Northside Study Area

Alternatives Development and Screening

Introduction:

A preliminary set of transportation alternatives was developed for the Northside Study Area by the consultant team and East-West Gateway Coordinating Council (EWGCC), Bi-State Development Agency (BSDA), and Missouri Department of Transportation (MoDOT) staff based on the purpose and need for improvements in the Northside Study Area as well as public input from community engagement activities. The preliminary alternatives represented a range of transportation modes including: light rail transit (MetroLink), bus transit, transportation systems management, and roadway improvements. Each modal alternative was developed to maximize the transportation benefits inherent in each mode and to utilize existing public rights-of-way and transportation corridors to the maximum extent possible, while serving existing and projected travel needs within the Study Area. The use of existing rights-of-way and transportation corridors for major transportation investment alternatives was judged to be essential in order to minimize potential community impacts as well as minimize costs associated with development and construction.

The preliminary alternatives were discussed with representatives from local jurisdictions, community leaders, and members of the public over a period of several weeks through a series of workshops, open houses, and briefings. During this phase of the Major Transportation Investment Analysis (MTIA) study process, the planning effort was geared towards adding new solutions and on broadening the range of alternatives. Study participants were asked to consider the purpose and need for transportation improvements within the Northside Study Area and make suggestions on what alternatives they would add to the list. Changes to the preliminary alternatives were also discussed and examined. These activities resulted in the Initial Set of Alternatives, which numbered fifteen alternatives for the Northside Study Area.

The initial set of fifteen alternatives were then subjected to a screening process to narrow them down to a smaller set of alternatives that best met the goals and objectives of the Northside Study Area. The Northside Alternatives Development and Screening Report documents the process by which a broad range of transportation alternatives was identified and describes the screening process used to narrow the range of alternatives down to the most competitive options.

S.0 EXECUTIVE SUMMARY

The Northside Alternatives Development and Screening Report documents the process by which a broad range of transportation improvement alternatives was identified and the screening process during which unsuitable or less competitive alternatives were eliminated.

An initial set of transportation improvement alternatives was developed by the consultant team and EWGCC, Bi-State and MoDOT staff based upon the purpose and need for improvements in each Study Area, as well as public input from community engagement activities. This broad range of alternatives represented a range of transportation modes including Light Rail Transit (MetroLink), bus transit, and roadway improvements. Each modal alternative was developed to maximize the transportation benefits inherent in each mode and to utilize existing public rights-of- way and transportation corridors to the maximum extent possible while serving existing and projected travel needs in each Study Area. The use of existing rights-of-way and corridors is emphasized to minimize potential community impacts and disruptions, as well as minimize the costs required to develop each alternative.

The Northside Major Transportation Investment Analysis (MTIA) study team presented eight light rail (LRT) alternative options, one bus rapid transit (BRT) alternative and two roadway alternative options to the public at the two Northside Community Workshops in May 1999. Several of these alternatives also included several alignment options for portions of them. During these community workshops a member of the public submitted one new LRT Alternative. In addition there were modifications to the existing alternatives.

These alternatives were then subjected to a screening process to narrow them down to a smaller set of alternatives that best meet the goals and objectives of the Northside Study Area. The following is a list of the general screening criteria used to reduce the set of alternatives to those that best meet the various aspects of purpose and need:

- Accessibility to concentrations of employment and population
- Accessibility to people without cars
- Ability to serve major travel markets
- Ease of transportation system connectivity
- Potential to serve redevelopment sites or encourage new development opportunities
- Relative impacts to residents, businesses or sensitive properties
- Physical feasibility
- Relative cost to build

As a result of the screening process, the initial set of eleven alternatives (plus alignment sub-options) was reduced to a set of eight alternatives presented to state and local agencies and the general public during June 1999. These alternatives represented those that best meet the goals and objectives of the Study Area as determined by the screening criteria.

In response to public comments after the June public meetings, the technical study team continued to refine the screening analysis results to focus the recommendations. This reduced the proposed alternatives from eight to six. In cases where several alternative alignment segments were generally comparable the most competitive options were chosen to move forward into detailed analysis. It must be noted that the alternatives at this stage of development are conceptual in nature and further study may result in additional refinements to them. In addition, during future design and engineering, several alternatives representing a concept may be re-evaluated and a similar alignment could be selected.

Based on the screening results, six alternatives are recommended for further study in the Northside Study Area. These alternatives address different aspects of the purpose and need for improvements in the Northside and encompass a range of transportation modes and investments. The Locally Preferred Alternative (LPA), to be selected at the conclusion of this MTIA, may combine one or more of these reasonable alternatives. For example, the LPA could include features of the TSM, a roadway alternative and an LRT alternative. The year 2020 is assumed as the year of analysis for all of the alternatives. The six alternatives are:

- Alternative 1 - No Build
- Alternative 2 - Transportation Systems Management (TSM)/Enhanced Bus Service
- Alternative 3 - Light Rail Transit: Natural Bridge Road/West Florissant Avenue
- Alternative 4 - Light Rail Transit: Natural Bridge Road/TRRA Right-of-Way (ROW)/ MetroLink
- Alternative 5 - Roadway: Route 367/Lewis and Clark Boulevard/Jennings Station Road/I-70
- Alternative 6 - Roadway: Route 367/Lewis and Clark Boulevard/Riverview Boulevard/West Florissant Avenue/I-70 and Riverview Drive/Hall Street

The next step is the more detailed technical analysis. This technical analysis will be followed by a financial analysis to determine the sources of potential funding to finance the alternatives. This information will be presented in an evaluation report so that decision-makers and the public can determine the relative benefits, costs and impacts of each alternative and which alternative (or combination of alternatives or elements of alternatives) best meets the purpose and need for major transportation investments in the Northside Study Area. Finally, the EWGCC Board of Directors will select a Locally Preferred Alternative (LPA) for the Northside Study Area, which will then be adopted into the long-range transportation plan for the St. Louis region.

1.0 INTRODUCTION

The Major Transportation Investment Analysis (MTIA) is the second phase in a multi-phase process for the development and construction of a federally funded major transportation investment project in an urban area. The East-West Gateway Coordinating Council (EWGCC), Missouri Department of Transportation (MoDOT), Illinois Department of Transportation (IDOT), and the Bi-State Development Agency (Bi-State), have adopted a long-range transportation plan, Transportation Redefined II (1999), which documents an on-going regional transportation planning process. This process identified the Northside, Southside, and Daniel Boone Study Areas as warranting an MTIA to determine an appropriate strategy for major transportation improvements for adoption into the long-range plan. Once these MTIAs are completed, the EWGCC Board will adopt a preferred alternative in each Study Area for inclusion in the long-range plan. It also will adopt a financing strategy for the preferred alternatives.

This report, the result of the third and fourth steps of the MTIA process, focuses on the development and screening of alternatives for the Northside MTIA. This report documents the process by which a broad range of alternatives was identified and the screening process during which unsuitable or less competitive alternatives were eliminated. The remaining portions of this report provide a more detailed description of each of the alternatives under consideration for more detailed analysis.

Identification of a locally preferred alternative (LPA) will be based upon the results of the detailed study and environmental analysis, public and agency input and other information, as appropriate. The evaluation process considers input from analysis of travel forecasting and traffic modeling, land use and economics, natural resources, preliminary engineering, and capital cost estimates to name a few. Additional public input will be sought throughout this process and, especially at each milestone prior to any decision being made.

2.0 OVERVIEW OF ALTERNATIVES DEVELOPMENT AND SCREENING

2.1 PURPOSE OF ALTERNATIVES DEVELOPMENT AND SCREENING

To meet the stated objectives of the study, a broad range of alternatives must be considered. Once a broad range of alternatives is established, it is necessary to screen the alternatives to narrow these down to a reasonable number for more detailed study prior to the selection of a LPA.

2.2 ROLE OF THE STUDY GOALS AND OBJECTIVES

The development of Purpose and Need Statement led to the identification of transportation issues within the Study Area. Subsequently, more specific goals and objectives were identified and guide the development and selection of transportation alternatives. The goals and objectives also were considered in the development of the screening criteria and will be used to develop the evaluation criteria for the set of alternatives carried forward for more detailed analysis. The more detailed goals and objectives that proposed transportation improvements must attain are delineated in the Northside Purpose and Need Statement (August 1999) and summarized below.

2.2.1 Access to Opportunity

Goal: Improve access to opportunities for Northside Study Area residents and businesses.

Objectives:

- Reduce total travel time by transit to neighborhood, Study Area and regional opportunities including:
    - jobs
    - medical care
    - shopping
    - education
    - places of worship
- Reduce travel times from the northern portion of the Study Area to downtown St. Louis
- Improve pubic transportation to facilitate people traveling between the Study Area and job locations, particularly from areas of high population densities to areas with relatively high employment concentrations
- Provide a balanced transportation system through increased transportation options
- Improve direct north-south connections

2.2.2 Safety and Security in Travel

Goal: Improve the personal and vehicular safety of the transportation system in the Northside Study Area.

Objectives:

- Reduce the existing accident rate on Route 367, through physical and operational improvements
- Improve personal safety through enhanced neighborhood vitality; transportation supporting land uses

2.2.3 Sustainable Development

Goal: Maintain and/or enhance Northside Study Area neighborhoods.

Objectives:

- Implement transportation improvements that will help to reverse or slow the loss of population, particularly in North City
- Invest in new and/or improved transportation services and infrastructure that contribute to maintaining and/or enhancing quality of life and personal safety in stagnating or declining neighborhoods
- Integrate transportation infrastructure investments and land development or redevelopment in ways that are economically sustainable and consistent with community values and historic preservation

2.2.4 Movement of Goods

Goal: Improve the movement of goods/freight within and through the Northside Study Area.

Objectives:

- Improve truck traffic within and through the Study Area by reducing conflicts between trucks and autos
- Improve the connectivity of the existing roadway system through roadway improvements, particularly north-south connections for trucks

2.2.5 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.

Objectives:

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

2.3 NORTHSIDE MTIA PROCESS

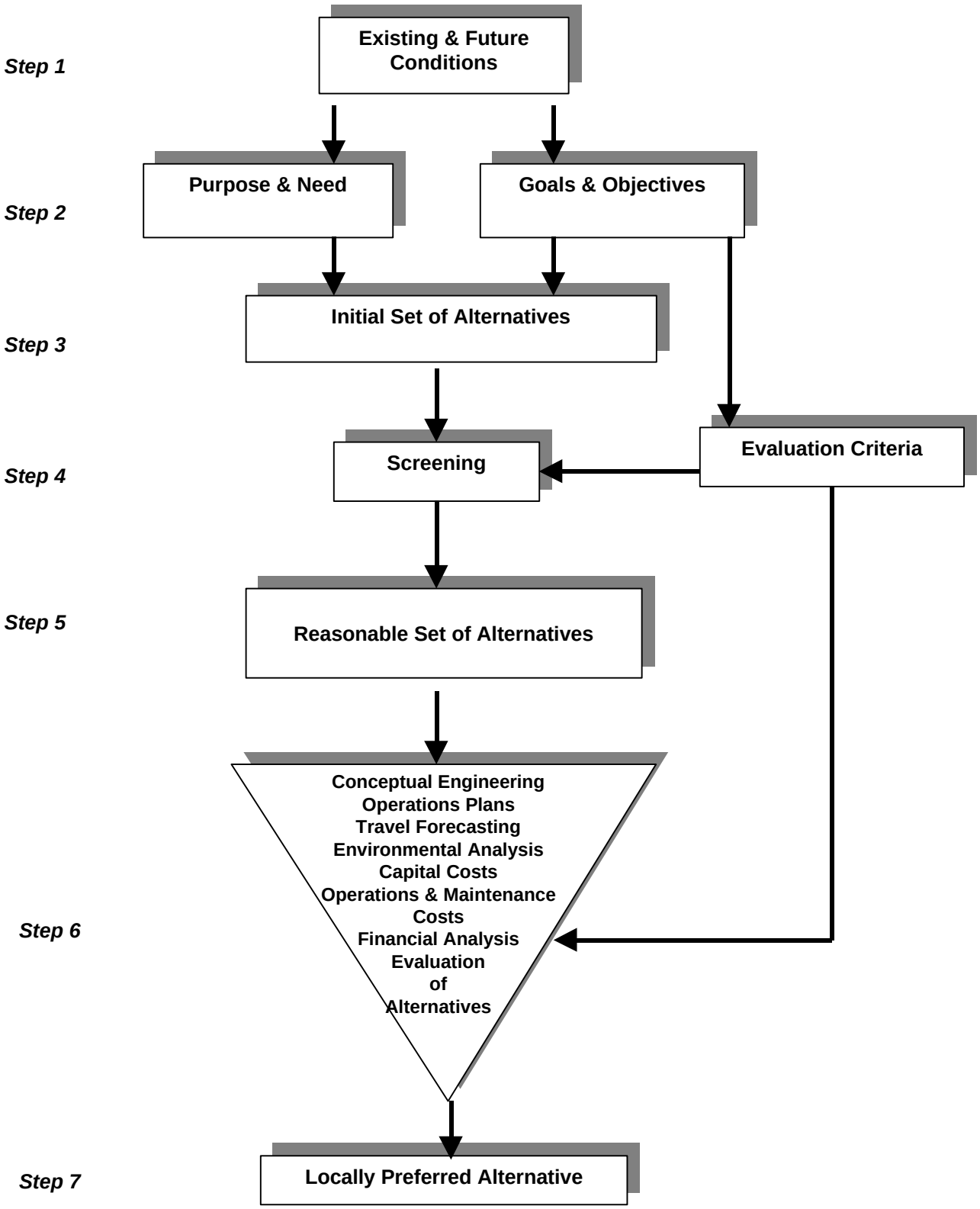
A MTIA follows a logical order of technical analysis and complementary public engagement activities to develop and assess major transportation investment alternatives in the Study Area. Figure 2.3-1 illustrates these steps and their interaction. More detailed definition of the process is provided in the Purpose and Need Statement (August 1999). Each step is briefly discussed in the following paragraphs.

The first step in the Northside MTIA was to compile information about the Study Area and metropolitan region to assess the existing and future socio-demographic, economic, and transportation system conditions (Existing and Future Conditions Report, May 1999). This assessment is intended to determine the underlying root causes of issues related to the transportation system in each Study Area.

The second step, development of the Purpose and Need Statement/Goals and Objectives, also lead to the determination of specific goals and related objectives that shape the development of transportation alternatives, as well as identify which transportation alternative is the “best” solution for the Study Area.

Study goals and objectives lead to the development of a range of multimodal transportation infrastructure and service alternatives.

FIGURE 2.3-1
MTIA PROCESS



The development of the initial set of alternatives, the third step, produced eleven transportation improvement alternatives (plus alignment sub-options) in the Northside Study Area. These alternatives were subjected to a screening process, which narrowed down these alternatives to a more manageable number for further study. This screening process assessed each of the initial set of alternatives against screening criteria derived from the goals and objectives for the Study Area as well as the physical feasibility of implementing the alternatives. These criteria applied both numerical and qualitative measures to assess the performance of each alternative against the goals and objectives to be achieved by major transportation investments in the Northside Study Area. Greater detail regarding the screening process as applied to the Northside MTIA is found in Sections 3.0 and 4.0.

The reduced set of alternatives was presented to and confirmed by the EWGCC Board of Directors for further study in July 1999.

This reduced set of alternatives will be analyzed with respect to a detailed set of evaluation criteria related to the goals and objectives of the Study Area. Conceptual engineering of the alternatives will be performed to provide estimates of capital costs and provide more specific information for an assessment of the environmental and community impacts and benefits of each alternative. Travel demand forecasts will be made to estimate the future usage of proposed transportation facilities and services included in each alternative, and annual operating and maintenance costs will be estimated. A financial analysis will be performed to assess the fundability of each alternative and the regional financial resources available to undertake the implementation of each alternative.

This information will be presented in an evaluation report so that decision-makers and the public can determine the relative benefits, costs and impacts of each alternative and which alternative best meets the purpose and need for major transportation investments in the Northside Study Area. Finally, the EWGCC Board of Directors will select a Locally Preferred Alternative (LPA) for the Study Area, which will then be adopted into the long-range transportation plan for the St. Louis region.

2.4 ROLE OF COMMUNITY ENGAGEMENT

Input from the community engagement outreach efforts -- stakeholder interviews, focus groups and telephone surveys -- played a key role in the development of the purpose and need, goals, objectives, and preliminary alternatives for each Study Area.

In addition, the community engagement team held several open public meetings, which followed different formats depending on the information that was presented. The first series of open houses was held in January 1999 and served to introduce the MTIA process to citizens in each Study Area, and to hear their views about transportation issues and needs. The first series of workshops was held in May 1999. The second series of open houses was held in mid-June and introduced the alternatives that are being recommended for further study and potential evaluation criteria.

Input received at the various meetings and workshops has directly affected the process. Input from the first open house helped to guide the development of each Study Area's purpose and need, goals, and objectives. Later in the process, citizen input from the workshops and open houses greatly influenced the preliminary transportation improvement alternatives, the modifications of options and addition of alternatives, and the selection of those alternatives recommended for further study.

Newsletters, meeting flyers and fact sheets complimented the community engagement and technical work.

3.0 INITIAL SET OF ALTERNATIVES

3.1 APPROACH TO ALTERNATIVES DEVELOPMENT

The development and screening of the initial set of alternatives was an iterative process that involved several rounds of both technical analysis as well as community engagement and public input. A broad range of alternatives in the Northside Study Area were identified, examined, and refined. They were then assessed against screening criteria to select a reduced set of the "best" alternatives to carry forward into more detailed analysis and evaluation in the remainder of the MTIAs. These have been reviewed with the public through the community engagement process and refined into the six alternatives that were adopted by the EWGCC Board in July 1999. The alternatives to be carried forward for more detailed analysis are described in Section 5.0 of this document. This section describes the development of the broad range of alternatives.

3.2 DESCRIPTION OF INITIAL SET OF ALTERNATIVES

3.2.1 Initial Alternatives Development

An initial set of transportation improvement alternatives was developed by the consultant team and EWGCC, Bi-State and MoDOT staff based upon the purpose and need for improvements in each Study Area, as well as public input from community engagement activities. This broad range of alternatives represented a range of transportation modes including Light Rail Transit (MetroLink), bus transit, and roadway improvements. Each modal alternative was developed to maximize the transportation benefits inherent in each mode and to utilize existing public rights-of- way and transportation corridors to the maximum extent possible while serving existing and projected travel needs in each Study Area. The use of existing rights-of-way and corridors was emphasized to minimize potential community impacts and disruptions, as well as minimize the costs required to develop each alternative.

Based upon the alternatives development process described above, five alternative transportation improvement modes were considered to address transportation issues and needs in the Northside Study Area. These alternative modes included the following:

- No Build
- Transportation Systems Management (TSM)
- Bus Rapid Transit (BRT)
- Light Rail Transit (LRT)
- Roadway

These five sets of alternatives had a variety of alignment options that could be combined to form a variety of multimodal alternatives. The No Build Alternative represented the year 2020 transportation infrastructure and services assumed to be in place by that year. The No Build Alternative provided the baseline for future travel conditions against which all other alternatives are compared.

The Transportation Systems Management (TSM) Alternative represented the maximum transportation system improvement that can be derived from relatively modest expenditures in the Northside Study Area. The intent of the transportation improvements in this alternative was to maximize the person moving ability of the road, rail and bus systems by improving the efficiency of those systems.

The Light Rail Alternatives included extending MetroLink by adding a new line that would follow, to the maximum extent possible, existing transportation or utility rights-of-way in the Northside Study Area, such as Natural Bridge Road, West Florissant Avenue, and Jennings Station Road. These LRT lines

would be constructed primarily at surface level with their tracks running alongside or within the middle of existing streets.

The Bus Rapid Transit Alternative entailed implementation of bus exclusive or semi-exclusive lanes on existing roadways such as West Florissant Avenue, Lewis and Clark Boulevard and Jennings Station Road. The use of exclusive or semi-exclusive lanes would allow the buses to increase their travel speed by allowing them to bypass traffic congestion.

The Roadway Alternatives included roadway widenings, intersection improvements added turn lanes, and access management control to reduce traffic congestion and improve the safety of traffic operations.

3.2.2 Initial Set of Alternatives Description

The Northside MTIA study team presented eight LRT alternative options, one BRT alternative and two roadway alternative options to the public at the two Northside Community Workshops in May 1999. Several of these alternatives also included several alignment options for portions of them. Figures 3.2-1a, 3.2-1b and 3.2-1c reflect the compilation of all the public, agency and study team input prior to the June public meetings, as discussed in the previous sections. These alternatives were then subjected to screening as described in Section 4.0

The LRT Alternatives, with three exceptions, all generally began in downtown St. Louis and terminated at I-270 either in the area of Florissant Valley Community College or Route 367. The biggest challenge was finding suitable alignments for these alternatives to cross I-70 as they head north. The remaining three LRT alternatives either headed north and east across the Mississippi River at McKinley Bridge, headed west without crossing I-70 or begin north of I-70 in the existing MetroLink corridor and then continued further north.

The Bus Rapid Transit (BRT) Alternative headed west on Natural Bridge and the TRRA corridor in an exclusive bus guideway.

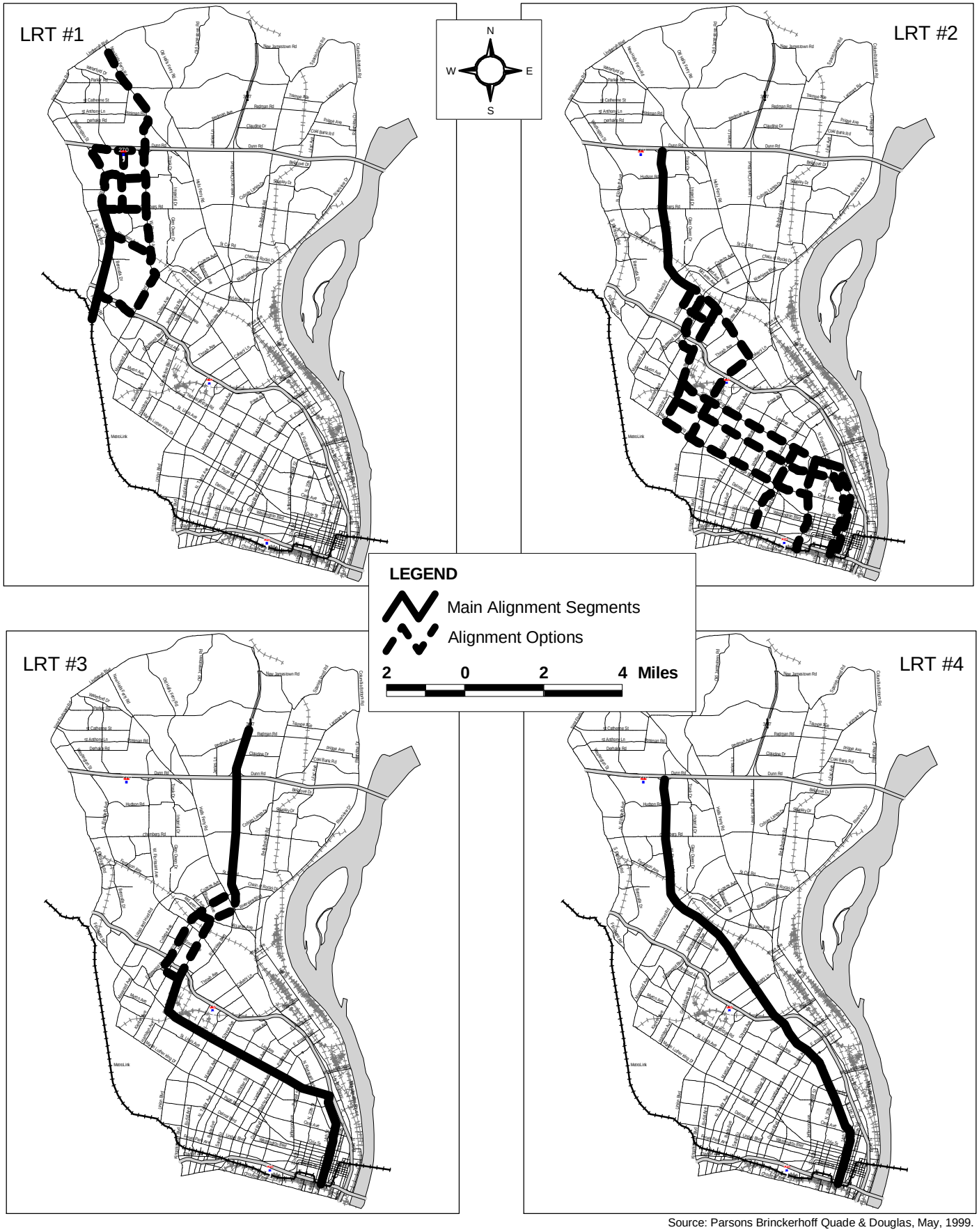
The two roadway alternatives focused on providing more efficient and direct access to North County from downtown St. Louis via Route 367, West Florissant Avenue or Riverview Drive. Both roadway alternatives included significant improvements on Route 367 north of I-270.

During the community workshop at Lexington Elementary School (May 3, 1999), a member of the public submitted one new LRT Alternative. In addition there were modifications to the existing alternatives. In addition to the initial set of alternatives presented at the May public workshops, Figures 3.2-1a, 3.2-1b and 3.2-1c reflect the suggestions and confirmations of alternatives at the public workshops.

Spring and Grand Avenues were eliminated as potential LRT alignments at this juncture because they were too far west to capture major employment and therefore ridership as compared to options east of 14th Street.

Subsequent to the public workshops, the study team conducted additional fieldwork. The study team also met with representatives of the University of Missouri at St. Louis (UMSL) to discuss the study and alternatives that they would like to have included. A citizen called and submitted 14th Street as an alternative route for LRT out of downtown.

These ideas are also reflected in Figures 3.2-1a, 3.2-1b and 3.2-1c. These alternatives were then subjected to a screening process to narrow them down to a smaller set of alternatives that best meet the goals and objectives of the Northside Study Area.

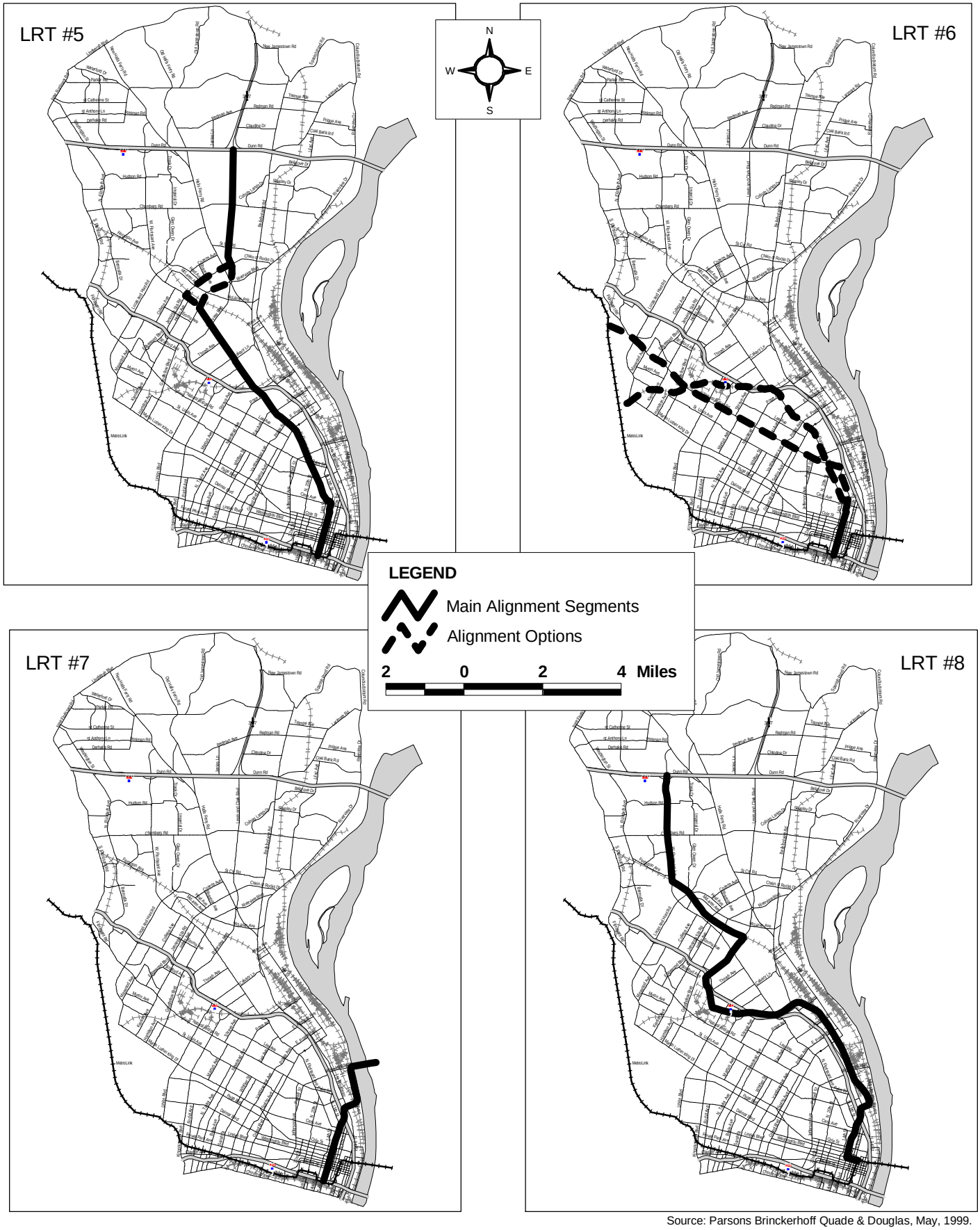


Source: Parsons Brinckerhoff Quade & Douglas, May, 1999.

Figure 3.2-1a

Initial Set of Alternatives

Northside Study Area
Major Transportation Investment Analysis

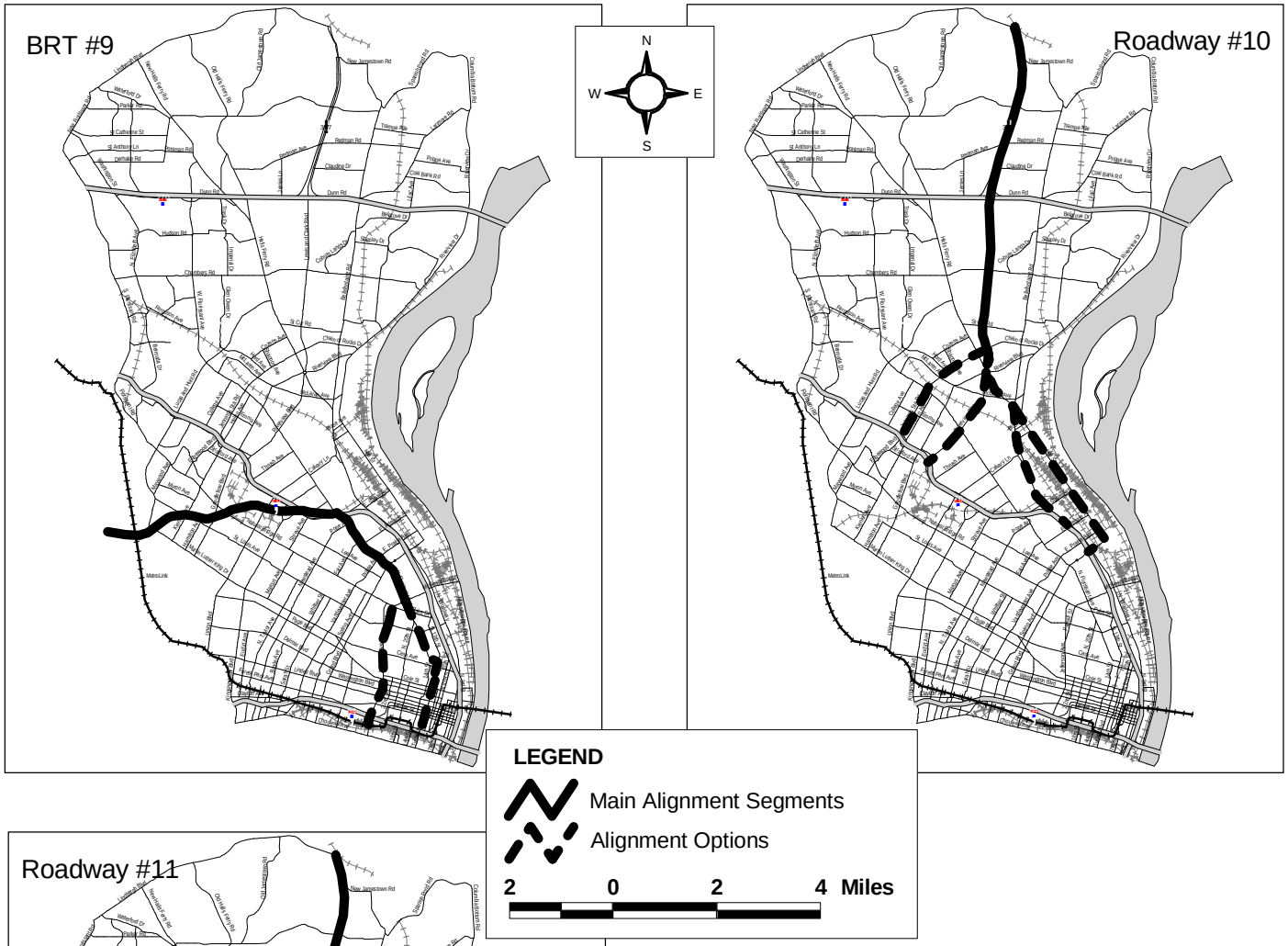


Source: Parsons Brinckerhoff Quade & Douglas, May, 1999.

Figure 3.2-1b

Northside Study Area
Major Transportation Investment Analysis

Initial Set of Alternatives



Source: Parsons Brinckerhoff Quade & Douglas, May, 1999.

Figure 3.2-1c

Northside Study Area
Major Transportation Investment Analysis

Initial Set of Alternatives

4.0 SCREENING

4.1 APPROACH/SCREENING CRITERIA

The full set of initial transportation improvement alternatives (see Section 3.0) was subjected to a screening process to reduce the number of alternatives to a reasonable set of alternatives that will be analyzed in more detail in Step 6 of the MTIA process (see Figure 2.3-1). The screening process applied screening measures derived from the purpose and need and goals and objectives for the Northside Study Area. The screening process permitted the study team to assess the relatively large numbers of alternatives in an expeditious and efficient way. The following is a list of the general screening criteria used to reduce the set of alternatives to those that best meet the various aspects of purpose and need:

- Accessibility to concentrations of employment and population
- Accessibility to people without cars
- Ability to serve major travel markets
- Ease of transportation system connectivity
- Potential to serve redevelopment sites or encourage new development opportunities
- Relative impacts to residents, businesses or sensitive properties
- Physical feasibility
- Relative cost to build

4.2 SCREENING EVALUATION

As a result of the screening process, the initial set of eleven alternatives (plus alignment sub-options) was reduced to a set of eight alternatives presented to state and local agencies and the general public during June 1999. These alternatives represented those that best meet the goals and objectives of the Study Area as determined by the screening criteria. Table 4.2-1 shows the alternatives taken into the screening process at the close of the May public workshops and the relative assessment of each. These alternatives have segments which were numbered alphabetically. The alphabetically numbered segments that correspond to the table can be found on the maps in Appendix A. Subsequent to this phase of alternatives screening, the segments were recombined and, in some cases, new segments were added. The alphabetical references were then deleted during the next phase of screening. In cases where several alternative alignment segments were generally comparable the most competitive options were chosen to move forward into detailed analysis. It must be noted that the alternatives at this stage of development are conceptual in nature and further study may result in additional refinements to them. In addition, during future design and engineering, several alternatives representing a concept may be re-evaluated and a similar alignment could be selected.

The public and agency comments received as a result of the June meetings were noted and incorporated into the final set of six reasonable alternatives (see Section 5.0) carried forward for more detailed analysis.

Eliminated during screening were portions of the LRT and Roadway alternatives. Under the LRT alternatives, options were eliminated west of 14th Street in downtown St. Louis since these did not penetrate the area of greatest employment and had more limited land redevelopment potential.

LRT alignment options along St. Louis Avenue and Martin Luther King Drive also were eliminated for similar reasons: lower population, employment density, less available right-of-way and less redevelopment potential in combination when compared to an alignment for Natural Bridge Road. A combination of limited right-of-way, potential displacements and grade considerations also eliminated an alignment on Lucas and Hunt Road.

Table 4.2-1 NORTHSIDE SCREENING OF ALTERNATIVES DEVELOPED BASED ON PUBIC, AGENCY AND TEAM INPUT AND PRESENTED TO THE PUBLIC IN MAY 1999

		ACCESS TO OPPORTUNITY											SUSTAINABLE DEVELOPMENT		RIGHT-OF-WAY IMPACTS		PHYSICAL FEASIBILITY	CAPITAL COSTS	
OPTIONS/ SUB-OPTIONS	**Length in miles**	Relative ability to serve major travel markets	Population within ½ mile of centerline of alignment of transit alternative (total population in Study Area 284,480)	Percentage population within ½ mile of centerline of alignment of transit alternative	Average per mile population within ½ mile of centerline of alignment of transit alternative	Employment within ½ mile of centerline of alignment of transit alternative (total employment in Study Area 218,133)	Percentage of employment within ½ mile of centerline of alignment of transit alternative	Per mile employment within ½ mile of centerline of alignment of transit alternative	Zero car households within ½ mile of centerline of alignment of transit alternative (total zero car households in Study Area 30,079)	Percentage of zero car households within ½ mile of centerline of alignment of transit alternative	Per mile zero car households within ½ mile of centerline of alignment of transit alternative	Relative ease of system connectivity	Relative potential for redevelopment/ large infill opportunity	Relative potential for revitalization/ incremental infill opportunity	Additional right-of-way requirements/ property takes	Relative neighborhood disruption due to property takes and/or restrictions to access to adjacent properties	Grades possible in excess of 6% along proposed in-street LRT rights-of-way	Total order of magnitude capital cost estimates (in millions) (1999)	Per mile cost (in millions) (1999)
LRT Option 1																			
Base	2.9	NA	8,176	2.9%	2,869	2,792	3.0%	1,007	368	1.2%	129	NA	low - Northland area	low - none identified at this time	low in RR ROW, moderate balance	low in RR ROW, moderate balance	low	$90	$31.6
A segment	3.2	NA	11,735	4.1%	3,690	5,647	2.6%	1,160	357	1.2%	112	NA			moderate	moderate	high	$140	$44.0
B segment	1.8	NA	5,525	1.9%	3,157	2,423	1.1%	1,804	149	0.5%	85	NA			high	high	moderate	$100	$56.0
C segment	2.7	NA	7,403	2.6%	2,742	3,789	1.7%	1,016	265	0.9%	98	NA			high	high	moderate	$150	$55.6
D segment	3.3	NA	9,285	3.3%	2,831	5,094	2.3%	863	226	0.7%	69	NA			high	high	moderate	$190	$57.9
E segment	3.1	NA	11,507	4.0%	3,748	5,569	2.6%	1,221	237	0.8%	77	NA			moderate	moderate	moderate	$160	$52.1
A+Base	6.1	moderate-serves FLCC, west connection	19,911	7.0%	3,264	8,439	2.4%	535	725	2.4%	119	moderate-connect with MetroLink to west			low in RR ROW, moderate balance	low in RR ROW, moderate balance	high	$240	$39.3
B+Base	4.3	moderate-serves FLCC, west connection	13,701	4.8%	3,186	5,215	4.1%	741	517	1.7%	120	moderate-connect with MetroLink to west			low in RR ROW, some high	low in RR ROW, some high	moderate	$190	$44.2
C+Base	5.6	moderate-serves FLCC, west connection	15,579	5.5%	2,807	6,581	4.7%	506	633	2.1%	114	moderate-connect with MetroLink to west			low in RR ROW, moderate balance	low in RR ROW, moderate balance	moderate	$240	$43.2
D+Base	6.2	moderate-serves FLCC, west connection	17,461	6.2%	2,825	7,883	5.3%	457	594	1.9%	96	moderate-connect with MetroLink to west			low in RR ROW, some high	low in RR ROW, some high	moderate	$280	$45.3
F	4.3	moderate-serves FLCC, west connection	14,345	5.0%	3,344	10,202	4.7%	779	651	2.2%	152	moderate-connect with MetroLink to west			moderate	moderate	high	$230	$53.6
G	6.0	moderate-serves FLCC, west connection	21,520	7.6%	3,611	10,430	4.8%	606	1,223	4.1%	205	moderate-connect with MetroLink to west			high-southwest	high-southwest	high	$290	$48.7
A+Base+E	9.2	moderate-serves FLCC, west connection	31,418	9.9%	3,415	14,008	5.0%	371	962	3.6%	105	moderate-connect with MetroLink to west	low - Northland area	low - none identified at this time	low in RR ROW, moderate balance	low in RR ROW, moderate balance	high	$390	$42.4
C+Base+E	8.7	moderate-serves FLCC, west connection	27,086	9.5%	3,113	12,150	7.3%	358	870	3.3%	100	moderate-connect with MetroLink to west			low in RR ROW, high balance	low in RR ROW, high balance	moderate	$390	$44.8
G+E	9.1	moderate-serves FLCC, west connection	33,027	11.6%	3,629	15,999	7.4%	399	1,460	4.9%	160	moderate-connect with MetroLink to west			high-southwest, balance moderate	high-southwest, balance moderate	high	$440	$48.4

		ACCESS TO OPPORTUNITY											SUSTAINABLE DEVELOPMENT		RIGHT-OF-WAY IMPACTS		PHYSICAL FEASIBILITY	CAPITAL COSTS	
OPTIONS/ SUB-OPTIONS	**Length in miles**	Relative ability to serve major travel markets	Population within ½ mile of centerline of alignment of transit alternative (total population in Study Area 284,480)	Percentage population within ½ mile of centerline of alignment of transit alternative	Average per mile population within ½ mile of centerline of alignment of transit alternative	Employment within ½ mile of centerline of alignment of transit alternative (total employment in Study Area 218,133)	Percentage of employment within ½ mile of centerline of alignment of transit alternative	Per mile employment within ½ mile of centerline of alignment of transit alternative	Zero car households within ½ mile of centerline of alignment of transit alternative (total zero car households in Study Area 30,079)	Percentage of zero car households within ½ mile of centerline of alignment of transit alternative	Per mile zero car households within ½ mile of centerline of alignment of transit alternative	Relative ease of system connectivity	Relative potential for redevelopment/ large infill opportunity	Relative potential for revitalization/ incremental infill opportunity	Additional right-of-way requirements/ property takes	Relative neighborhood disruption due to property takes and/or restrictions to access to adjacent properties	Grades possible in excess of 6% along proposed in-street LRT rights-of-way	Total order of magnitude capital cost estimates (in millions) (1999)	Per mile cost (in millions) (1999)
LRT Option 2																			
Base	3.8	NA	16,022	5.6%	4,250	9,794	4.5%	1,127	857	2.8%	227	NA	low - Northland area	very high - south of I-70 for entire length	moderate	moderate	high	$170	$45.1
A segment	4.2	NA	30,590	10.8%	7,283	10,066	4.6%	1,734	5,394	17.8%	1,284	NA	good - vicinity Union and Natural Bridge		moderate	moderate	moderate	$190	$45.2
B segment	4.4	NA	33,898	11.9%	7,793	9,268	4.2%	1,791	6,659	21.9%	1,531	NA			moderate	moderate	moderate	$200	$46.0
C segment	4.7	NA	33,418	11.7%	7,125	8,268	3.8%	1,519	7,100	23.4%	1,514	NA	low - A and B closer to area		moderate	moderate	low	$210	$44.8
D segment	2.7	NA	13,618	4.8%	5,120	74,196	34.0%	1,925	3,440	11.3%	1,293	NA	low - none identified at this time	high - north above Washington Avenue	high	high in north, moderate	low	$150	$56.4
E segment	2.8	NA	16,231	5.7%	5,860	63,675	29.2%	2,115	3,955	13.0%	1,428	NA			high	high in north, moderate	low	$160	$57.8
F segment	2.0	NA	8,359	2.9%	4,222	18,672	8.6%	2,132	5,154	17.0%	2,603	NA			moderate	moderate	low	$100	$50.5
G segment	2.5	NA	17,243	6.1%	6,953	12,880	5.9%	2,804	3,732	12.3%	1,505	NA			high/ moderate	high/ moderate	moderate	$140	$56.5
H segment	2.9	NA	18,973	6.7%	6,453	9,351	4.3%	2,195	1,826	6.0%	621	NA	low - none identified at this time	low - none identified at this time	high/ moderate	high	moderate	$180	$61.2
I segment	2.8	NA	17,052	6.0%	6,025	9,234	4.2%	2,129	1,524	5.0%	539	NA			high/ moderate	high	moderate	$140	$49.5
J segment	2.9	NA	20,144	7.1%	7,019	9,773	4.5%	2,446	1,771	5.8%	617	NA			moderate	high	high	$150	$52.3
K segment	4.9	NA	30,768	10.8%	6,344	9,465	4.3%	1,308	3,819	12.6%	787	NA			moderate	moderate	high	$230	$47.4
A+D+H+Base	13.6	moderate-serves FLCC, Downtown	79,203	22.3%	5,837	103,407	47.4%	430	11,517	37.9%	849	moderate-connect with MetroLink Downtown	high - at Goodfellow/ Natural Bridge	very high - south of I-70	moderate/ high	high/moderate	high	$700	$51.6
B+G+I+Base	13.5		84,215	29.6%	6,238	41,176	27.9%	462	12,772	42.0%	946						high	$650	$48.1
A(part)+E+K+Base	15.6		88,021	29.1%	5,642	107,934	35.7%	362	33,631	37.4%	2,156						high	$730	$46.8
LRT Option 3																			
Base	11.9	NA	57,708	20.3%	4,845	91,143	41.8%	407	9,072	29.9%	762	NA	high - at Goodfellow/ Natural Bridge	high - along Natural Bridge	moderate/ high	moderate/ high	high-north low-south	$540	$45.3
A segment	2.8	NA	19,990	7.0%	7,165	6,650	3.0%	2,568	1,514	5.0%	543	NA	low - none identified at this time	low - none identified at this time	moderate	high	high	$160	$57.3
B segment	3.3	NA	19,990	7.0%	6,132	6,650	3.0%	1,881	1,514	5.0%	464	NA			moderate	high	moderate	$190	$58.3
C segment	3.1	NA	19,892	7.0%	6,438	6,894	3.2%	2,083	1,501	4.9%	486	NA			moderate	high	low	$180	$58.3
A+Base	15.0	low-serves Downtown	77,698	27.3%	5,180	97,793	44.8%	345	10,586	34.9%	706	moderate-connect with MetroLink Downtown	high - at Goodfellow/ Natural Bridge and north of Halls Ferry Circle	high - along Natural Bridge	moderate/ high	moderate/ high	high	$700	$46.7
B+Base	15.5		77,698	27.3%	5,013	97,793	44.8%	323	10,586	34.9%	683						high/moderate	$720	$46.5
C+Base	15.0		77,600	27.3%	5,173	98,037	45.0%	345	10,573	34.8%	705						high/low	$710	$47.3
LRT Option 4																			
Base	11.9	moderate-serves FLCC, Downtown	59,121	20.8%	4,985	87,993	40.3%	420	8,296	27.3%	699	moderate-connect with MetroLink Downtown	low - Northland area	high - south of I-70	moderate/ high-southeast	moderate/ high-southeast	high-north, moderate-middle, low-south	$600	$50.6
LRT Option 5																			
Base	10.3	NA	53,383	18.8%	5,193	82,929	38.0%	8,067	7,918	26.1%	770	NA	high - north of Halls Ferry Circle	high - south of I-70	moderate/ high-southeast/ low-north	moderate/ high-southeast/ low-north	high-north/middle, low-south	$530	$51.6
A segment	1.5	NA	12,815	4.5%	8,321	2,675	1.2%	1,737	852	2.8%	553	NA	low - none identified at this	low - none identified at this	moderate/ low	high	high	$70	$45.5
B segment	1.9	NA	13,517	4.8%	7,114	3,115	1.4%	1,639	897	3.0%	472	NA			moderate/ low	high	moderate	$90	$47.4
A+Base	11.8	low-serves Downtown	66,198	23.3%	5,610	85,604	39.2%	7,255	8,770	28.9%	743	moderate-connect with	high - north of Halls Ferry	high - south of I-70	moderate/ high-southeast/ low-	moderate/ high-southeast/ low-	high	$590	$50.0
B+Base	12.2		66,900	23.6%	5,484	86,044	39.4%	7,053	8,815	29.1%	723						moderate	$610	$50.0

		ACCESS TO OPPORTUNITY											SUSTAINABLE DEVELOPMENT		RIGHT-OF-WAY IMPACTS		PHYSICAL FEASIBILITY	CAPITAL COSTS	
OPTIONS/ SUB-OPTIONS	**Length in miles**	Relative ability to serve major travel markets	Population within ½ mile of centerline of alignment of transit alternative (total population in Study Area 284,480)	Percentage population within ½ mile of centerline of alignment of transit alternative	Average per mile population within ½ mile of centerline of alignment of transit alternative	Employment within ½ mile of centerline of alignment of transit alternative (total employment in Study Area 218,133)	Percentage of employment within ½ mile of centerline of alignment of transit alternative	Per mile employment within ½ mile of centerline of alignment of transit alternative	Zero car households within ½ mile of centerline of alignment of transit alternative (total zero car households in Study Area 30,079)	Percentage of zero car households within ½ mile of centerline of alignment of transit alternative	Per mile zero car households within ½ mile of centerline of alignment of transit alternative	Relative ease of system connectivity	Relative potential for redevelopment/ large infill opportunity	Relative potential for revitalization/ incremental infill opportunity	Additional right-of-way requirements/ property takes	Relative neighborhood disruption due to property takes and/or restrictions to access to adjacent properties	Grades possible in excess of 6% along proposed in-street LRT rights-of-way	Total order of magnitude capital cost estimates (in millions) (1999)	Per mile cost (in millions) (1999)
LRT Option 6																			
A	9.0	high-serves Downtown, west	45,170	15.9%	5,030	86,140	39.5%	560	7,991	26.3%	890	high-connect with MetroLink Downtown and west	low - none identified at this time	high - between Natural Bridge and Washington	moderate/ low-existing RR ROW/high-southeast	moderate/ low-existing RR ROW/high-southeast	low	$270	$30.1
B	9.3	high-serves Downtown, west	50,067	17.9%	5,395	83,656	38.4%	581	8,672	28.5%	934	high-connect with MetroLink Downtown and West	low - none identified at this time	very high - south of I-70 for entire length	moderate/ high-southeast	moderate/ high-southeast	high-northwest, low southeast	$460	$49.6
LRT Option 7																			
Base	3.9	low-serves Downtown	9,026	3.2%	2,314	75,165	34.5%	593	2,627	8.6%	674	low-connect with MetroLink Downtown	low - none identified at this time	low - none identified at this time	moderate/ moderate	low	low	$160 but does not account for termini	$41.0
LRT Option 8																			
Base	14.7	high-serves Downtown, west	55,948	19.7%	3,806	100,631	46.1%	259	7,113	23.4%	484	high-connect with MetroLink Downtown and West	moderate - Northland area, Union 76	moderate - Goodfellow/ Natural Bridge	moderate/ low existing RR ROW	moderate	low	$600	$40.8
BRT																			
Base		high-serves Downtown, west										high-connect with MetroLink Downtown and West	high - at Goodfellow/ Natural Bridge	very high - south of I-70 for entire length	low	low	NA		
Roadway Option 1																			
Base	6.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	moderate	low	NA	$50.0	$7.9
A segment	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	moderate	high	NA	$20.0	$8.0
B segment	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	moderate	high	NA	$20.0	$9.5
C segment	3.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	high	high	NA	$30.0	$7.7
A+Base	8.8	moderate-serves Downtown	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	moderate	low base/high	NA	$70.0	$8.0
B+Base	8.4	moderate-serves Downtown	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	moderate	low base/high	NA	$70.0	$8.3
C+Base	10.2	moderate-serves Downtown	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	high	low base/high	NA	$80.0	$7.8
Roadway Option 2																			
A	8		NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	moderate	low	NA	$20.0	$2.5
B	11.6		NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	moderate	low	NA	$30.0	$2.6
C	3.4		NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	moderate	moderate	NA	$20.0	$5.9

Between Ferguson Avenue and I-270, several roadways were eliminated as potential LRT alignments (including North Elizabeth Avenue and Hudson Road) as having too little available right-of-way.

LRT alternatives that left downtown and went immediately east to Illinois were eliminated as not serving the Northside Study Area. LRT alternatives that left downtown St. Louis and followed the rail right-of-way north of I-70 before heading west were eliminated as not serving the greater population and employment opportunities when compared to the LRT alignments that headed west through the City prior to crossing I-70.

All alternative LRT options that extended north to Route 367 at its intersection with I-270 were eliminated because opportunities to serve major travel markets and areas of potential redevelopment were not as great as those options that terminate at Florissant Valley Community College. The alignments following West Florissant Avenue, heading up to Florissant Valley Community College by comparison, had greater population and employment densities as well as somewhat higher areas of potential redevelopment.

Under the roadway alternatives, the alternative that considered improvements to West Florissant Avenue from downtown St. Louis was dropped from further consideration since it did not have the benefit of extending the proposed improvements on the northern segment of Route 367 south of I-270. It also followed a corridor with right-of-way that was in competition for other proposed improvements.

Halls Ferry Road, south of Halls Ferry Circle, was considered as an alternative to Riverview Boulevard for the remaining segment of Option B. It would provide a connection to Broadway and Hall Street heading into Downtown. However, in comparison to the other options under consideration, there were several drawbacks. First, this route had, overall, less available right-of-way. It has a 60-foot right-of-way, which narrows down to 40 feet, as it continues southeast. This narrow right-of-way would necessitate both the removal of on-street parking and displacement of several businesses and residences in order to accommodate an Urban Boulevard facility. This would be particularly significant as Halls Ferry Road approaches the Baden "business district." Not only would this result in community disruption, but it also would increase the cost of this alternative option.

In addition, the section of Broadway (south of its merge with Halls Ferry Road) is projected to have a level-of-service F in 2000. Significant increases in traffic would exacerbate this condition. Therefore, the other segment option (refer to Alternative 6 (Option A)) as compared to this option, has greater right-of-way available, fewer community impacts, and better projected level of service and should be carried forward.

Generally the alternatives presented at the June meetings were as follows.

The three LRT alternatives, with one exception, all begin in downtown St. Louis and terminate at I-270 in the area of Florissant Valley Community College. The alternatives headed north from downtown on Tucker Boulevard (or other alternative alignment east of 14th Street) and turned west on Natural Bridge Road. Two of the alternatives then headed north on Goodfellow Boulevard/I-70/Jennings Station Road, Union Boulevard or just east of Goodfellow Boulevard through the railyards to Riverview Boulevard. These two LRT alternatives then turned northwest on West Florissant Avenue and terminated in the vicinity of the Florissant Valley Community College. The other LRT Alternative continued west on Natural Bridge Road to the TRRA rail right-of-way and continued west to the existing MetroLink corridor.

The Bus Rapid Transit (BRT) Alternative headed north on I-70 and left I-70 at West Florissant Avenue, Riverview Boulevard or Jennings Station Road. The alignment on West Florissant Avenue continued north to Lindbergh Boulevard, while the other two BRT alternatives continued north to Halls Ferry Circle then followed Route 367 to the vicinity of its intersection with I-270. The BRT alternatives are proposed as semi-exclusive bus lanes as opposed to exclusive busways.

The two roadway alternatives focused on providing higher capacity roadway access from North County to downtown St. Louis via West Florissant Avenue, Riverview Boulevard or Jennings Station Road to I-70.

Both roadway alternatives included significant improvements on Route 367 north of I-270. Improvements also are proposed on Riverview Drive/Hall Street as an alternative roadway travel path from I-270 south on to I-70 to Downtown.

In response to public comments after the June public meetings, the technical study team continued to refine the screening analysis results to focus the recommendations. This reduced the proposed alternatives from eight to six. Note that these alternatives will continue to evolve through the remainder of the MTIA process as more detailed assessments of these proposed alternatives are conducted. Also note that the locally preferred alternative could be a multi-modal combination of these individual alternatives or some of their components.

The additional changes to the alternatives included the following:

- The BRT Alternative was redefined to include enhanced bus service in semi-exclusive lanes, as opposed to an exclusive bus guideway, so that the BRT Alternative was made a part of the TSM Alternative. Since the enhanced bus improvements were included as an augmentation to those bus improvements already included in the TSM Alternative, it was retitled the TSM/Enhanced Bus Alternative.

- The proposed LRT alignment along Chambers Road was eliminated between North Elizabeth Avenue and West Florissant Avenue as it experiences some heavy periods of traffic, which would be exacerbated by inclusion of in-street running rail. Chambers Road also is considered as having too little available right-of-way to accommodate two LRT tracks. In addition, a light rail alignment parallel to Ferguson Avenue within available right-of-way appears a more competitive alignment choice.

- North of Cass Avenue, 13th Street was removed from further consideration as a light rail alternative as having too narrow a right-of-way, and Tucker Boulevard appears more attractive for LRT alignment in general.

- The confirmation of improvements to Jennings Station Road by St. Louis County as part of the proposed projects in the region added it as a more competitive light rail alignment alternative, thereby reducing the need to consider Goodfellow Boulevard north of I-70. A combination of limited right-of-way, potential displacements and grade considerations were the issues affecting the potential use of Goodfellow Boulevard.

- The Norfolk Southern Railroad alignment at Riverview Boulevard near West Florissant Avenue also was eliminated as a candidate since its use would displace too many residences to make the change in grade to transition the alignment between Riverview Boulevard and the railroad.

The next section of this document describes the six recommended alternatives.

5.0 SET OF ALTERNATIVES FOR FURTHER ANALYSIS

5.1 DESCRIPTION OF REASONABLE ALTERNATIVES

Selection of reasonable alternatives for more detailed analysis, the fifth step in the MTIA process, defines the alternatives to be carried forward while noting that these could be further refined as the technical studies in the remainder of the MTIA are completed. As described in Section 4.0, the broad range of alternatives was screened to a reasonable number of alternatives. These were approved in July 1999 by the EWGCC Board for further study in the Northside MTIA.

Based on the screening results, six alternatives are recommended for further study in the Northside Study Area. These alternatives address different aspects of the purpose and need for improvements in the Northside and encompass a range of transportation modes and investments. The Locally Preferred Alternative (LPA), to be selected at the conclusion of this MTIA, may combine one or more of these reasonable alternatives. For example, the LPA could include features of the TSM, a roadway alternative and an LRT alternative. The year 2020 is assumed as the year of analysis for all of the alternatives. The six alternatives are:

- Alternative 1 - No Build
- Alternative 2 - Transportation Systems Management (TSM)/Enhanced Bus
- Alternative 3 - Light Rail Transit: Natural Bridge Road/West Florissant Avenue
- Alternative 4 - Light Rail Transit: Natural Bridge Road/TRRA Right-of-Way (ROW)/ MetroLink
- Alternative 5 - Roadway: Route 367/Jennings Station Road/I-70
- Alternative 6 - Roadway: Route 367/West Florissant Avenue/I-70 and Riverview Drive/Hall Street

5.1.1 Alternative 1 - No Build

The No Build Alternative consists of planned and committed transportation projects that are anticipated to be in place by the year 2020, the planning horizon year for the Northside MTIA. The No Build Alternative represents the future year transportation condition if no further action is taken in the Study Area beyond what is already planned. All the No Build Alternative improvements are assumed to be in place in all of the other alternatives. This alternative is required by federal planning guidelines to provide a basis of comparison against which to measure the effects of the other alternatives.

The following lists the planned and committed transportation projects included in the No Build Alternative.

Light Rail Transit (LRT)/Bus Transit

- Cross County MetroLink extension (all three segments: Forest Park to Clayton; Clayton south to Butler Hill Road in South St. Louis County; Clayton north to Florissant in the vicinity of the I-270/I-170 interchange).
- Proposed bus transfer centers.
- Transition to transit center design for bus service.
- Flexible routing and demand response bus service.
- Downtown multimodal center at 14th Street and Spruce Street.

Highway/Roadway

- New Mississippi River Bridge (8-lane) and I-70 relocation from Madison Avenue to Illinois state line. New ramps from 14th Street and Tucker Boulevard to new I-70 bridge.
- Close ramps on I-70 at Poplar Street Bridge and Memorial Drive.
- 22nd Street Parkway between I-64 and Martin Luther King Boulevard.
- New ramps at Spruce Street and I-64 for Northbound and Southbound I-70.
- Auxiliary lanes and interchange improvements on I-64 from Kingshighway Boulevard to Tower Grove Road.
- Central Corridor signal synchronization – Kiel Center, Busch Stadium and Convention Center (controlled signals, closed loop detection, fiber optics, major event traffic handling).
- Signal synchronization – West Florissant Avenue – Sunbury Avenue to Seven Hills Drive and Lucas-Hunt Road – West Florissant Avenue to Hord Avenue.
- Bellefontaine Road – Sierra Vista Road to Horizon Village Drive – Widen from 2 to 3 lanes.
- Signal coordination and TSM improvements along Grand Avenue, Kingshighway Boulevard and Natural Bridge Road within City Limits.
- Jennings Station Road – I-70 to West Florissant Avenue – widen from 2 to 5 lanes.
- West Florissant Avenue – Jennings Station Road to Lucas-Hunt Road – widen from 4 to 5 lanes.
- Old Halls Ferry Road – Dunn Road to Parker Road – widen from 2 to 3 lanes.
- Reconstruction of I-170/I-270 interchange west of Northside Study Area.
- Spruce Street extension at downtown multimodal center.

Intelligent Transportation Systems (ITS)

- Transit ITS strategies.
- ITS Improvements, district-wide, such as freeway on-ramp signals, changeable message boards, vehicle detection on the mainlines.
- Automated Vehicle Location (AVL) technology, including signal preemption for transit vehicles.

5.1.2 Alternative 2 - Transportation Systems Management/Enhanced Bus

The TSM/Enhanced Bus Service Alternative consists of an integrated package of low cost or operational transportation projects for the Study Area, such as increased bus service, traffic signal coordination and access management along arterial roadways, and intelligent transportation system improvements. In addition, this alternative has a strong set of bus enhancements. These include exclusive and/or semi-exclusive bus lanes along Lewis and Clark Boulevard to Jennings Station Road, then continuing south to I-70 and using the reversible lanes (perhaps with new, bus only ramps) on I-70 into Downtown. Exclusive and/or semi-exclusive bus lanes would begin at I-270 on West Florissant Avenue and continue to Jennings Station Road and, again, connect with I-70. There would be bus route restructuring to compliment the enhanced bus service improvements. The TSM Alternative is required, along with the No Build Alternative, by federal planning guidelines to provide a basis of comparison to the higher cost, high capital investment alternatives.

The following lists additional TSM/Enhanced Bus Service Alternative operational improvements and/or low cost capital improvements designed to make the best use of the existing transportation infrastructure. All the improvements listed in the No Build Alternative are assumed to be in place with the TSM/Enhanced Bus Service Alternative.

Transit

- Continue development of transit centers and route restructuring to provide connectivity to jobs in Daniel Boone (West St. Louis County) Study Area.

- Continue transit corridor improvements/amenities including signal preemption, curb cuts, and so forth.
- Altogether would represent about a 20 percent increase in transit service compared to existing conditions.
- Develop bus rapid transit (BRT) service from North St. Louis County via exclusive or semi-exclusive bus lanes on New Halls Ferry Road and Highway 367 (Lewis and Clark Boulevard) feeding into the I-70 reversible lanes either at Jennings Station Road or West Florissant Avenue.

Highway/Roadway

- Operational improvements on Route 367 north of I-270.
- Access management and/or signal coordination along key arterials: Forest Park Parkway (Grand Avenue to City limits), New Halls Ferry Road, Lindbergh Boulevard, Natural Bridge Road, St. Charles Rock Road, and Page Avenue to improve traffic flow.

Bikeway/Pedestrian

- Support pedestrian movements.
- Support bike trails/paths.

Intelligent Transportation Systems (ITS)

- "Regional" diversionary routing (in other words, use of variable message signs before major decision points, information systems).
- Freeway on-ramp, ramp signals/queue bypass at on-ramps that are near or that serve transit centers.
- Extend implementation of ITS improvements (approximately 60 percent increase). Possibilities include accident investigation, glare screens, truck channelization strategies, and so forth.

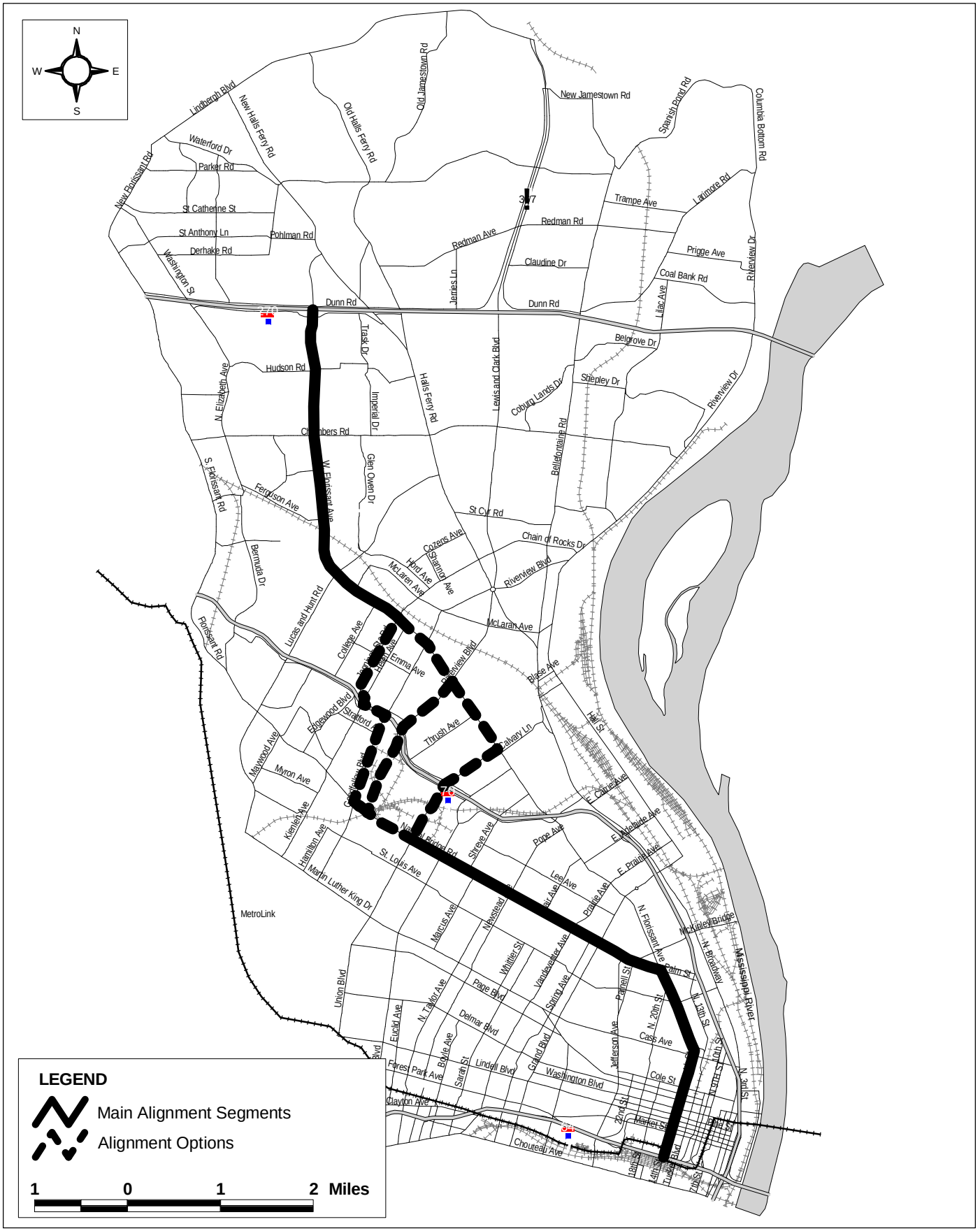
5.1.3 Alternative 3 - Light Rail Transit (Natural Bridge Road/West Florissant Avenue)

Alternative 3 (see Figure 5.1-1) is a light rail transit facility (LRT) (MetroLink). This facility would be primarily at-grade and run in the street right-of-way either in the middle or along one side. LRT Alternative 3 would include stations spaced approximately one-half to one mile apart near population and employment centers along the alignment, with exact locations to be determined in later phases of the planning process. Park-and-ride lots could be included at several stations, convenient to roadways and/or the interstates. Bus feeder and circulator buses would provide connections between stations and major destination points not within walking distance of stations (generally greater than one-half mile).

LRT Alternative 3 would connect the Downtown St. Louis area to I-270 in the vicinity of Florissant Valley Community College. The alignment would:

- Begin in downtown and go north along 14th Street or other street east of 14th Street (to be determined in later phases of the planning process)
- From 14th Street it would go northwest along Natural Bridge Road
- Heading north the alignment could follow one of three alternatives that cross I-70 and connect to West Florissant Avenue:
  - Turn north on Union Boulevard and continue to West Florissant Avenue.
  - Turn north through the industrial area just east of Goodfellow Boulevard to Riverview Boulevard. Continue on Riverview Boulevard and connect to West Florissant Avenue.

  - Turn north on Goodfellow Boulevard and continue north to I-70. At I-70 head northwest adjacent to I-70 to Jennings Station Road. Head north on Jennings Station Road to West Florissant Avenue.
- After connecting with West Florissant Avenue, the alignment would continue northwest on West Florissant Avenue and terminate in the vicinity of the Florissant Valley Community College.



Source: Parsons Brinckerhoff Quade & Douglas, May, 1999.

Figure 5.1-1

Northside Study Area
Major Transportation Investment Analysis

Alternative 3

LRT Alternative 3 is recommended for more detailed study since it uses existing in-street rights-of-way where sufficient rights-of-way exist, which minimizes property takes and costs. LRT Alternative 3 also would provide service to the areas in the Northside with the greatest population, employment and concentration of zero-car owning households. It offers the potential for transit-oriented development and neighborhood revitalization and redevelopment in the vicinity of the LRT stations. This alternative provides connectivity with the existing MetroLink system in Downtown as well as potential Southside light rail alternatives.

5.1.4 Alternative 4 - Light Rail Transit (Natural Bridge Road/TRRA Right-of-Way/MetroLink)

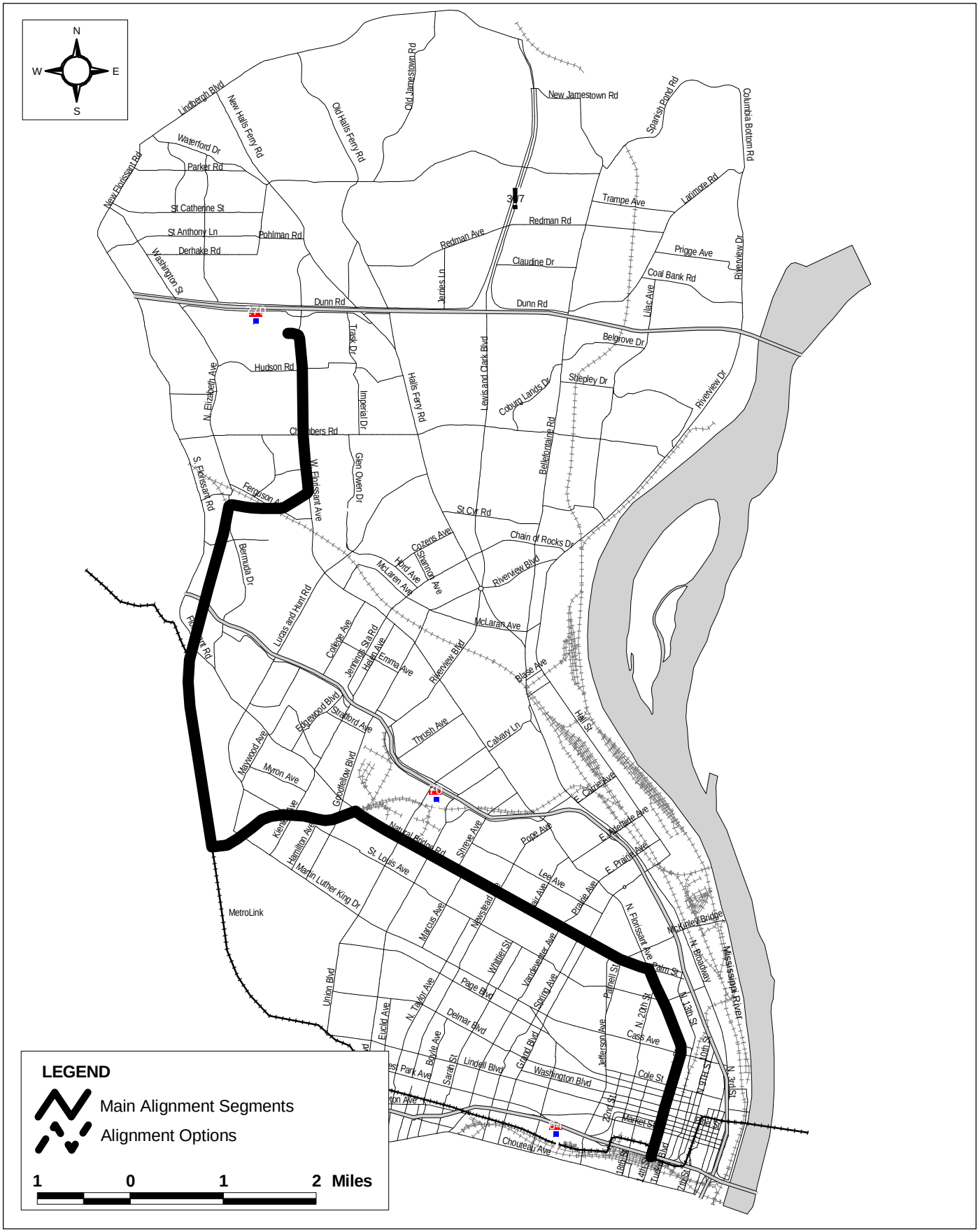
LRT Alternative 4 (see Figure 5.1-2) has many of the same features as the LRT Alternative 3. This alternative also would connect Downtown with North County. LRT Alternative 4 would:

- Begin in downtown, similar to LRT Alternative 3, and go north on 14th Street or other street east of 14th Street (to be determined in later phases of planning)
- From 14th Street it would go northwest at Natural Bridge Road.
- Just east of Goodfellow Road, head southwest adjacent to the existing TRRA rail line to the existing MetroLink corridor near the Rock Road Station.
- Head north in the MetroLink corridor, leaving the corridor near Florissant Road, using an abandoned rail line (now Trailnet Bikeway right-of-way) running parallel to Bermuda Drive.
- South of Ferguson Avenue, the line would go east in an existing right-of-way to West Florissant Avenue.
- After connecting with West Florissant Avenue, the alignment would continue northwest on West Florissant Avenue and terminate in the vicinity of the Florissant Valley Community College.

LRT Alternative 4 is recommended for more detailed study for many of the same reasons as the LRT Alternative 3. Alternative 4 also would use in-street as well as railroad rights-of-way, which potentially minimizes property takes and costs, and would provide service to the areas in the Northside with the greatest population, employment and concentration of zero-car owning households. It offers the potential for transit-oriented development and neighborhood revitalization and redevelopment. This alternative provides an opportunity to connect to future Cross-County, Southside and West County (Daniel Boone) MetroLink extensions. It also is a more direct transit connection between the University of Missouri-St. Louis (UMSL) and Florissant Valley Community College.

5.1.5 Alternative 5 - Roadway (Route 367/Lewis and Clark Boulevard/Jennings Station Road/I-70)

Roadway Alternative 5 (see Figure 5.1-3) would provide improvements to Route 367 that would include significant widening and alignment adjustments with intersection changes and enhancements, including potential grade-separations north of I-270 similar to an expressway. An expressway is an arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections. Major improvements on Lewis and Clark Boulevard south of I-270 to Jennings Station Road would be similar to a parkway. A parkway generally serves as an arterial highway for non-commercial traffic, with full or partial control of access, and may include a landscaped median or other features to offer a more park-like setting. In the case of the freeway and the parkway, both offer potential decrease in accident rates and increase the level of service.

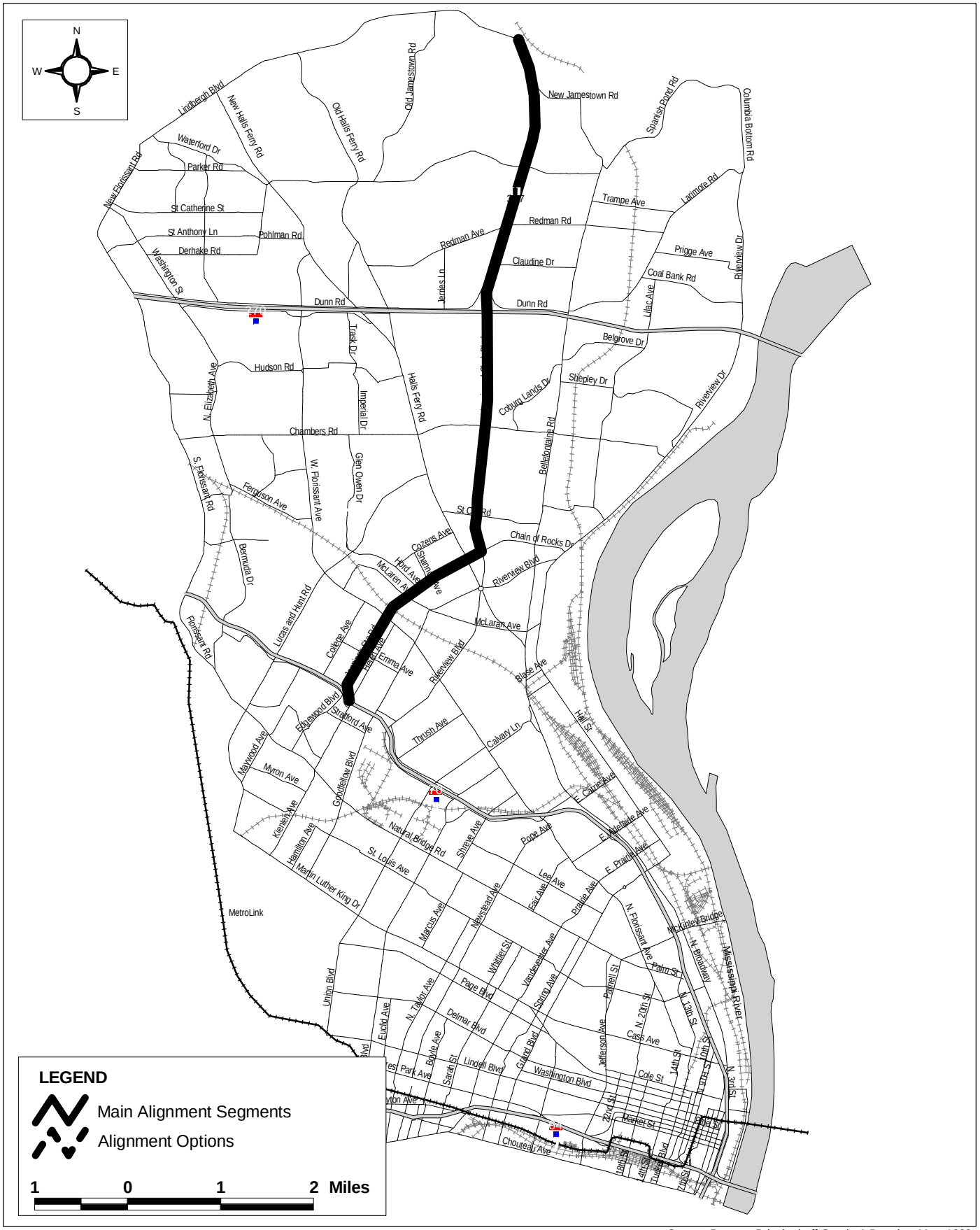


Source: Parsons Brinckerhoff Quade & Douglas, May, 1999.

Figure 5.1-2

Northside Study Area
Major Transportation Investment Analysis

Alternative 4



Source: Parsons Brinckerhoff Quade & Douglas, May, 1999.

Figure 5.1-3

Northside Study Area
Major Transportation Investment Analysis

Alternative 5

This alternative is recommended for more detailed study since it connects Downtown St. Louis with North County more directly and improves traffic safety on Route 367. It also would make use of existing and planned roadway improvements (such as the Jennings Station Road widening) and existing roadway rights-of-way.

The following more specifically describes roadways that would have improvements for Roadway Alternative 5. All the improvements listed in the No Build Alternative are assumed to be in place with Roadway Alternative 5.

- Begins in downtown at I-70 and uses the reversible lanes now under re-construction.
- Continues northwest to Jennings Station Road and heads north on Jennings Station Road as a 4-lane parkway (improvements are already planned south of West Florissant Avenue).
- At Route 367 the improvements would head north, crossing I-270 and continuing to the Illinois State line.

5.1.6 Alternative 6 - Roadway (Route 367/Lewis and Clark Boulevard/Riverview Boulevard/West Florissant Avenue/I-70 and Riverview Drive/Hall Street)

Alternative 6 (see Figure 5.1-4) would provide improvements that would be similar to Roadway Alternative 5 north of I-270; however, the improvements south of I-270 would be more modest. In addition, Riverview Drive would be upgraded to a parkway, connecting Downtown (via Hall Street, Grand Boulevard and I-70) and I-270.

Alternative 6 is recommended for more detailed study since it improves safety on Route 367 north of I-270. It also would make use of existing roadway improvements (such as those under construction on I-70) and existing roadway rights-of-way. The route also serves the industrial (trucking) area along the riverfront and enhances the existing scenic route.

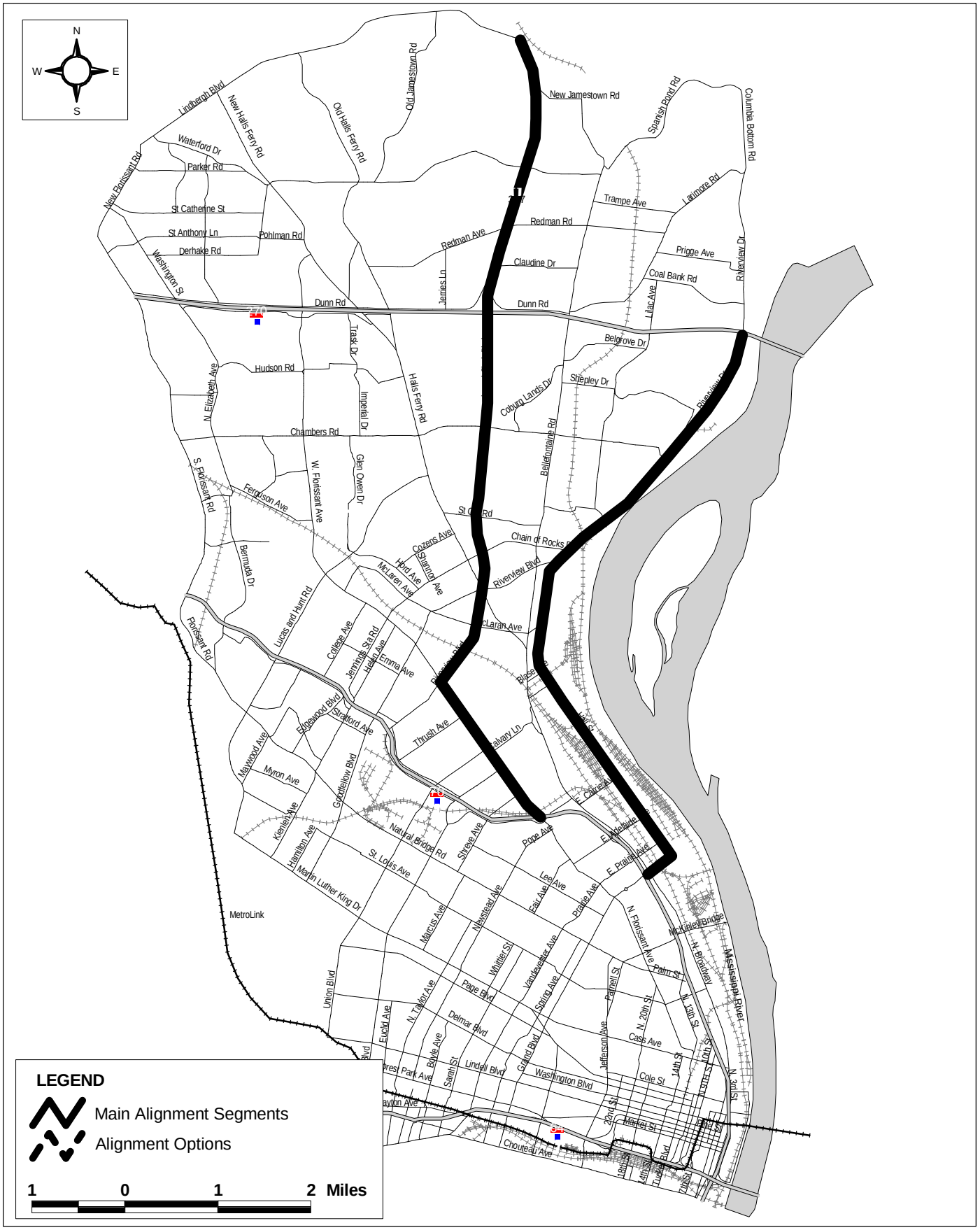
The following more specifically describes the roadways that would have improvements for Alternative 6. All the improvements listed in the No Build Alternative are assumed to be in place with Roadway Alternative 6.

Roadway Alternative 6 improvements to Route 367/Lewis and Clark Boulevard/Riverview Boulevard/West Florissant Avenue/I-70:

- Begin in downtown at I-70 and use the reversible lanes now under re-construction.
- Continue northwest to West Florissant Avenue.
- Continue northwest on West Florissant Avenue to Riverview Boulevard.
- At Riverview Boulevard, the improvements would continue north through Halls Ferry Circle to Route 367.
- At Route 367, the improvements would head north, crossing I-270 and continuing to the Illinois State line.

Roadway Alternative 6 improvements to Riverview Drive/Hall Street:

- Begin in Downtown at I-70 and East Grand Boulevard.
- Continue northeast and turns northwest onto Hall Street.
- Head northwest on Hall Street.
- Continue north on Hall Street, tuning northeast as it becomes Riverview Drive.
- Continue northeast on Riverview Drive to I-270.



Source: Parsons Brinckerhoff Quade & Douglas, May, 1999.

Figure 5.1-4

Northside Study Area
Major Transportation Investment Analysis

Alternative 6

5.2 NEXT STEPS – DETAILED ANALYSIS OF ALTERNATIVES

As shown in Figure 2.3-1, the next step is the more detailed technical analysis. The analysis will include:

- Conceptual engineering
- Development of preliminary operating plans
- Travel forecasting
- Environmental impact assessment
- Community impact assessment
- Capital cost estimates
- Operating and maintenance cost estimates

This technical analysis will be followed by a financial analysis to determine the sources of potential funding to finance the alternatives.

This information will be presented in an evaluation report so that decision-makers and the public can determine the relative benefits, costs and impacts of each alternative and which alternative (or combination of alternatives or elements of alternatives) best meets the purpose and need for major transportation investments in the Northside Study Area. Finally, the EWGCC Board of Directors will select a Locally Preferred Alternative (LPA) for the Northside Study Area, which will then be adopted into the long-range transportation plan for the St. Louis region.

6.0 REFERENCES

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