridor are consistent with other freeways within St. Louis (Appendix C). State law restricting trucks from the left lane on a six-lane freeway will require modification.

8.0 Summary and Next Steps

The federal government along with the states of Missouri, Illinois, Indiana and Ohio are evaluating the addition of truck-only lanes to the I-70 corridor as part of the Corridors of the Future program. If successful, the Corridors of the Future Program will produce the following benefits:

- Improve public safety by separating freight and passenger vehicles.
- Separate long-haul freight from commuter congestion.
- Combine truck and rail intermodal facilities improving freight transfers.
- Standardize state regulations for truck load, length and speed.
- Avoid rail bottlenecks by providing intermodal options for time-sensitive freight.
- Provide unique financing options for infrastructure improvements.
- Enable unique private sector investment incentives.
- Provide a testing for new truck technology, traffic management and freight.

Freight movement through St. Louis is currently served by the following corridors:

- I-70 and I-64 for east-west movement
- I-44 for freight heading to and from the southwest
- I-55 for freight heading north and south
- I-270, I-255, I-170 and State Route 370 interconnect these corridors

To determine the likely corridor for truck-only lanes, the consultant developed a set of initial criteria, then narrowed the field to the three most likely corridors and rated these corridors on environmental, engineering and economic criteria.

If the truck-only lanes prove viable and consensus can be reached between governmental bodies, the next step for truck-only lanes within St. Louis would be a closer examination of the three alternatives and then adding the improvements to the Metropolitan Planning Organization’s Long Range Transportation Plan (LRTP) and begin an Environmental Impact Statement (EIS). The EIS will better define the environmental, economic and cultural impacts while identifying a preferred alternative. Future steps will then be engineering design and construction to provide the fulfillment of the COF vision.
Appendix A

Construction Cost Development Methodology
Development of Costs
The three reasonable alternatives were reviewed to identify cost-generators. All costs were developed based on the minimum amount of reconstruction to add two lanes to each direction of the given corridor with no allowance for reconstructing existing facilities or correcting existing deficiencies. Simplifying assumptions were used for this high-level analysis. For each of the three alternatives, the total number of each item was multiplied by a unit cost to develop a cost extension for that item. These extensions were then totaled (Appendix B). The following narrative describes the identification of these cost-generators. Some cost-generators are identified as engineering hard points. Engineering hard points require a significant design effort to develop a solution or even a reasonably accurate cost estimate. Due to the uncertainties concerning engineering hard points, impacts to them would be best avoided. Some cannot be avoided, regardless of alternative.

Aerial photographs were used, supplemented by Google Earth and the Bird’s Eye view feature on MSN Maps. Google Earth was used to measure distances. MSN Maps was used to count lanes and determine whether bridges had integral abutments and to determine whether bridge pier locations made the preservation of a bridge infeasible.

System Status for Cost Estimate
The routes were analyzed from aerial photographs in October 2008. The only anticipated improvements are those in association with the New Mississippi River Bridge (NMRB), which the southern alternative is anticipated to incorporate. The recently completed Single Point Urban Interchange (SPUI) at the intersection of I-70 and Route 94 is included in the analysis. It is assumed that work associated with the NMRB, or other changes that MoDOT may perform prior to the construction of the truck only lanes, is of a minor and insignificant nature with respect to overall objective of this feasibility study.

System Interchanges
System interchanges, generally on the interstate system, have features such as flyover ramps and complex bridge arrangements which indicate that the individual elements of the interchange are interrelated: change one element and several other elements are affected. The addition of lanes through such an interchange requires the reconstruction of a significant portion of the interchange, if not the entire interchange. System interchanges were considered to be engineering hard points.

These interchanges vary in number of through lanes, ramps, bridge, acreage and overall complexity. Since these factors drive significantly different construction costs for each interchange, a subjective “complexity factor” was assigned to each interchange, as shown below. The I-70/I-370 interchange was used as a base with a complexity factor of 1. Some interchanges require more than one factor depending on the alternative. These factors were then directly applied to the base system interchange improvement cost to develop the cost for each interchange.
These interchanges and their complexity factors are as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>First Route</th>
<th>Second Route</th>
<th>I-70 to NMRB to I-70 Route</th>
<th>I-70 to I-270 to I-70 Route</th>
<th>I-70 to St. Route 370 to I-270 to I-70 Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Charles, MO</td>
<td>I-70</td>
<td>I-370</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>I-70</td>
<td>I-270</td>
<td>1.3</td>
<td>1.2</td>
<td>--</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>I-270</td>
<td>I-370</td>
<td>--</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>I-70</td>
<td>I-170</td>
<td>1.4</td>
<td>1.4</td>
<td>--</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>I-170</td>
<td>I-270</td>
<td>--</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>St. Louis City, MO</td>
<td>I-70</td>
<td>I-55 at NMRB</td>
<td>1.5</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Madison, IL</td>
<td>I-70</td>
<td>I-255</td>
<td>1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Madison, IL</td>
<td>I-70</td>
<td>US 40</td>
<td>0.5</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Madison, IL</td>
<td>I-70</td>
<td>I-270</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sum of complexity factors per alternative</td>
<td>7.7</td>
<td>6.6</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The sum of the complexity factor was multiplied by a base cost of $40,000,000 per interchange to determine the cost for system interchange improvements for each alternative.

**Diamond and Cloverleaf Interchanges**

Most of the interchanges present are diamond or cloverleaf interchanges, with individual components that can be separated for analysis. Bridges and ramps can be separately counted and analyzed. For simplicity, we assumed all ramps would require the same length treatment and developed a per ramp cost for grading, paving, drainage and incidentals. Bridges at these interchanges were treated as described below.

**SPUIs**

Several SPUIs have recently been constructed along I-70. Retaining walls are built to minimize right of way takings at SPUIs. Thus, mainline lane additions cannot be made without the reconstruction of the entire interchange under consideration. The SPUI at Route 94 (First Capitol) and I-70, recently completed, would require the complete removal, redesign and reconstruction of the interchange and of the adjacent roundabout and outer roads. Accordingly, we regarded SPUIs to be comparable in cost to a system interchange to remove and replace. These are considered engineering hard points.

**Bridges**

Bridge types were identified as major river bridges, stream crossings, railroad overpasses and underpasses, road underpasses and road overpasses.

- **Major river bridges** - These bridges cross navigable waterways and generally have approach viaducts over their floodplain. Their structure dominates the roadway geometry. Because of the cost, most of the existing bridges have insufficient expansion potential and require a new, parallel structure for expansion of capacity. Bridges identified include truss bridges, girder bridges and the NMRB, which is a four-lane cable stayed bridge with a 96-foot wide deck. These are considered engineering hard points.
Major river crossings include the following:

<table>
<thead>
<tr>
<th>Route</th>
<th>Crossing</th>
<th>Type of Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-70</td>
<td>Missouri</td>
<td>Two through-truss</td>
</tr>
<tr>
<td>I-370</td>
<td>Missouri</td>
<td>Two truss and girder</td>
</tr>
<tr>
<td>I-270</td>
<td>Mississippi</td>
<td>Girder</td>
</tr>
<tr>
<td>I-270</td>
<td>Chain of Rocks Canal</td>
<td>Two through truss</td>
</tr>
<tr>
<td>I-70</td>
<td>Mississippi</td>
<td>Cable-stayed</td>
</tr>
</tbody>
</table>

These crossings would require additional capacity. As only girder bridges can be widened, new parallel structures would be required for the other crossings. We assumed the same type of structure as is present today would be added at each location to carry the additional truck only lanes. According to the New Mississippi River Bridge Project web site (http://www.newriverbridge.org/initialphase.asp) the current plan calls for a four-lane cable stay bridge to be build in the near future with a second four-lane companion structure to be built in the future. The Truck Only Lane concept would require the second companion structure be build now and a third structure be added when the warranted in the future. The cost for the additional structure was assumed to be identical to the cost for the bridge now under construction.

- **Stream crossings** - These bridges or culverts cross streams and drainage ditches. Typically, with respect to the roadway, they are wider than they are long. Additional width can be added for lane additions. The existing bridges or culverts can be used in place. We assumed a uniform length of 100 feet per stream crossing. New structure area was calculated as this length times the width.

- **Railroad overpasses** - These structures cross over the existing highway, often at a skew. There may be clearance problems with proposed widening. Existing pier locations may interfere with widening. Therefore, we have assumed that these structures will be completely removed and rebuilt. These are considered engineering hard points.

- **Railroad underpasses** - The highway passes over the existing railroad, often at a skew. Our assumption here is that there are no clearance problems, and that the existing bridges can be used in place.

- **Road underpasses** - These are treated the same as stream crossings. The number of lanes passing under the highway was used to determine the area of new bridge required.

- **Road overpasses** - Bridges over the route were reviewed to determine their potential to be salvaged. Some bridges have integral abutments or pier arrangements that disallow them from continued use.
  - **Salvageable** - These bridges will be used in place. Concrete slope protection under the bridges will be removed and retaining walls will be used to allow the addition of lanes under the bridge.
  - **Non-salvageable** - These bridges will be completely removed and replaced.
Reversible Lanes
Due to the highly directional distribution of traffic into downtown St. Louis and right of way constrictions, two reversible lanes have been constructed from Union Boulevard to south of where the NMRB connection will be at Cass Avenue. These lanes propose difficulties as follows:

1) If the lanes are removed, then two additional lanes may need to be added to each direction to restore capacity, in addition to the truck only lanes. This sharply and dramatically increases project complexity and cost, given the number of adjacent and crossing roads, utilities, adjacent buildings, etc.

2) If the lanes are not removed, then the truck only lanes may need to be added outside the reversible lanes. The same right of way constriction is a concern but to a lesser extent.

For this study, we assumed that the reversible lanes will be removed and the truck only lanes substituted in their place.

Mound at Cahokia
Prehistoric Indians built earthen mounds, the most famous of which is Monk’s Mound in Cahokia Mounds Historic Site along I-70 in Madison County, Illinois, the center of a widespread mound system in the Mississippi Valley. At first glance this would appear to be an environmental rather than an engineering issue. However, review of the aerial map indicates that the corner of one mound (possibly Mound 5 in Cahokia’s nomenclature) appears to have been removed when I-70 was built. Additional widening might require the prohibited removal of more of the same mound, or disturbance of other cultural resources. Additional conical mounds may lie within the trees to the south of I-70 that might be impacted. Will use an urban section with retaining walls to stay within the existing 200-foot right of way. Archaeological investigations will be required.

Rest Areas
Illinois’ Homestead Rest Areas on I-55, both east and west bound, will be impacted by one option. It appears there is approximately 86 feet between the edge of the existing shoulder and the near-curb for the passenger parking. The on and off ramps will need to be reconstructed for these rest areas. Whether the rest areas themselves can be preserved is an open question. The buildings appear to be far enough away from I-70 to allow widening without disruption of the buildings. Some reconfiguration of the parking and ramps may be required. We have assumed that the ramps are all that requires revisions and assigned them a cost equivalent to other ramps.

Utilities
Utility relocation costs will vary widely over each alternative, depending on the complexity of the work, the locations and number of existing utilities. We evaluated the difficulty of the relocation on a 1 to 3 scale for segments of each alternative, with 1 being “relatively easy” and 3 being “difficult”. Urbanized areas were given higher ratings; rural and undeveloped sections such as I-370 were given low ratings. We then multiplied the rating identified for each section by the length of the section to develop a “utility complexity product”, which was totaled for each alignment. The area just north of downtown was rated at a 3.5 due to the age and nature of the systems present. As the overall utility complexity was less than 2, utility costs were combined into an estimated 30 percent of other costs.
Encroachment on Railroads
Existing railroads are within the identified footprint at several locations. Either the widening will have to shift to avoid impacts to the railroads or the railroads will have to move. These locations are regarded as engineering hard points. We assigned a lump sum cost of $10,000,000 per mile to treat these areas.

Maintenance of Traffic During Construction
Maintenance of traffic during construction can be a significant cost. This includes costs for public involvement and information via websites and changeable message signs, detours, multiple staging and temporary road closures. The cost increases also with the complexity of the geometric improvements, utility adjustments, traffic volumes and congestion. Costs correlate to the complexity of the utility adjustments; the same factor can be used to develop traffic maintenance costs as utility adjustments. The compressed geometry just north of downtown St. Louis also reflects this.

Erosion Control Sensitivity
Erosion control costs will vary over the project depending on the degree of development of the land and the presence of sensitive areas such as wetlands. These costs will not be significant enough to make or break the decision on which alignment is preferable from a cost viewpoint.

Signal and Signing Modifications to Existing Interchanges
In most cases the existing intersections of the ramps with the cross road is at a sufficient distance from the widening that the signals will not have to be relocated. Accordingly, signal and signing modification costs at existing interchanges should be incidental and can be disregarded.

Costs Associated with Increased Storm Water Runoff
Existing detention basins may require modifications with the increased runoff from the addition of the truck only lanes and new detention basins may need to be constructed, particularly to bring the road into compliance with standards that have come into existence since the highways were built. As a proportion of total construction cost, these will be minor but should be considered in a more detailed analysis. Some areas that are presently drained by ditches may require subsurface drainage. This cost may be minor but significant, but cannot be determined at this level of analysis.

Linear Feet Costs
Costs for grading, pavement, barrier, surface drainage, pavement marking and miscellaneous items such as delineators and rumble strips were developed on a linear basis and multiplied by the length of the alternative. Costs were developed for the mainline as well as for the outer roads.

Retaining Walls
It was assumed that retaining walls will be required between the freeway and the outer road, and between the outer road and the edge of construction, as well as under salvageable bridges. It was assumed that the walls will be six feet high and the entire length of the outer road. Retaining wall costs were broken out per bridge and included in the linear foot cost for outer roads.
Appendix B

Construction Cost Summary
<table>
<thead>
<tr>
<th>Cost-Generator</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>I-70 Route</th>
<th>I-70 to I-270 to I-70</th>
<th>I-70 to State Route 370 to I-270</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quantity*</td>
<td>Extension</td>
<td>Quantity*</td>
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<td></td>
<td></td>
<td>Quantity*</td>
<td></td>
<td>Quantity*</td>
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<tr>
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<td>$69,700,000</td>
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<td>Overpass - Save Bridge with Walls</td>
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<td>Major Culverts and Drainage bridges</td>
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<td>System Interchange</td>
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<tr>
<td>Railroad overpass</td>
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<td>3</td>
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<td>6</td>
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<tr>
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<td>railroad adjacent (length in miles)</td>
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<td>$26,500,000</td>
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</table>

| Totals                                            |       |           | $882,556,396                       | $551,685,364         | $447,644,821                     |
| Miscellaneous and Utilities (20% of Total less bridges) |       |           | $107,779,055                       | $91,832,649         | $67,784,658                      |
| Total                                             |       |           | $990,335,451                       | $643,518,013        | $515,629,479                     |
| Design and Construction Administration             |       | 15%       | $148,550,318                       | $96,527,702         | $77,344,422                      |
| Contingency                                        |       | 10%       | $99,033,945                        | $64,351,801         | $51,562,948                      |
| Grand Total                                        |       |           | $1,237,919,314                     | $804,397,516        | $644,536,849                     |

*Quantities are rounded. Rounding does not carry through the calculations.
Appendix C

Right of Way Cost Summary
### I-70 to NMRB to I-70

<table>
<thead>
<tr>
<th>Relocation Type</th>
<th>Average Value</th>
<th>Contingency</th>
<th>Number of Relocations</th>
<th>Sum Total</th>
<th>Contingency Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homes</td>
<td>$106,000</td>
<td>50%</td>
<td>353</td>
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<tr>
<td>Industrial</td>
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<td>32</td>
<td>$60,800,000</td>
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<tr>
<td>Commercial</td>
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<tr>
<td>Office</td>
<td>$9,900,000</td>
<td>NA</td>
<td>0</td>
<td>$0</td>
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</tr>
<tr>
<td>Retail (≤ 15,000 sq ft)</td>
<td>$1,000,000</td>
<td>NA</td>
<td>114</td>
<td>$114,000,000</td>
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<tr>
<td>Retail (&gt; 15,000 sq ft)</td>
<td>$7,200,000</td>
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<td>13</td>
<td>$93,600,000</td>
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<td><strong>Total</strong></td>
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<td>$324,527,000</td>
<td>30% $421,885,100</td>
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### I-70 to I-270 to I-70

<table>
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<tr>
<th>Relocation Type</th>
<th>Average Value</th>
<th>Contingency</th>
<th>Number of Relocations</th>
<th>Sum Total</th>
<th>Contingency Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homes</td>
<td>$106,000</td>
<td>50%</td>
<td>124</td>
<td>$19,716,000</td>
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<tr>
<td>Industrial</td>
<td>$1,900,000</td>
<td>NA</td>
<td>8</td>
<td>$15,200,000</td>
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<tr>
<td>Commercial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>$9,900,000</td>
<td>NA</td>
<td>0</td>
<td>$0</td>
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<tr>
<td>Retail (≤ 15,000 sq ft)</td>
<td>$1,000,000</td>
<td>NA</td>
<td>87</td>
<td>$87,000,000</td>
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<tr>
<td>Retail (&gt; 15,000 sq ft)</td>
<td>$7,200,000</td>
<td>NA</td>
<td>10</td>
<td>$72,000,000</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
<td></td>
<td>$193,916,000</td>
<td>30% $252,090,800</td>
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</table>

### I-70 to I-370 to I-270 to I-70

<table>
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<th>Relocation Type</th>
<th>Average Value</th>
<th>Contingency</th>
<th>Number of Relocations</th>
<th>Sum Total</th>
<th>Contingency Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homes</td>
<td>$106,000</td>
<td>50%</td>
<td>85</td>
<td>$13,515,000</td>
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<td>Industrial</td>
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<td>6</td>
<td>$11,400,000</td>
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<tr>
<td>Commercial</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>$9,900,000</td>
<td>NA</td>
<td>0</td>
<td>$0</td>
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</tr>
<tr>
<td>Retail (≤ 15,000 sq ft)</td>
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<td>59</td>
<td>$59,000,000</td>
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<tr>
<td>Retail (&gt; 15,000 sq ft)</td>
<td>$7,200,000</td>
<td>NA</td>
<td>6</td>
<td>$43,200,000</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
<td></td>
<td>$127,115,000</td>
<td>30% $165,249,500</td>
</tr>
</tbody>
</table>

Appendix D

Legal Restrictions
Regulatory Route Evaluation
(Note a primary source for state regulatory limits is the 2007 Rand McNally Motor Carrier Atlas).

Routes Evaluated:

1. I-70 from the interchange with State Route 370 to the interchange with I-270
2. I-270 from the interchange with I-70 in Missouri to the interchange with I-70 in Illinois
3. State Route 370 from the interchange with I-70 to the interchange with I-270

I-70 and I-270 are included as elements of the National Network of highways as prescribed in 23 Code of Federal Regulations (CFR) Part 658:

§ 658.3 Policy statement.
The Federal Highway Administration’s (FHWA) policy is to provide a safe and efficient National Network of highways that can safely and efficiently accommodate the large vehicles authorized by the STAA. This network includes the Interstate System plus other qualifying Federal-aid Primary System Highways.

Title 23 USC, 127 provides the following weight limits on the National Network, including the Interstate Highway System:

- Single axle weight limit: 20,000 pounds
- Tandem axle weight limit: 34,000 pounds
- Gross vehicle weight limit: 80,000 pounds
- All vehicle combinations must comply with the federal bridge formula.
- Semitrailer length: States can not impose a length limit of less than 48 feet. Both Illinois and Missouri allow 53 foot semitrailers, in a tractor-semitrailer combination.
- Twin Trailers: All states must allow the operation of twin trailers (tractor, semitrailer, trailer) where the neither trailer exceeds 28 feet.
- Overall length: States may not impose an overall length restriction on tractor semitrailer combinations or tractor, semitrailer, trailer combinations regardless of the length of the semitrailer or trailers
- Width: 102 inches
- Height: Federal regulations do not specify a vehicle height limit.

State Route 370 is not listed as an element of the National Network in Appendix A of 23 CFR Part 658. As a result, Missouri State vehicle size and weight limits apply:

- Steering Axle: 22,000 lbs. or the tire manufacturers' weight rating, which ever is less.
- Single axle weight limit: 22,000 pounds
- Tandem axle weight limit: 36,000 pounds
- Gross vehicle weight limit: 80,000 pounds
- All vehicle combinations must comply with the bridge formula.
- Semitrailer length: 53 feet. Total combination length (tractor, semitrailer) is limited to 60 feet when operated more than 10 miles from an Interstate, designated or primary highway.
• Twin Trailers: Total combination length is limited to 65 feet overall when operated more than 10 miles from an Interstate or Primary highway.
• Width: 96 inches when operated more than 10 miles from an Interstate or designated highway.
• Height: 13 feet-6 inches when operated more than 10 miles from an Interstate or designated highway, otherwise 14 feet.

Access Provisions off the National Network or Interstate Highways: Under federal law 23 CFR Section 658.19:

No State may enact or enforce any law denying reasonable access to vehicles with dimensions authorized by the STAA between the NN and terminals and facilities for food, fuel, repairs, and rest. In addition, no State may enact or enforce any law denying reasonable access between the NN and points of loading and unloading to household goods carriers, motor carriers of passengers, and any truck tractor-semi-trailer combination in which the semitrailer has a length not to exceed 28 feet (28.5 feet where allowed pursuant to §658.13(b)(5) of this part) and which generally operates as part of a vehicle combination described in §§658.13(b)(5) and 658.15(a) of this part.

State access provisions:

• Illinois: 1 mile from a Class I highway unless prohibited by signage; 5 miles from a Class I, II or III highways on the state highway system at 80,000 pounds and on locally designated routes and streets at 73,280 pounds to points of loading or unloading and to service facilities.

• Missouri: 10 miles.

Low Clearance or Restricted Routes

None of the three route segments have low clearances or are restricted.

Hazmat Restrictions

None of the three route segment appear to have hazardous materials restrictions. For additional information refer to the contacts below:

• Missouri: (866) 831-6277
• Illinois: (217) 785-1181