

Executive Summary

Background

As congestion continues to affect mobility in the region, the Ozarks Transportation Organization (OTO) is particularly concerned with traffic movement. The North-South Corridor Study, completed in 2007 for the OTO, examines and prioritizes transportation options that would improve regional and local north-south travel, with particular emphasis on the area south of the James River Freeway and north of I-44. Four routes between Route MM on the west and U.S. 65 on the east were identified by the OTO as potential locations to improve north-south travel in the Springfield area. The four corridors studied include:

- U.S. 160/West Bypass/State Highway FF
- Missouri Highway 13/Kansas Expressway
- Campbell Avenue/U.S. 160
- National Avenue

The North-South Corridor Study has three phases. The first phase of the study is an evaluation of current transportation conditions. The second study phase identifies the traffic implications of continued growth in the OTO area on the existing street and highway system and evaluates transportation options and alternatives. The third phase of the study discusses how the prioritized list of projects could move forward for funding and construction.

Stakeholder and public participation was a key factor to ensure success of the study. With the assistance of the OTO staff, a Technical Subcommittee, comprised of representatives from state and local government organizations, was formed to guide the major decisions and completion of this study. The Subcommittee also had the role of representing the Technical Committee, which recommends approval of the study to the OTO Board for adoption. Eight public meetings were held. Four meetings were held early in the project to discuss project needs and identify potential solutions. The second set of four meetings was held toward the end of the project in order to obtain feedback on the recommended priorities.

On December 18, 2003, the OTO Board of Directors adopted the following top five list of High Priority Projects. In this list is this study itself. The results of this study do not necessarily replace the High Priority Projects. The OTO will need to consider incorporating the recommendations of this study into this list.

- U.S. 60 and U.S. 65 interchange (including at-grade rail crossing on James River Freeway).
- U.S. 65 and I-44 interchange.
- Glenstone/Republic and James River Freeway interchange.
- Transportation planning study to enhance connectivity within the region and MPO with emphasis on North/South corridors (Kansas Expressway, West By-Pass, U.S. 160 North to Willard, Route 13 North to Bolivar, National Avenue, U.S. 65, U.S. 160/Campbell Avenue). (the North-South Corridor Study)
- Development of multi-modal corridor(s) to the new Airport Terminal.

On October 19, 2006, the OTO Board of Directors adopted the following list of High Priority Corridors. This list includes two of the corridors that were evaluated as part of this study.

US 65 – CAPACITY IMPROVEMENTS TO INCLUDE SIX LANES FROM I-44 TO ROUTE 14

Interchange improvements at Chestnut and US 65 including RR grade separation
Interchange improvements at Battlefield and US 65
Interchange improvements at Route 14 and US 65

US 60 – CAPACITY IMPROVEMENTS

Interchange improvements at National Avenue and James River Freeway
Interchange improvements at James River Freeway and Campbell Avenue
Upgrade to Freeway from US 65 through Rogersville
US 60 West Relocation Study (MPO portion of US 60/MO37 from AR to JRF)

I-44 – CAPACITY IMPROVEMENTS

Interchange improvements at Route 13 and I-44
Interchange Improvements at Route 266 and I-44

US 160 – CAPACITY IMPROVEMENTS

Capacity improvements from Springfield to Willard
Capacity improvements from James River Freeway south through Nixa

ROUTE 14 – CAPACITY IMPROVEMENTS

Capacity improvements from Business 65 in Ozark to US 160 in Nixa
Bridge Widening over 65

SELECTED NORTH SOUTH CORRIDOR RESULTING FROM STUDY

This North-South Corridor Study addresses some of the many areas of traffic congestion in the region. All of these corridors will need to be addressed in order for the OTO region to maintain regional mobility and ensure quality economic development. The recommendations of this study in no way preclude the OTO from addressing the other congested roadways in the region, nor does it suggest the recommendations in this report are more important than the OTO region’s Top Five Priority Projects. Although this study provides the MPO the ability to better set priorities, whether or not the recommended corridor from the study is a top 5 project must still be voted on by the OTO Board.

Summary of Current Transportation Conditions

The study provides an inventory of the primary north-south corridors in the study area. This inventory includes an overview of land use, traffic volumes, crash data, and environmental conditions. Major findings are summarized below.

- Land Use/Growth – the Springfield area is growing rapidly. While growth has occurred throughout the region, a concentration of new growth is occurring south of the James River Freeway. The City of Willard is experiencing growth as well. This growth is resulting in increased traffic volumes and congestion of the existing streets and highways.
- Traffic congestion is currently occurring on north-south routes. The most congested locations are shown to be:
 - Kansas Expressway – Atlantic to Sunset
 - Campbell Avenue – Battlefield to Missouri Route CC
 - National Avenue – Trafficway to westbound Route 60 ramps
- The locations with the highest crash rates include:
 - West Bypass – Division to Chestnut
 - Kansas Expressway – Eastbound I-44 ramps to Kearney
 - Kansas Expressway – College to Walnut
 - Campbell Avenue – Battlefield to westbound U.S. 60 ramps
 - National Avenue – Battlefield to Montclair
- Fixed route transit service is limited to the City of Springfield and not supported in other locations.



Implications of Continued Growth

The projected growth of the area south of the James River Freeway is expected to result in higher traffic volumes and slower travel times. An analysis of existing and future conditions indicate limitations with connecting the area south of the James River with the rest of the metropolitan area. Given the assumptions of future growth developed by the OTO and used in the Long Range Transportation Plan, the traffic model for the forecast year 2030 shows that the north-south travel demand would be approximately 70,000 trips over the available capacity (see **Table ES-1**). This level of demand does not include volumes on U.S. 65, which is also forecast to experience traffic congestion. Additional transportation strategies are needed within the corridors under study, even if U.S. 65 is eventually widened. Similarly, U.S. 160 connecting Willard to the Springfield metropolitan area will be 12,000 trips over capacity (see **Table ES-2**).

Table ES-1 Comparison Future No Build with Current Conditions
(South of James River Freeway)

Variable	2000	2030	% Growth
Volumes at James River	37,470	112,800	248%
Roadway Capacity at James River	37,200	37,200	0%
Peak Travel Time (minutes) between Republic Road and Route 14 (6.6 miles)	16.3	56.4	250%
Average Peak Speed (m.p.h.)	24.2	6.9	-71%

Table ES-2 Comparison Future No Build with Current Conditions
(U.S. 160 North)

Variable	2000	2030	% Growth
Volume on U.S. 160 South of Willard	14,040	24,200	72%
Roadway Capacity of U.S. 160	13,600	13,600	0%
Peak Travel Time (minutes) From Willey St. in Willard to I-44 (6.4 miles)	14.5	24.6	70 %
Average Peak Speed (m.p.h.)	26.6	15.6	-41%

The transportation strategies investigated in this study follow the approach endorsed by the Federal Highway Administration as reflected in the OTO Congestion Management System (CMS). Initial strategies included:

- Travel Demand Management
- Transit Service Options
- High Occupancy Vehicle Lanes
- Transportation System Management
- Intelligent Transportation Systems
- Land Use Planning and Site Requirements
- Increasing Road Capacity

The review of existing conditions and growth forecasts indicate that even with full implementation of transit, TSM, TDM, and land use planning strategies, additional roadway capacity will be needed in order to maintain an acceptable level of travel mobility.

The initial build alternatives developed as part of the study are described below:

West Bypass/State Highway FF

Beginning north of Weaver Road, the two-lane section of Highway FF would be widened to a four-lane expressway section or possibly relocated from the current alignment. South of Farm Road 194 (county line), a new four-lane expressway section would be constructed that would cross the James River, continue in a southeastern direction, and connect to Highway 14 on the west side of the City of Nixa. The route could ultimately be extended farther southeast connecting with U.S. 160 south of the City of Nixa.

Missouri Highway 13/Kansas Expressway

In this alternative, the Kansas Expressway would be extended farther south as a new four-lane expressway. The new alignment would likely move slightly eastward in order to avoid residential areas. Farther south, the alignment could use or be located close to Farm Road 141. It would continue southward to Highway 14 aligning with Route M.

Campbell Avenue/U.S. 160

In this alternative, the existing Campbell Avenue designated as U.S. 160 south of the James River Freeway, would be widened from four lanes to six lanes. In this alternative, the six lane widening would begin north of U.S. 60 and continue south of Highway 14.

National Avenue

In this alternative, National Avenue would be extended southward from Gaslight as a four-lane arterial roadway. The alignment of this new roadway section would shift in order to minimize impact to residential areas and follow or parallel the Cheyenne Road alignment. The alignment could then continue in a southwest direction to connect back with U.S. 160.

Highway 13 North of I-44

This alternative would construct a new freeway connection for Highway 13 with a U.S. 160/West Bypass and I-44 interchange. This new connection would have grade-separated connections with the existing Highway 13 then extend to the southwest. U.S. 160 north of I-44 would connect with the new Highway 13 connection.

U.S. 160 widening north of I-44

This alternative would widen U.S. 160 from two lanes to four lanes north of I-44 to Willard.



Evaluating the Alternatives

The degree to which alternatives achieve project objectives is determined through the application of evaluation criteria that reflect the project objectives. The evaluation criteria for the North-South Corridor Study include the following items:

- Mobility Benefits
 - Travel time reduction for regional north-south traffic
- Growth & Economic Development Benefits
 - Provide opportunity for new development
- Environmental – Impact to the natural environment
 - Minimize impact to wetlands, streams, rivers, floodplains, parks and historic sites
- Environmental – Impact to the built environment

- Minimize impacts to existing buildings, commercial areas and neighborhoods
- State/federal funding eligibility
 - The degree in which the project serves statewide travel interests and/or would be attractive to MoDOT to participate in project funding
- Magnitude of cost
- Potential for extension to connect with U.S. 160 south of the City of Nixa

Using the evaluation criteria described in the first section of this chapter, a recommended prioritization strategy was developed for the six project corridors under study. The project priorities of the alternatives studied are listed in **Table ES-3**. The project priorities are based upon the alternative scoring and weighting process described in this report.

Table ES-3 Recommendations

New Construction:		System Management:
1)	West Bypass/State Highway FF (44.0)	Campbell Avenue/U.S. 160 (39.0)
	Improve existing and construct new sections of four-lane roadway to extend south of Highway 14.	Transportation System Management including adding turn lanes and improving intersection geometrics, access management, ITS, land use planning and transit service enhancements
2)	Kansas Expressway Extension (41.0)	
	Construct new sections of two-lane roadway to extend south connecting with the extended State Highway FF	Further Study:
3)	U.S. 160 widening north of I-44 (40.3)	Highway 13 Connector
	Widen U.S. 160 to four lanes north of I-44 to Willard.	Study as part of MoDOT's Statewide I-44 Corridor Study
4)	National Avenue Extension (36.4)	
	Construct new sections of four lane roadway to extend south of Highway 14.	



Magnitude of Cost

Generalized estimates of probable construction costs were prepared to provide cost comparisons. The costs include construction, right-of-way, engineering and administration, as well as the costs of interchange modification at the James River Freeway at each location. The costs for interchange reconstruction were obtained from the LRTP and these figures will be refined as further engineering studies are completed. For Missouri Highway 13/Kansas Expressway, cost estimates do not include the cost for right-of-way already purchased by Greene County.

Alternative	Estimated Cost (Mil. \$)
West Bypass/State Highway FF	94.0
Missouri Highway 13/Kansas Expressway	102.4
Campbell Avenue/U.S. 160	84.3
National Avenue	113.5
Highway 13 Connector	77.1
U.S. 160 widening north of I-44	42.2

Project Refinement / Recommendation

Based upon these findings, a new alternative was developed. This alternative is shown in **Figure ES-1**. The refined alternative includes the West Bypass/Highway FF extension as a four-lane expressway route as previously indicated. The alignment for the Kansas Expressway would continue south from Republic Road. South of the proposed east-west arterial, it would turn to the southwest and connect with the West Bypass/Highway FF alignment. The two would share a common alignment as that route would extend south of the City of Nixa and connect with U.S. 160. The Kansas Expressway extension would initially be constructed as a minor arterial to be more compatible with the residential character north of the James River. The cost of the refined alternative is estimated at \$226 million. Also shown in the figure are the U.S. 160 (Campbell Avenue) and National Avenue general alignments. The generalized alignments for the U.S. 160 north of I-44 and the Highway 13 connector are shown in **Figure ES-2**.

Next Steps and Timeline

The study discusses the anticipated steps needed to move each project from recommendation to construction. Since full funding for these alternatives will not be available immediately, a key concern is to be able to preserve the opportunity for future construction in these high growth locations. The time needed between this study phase and project construction is a minimum of five to seven years. The actions completed during that time include environmental documentation, determining route location, completing roadway design, and purchasing right-of-way. Given the need to limit building activity within the area identified for roadway improvement, the use of zoning, subdivision and corridor mapping was identified as important steps that local governments can take to helping these transportation projects to occur.

The next step in the project development process is to complete an environmental impact study (EIS for the West Bypass/Highway FF extension/ Kansas Expressway extension. An earmark was included in SAFETEA-LU for which an amount of \$1.4 million is remaining and could be used for an environmental and location study in the U.S. 160/Kansas Expressway Corridor. The timeline for environmental and location study is approximately 2 to 3 years in length. The OTO Major Thoroughfare Plan should be amended to reflect the corridor locations identified in this study. At the same time, the Cities of Springfield, Battlefield, Nixa, and Greene and Christian Counties should monitor building permit activity immediately adjacent to the identified corridors and within the anticipated right-of-way corridor for new sections of roadway in anticipation of future right-of-way requirements.

Following completion of the EIS, the anticipated right-of-way corridor can be further refined on the local major thoroughfare and zoning maps. If a development or a sale of a property becomes apparent, communities should work with MoDOT on hardship right-of-way purchases in order to preserve the corridor prior to the completion of right-of-way plans and initiation of right-of-way acquisition. Given anticipated funding constraints, a plan for the phased construction of each corridor is included in Final Report.



Figure ES-1 Recommended General Corridor Alignments

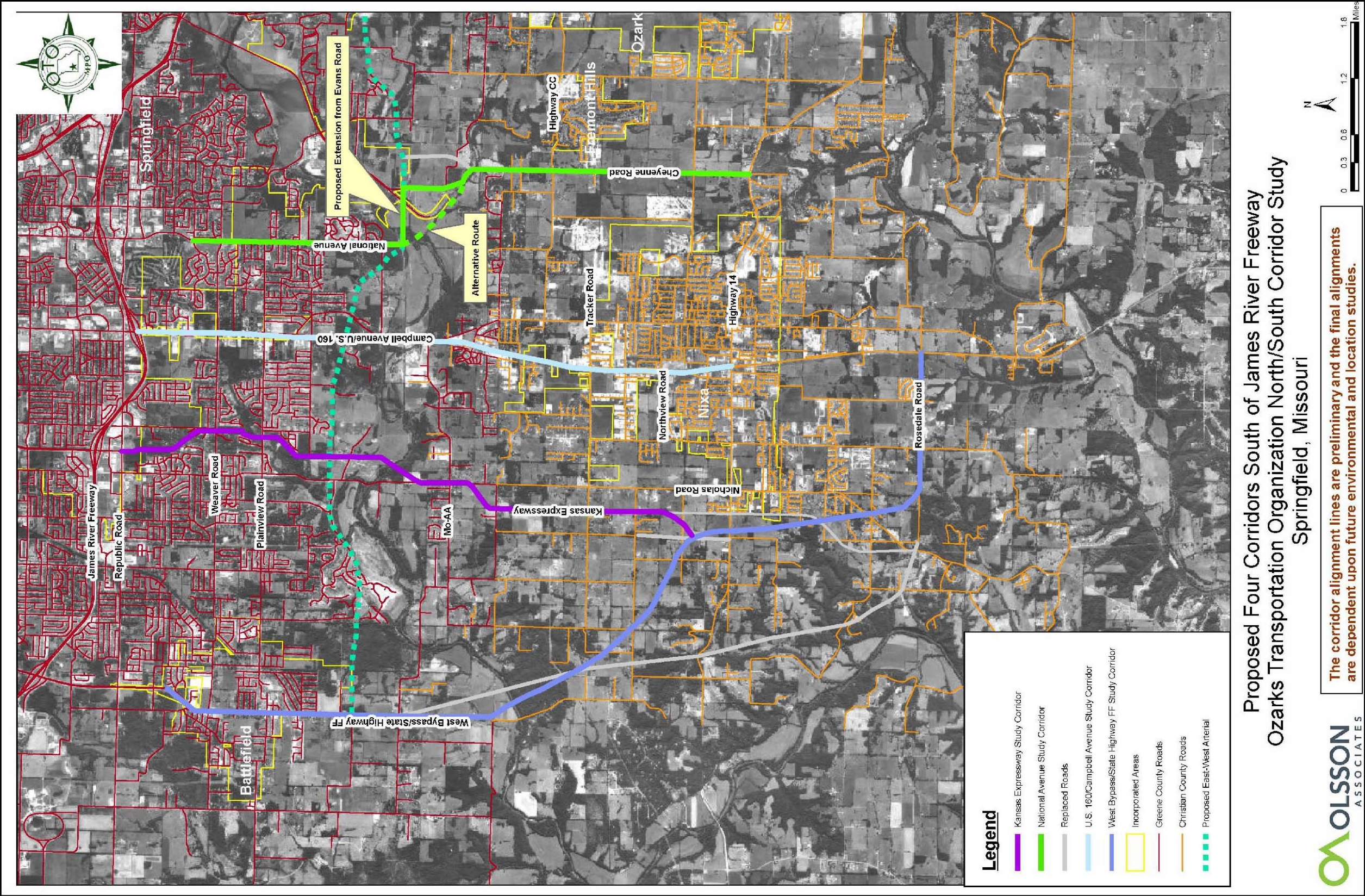


Figure ES-2 Recommended General Corridor Alignments North of I-44

