1.0 INTRODUCTION

This technical report is prepared as part of the East-West Gateway Coordinating Council's (EWGCC) Major Transportation Investment Analysis (MTIA) for the Daniel Boone Study Area. The MTIA is a process for identifying transportation problems, evaluating alternative solutions, and reaching decisions on the best overall solution. This report identifies the goals, objectives, and evaluation criteria to be used in comparing the transportation alternatives that are presently under consideration in the Daniel Boone Study Area. The evaluation framework will help decision-makers and the public to understand the implications of the alternatives and to make informed choices.

This evaluation methodology recognizes the focus areas that were defined in the EWGCC's long range transportation plan, Transportation Redefined (May 1995) and Transportation Redefined II (March 1999):

- Access to opportunity
- Efficient movement of goods
- Congestion management
- Safety and security
- Resource conservation
- Sustainable development
- System preservation

The methodology also draws upon the recommended evaluation framework and criteria in the EWGCC's St. Louis Performance Measures Study. In addition, attention has been given to goals, objectives, and evaluation criteria that reflect the specific needs and aspirations of Daniel Boone Study Area residents.

The Daniel Boone study is one of three MTIAs that the EWGCC is carrying out concurrently. Thus, the information developed in the Daniel Boone MTIA will be designed for two separate but highly interrelated decisions. The first of these decisions is the selection of the alternative or strategy that best meets the needs of the Daniel Boone corridor. The second is the selection of the corridor or corridors that will be given priority for investment. It is highly unlikely that the region will have the financial capacity to pursue major investments in all three corridors simultaneously. Thus, this methodology provides for cross-corridor comparisons, providing a technical basis for identifying the most promising corridor for investment.

The remainder of this report is divided into six sections:

- Section 2 describes the planning context for this study
- Section 3 presents the alternatives that have been recommended for analysis in the Daniel Boone Study Area
- Section 4 offers a recommended framework for evaluating alternative transportation investments
- Section 5 identifies the goals and objectives that a major investment is intended to achieve in the Daniel Boone Study Area
- Section 6 proposes a set of evaluation criteria and a draft evaluation matrix
- Section 7 lists the references that were cited in other sections of this report

2.0 PLANNING CONTEXT

The Daniel Boone Study Area was originally conceptualized and illustrated in the St. Louis Systems Analysis for Major Transit Capital Investments (amended June 1991) to provide improved transit access to Clayton and the St. Louis CBD from west and central St. Louis County. The need to conduct a MTIA and to consider alternative investment strategies was first identified in the subsequent Regional Transportation Plan for the St. Louis metropolitan area, Transportation Redefined. Transportation Redefined identifies this Study Area as having priority for implementation of transportation improvements in the mid-term.

2.1 REGIONAL PLANNING

EWGCC carries out a regional transportation planning process for the St. Louis metropolitan area. The process has six major integrated components:

- Regional Transportation Plan
- Transportation Project Planning
- Regional Project Selection
- Project Implementation
- Project Monitoring and Evaluation
- Community Engagement

The current Regional Transportation Plan, Transportation Redefined II, identifies a set of transportation-related goals and objectives and the policies, services, and facilities needed to meet them over the next 20 years. The plan is fiscally constrained, and sets forth a funding strategy to show where the funds will come from to implement needed transportation improvements while continuing to operate and maintain the existing system. Projects identified in the plan can be selected for advancement and implementation using Federal funds.

The EWGCC's Transportation Improvement Program (TIP) identifies the federally-funded transportation projects to be built in the short term. Currently, the TIP contains a three-year schedule of transportation improvement projects drawn from the Regional Transportation Plan. A project must be included in the TIP to be eligible for Federal funding.

As noted above, Transportation Redefined I and II identify the Daniel Boone Study Area for study. The Daniel Boone MTIA is part of the Transportation Project Planning phase, and is considering alternative ways to meet the study area's transportation needs. As a result of this MTIA, one or more projects may be adopted into the Regional Transportation Plan and added to the TIP. This approval action would be a prerequisite to further advancement with Federal funds. Additional MTIAs are being conducted in the Northside Study Area and the Southside Study Area.

2.2 RELATED PROJECTS/STUDIES

In addition to the three concurrent MTIAs, the western portion of St. Louis County has several other infrastructure related studies currently in progress or planned for the near future. These studies include the West County Traffic Study and the Route 100 MTIA.

The West County Traffic Study is a short duration, non-intensive analysis of the current roadway conditions for major roads in the West St. Louis County area. The boundaries of the study area are U.S. 40 on the north, Route 141 on the east, I-44 on the south, and the Franklin County line to the west. The intent of the study is to determine long-range and short-range improvements to handle the projected

traffic growth in the area. The scope of the West County Study included some possible improvements. Further study will be needed to determine the need for any major improvements.

The Route 100 MTIA is assessing transportation improvements along existing Route 100 from Route T in St. Louis County to Route 47 in Franklin County. The MTIA and a draft environmental assessment are currently underway evaluating several highway alternatives.

The Cross-County Major Transportation Investment Analysis, Final MTIA Report (September 1997) had a study area that bordered the Northside, Southside and Daniel Boone Study Areas. This study boundary roughly followed I-64 and I-170, as well as an area extended south from I-170. This boundary followed the Northside and Southside Study Areas on the west and the Daniel Boone Study Area on the east. Findings and recommendations of this study include a MetroLink extension from Forest Park to Clayton then south to Butler Hill Road in south St. Louis County and north to I-170/I-270 in north St. Louis County.

The Route 109 Corridor Study currently underway has boundaries along the Route 109/BA and Eatherton Road area. The primary focus of the study is to improve safety and security in travel, as well as improve operations along Route 109.

The area encompassed by the study boundary has also fallen within several regional studies, including the Bi-State Transit Center Hub Restructuring Study (February 1998), a study which proposed a network of Transit Centers, with increased service connecting the centers, and other restructuring to improve the efficiency of the system. The Industry Perspectives and Recommendations for a Regional Freight Planning Process (September 1997) identified recommended transportation infrastructure projects to satisfy regional shipping requirements.

3.0 DANIEL BOONE ALTERNATIVES

The Daniel Boone MTIA initially identified 15 alternatives for consideration. These initial alternatives for the Study Area included a No Build or baseline alternative, a Transportation Systems Management Alternative composed of low cost or operational improvements, five light rail alternatives, two bus rapid transit alternatives, two Diesel Multiple Unit alternatives, two roadway improvement alternatives, and two high occupancy vehicle alternatives. These alternatives were then evaluated using the following screening criteria:

- Impact on existing and future traffic congestion
- Potential for accident reduction
- Ability to serve major travel movements within the Study Area
- Ease of transportation system connectivity
- Accessibility to concentrations of employment and population
- Accessibility to people without cars
- Potential to serve redevelopment sites
- Relative impacts to residences, businesses, or sensitive properties
- Physical feasibility (ability to be constructed)
- Relative cost to build

As a result of this screening process, six alternatives remain for further analysis and evaluation. The remaining alternatives will be further defined in terms of their physical features and operating characteristics. Travel demand forecasts and cost estimates will be prepared, and environmental and community impact assessments will be performed. The evaluation methodology described in this report will then be used to structure the findings and support the selection of a preferred alternative.

Six alternatives are recommended for further study in the Daniel Boone Study Area, and will be compared using this evaluation methodology:

- Alternative 1 – No Build
- Alternative 2 – Transportation Systems Management (TSM)
- Alternative 3 – Light Rail Transit, Rock Island Railroad Right-of-Way (ROW), Utility Corridor
- Alternative 4 – Light Rail Transit, I-64/US40 ROW
- Alternative 5 – HOV Lane, I-64 and Arterial Roadways
- Alternative 6 – Capacity Enhancements, I-64/I-270

The LPA selected at the end of this study may be a package of elements drawn from each of these six alternatives. For example, it may include some of the transit elements of Alternatives 3 and 4 plus some roadway improvements from Alternatives 5 and 6.

1. No Build Alternative: The No Build Alternative represents the year 2020 baseline for transportation within the Daniel Boone Study Area. These are the projects that are assumed to be in place and used as a comparison for this study's recommended improvements. Federal regulations require that this alternative be carried through the planning process.

The No Build Alternative includes planned improvements along I-170, Rt. 141 (south of Clayton Road), Olive Boulevard (Ladue Road to River Valley Drive), Clayton Road (Clarkson Road to Baxter Road) , Ballas Road (south of Olive Boulevard), Schuetz Road (Lackland Road to Fee Fee Road), and Weidman Road (north of Manchester Road). Numerous roadway resurfacing and bridge rehabilitation and replacement projects are included as well. A West County transit center is also planned, in addition to improved bus service to the Study Area. The Cross County MetroLink Extension (Segments I, II and III) is included as well.

2. Transportation Systems Management (TSM) Alternative: This alternative consists of operational improvements and/or low cost improvements designed to make the best use of the existing transportation infrastructure. Included transit improvements would be better bus service, more routes and greater frequency, increased service between main bus routes and employment opportunities. Highway or roadway TSM improvements would include better access management, improved traffic signal coordination, transit-supportive amenities along key corridors and enhanced bicycle/pedestrian facilities.

3. Light Rail Transit Alternative (Rock Island ROW), Utility Corridor: This LRT Alternative would extend MetroLink from the Cross-County Segment III Extension near I-170 to Chesterfield Valley. The alignment would run west from the Cross-County MetroLink extension along either the Rock Island or Terminal Railroad line to Lindbergh Blvd. It then proceeds west along Page Avenue or an existing Ameren/UE utility easement to Creve Coeur Mill Road, then along the Rock Island Railroad to Chesterfield Valley.

The facility would be primarily at-grade with short elevated portions where dictated by design standard considerations. The LRT line would include stations spaced approximately one-half to one mile apart at locations near employment and activity centers along the alignment, with exact locations to be determined in later phases of the planning process. Park and ride lots would be included at several stations, convenient to major roadways and/or interstates. Bus feeder and circulator services would provide connections between stations and major destination points not within walking distance (generally greater than one-half mile). Trains would operate approximately every 7 to 10 minutes during peak periods and every 15 to 20 minutes during off-peak periods, depending on future demand and ridership.

This LRT Alternative is recommended because it would use an existing railroad or utility corridor, which would reduce property takings and other residential and commercial impacts. It would provide direct access from the Cross-County MetroLink line to the Chesterfield Valley and Page Avenue employment areas. This alternative would also provide an opportunity for park and ride lots in Chesterfield Valley, along I-64, and along Page Avenue, as well as maintain the potential for serving the Riverport/Earth City area with a feeder bus system.

4. Light Rail Transit (I-64/US40 ROW): This light rail alternative has the same general physical and operational features as the other LRT alternative. This alternative would connect the Cross-County MetroLink Extension Segment I and follow the I-64 ROW to Chesterfield Valley.

This alternative is recommended because it provides a connection from Cross-County MetroLink Segment I to Chesterfield Valley, as well as connections to Clayton and Downtown St. Louis. This alternative serves employment areas near Ballas Road and the West County transit center, and provides the opportunity for park-and-ride lots in Chesterfield Valley.

5. Roadway Alternative (HOV Lanes on I-64/Arterial Improvements): This alternative would provide improvements to arterials that would include significant widening to add roadway lanes, provide alignment improvements and/or, in some cases, construct new roadways on new location. Widening along I-64 would provide an HOV lane from I-270 to the Missouri River.

This alternative is recommended because it enhances capacity on the arterial roadway system, reduces congestion and improves safety, and involves only moderate property takings. The I-64 HOV lane would afford a travel time advantage to carpools and buses, promoting use of higher occupancy modes, thereby increasing the person throughput of the I-64 corridor. It also offers an Earth City Extension to Olive Boulevard. It would relocate Highway 141 from Ladue Road to Olive Boulevard and make improvements to Clarkson Road from Clayton Road to I-64. This alternative would also offer a new roadway from Earth City Extension to I-64, near the Rock Island Railroad. Realignment of the Long Road/Kehrs Mill Road intersection with Wildhorse Creek Road would be offered, and Eatherton Road from Wildhorse Creek Road would be realigned to a new interchange with I-64. Additional I-64 interchanges in Chesterfield Valley would also be included.

6. Roadway Alternative (Capacity Additions I-64/I-270): This alternative would provide major capacity improvements along both I-270 and I-64 within the Study Area. Improvements to I-64 from I-270 west to Clarkson Road include widening to provide additional traffic lanes. West of Clarkson Road to the Daniel Boone Bridge is the addition of a collector-distributor roadway system. Improvements along I-270 from Page Avenue south to Manchester Road include widening to provide additional lanes and/or a collector-distributor roadway system.

This alternative is recommended because it enhances travel capacity in both the north-south and east-west directions within the Study Area while requiring only moderate property takings. It reduces anticipated traffic congestion in 2020 and improves travel safety in the Daniel Boone Study Area.

4.0 EVALUATION FRAMEWORK

This MTIA will develop a considerable body of information on the costs, benefits, and impacts of the six alternatives or strategies summarized in the previous section. An evaluation framework is needed to organize this information in such a way that decision-makers can understand the implications of each alternative and consider the trade-offs involved in selecting a preferred alternative. This Evaluation Methodology identifies the kinds of information the study will need to produce, and provides a structured framework for presenting the information to decision-makers and the public. It identifies the benefits, impacts, and costs that are thought to be of greatest interest to those who will participate in the selection of a preferred strategy. The results of this evaluation will be presented in a subsequent report, once the technical analysis has been completed.

This section of the Evaluation Methodology identifies the separate decisions that are expected to result from the Daniel Boone MTIA, and outlines a basic framework for organizing the information necessary for each decision.

4.1 DECISION REQUIREMENTS

This MTIA will need to produce information to support two interrelated decisions – the selection of a preferred alternative for the corridor, and the adoption of the preferred alternative into the EWGCC plan. For the first of these decisions, the Daniel Boone alternatives will be compared to see which one best addresses the corridor's current and future transportation and related needs. This evaluation will be based on the specific needs of the corridor. For the second of these decisions, the merits of an investment in the Daniel Boone Study Area will need to be compared with investments elsewhere in the region, including the Northside and Southside Study Areas. Since it is unlikely that the region will have sufficient resources to build the best alternative in each corridor at the same time, trade-offs will need to be made and priorities established.

Thus, the evaluation framework to be used in this MTIA will need to provide information for both intra-corridor and cross-corridor comparisons. The framework will include one set of evaluation criteria that are reflective of Daniel Boone area needs. In addition, the framework will include some criteria that will be addressed in all three of the ongoing MTIAs.

In addition, since this MTIA is considering fixed guideway transit alternatives (such as light rail) that might be built with Federal Transit Administration (FTA) funds, this Evaluation Methodology has been designed to address certain FTA requirements. FTA has established a set of New Starts Criteria that it uses to assess the merits of fixed guideway projects at several stages. The agency first applies these criteria after the corridor planning phase is completed and a project has been recommended for advancement into preliminary engineering. From that point on, FTA evaluates each project on an annual basis and makes funding recommendations to Congress. With the FTA measures included within the MTIA framework, local decision-makers will gain an understanding of how each alternative might fare in the national competition for FTA New Starts funding.

4.2 FRAMEWORK

A basic framework for evaluating alternatives in an MTIA is suggested in Federal guidance. In their Major Investment Study Desk Reference, FTA and the Federal Highway Administration recommend that alternatives be considered from four different perspectives:

- Effectiveness – the extent to which each alternative meets established goals and objectives, including community and urban development goals as well as transportation goals.
- Cost effectiveness – to show the trade-off between the effectiveness of an alternative and its capital and operating costs.
- Financial feasibility – the ability of the region to obtain the financial resources needed to build and operate an alternative.
- Equity – the distribution of costs and benefits.

The evaluation framework for the Daniel Boone MTIA will use the four FTA/FHWA perspectives as a basic organizing structure. Within this structure, Regional and Daniel Boone Study Area goals and objectives will be used to establish the specific evaluation criteria to be addressed. The goals and objectives to be used are presented in Section 5 of this Methodology, and the specific evaluation criteria are presented in Section 6.

The evaluation framework will consist of two parts:

- An evaluation matrix in which the alternatives are arrayed on one axis and the criteria on another. The cells of the matrix will contain quantitative or qualitative indicators of how well an alternative performs on a particular criterion.
- A cogent discussion highlighting the significant differences between the alternatives and the trade-offs to be made in making a selection.

The evaluation matrix will serve as a summary of those technical findings that are considered to be most important to the decisions at hand. No weighting or scoring will be done to suggest that any one measure is more important than the others. Rather, each decision-maker and interested stakeholder will be able to review the technical findings and to determine for himself or herself those factors which are most important to them. As appropriate, the discussion of significant differences and trade-offs can be used to provide some sense of proportion and the relative significance of the technical findings.

5.0 GOALS AND OBJECTIVES

The EWGCC's long range transportation plan, Transportation Redefined (1995), established seven focus areas around which the needs of the region's transportation users are clustered:

- Access to opportunity
- Efficient movement of goods
- Congestion management
- Safety and security
- Resource conservation
- Sustainable development
- System preservation

These seven focus areas provide the basic categories or topics to be addressed in determining the effectiveness of each alternative in meeting the goals and objectives of the St. Louis metropolitan area. They are continued in the latest update to the plan, Transportation Redefined II.

The specific transportation needs of the Daniel Boone Study Area are defined in the Purpose and Need Statement (July 1999) that was prepared as part of this MTIA. These needs reflect a variety of early technical analysis activities conducted as part of the MTIA, as well as early stakeholder/public involvement activities. The Purpose and Need Statement translated these needs into five goals and supporting objectives that roughly correspond to the EWGCC's focus areas.

Congestion Mitigation

Goal: Relieve traffic congestion and improve mobility within the Study Area.

Objectives:

- Improve roadway connectivity within the Study Area.
- Increase the capacity of the transportation system between the Study Area and the rest of St. Louis County and Downtown St. Louis.
- Increase the usage of alternative modes to the auto.
- Provide coordinated transportation and land use.

Safety and Security in Travel

Goal: Improve the safety of the transportation system within the Daniel Boone Study Area.

Objectives:

- Reduce the existing accident rate on Daniel Boone Study Area roadways, particularly those whose rates are above the statewide average for that type of roadway.
- Provide safer roadways, including pedestrian and bicycle opportunities.

Access to Opportunity

Goal: Improve the ability of transit dependent, entry-level workers to reach centers of employment within the Daniel Boone Study Area.

Objectives:

- Improve transit services to employment centers located along Ballas Road near I-64 and in Chesterfield Valley.
- Decrease transit travel times.
- Increase frequency of transit service.

Cost Effectiveness

Goal: Provide transportation system improvements that maximize attainment of the above goals within the financial constraints of the transportation-providing agencies within the region

Objective:

- Maximize the cost-effectiveness of the transportation system improvements within the Daniel Boone Study Area

The next section shows how the four FTA/FHWA evaluation perspectives, the seven regional focus areas, and the Daniel Boone goals and objectives all relate to one another, and provides a set of specific evaluation criteria for comparing the six Daniel Boone alternatives.

6.0 EVALUATION CRITERIA

This section identifies the specific evaluation criteria or measures of effectiveness that will be used to compare the final set of alternatives for the Daniel Boone MTIA. Many of the criteria are drawn from the St. Louis Performance Measures Study (November 1998) developed by EWGCC.

Table 6-1 presents the list of recommended evaluation criteria for the Daniel Boone MTIA. Criteria have been included for both intra-corridor and cross-corridor comparisons. The criteria shown in bold italic print will be addressed in all three of the ongoing MTIAs. While some of these may not be particularly relevant or useful for comparing alternatives within the Daniel Boone study area, they do address the region's adopted focus areas and thus may provide insights that are relevant for establishing regional funding priorities. Those criteria that are not in bold italic print have been selected for use in addressing the goals and objectives that are unique to the Daniel Boone Study Area.

The table includes criteria addressing each of the regional focus areas and each of the Daniel Boone goals and objectives. A significant number of the criteria address the regional and Daniel Boone goal of relieving traffic congestion and providing access to opportunity. Goods movement, safety and security, resource conservation and sustainable development are also covered. Criteria are also included for each of the evaluation perspectives recommended by FTA/FHWA.

The selected criteria will differentiate between the various investment alternatives that are being considered in the Daniel Boone Study Area. For example, the transit alternatives can be compared in terms of such factors as transit travel time; transit ridership; service to existing residences, jobs, and low income households; and cost. The roadway alternatives can be compared with each other in terms of highway travel time, delay, level of service, and cost. A number of the criteria will be useful for cross-modal comparisons between transit improvements and highway improvements. These include travel time savings, mode share, vehicle miles of travel, displacements, land consumption, and financial feasibility.

FTA's New Starts Criteria are included to the extent that they will be helpful in distinguishing among the Study Area alternatives. Some of FTA's criteria are more regional in nature – such as the metropolitan area's air quality attainment status, and the region's financial capacity. These have not been included at this time. If this MTIA leads to a decision to advance a fixed guideway project for FTA funding, information addressing all of FTA's criteria will need to be assembled.

Data for addressing the evaluation criteria will come from a variety of sources. Many will come directly from or are derived from the travel demand forecasting and environmental impact assessment done in Task 10. Cost estimates will be produced in Task 11, and the financial feasibility analysis will be an output of Task 12.

Table 6-2 provides the evaluation matrix that will be used to summarize the technical results and compare the Daniel Boone alternatives in Task 13. This matrix will be accompanied by a narrative discussion of the significant trade-offs to be made in the selection of the preferred alternative.

TABLE 6-1
PROPOSED EVALUATION CRITERIA

Perspectives	EWGCC Focus Areas	Daniel Boone Goals	Daniel Boone Objectives	Evaluation Criteria (a, b))
Effectiveness	Access to Opportunity	Improve the ability of transit dependent, entry-level workers to reach centers of employment within the Daniel Boone Study Area	• Improve transit services to employment centers along Ballas Road near I-64 and in Chesterfield Valley • Decrease transit travel times • Increase frequency of transit service	• Transit travel time from Olive and I-170 to West County Transit Center in AM peak • Transit travel time from Olive and I-170 to Spirit of SL Interchange in AM peak • Number of buses providing reverse commute service to employment centers in Study Area

	Congestion Management	Relieve traffic congestion and improve mobility within the Study Area	• Improve roadway connectivity within the Study Area
			• Increase the capacity of the transportation system between the Study Area and the rest of St. Louis County and Downtown St. Louis
			• Increase the usage of alternative modes to the auto
			• Provide coordinated transportation and land use
				• Highway travel time in PM peak
				  • I-270 to Spirit of SL Blvd.
				  • Clayton to Spirit of SL Blvd.
				  • Downtown to Spirit of SL Blvd.
				• Transit travel time in AM peak:
				  • Spirit of SL Blvd. to West County Transit Center
				  • Spirit of SL Blvd. to Clayton
				  • Spirit of SL Blvd. to Downtown SL
				• V/C ratio on key highway segments (peak period):
				  • I-64 between Ballas and Lindbergh
				  • I-64 between 141 and Olive/Clarkson
				  • I-270 between Manchester and I-64
				  • I-270 between Olive and Ladue
				  • Hwy. 141 between Ladue and Olive
				  • Creve Coeur Mill Road north of Olive
				  • Chesterfield Airport Road west of Spirit of SL Blvd.
				• ***Annual hours of travel time savings compared with No Build and TSM (FTA measure)***
				• ***Change in hours of highway travel delay within Study Area (annual, compared with No Build)***
				• ***Number of new transit riders (linked trips, annualized, compared with No Build)***
				• Number of new HOV passengers (compared with No Build)
				• ***Change in transit mode share for all work trips originating in Study Area (compared with No Build)***
				• Change in HOV mode share for all work trips originating in Study Area (compared with No Build)

	Safety and Security	Improve the safety of the transportation system within the Daniel Boone Study Area	• Reduce existing accident rate • Provide safer roadways, including pedestrian and bicycle opportunities	• ***Number of high accident locations that are improved*** • Miles of new bicycle and pedestrian facilities
	Resource Conservation			• ***Change in vehicle miles of travel within the Study Area (daily, compared with No Build)*** • ***Acres of land converted to transportation uses***
	System Preservation			• ***Lane miles of existing highways that are rebuilt*** • ***Number of buses >12 years old***
Equity				• ***Low income households within ½ mile of transit stop (FTA measure)*** • ***Number of low income or minority households displaced***
Cost Effectiveness		Maximize attainment of above goals within financial constraints of the region	• Maximize cost effectiveness	• ***Incremental cost per new transit trip (FTA measure)*** • ***Cost per hour of travel time savings***
Financial Feasibility		Maximize attainment of above goals within financial constraints of the region		• ***Capital cost*** • ***Operating and maintenance cost*** • ***Availability of funds for capital costs (subjective assessment: high, medium or low)*** • ***Availability of funds for O&M costs (subjective assessment: high, medium, or low)***

(a) Measures of effectiveness shown in bold italics will be addressed in all three corridors, for use in cross-corridor evaluations.
(b) The measures of effectiveness comprise the proposed evaluation methodology and are subject to change.

TABLE 6-2
PROPOSED EVALUATION MATRIX

	1	2	3	4	5	6
	No Build	**TSM/ Enhanced Bus**	**LRT: Rock Island ROW**	**LRT: I-64/US40 ROW**	**HOV Lane, I 64 and Arterial Roadways**	**Capacity Enhancement, I-64/I-270**
Effectiveness: Access to Opportunity						
Transit travel time from Olive and I-170 to West County Transit Center in AM peak						
Transit travel time from Olive and I-170 to Spirit of SL Interchange in AM peak						
Number of buses providing reverse commute service to employment centers in Study Area						
Effectiveness: Congestion Management						
Highway travel time: I-270 to Spirit of SL Blvd.						
Highway travel time: Clayton to Spirit of SL Blvd.						
Highway travel time: Downtown to Spirit of SL Blvd.						
Transit travel time: Spirit of SL Blvd. to West County Transit Center						
Transit travel time: Spirit of SL Blvd. to Clayton						
Transit travel time: Spirit of SL Blvd. to Downtown						
V/C ratio: I-64 between Ballas and Lindbergh						
V/C ratio: I-64 between 141 and Olive/Clarkson						
V/C ratio: I-270 between Manchester and I-64						
V/C ratio: I-270 between Olive and Ladue						
V/C ratio: Hwy. 141 between Ladue and Olive						
V/C ratio: Creve Coeur Mill Rd. north of Olive						
V/C ratio: Chesterfield Airport Rd. west of Spirit of SL Blvd.						
Annual hours of travel time savings (compared with No Build and TSM)						
Change in hours of highway travel delay within Study Area (annual, compared with No Build)						
Number of new transit riders (linked trips, compared with No Build)						
Number of new HOV passengers (compared with No Build)						
Change in transit mode share for all work trips originating in Study Area (compared with No Build)						
Change in HOV mode share for all work trips originating in Study Area (compared with No Build)						
Effectiveness: Safety and Security						
Number of high accident locations that are improved						
Miles of new bicycle and pedestrian facilities						
Effectiveness: Resource Conservation						
Change in VMT within the Study Area (daily, compared with No Build)						
Acres of land converted to transportation uses						
Effectiveness: System Preservation						
Lane miles of existing highways that are rebuilt						
Number of buses > 12 years old						
Equity						
Low income households within 1/2 mile of transit stop						
Number of low income or minority households displaced						
Cost Effectiveness						
Incremental cost per new transit trip						
Cost per hour of travel time savings						
Financial Feasibility						
Capital cost (millions)						
Operating and maintenance cost (million per year)						
Availability of funds for capital costs						
Availability of funds for O&M costs						

7.0 REFERENCES

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