

PLANNING AND ENVIRONMENTAL LINKAGES LEVEL 3 SCREENING METHODOLOGY AND RESULTS MEMORANDUM



CA0602

Interstate 530 – Highway 67

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Arkansas State Highway &
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LIST OF ATTACHMENTS

- Attachment A: Lane Configurations of the Reasonable Alternatives
- Attachment B: EJ/LEP Level 3 Screening Evaluation

1.0 INTRODUCTION

The Arkansas Highway and Transportation Department is conducting the Interstate 30 (I-30) Planning and Environmental Linkages (PEL) Study to identify the purpose and need for improvements within the I-30 PEL study area, determine possible viable alternatives for a long-term solution, and recommend alternatives for further evaluation. The study team, with public and agency input, developed the *I-30 PEL Study Purpose and Need Report (Appendix A)*, which identified the purpose and need for the project, along with the goals of the study. The team then developed the *Universe of Alternatives*, which contains a wide range of possible solutions to the issues in the study corridor identified in the purpose and need and the study goals.

The *I-30 PEL Study Alternative Screening Methodology (ASM)* technical report describes the measures and the scoring system utilized to evaluate the alternatives in a tiered screening process as described below:

- **Level 1** was a qualitative screening of the Universe of Alternatives based on the purpose and need. Those alternatives that passed Level 1 Screening were advanced to Level 2 as Preliminary Alternatives.
- **Level 2** was primarily a qualitative screening (with some quantitative analysis) of the Preliminary Alternatives based on the study goals, which produced the Reasonable Alternatives.
- **Level 3** was primarily a quantitative screening of the Reasonable Alternatives based on the study goals. Level 3 Screening resulted in recommended solution(s) which will be advanced for further development/study during the subsequent National Environmental Policy Act (NEPA) study.

The documents and analysis previously produced that were relied upon for the development of the Level 3 Screening include:

- *I-30 PEL Purpose and Need Report (Appendix A)*;
- *I-30 PEL Universe of Alternatives (Appendix D-1)*;
- *I-30 PEL Alternative Screening Methodology (Appendix D-2)*;
- *I-30 PEL Level 1 Screening Methodology and Results Memorandum (Appendix D-3)*; and
- *I-30 PEL Level 2 Screening Methodology and Results Memorandum (Appendix D-4)*.

This document presents the results of the Level 3 Screening process.

The proposed I-30 PEL study area is located in central Arkansas and stretches approximately 6.7 miles through Little Rock and North Little Rock. The study area begins at Interstate 530 (I-530) in the south and extends to Interstate 40 (I-40) in the north, and along I-40 eastwardly to its interchange with United States Highway 67 (Hwy. 67) in North Little Rock as shown in **Figure 1**.

Figure 1. I-30 PEL Study Area



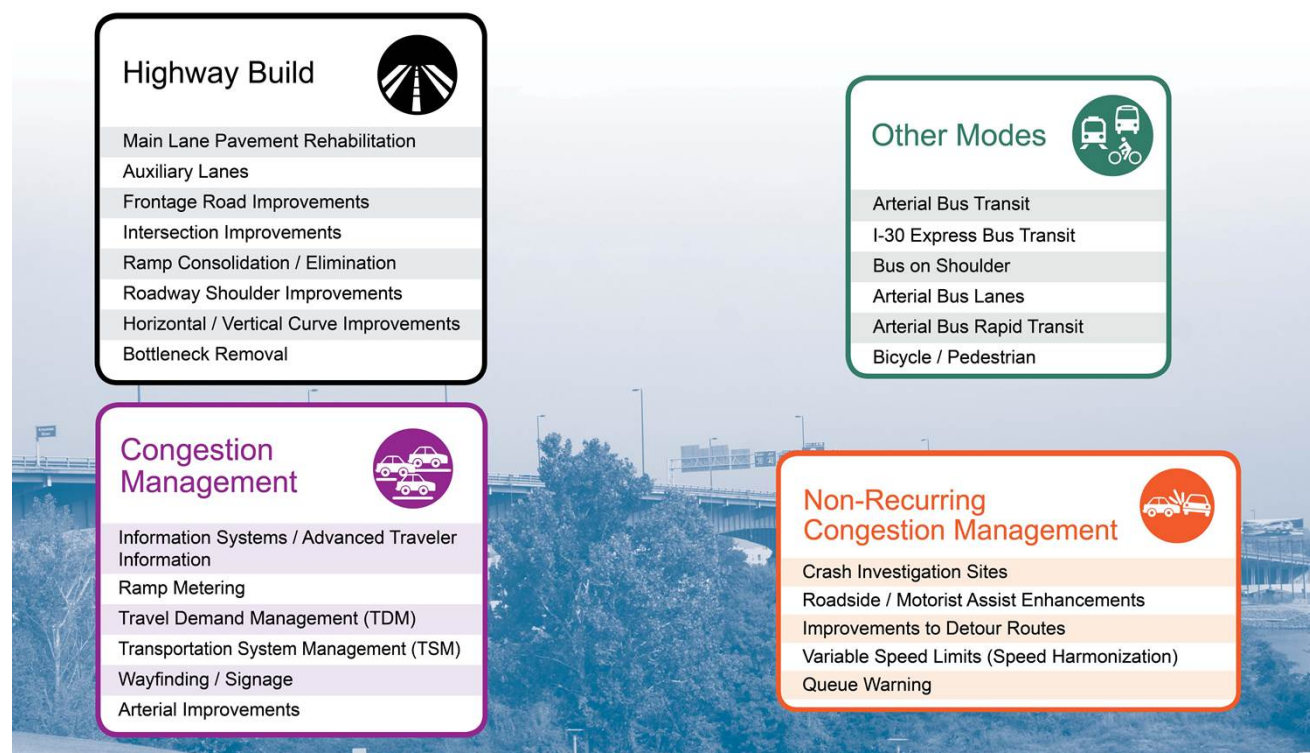
2.0 LEVEL 3 ALTERNATIVE SCREENING METHODOLOGY AND RESULTS

2.1 Alternatives Analyzed in Level 3

For Level 3 analysis, the designs for each of the Reasonable Alternatives were refined to include interchanges providing connectivity to the local street network and other modes of transportation. This provided the study team with designs for each alternative that were sufficient for the development of micro-simulation models for traffic and safety analysis and more accurate right-of-way (ROW) footprints for environmental analysis.

The Reasonable Alternatives represent complete transportation solutions, incorporating the improvements shown in **Figure 2** as needed to create the most efficient transportation corridors possible.

Figure 2. Transportation Solutions Incorporated in the Reasonable Alternatives



The following alternatives were evaluated in Level 3.

- **No Action** – The No Action Alternative is required to be analyzed in PEL and NEPA studies.
- **8-lane C/D¹** (3 main lanes + 1 C/D lane in each direction) – This alternative included adding 1 C/D lane in each direction from just south of 3rd Street in

¹ A C/D system includes one or more freeway lanes that are parallel to, but separated from the through traffic main lanes. The C/D system provides access to the local service interchanges, thereby eliminating most of the weaving areas from the I-30 main lanes.

Little Rock to just south of Broadway Street in North Little Rock, with the new I-30 Bridge over the Arkansas River being constructed to the east or to the west of the existing bridge. Some sections of the C/D road also required an auxiliary lane to accommodate the heavy traffic moving into and out of the downtown areas. Outside the location of the C/D road, the new facility included the addition of 1 main lane in each direction for a total of 8 main lanes throughout the rest of the study corridor.

- **10 Main Lanes** (5 main lanes in each direction) - This alternative included adding two main lanes to each side of the current 6-lane facility. The improved facility would consist of 10 main lanes throughout the corridor, 5 lanes in each direction, with the new I-30 Bridge over the Arkansas River being constructed to the east or to the west of the existing bridge.
- **10-lane C/D¹** (3 main lanes + 2 C/D lane in each direction) – This alternative included adding 2 C/D lanes in each direction. The southbound C/D lanes would begin near 15th Street in North Little Rock and end just south of 3rd Street in Little Rock. The northbound C/D lanes would begin just south of 3rd Street in Little Rock and end near 13th Street in North Little Rock. Outside the location of the C/D roads, the new facility included 5 main lanes in each direction, having the same footprint as the 10 Main Lane Alternative. This alternative also included replacement of the I-30 Bridge over the Arkansas River, with the new bridge width extending to the east and west of the existing bridge location.

2.2 Modifications to Reasonable Alternatives

Some similarities exist across all three alternatives with regard to connections and intersection improvements, as listed below.

- In the existing condition, vehicles traveling from I-30 must cross two lanes of I-40 east in order to reach the left exit to travel north on Hwy. 67. This weave is eliminated with the addition of a right exit followed by a flyover ramp from I-40 east to northbound Hwy. 67.
- In the existing condition, vehicles traveling from Hwy. 67 toward Little Rock must cross two lanes of I-40 west in order to reach the left exit for I-30 south. This weave is eliminated with the addition of a right exit followed by a flyover ramp from I-40 west onto I-30.
- All alternatives required replacement of the Arkansas River Bridge, with the number of lanes determined by the lane configuration on either side of the river.
- The ramp from northbound I-30 to westbound I-40 was expanded to include 2 lanes.
- North Cypress Street, which serves as a frontage road on the west side of I-30 north of the Arkansas River, dead ends on either side of the Union Pacific Railroad, making the frontage road system discontinuous. A new connection was added spanning the railroad tracks. The two-way section of North Locust

Street on the east side of I-30 was also converted to one-way, effectively completing a one-way frontage road system north of the Arkansas River.

- American Association of State Highway and Transportation Officials (AASHTO) standards recommend no more than one interchange per mile along urban interstates. The existing I-30 design is unsafe as a result of too many access points, with two interchanges (a full interchange at 15th Street and a split-diamond interchange between Broadway Street and Bishop Lindsey Avenue) within a 1.25 mile section. In order to improve safety and mobility, the 15th Street interchange was eliminated and modifications were made to the split-diamond interchange. To facilitate connectivity, Texas U-Turns were added near Bishop Lindsey Avenue and 19th Street.
- Access from North Little Rock to I-40 eastbound was provided via a slip ramp from the I-30/I-40 frontage road onto the ramp leading from I-30 to I-40 eastbound.
- The complex interchange at Cantrell Road was proposed to be replaced with a diverging diamond interchange that would improve traffic flow and reduce the space required for the interchange, leaving potential excess ROW.
- The southbound exit ramps from I-30 to 6th and 9th Streets were eliminated. Southbound access from I-30 into downtown Little Rock is provided via a flyover ramp from near Cantrell Road to the existing southbound frontage road.
- The 1 lane section of I-530 northbound leading into I-30 was expanded to 2 lanes.
- Each widening alternative, with the exception of the 10-lane C/D, was designed with an east and a west option. This represents the location of the bridge replacement, with staged construction of the new bridge beginning to the east or west of the existing bridge. The first stage would include construction of a new structure wide enough to carry at least 6 lanes of traffic, built as closely as possible to the existing bridge while the old bridge is still open to traffic. Once the first stage of the new bridge construction is completed, traffic would be diverted to the new structure and the old bridge would be removed. The remaining portion of the new bridge would then be constructed while traffic remains open on the recently completed section. In this way, the bridge is constructed taking as little ROW as possible, while keeping at least 6 lanes of traffic open at all times. Separate alternatives (east and west) were created for the 8-lane C/D and the 10 Main Lane alternatives. The 10-lane C/D alternative, due to its width, was anticipated to require widening to some degree to both sides of the existing bridge location, and therefore, was not designed with east/west options.
- In order to assess the full impacts of the proposed alternatives, the transportation models developed for this study included additional improvements to I-630 and I-30 south of the study area, which are not included as part of the I-30 project. AHTD is aware that congestion from these areas will cause traffic to back up into the study area at some point prior to the 2041 design year for this project, and has plans to study the capacity needs at both locations.
- In the preliminary design for the PEL Recommendation, Washington Street in North Little Rock and 4th Street in Little Rock would be closed to vehicular traffic due to the reduced vertical clearance as a result of the proposed modifications to

I-30. It is possible that these locations could remain open for bicycle and pedestrian traffic. Also, the elevation of Washington Street could possibly be lowered to provide proper clearance for vehicular traffic, depending on drainage issues. The PEL Study Team recommends that both locations be further evaluated in NEPA to allow both streets to remain open, thereby improving connectivity in the area.

- In addition, improvements were included at the interchanges at Broadway Street, I-630 and Roosevelt Street to facilitate the expected increase in traffic through the year 2041.

Lane configurations for the Reasonable Alternatives are provided in **Attachment A**.

2.3 Level 3 Screening Process

The Level 3 Screening process was primarily a quantitative analysis, improving on the qualitative analysis from Level 2 when data was available. A description of the methods used to quantify the measures for each analysis group is included below.

2.3.1 Mobility

A Vissim micro-simulation traffic model was developed for the future No Action and each of the three build Reasonable Alternatives to analyze mobility. To analyze mobility, a comprehensive set of mobility measures such as level-of-service (LOS), vehicle travel time, vehicle travel speed, vehicle hours of travel and vehicle hours of delay, to name a few, were developed. Forecasted traffic for a 2041 design year was developed based on historical growth rates and the Central Arkansas Regional Transportation Study area (CARTS) travel demand model. Existing and forecasted traffic volumes are presented in the *Traffic and Forecast Plan*, December 2014, which is part of the *I-30 PEL Traffic and Safety Report (Appendix F)*.

A list of mobility measures of effectiveness were developed around the project's study goals. **Table 1** identifies all the transportation measures and their relationship to the PEL study goals.

Table 1. Mobility Measures of Effectiveness

PEL Study Goals	Measures	Description of Evaluation
Enhance Mobility	Mobility in the PEL study area	Distance and duration of LOS E or F (Miles/Minutes during PM Peak).
	Mobility in the PEL study area	Distance and duration of LOS F (Miles/Minutes during PM Peak).
	Total Travel Time	Average travel time between the Hwy 67/I-40 Interchange and the Southern Interchange (Heading south in AM and north in PM).
	Average Peak Hour Travel Speed Through the Corridor	Average speed when traveling between the Hwy 67/I-40 Interchange and the Southern Interchange (Heading south in AM and north in PM).
Access to Downtown	Mobility of Key Intersections within the PEL study area	Number of intersections at LOS E and number of intersections at LOS F.
	Travel time to key destinations in the PEL study area	Travel Time (min) from Hwy 67 at McCain to the Capitol.

PEL Study Goals	Measures	Description of Evaluation
East-West Connectivity	Locations allowing for local street connectivity	Qualitative evaluation.
	Designs that allow for open space across I-30	Qualitative evaluation.
Connect Bicycle and Pedestrian-Friendly Facilities	Grade-separated bicycle and pedestrian facilities	Qualitative evaluation.
Accommodate Existing and Future Transit	Transit Ridership in the PEL study area	Qualitative evaluation.
Minimize Roadway Disruptions	Severity of I-30 lane closures, detours during construction	Qualitative evaluation.
	Severity of river closures during construction	Qualitative evaluation.
	Location of navigational impediments (bridge piers)	Qualitative evaluation.
Opportunity for Economic Development	Access to existing / potential business sites within the PEL study area	Qualitative evaluation.
Commitment to Voters	Mobility on I-30 main lanes	Qualitative evaluation.

Vissim was used to analyze the mobility measures of the PEL study area described in **Table 1**. A detailed description of the Vissim model methodology and traffic analysis approach is described in the *I-30 PEL Traffic and Safety Report (Appendix F)*.

2.3.2 Safety

A quantitative safety analysis was performed for the existing crashes, arterial connection conflict points, main lane conflict points, collector distributor road conflict points, deficient acceleration and deceleration ramp lengths, deficient weaving lengths, main lane ramps, and C/D ramps. In addition, potential crash reductions were estimated based on crash modification factors for a particular design element. The safety measures evaluated for the Level 3 Screening are presented in **Table 2** along with a description of the evaluation process for each measure.

Table 2.Safety Measures for Evaluation

PEL Study Goals	Measures	Description of Evaluation
Crashes	Quantified 2010-2012 crashes	Crashes broken down by location, type of crash, and severity of crash.
	2010-2012 Crash Rates	Crash rates developed for each section based on average daily traffic and number of crashes.
	2041 Projected Crashes	Based on crash rate for 2012 and 2041 projected traffic volumes; estimated crashes projected for 2041.
Conflict Points	Quantified Arterial Connection Points	Conflict points counted based on number of vehicle paths that cross, merge, and diverge with another vehicle based on legitimate movements through an intersection.
	Quantified Main Lane Conflict Points	Conflict points quantified from the merge and diverge points on main lanes; if ramp had designated lane and no lane change was required to stay on the main lanes, then no conflict point was counted.

PEL Study Goals	Measures	Description of Evaluation
	Quantified C/D Road Conflict Points	Conflict points quantified from the merge and diverge points on C/D road. If a ramp had a designated lane and no lane change was required, then no conflict point was counted.
Deficient Ramps and Weaving Lengths	Quantified deficient acceleration and deceleration ramp lengths	Deficient acceleration and deceleration according to the largest applicable minimum (AASHTO Green Book and AHTD Standards).
	Quantified deficient weaving lengths	Deficient weaving lengths counted based on AASHTO Green Book minimum guidelines for all alternatives.
Ramps per Direction	Quantified main lane ramps	Ramps counted in each direction of the study section.
	Quantified C/D ramps	Ramps counted in each direction for the length of the C/D system.
Potential Crash Reductions	Quantified potential crash reductions	Crash modification factors applied to different design elements for the Build Alternatives; assumed no improvements to the No Action Alternative.

A detailed description of the safety methodology and analysis approach is described in the *I-30 PEL Traffic and Safety Report (Appendix F)*.

2.3.3 Cost

The study team utilized high-level schematics in order to establish a proxy cost, based on the square feet of pavement and bridge decking, for each alternative. Information was not available at this stage of the project to identify bridge elevations and locations needing retaining walls, etc.; therefore, the proxy costs were lower than the expected construction costs. However, the proxy costs do provide a means to identify the approximate percentage difference in construction costs between alternatives. Using the proxy cost, the study team was able to evaluate trade-offs between the four measurement groups – mobility, safety, cost, and environmental. The study team also developed high-level ROW cost estimates using general market value based on comparable sales for various sections of the I-30 PEL study area. The cost measures evaluated for the Level 3 Screening are presented in **Table 3** along with a description of the evaluation process for each measure.

Table 3. Cost Measures for Evaluation

PEL Study Goals	Measures	Description of Evaluation
Maximize Cost Efficiency	Construction Cost	Estimated costs based on total square feet of pavement and bridge deck area.
	Total Cost of ROW Acquisition	Estimated cost based on general market value.
	Total Cost to AHTD	Construction cost + ROW cost.
	Total Investment by Others	To be determined during NEPA.

2.3.4 Environmental

Potential direct impacts to the environmental resources were evaluated based on the preliminary design of the Reasonable Alternatives, as applicable. The preliminary design, including anticipated ramping, interchange, and intersection designs were overlaid with the environmental resources of the study area, as identified and described in the *I-30 PEL Constraints Report (Appendix B)*. Similar environmental measures to those in the Level 2 Screening were utilized for assessing environmental impacts. These measures of effectiveness were developed around the study goals. Impacts to these environmental measures were calculated via spatial analysis with ArcGIS. When possible, impacts were quantified by count or acreage. When quantification was not reasonable, potential impacts were qualitatively assessed utilizing the more detailed preliminary designs of each Reasonable Alternative compared to those available at the time of the Level 2 Screening.

Details of the environmental screening, including the study goals, environmental measures, and the associated methodology for evaluating impacts are provided in **Table 4** and **Attachment B**.

Table 4. Environmental Measures for Evaluation

PEL Study Goals ¹	Measures	Evaluation Parameters
Community	ROW	Acres of proposed ROW required, calculated using design files for each Reasonable Alternative.
	Parcels	Number of parcels where ROW could be required as identified using County Assessors Mapping Program (CAMP) Pulaski County parcel data.
	Displacements (commercial & residential) Structures (billboards)	Number of commercial and residential displacements as affected by proposed ROW. Utilized CAMP Pulaski County parcel data and aerial photographs. Also evaluated billboards impacted.
	Environmental Justice/ Limited English Proficiency (EJ/LEP) ⁴	Series of questions used to identify potential adverse impacts to EJ/LEP populations; the potential for avoidance, minimization, and mitigation to offset adverse impacts to EJ/LEP populations; and the potential for beneficial impacts associated with the improvements, as applicable. Details of the E/LEP analysis, including a listing and description of the evaluation questions, are provided in Attachment B .
Cultural Resources ^{2, 3}	Recorded archeological sites	Number of recorded archeological sites located within proposed ROW. Recorded archeological sites identified by the AHTD through background research and field reconnaissance, and subsequent coordination with the Arkansas Historic Preservation Program (AHPP).
	NRHP or NRHP-eligible sites	Number of National Register of Historic Places (NRHP) or NRHP-eligible sites located within proposed ROW. Sites identified by AHTD through background research and field reconnaissance, and subsequent coordination with the AHPP.

PEL Study Goals ¹	Measures	Evaluation Parameters
	High probability areas for archeological resources	Number of areas along existing and proposed ROW determined to have a high probability for archeological resources, as identified in the <i>I-30 PEL Cultural Resources Survey Methodology Memo (Appendix G)</i> . High probability areas determined through geospatial analysis of 1913 Sanborn Fire Insurance Maps overlaid with current aerial imagery to identify locations where structures once existed but are no longer intact; and through the analysis of United States Geological Survey (USGS) topographic maps to identify upland areas that may contain intact cultural deposits based on high elevation contours.
Natural Resources	Parks ³	Names and acres of parks located within proposed ROW for each Reasonable Alternative as identified using Arkansas Geographic Information Office park data, as well as AHTD provided data..
	Surface Water Crossings/Wetlands	Acres of surface water crossings and wetlands located within proposed ROW for each Reasonable Alternative. Wetlands classified by type (emergent or forested/shrub) using 2014 aerial photography and verified with AHTD input and National Wetland Inventory maps for reference.
	Listed and non-listed species and/or habitat, and rare locally important species	Acres of quality habitat within proposed ROW of each Reasonable Alternative. Vegetation classified by type (non-maintained herbaceous, woodland, and riparian) using 2014 aerial photography and input from AHTD. Existing ROW classified as maintained herbaceous and not considered quality habitat.
Other	Hazardous Materials Sites	Number of encroachments on hazardous material sites for each Reasonable Alternative and potential impacts to sites. Site descriptions, history and current status determined using Arkansas Department of Environmental Quality (ADEQ) database information.
	Traffic Noise Receptors	Number of sensitive noise receptors (residences, churches, schools, daycares) along the proposed alignment for each Reasonable Alternative as identified using public facility data provided by AHTD, online research, and CAMP Pulaski County parcel data.
Public Input	Meeting Comments	Percentage of comments received at Public Meeting #3 that identified a preference for a specific Reasonable Alternative (Reasonable Alternatives presented at Public Meeting #3).

PEL Study Goals ¹	Measures	Evaluation Parameters
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Notes:

¹ Goals associated with the environmental screening as established in the I-30 PEL Purpose and Need Report (**Appendix A**) are to “Avoid and/or minimize impacts to natural and human resources, including historic and archeological resources” and to “Sustain public and agency input and support for the I-30 corridor improvements.”

² Cultural Resources: PEL-level assessment of cultural resources and NEPA methodology outlined in the I-30 PEL Cultural Resources Survey Methodology Memorandum (**Appendix G**).

³ Section 4(f) applicability to be determined during the NEPA phase.

⁴ EJ/LEP evaluated in accordance with the following, as detailed in Attachment B: Executive Order (EO) 12898, EO 13166, Title VI of the Civil Rights Restoration Act of 1987 and FHWA’s Guidance on Environmental Justice and NEPA (Dec. 2011).

2.4 Level 3 Scoring

The matrix presented in **Table 5** shows the ratings for the alternatives against each of the Level 3 Screening measures, based on the study goals. For the Level 3 Screening, the No Action Alternative was scored in the same manner and against the same mobility, safety, cost and environmental measures as the Build Alternatives. Evaluating the No Action Alternative in this manner gave a quantifiable score that was compared to the various alternatives and which provided a better understanding of the performance and impacts resulting from the No Action Alternative.

Table 5. Level 3 Screening Matrix

Color Codes for Measures		Mobility		8-Lane C/D Reasonable Alternative		10-Lane GP Reasonable Alternative		10-Lane C/D Reasonable Alternative		
		Safety		3 GP Lanes + 1 C/D Lane Widening (each direction)		3 GP Lanes + 2 GP Lane Widening (each direction)		3 GP Lanes + 2 C/D Lane Widening (each direction)		
		Cost		No Action						
		Environmental		102(2.55M)		190 (3.74M)		166(4.15M)	214(4.54M)	
		Bridge Location				West		East	West	East
		Measures								
Goals										
Enhance Mobility	Mobility in PEL Study Area		Distance and duration of LOS E or F (Miles/Minutes during PM Peak)	9. 67/120	5. 85/120		. 67/60		0/0	
	Mobility in PEL Study Area		Distance and duration of LOS F (Miles/Minutes during PM Peak)	9. 67/120	5. 31/120		. 67/45		0/0	
	Total travel time		Hwy. 67 to S. Terminal AM SB/PM NB travel time (minutes)	16/18	15/22. 4		6/6		6/6	
	Average peak hour travel speed through corridor		Hwy. 67 to S. Terminal AM SB/PM NB average speed (mph)	22/20	24/15		58/58		59/59	
Access to Downtown	Mobility of key intersections within PEL Study Area		# of intersections at E/F	20/19	13/10		4/3		5/3	
	Travel time to key destinations in PEL Study Area		Between McCain and Capitol (To Capitol in the AM and From Capitol in the PM)	24/39	23/24		8/8		8/8	
East-West Connectivity	Locations allowing for local street connectivity		Re-evaluate qualitatively	--	+	+	+	+	+	
	Designs that allow for open spaces across I-30		Re-evaluate qualitatively	--	+	+	+	+	+	
Connect Bicycle/Pedestrian Friendly Facilities	Grade separated bike / ped accommodations across I-30 (East-West Connectivity)		Re-evaluate qualitatively	0	+	+	+	+	+	
Accommodate Existing Transit and Future Transit	Transit ridership in the PEL Study Area		Re-evaluate qualitatively	-	++	++	+	+	+	
Minimize Roadway Disruptions	Severity of I-30 lane closures, detours during construction		Re-evaluate qualitatively	++	-	-	-	-	-	
Minimize River Disruptions	Severity of river closures during construction		Carry Forward	++	-	-	-	-	-	
	Location of navigational impediments (Bridge Piers)		Re-evaluate qualitatively	--	++	++	++	++	++	
Opportunity for Economic Development	Access to existing / potential business sites within the PEL Study Area		Re-evaluate qualitatively	--	-	-	+	+	+	
Commitment to Voters	Mobility on I-30 Main Lanes (qualitative)		Re-evaluate qualitatively	--	-	-	+	+	+	
System Reliability	Potential accident reductions		Number of Annual Crashes	0	175		159		229	
	Emergency Vehicle Travel Time		Fire Station 1 to Incident west of N. Hills Blvd. in the PM (minutes)	7	11		4		4	
Improve Safety	I-30 PEL conflict points in weaving / merge / diverge areas - Main		Count	31	20		26		19	
	I-30 PEL conflict points in weaving / merge / diverge areas - C/D Lanes		Count	--	6		--		7	
	Total Conflict Points (Main Lanes and C/D)		Total	31	26		26		26	
	Number of ramps on I-30 in the study area - Main Lanes		Count	15/15	13/11		14/12		12/10	
	Number of ramps on I-30 in the study area - C/D		Count	--	3/3		--		3/5	
	Ramp acceleration, deceleration and weaving lengths		lengths not meeting current standards	26	6		6		7	
	I-30 Roadway and bridge structural conditions		Re-evaluate qualitatively	--	++	++	++	++	++	
Maximize Cost Efficiency	Arterial connection conflict points		Count	411	515		515		515	
	Construction Cost		Projected cost	0	-13%		Base		+4%	
	Total cost of ROW acquisition		Projected cost	0	-7%	-1%	+4%	Base	+10%	
	Total Cost To AHTD		Construction + ROW	0	-13%	-13%	+1%	Base	+4%	
Community Impacts	Total investment required by others		Re-evaluate qualitatively	0	TBD	TBD	TBD	TBD	TBD	
	ROW impacts		Acres	0. 00	7. 5	8. 7	8. 6	8. 9	9. 0	
	Parcels Impacted		Count	0	39	47	48	46	46	
	Displacements		Count	0	16: 5 Residential 5 Commercial 6 B I I I boards	17: 5 Residential 6 Commercial 6 B I I I boards	20: 5 Residential 8 Commercial 7 B I I I boards	19: 5 Residential 7 Commercial 7 B I I I boards	19: 5 Residential 7 Commercial 7 B I I I boards	
EJ/LEP	Are EJ/LEP populations present in the study area?		Re-evaluate qualitatively	yes	yes	yes	yes	yes	yes	
	Is there a potential for displacements to EJ/LEP populations?		Count	0	6: 5 Residential 1 Commercial al *	6: 5 Residential 1 Commercial al *	6: 5 Residential 1 Commercial al *	6: 5 Residential 1 Commercial al *	6: 5 Residential 1 Commercial al *	
	If YES to displacements, is there a potential for mitigation to offset displacements to EJ/LEP populations - Replacement properties of similar value in same area (count)	Homes for sale under \$50,000	Zillow.com	N/A	8 homes for sale	8 homes for sale	8 homes for sale	8 homes for sale	8 homes for sale	
		Apartment rent of \$500 - \$600 per month	Zillow.com	N/A	8 homes/apts for rent	8 homes/apts for rent	8 homes/apts for rent	8 homes/apts for rent	8 homes/apts for rent	
		Section 8 housing - all considered decent, safe and sanitary	Hud.gov	N/A	33 Section 8 properties	33 Section 8 properties	33 Section 8 properties	33 Section 8 properties	33 Section 8 properties	
	If YES to displacements, is there a potential for avoidance, minimization, and/or mitigation to offset displacements to EJ/LEP populations - displacement/relocation will follow the Uniform Relocation Act?		Re-evaluate qualitatively	N/A	yes	yes	yes	yes	yes	
	Is there a potential for adverse impacts to the community cohesion of EJ/LEP populations?		Re-evaluate qualitatively, mapping evaluation	no	no	no	no	no	no	
	If YES , is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts to the community cohesion of EJ/LEP populations?		Re-evaluate qualitatively	N/A	N/A	N/A	N/A	N/A	N/A	
	Is there a potential for adverse impacts to access for EJ/LEP populations?		Mapping evaluation	no	No - ramping would not eliminate access	No - ramping would not eliminate access	No - ramping would not eliminate access	No - ramping would not eliminate access	No - ramping would not eliminate access	
	If YES, is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts to access for EJ/LEP populations?		Re-evaluate qualitatively	N/A	N/A	N/A	N/A	N/A	N/A	
Cultural Resource Impacts	Are sensitive noise receptors located in EJ/LEP areas?		Count of receivers directly adjacent in EJ/LEP areas	0	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	
	If YES (and noise impacts are assumed), is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts resulting from noise for EJ/LEP populations?		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	
	Is there a potential for beneficial impacts to mobility for EJ/LEP populations?		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	
	Is there a potential for beneficial impacts to safety for EJ/LEP populations?		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	
	Is there a potential for beneficial impacts to E-W connectivity for EJ/LEP populations?		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	
	Recorded archaeological sites potentially impacted		Count	0	0	0	0	0	0	
	NRHP or NRHP-eligible sites potentially impacted		Count	0	1	1	1	1	1	
Natural Resource Impacts	Number of areas along existing and proposed ROW determined to have a high probability for archeological resources		Count - Evaluation of 1913 Sanborn Fire Insurance Maps and USGS Topographic	0	36	36	36	36	36	
	Park impacts (acres)	Park impacts	Count	0	3	3	3	3	3	
		North Shore Riverwalk Park	Acres	0. 0	1. 4	1. 6	1. 5	1. 4	1. 7	
		Julius Breckling Riverfront Park	Acres	0. 0	0. 7	0. 5	1. 0	0. 5	0. 5	
		William J. Clinton Presidential Center and Park	Acres	0. 0	0. 3	0. 5	0. 3	0. 4	0. 4	
	Surface water crossings / wetlands	Total Park Impacts	Acres	0. 0	2. 4	2. 6	2. 8	2. 3	2. 6	
		Impacts - Acres of water features permanent fill impacts	Acres	0. 0	0. 8	0. 8	0. 8	0. 8	0. 9	
		Impacts - Acres of emergent wetlands permanent fill impacts	Acres	0. 0	0. 3	0. 3	0. 3	0. 3	0. 3	
		Impacts - Acres of forested/shrub wetlands permanent fill impacts	Acres	0. 0	0. 9	0. 9	0. 9	0. 9	0. 9	
	High quality vegetation/habitat	Impacts - Acres of non-maintained herbaceous habitat impacted	Acres	0. 0	0. 5	0. 5	0. 5	0. 4	0. 4	
Impacts - Acres of woodland (forested/shrub) impacted		Acres	0. 0	1. 3	1. 3	1. 9	1. 9	1. 9		
Impacts - Acres of riparian habitat impacted		Acres	0. 0	0. 1	0. 1	0. 1	0. 1	0. 1		
Other Impacts	Number of hazardous material sites that could have negative effect on the project		Count - Type of site, proximity to project, type of construction activities occurring at or adjacent to site.	0	6	6	7	7	8	
	Traffic noise receptors directly adjacent		Count	0	184	184	184	184	184	
Public / Agency Input	Meeting comments and local resolutions		Input from Technical Work Group and the public	None	67%		11%		22%	

*Commercial displacement listed as 10th Street Warehouse Association, LLC

2.5 Level 3 Screening Results

A brief explanation of the results of the Level 3 Screening process for each of the alternatives is provided below.

Capacity improvements outside the PEL study limits were needed to evaluate the PEL study area. AHTD plans to study the needs of both of these two corridors, as practicable.

1. I-630 westbound lane added from Louisiana west beyond the model limits; and
2. I-30 eastbound and westbound lane added in each direction southwest of the south terminal to 65th Street.

These additional improvements were deemed necessary to avoid backups from congestion outside the PEL limits to inside the PEL limits.

2.5.1 Mobility

Mobility for the No Action and three Reasonable Alternatives was analyzed using Vissim models. **Table 6** shows the mobility results in comparison to each other.

The table shows that the two 10-lane Reasonable Alternatives are comparable to each other and far exceed the mobility benefits of the 8-lane C/D Reasonable Alternative and No Action Alternative in almost all measures. Although the two 10-lane Alternatives operate similarly to each other, the 10-lane C/D does provide slightly better mobility than the 10 Main Lanes. These benefits are provided primarily within the limits of the C/D system, where the C/D system separates the high volume weaving between the Broadway Street and Cantrell Road interchanges and lower speed from the higher speed through traffic on the main lanes.

Other mobility measures such as access to downtown, east-west connectivity and bicycle and pedestrian east-west connectivity are expected to perform the same for all three Reasonable Alternatives, but better than the No Action Alternative. Transit service is the one measure that is expected to perform better for the 8-lane C/D than both 10-lane Alternatives and the No Action Alternative. This is because congestion will be high enough to attract transit riders to the bus on shoulder express service compared to less congested 10-lane Reasonable Alternatives.

Table 6. Impacts Comparison for Mobility

		No Action	8-Lane C/D Reasonable Alternative		10 Main Lane Reasonable Alternative		10-Lane C/D Reasonable Alternative
			3 main lanes + 1 C/D lane widening (each direction)		3 main lanes + 2 main lane widening (each direction)		3 main lanes + 2 C/D lane widening (each direction)
Goals	Measures		West	East	West	East	
Enhance Mobility	Mobility in PEL Study Area (LOS E or F) (miles / minutes during PM peak)	9.67 miles / 120 minutes	5.34 miles / 120 minutes		0.67 miles / 60 minutes		0 miles / 0 minutes
	Mobility in PEL Study Area (LOS F) (miles / minutes during PM peak)	9.67 miles / 120 minutes	4.80 miles / 120 minutes		0.67 miles / 45 minutes		0 miles / 0 minutes
	Total travel time through corridor (minutes) (AM south / PM north)	16 / 17 minutes	15 / 22 minutes		6 / 7 minutes		6 / 6 minutes
	Average peak hour travel speed through corridor (mph) (AM south / PM north)	22 / 20 mph	24 / 15 mph		58 / 58 mph		59 / 59 mph
Access to Downtown	Mobility of key intersections within PEL Study Area (number of intersections at E/F)	20 E / 19 F intersections	13 E / 10 F intersections		4 E / 3 F intersections		5 E / 4 F intersections
	Travel time to key destinations in PEL Study Area (minutes) AM – McCain to Capitol PM – Capitol to McCain	24 / 37 minutes	23 / 24 minutes		9 / 8 minutes		8 / 8 minutes
East-West Connectivity	Locations allowing for local street connectivity	— —	+				
	Designs that allow for open spaces across I-30	— —	+				

		No Action	8-Lane C/D Reasonable Alternative		10 Main Lane Reasonable Alternative		10-Lane C/D Reasonable Alternative
			3 main lanes + 1 C/D lane widening (each direction)		3 main lanes + 2 main lane widening (each direction)		3 main lanes + 2 C/D lane widening (each direction)
Goals	Measures		West	East	West	East	
Connect Bicycle / Pedestrian Friendly Facilities	Grade separated bike / pedestrian accommodations across I-30 (east-west connectivity)	0	+				
Accommodate Existing Transit and Future Transit	Transit ridership in the PEL Study Area	—	++		+		+
Minimize Roadway Disruptions	Severity of I-30 lane closures, detours during construction	++	—				
Minimize River Disruptions	Severity of river closures during construction	++	—				
	Location of navigational impediments (bridge piers)	— —	++				
Opportunity for Economic Development	Access to existing / potential business sites within the PEL Study Area	— —	—		+		+
Commitment to Voters	Mobility on I-30 main lanes (qualitative)	— —	—		+		+

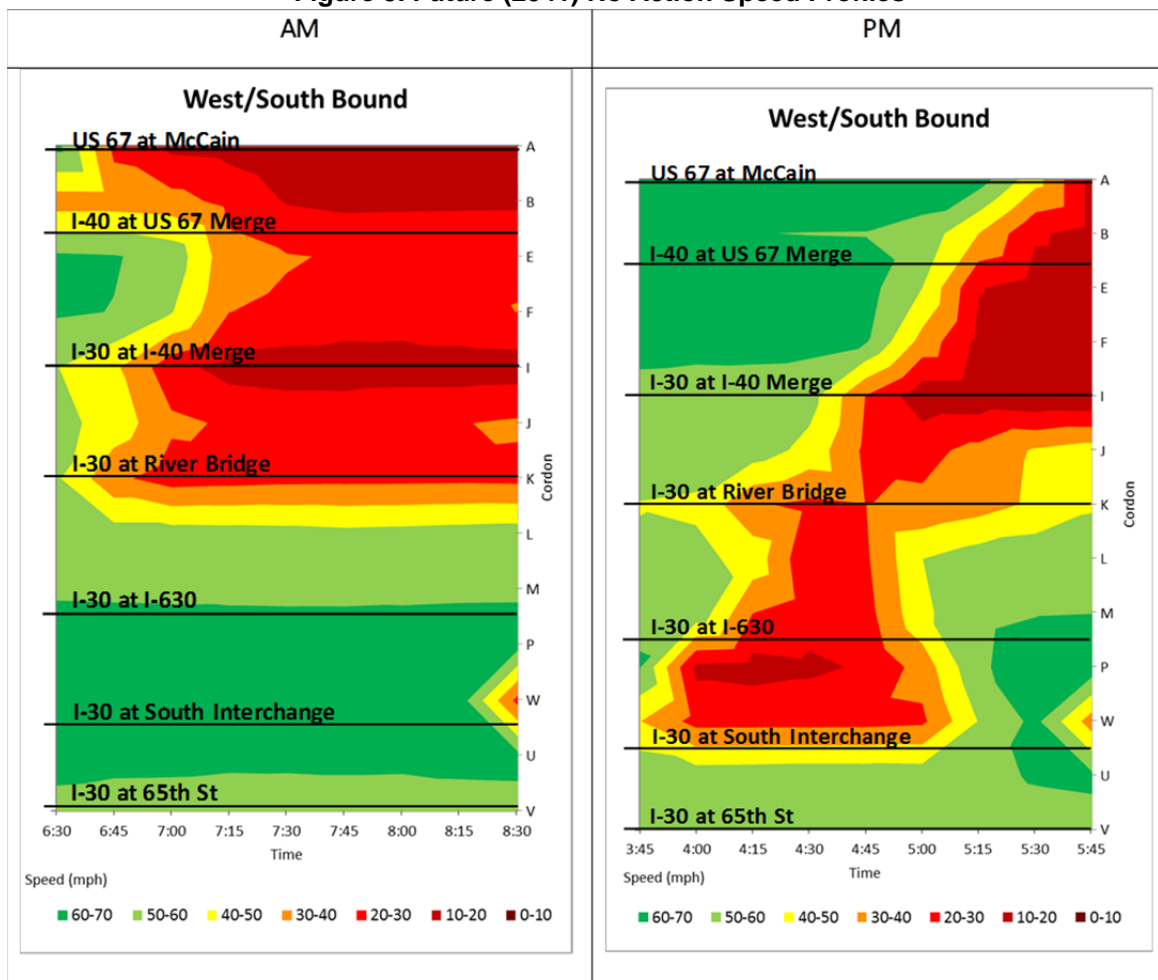
Source: I-30 PEL Vissim model

Minimizing roadway disruptions and minimizing river disruptions are expected to perform the same for all three Reasonable Alternatives and better than the No Action Alternative. The “opportunity for economic development measure” and “commitment to voters” measure have a higher rating for the 10-lane Alternatives than the 8-lane Alternative because most congestion is resolved in the design year with the 10-lane Alternatives.

Another way to demonstrate mobility is with speed profiles. A speed profile compares the expected travel speed for the length of the corridor over a two hour period using the Vissim models. In the figures below, speed profiles of travel are shown for some of the primary directions of travel. A full set of speed profiles for existing and future No Action and three Reasonable Alternatives are provided in the *I-30 PEL Traffic and Safety Report (Appendix F)*.

In **Figure 3**, future No Action travel speeds for AM and PM peak period are shown throughout the length of the corridor.

Figure 3. Future (2041) No Action Speed Profiles



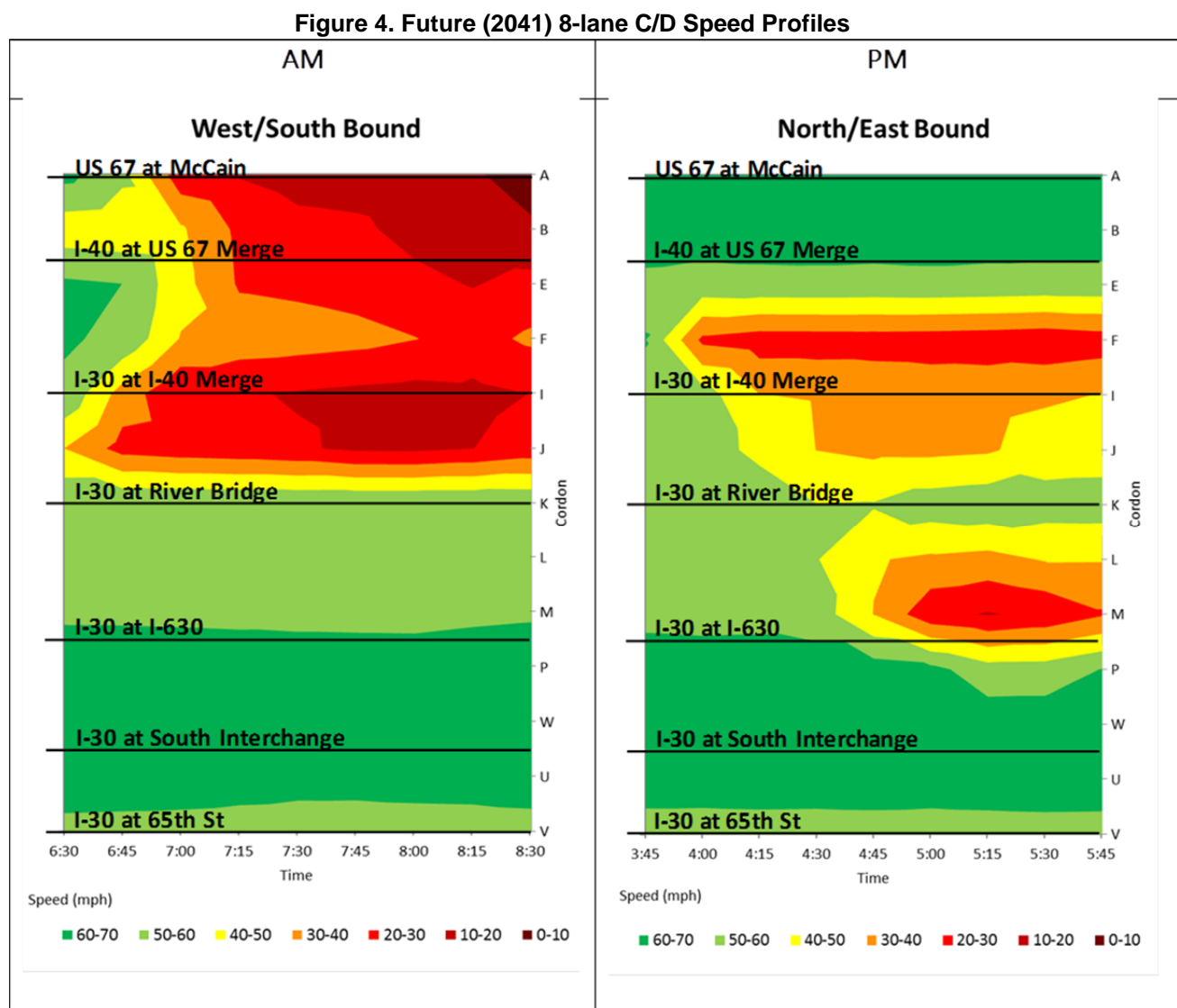
Source: I-30 PEL Vissim models

Note: See the I-30 PEL Traffic and Safety Report (**Appendix F**) for additional speed profiles.

As the speed profiles show, the duration of congestion in the corridor is significant in the west/southbound direction during the AM and PM peak periods for the future No Action Alternative. Particularly long and severe congestion, with speeds as low as 0-10 miles per hour (mph) can be seen in the west/southbound direction in the morning and afternoon. This congestion is primarily a result of a lack of capacity for the projected demand as well as insufficient operations of exit and entrance ramps.

From a mobility standpoint, this alternative does not achieve the purpose and need or study goals.

In **Figure 4**, future 8-lane C/D Alternative travel speeds for AM and PM peak period are shown throughout the length of the corridor.



Source: I-30 PEL Vissim models

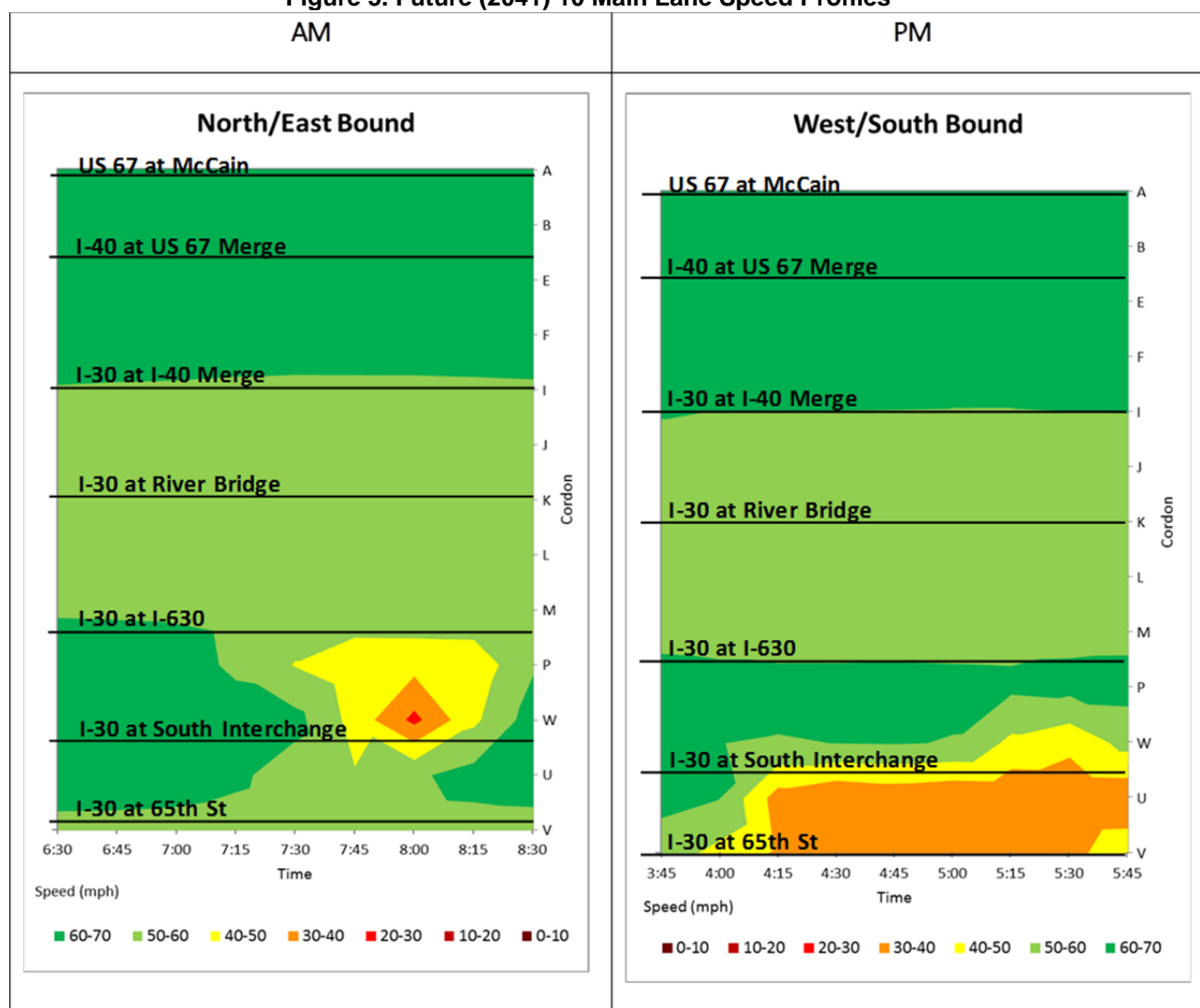
Note: See the I-30 PEL Traffic and Safety Report (**Appendix F**) for additional speed profiles.

As the speed profiles show, the duration of congestion in the corridor is significant in the west/southbound and north/eastbound direction during the AM and PM peak periods for the future 8-lane C/D Alternative. Particularly long and severe congestion, with speeds as low as 0-10 miles per hour (mph) can be seen in the west/southbound direction in the morning. This congestion is primarily a result of a lack of capacity for the projected demand in the C/D system.

From a mobility standpoint, this alternative does not achieve the purpose and need or study goals.

In **Figure 5**, future 10 Main Lane Alternative travel speeds for AM and PM peak periods are shown throughout the length of the corridor.

Figure 5. Future (2041) 10 Main Lane Speed Profiles



Source: I-30 PEL Vissim models

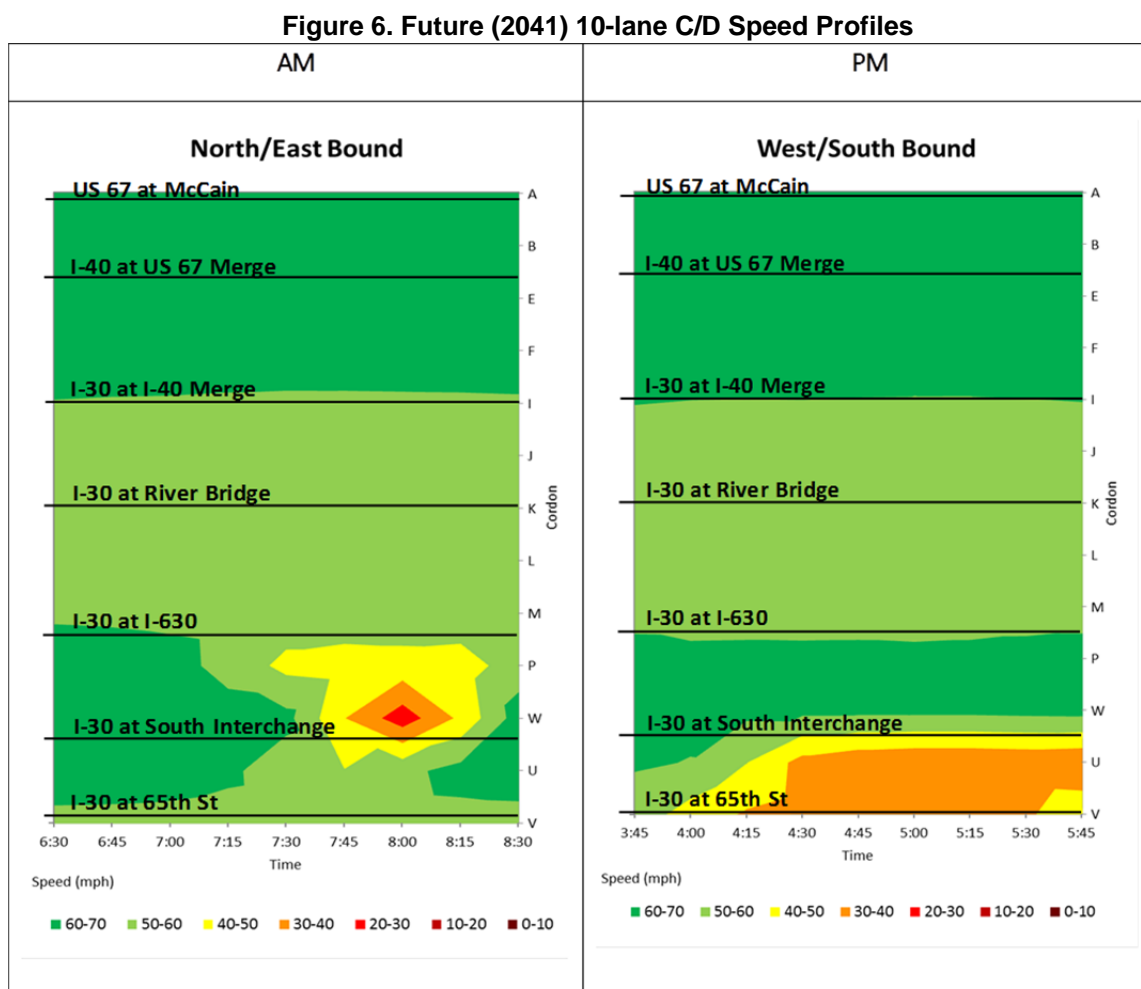
Note: See the I-30 PEL Traffic and Safety Report (**Appendix F**) for additional speed profiles.

As shown in **Figure 5**, slowdowns only occur for a brief amount of time in the AM and PM peak period simulations. Compared to the future No Action Alternative, and the existing conditions shown in *I-30 PEL Traffic and Safety Report (Appendix F)*, the duration and severity of congestion is minimal in this 10 Main Lane Alternative.

The two areas where slowdowns are evident are related to constraints outside of the PEL study area. In the AM north/eastbound direction, traffic experiences a slowdown just south of the I-30 eastbound to I-630 westbound flyover ramp. This is because the demand slightly exceeds the capacity for vehicles using the flyover ramp. In the PM south/westbound direction, slowdowns occur mostly outside of the PEL study area due to demand exceeding capacity on I-30 westbound.

From a mobility standpoint, this alternative primarily achieves the purpose and need and study goals.

In **Figure 6**, future 10-lane C/D Alternative travel speeds for AM and PM peak period are shown throughout the length of the corridor.



Source: I-30 PEL Vissim models

Note: See the I-30 PEL Traffic and Safety Report (**Appendix F**) for additional speed profiles.

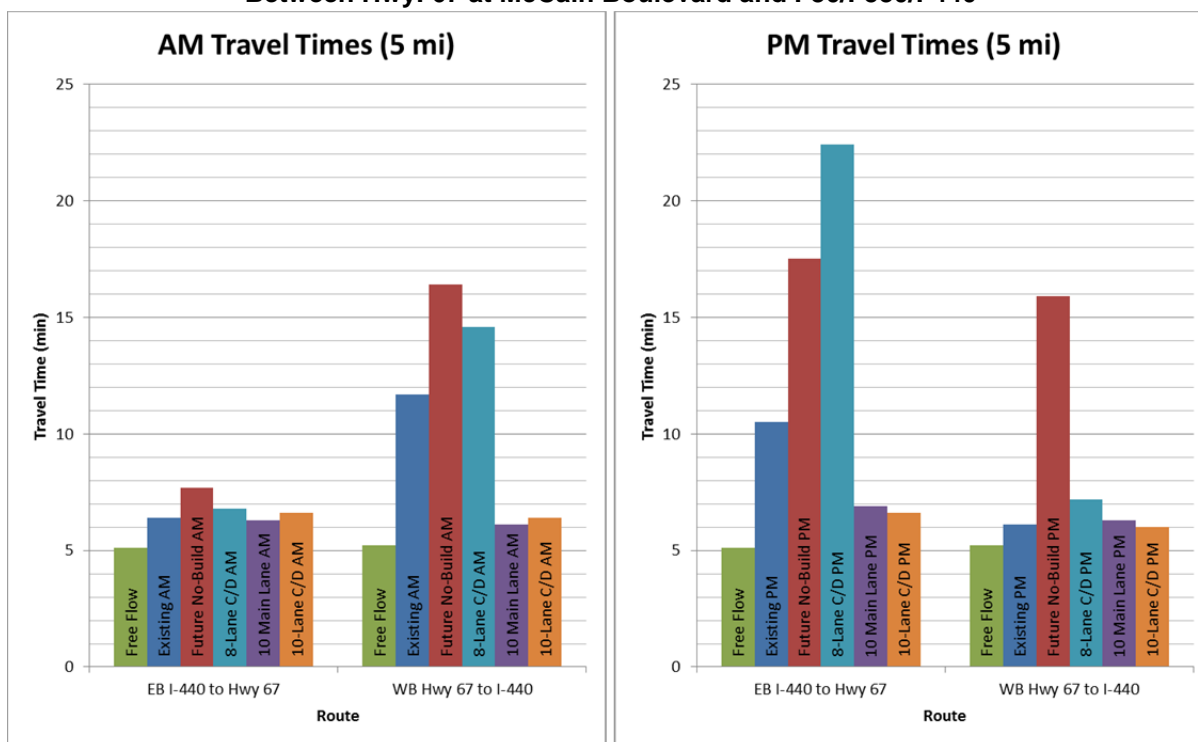
As shown in **Figure 6**, slowdowns only occur for a brief amount of time in the AM and PM peak period simulations. Compared to the future No Action Alternative, and the existing conditions, the duration and severity of congestion is minimal in this 10-lane C/D Alternative.

The two areas where slowdowns are evident are related to constraints outside of the PEL study area. In the AM north/eastbound direction, traffic experiences a slowdown just south of the I-30 eastbound to I-630 westbound flyover ramp. This is because the demand slightly exceeds the capacity for vehicles using the flyover ramp. In the PM south/westbound direction, slowdowns occur mostly outside of the PEL study area due to demand exceeding capacity on I-30 westbound.

From a mobility standpoint, this alternative primarily achieves the purpose and need and study goals. The 10 Main Lane Alternative and the 10-lane C/D Alternative perform very similarly, but the 10-lane C/D Alternative operates better.

Figure 7 shows the average travel time for all alternatives. Travel time was measured between Hwy. 67 at McCain Boulevard and the I-30/I-530/I-440 south terminal interchange, which is approximately a 6.7 mile segment. Only vehicles that traversed the entire distance were considered in the travel time calculation. A baseline “free flow” travel time was also added. Free-flow travel time is the time it would take to traverse the corridor in off-peak conditions. The free-flow travel time is a baseline for comparing the various alternatives.

Figure 7. Corridor Travel Time
Between Hwy. 67 at McCain Boulevard and I-30/I-530/I-440



Source: I-30 PEL Vissim models

Figure 7 shows that the future No Action and the 8-lane C/D Alternatives both exhibit significantly increased travel times compared to the existing condition. In each peak hour, the 10 Main Lane Alternative and the 10-lane C/D Alternative both have very similar travel times. The 10 Main Lane Alternative performs better during the AM peak hour and the 10-lane C/D Alternative performs better during the PM peak hour.

2.5.2 Safety

As shown in **Table 7**, the safety screening items were quantified for comparison. This compares the No Action, 8-lane C/D, 10 Main Lane, and 10-lane C/D Alternatives.

The No Action will continue to have the most ramps, conflict points, and deficient ramps and weaving lengths on the main lane system. The 10-lane C/D has the most potential for crash reductions but has one more deficient weaving length than 8-lane C/D and 10 Main Lane Alternatives. All the Build Alternatives would have the same amount of connecting arterial conflict points.

2.5.3 Cost

As discussed in **Section 2.2.3**, square feet of pavement and bridge decking were used to establish reference costs for the alternatives. **Table 8** shows how the alternatives compared in cost.

Because the 8-lane C/D Alternative performed poorly in the Mobility measures and did not meet the purpose and need, the 10 Main Lane Alternative was established as the *Base* cost – the least amount that could be spent to meet the purpose and need and study goals of the project. The 8-lane C/D Alternative could be constructed for 13% less cost, but that would not solve the mobility issues in the study corridor. The 10-lane C/D Alternative would cost 4% more, which would provide additional safety benefits.

For all alternatives, some investment will be required of other agencies. If bridges are widened to allow bicycle/pedestrian facilities to cross I-30, the cost of the paths leading to the I-30 crossing will be the responsibility of others. Buses for transit will also be the responsibility of others. The investment required by others will be further evaluated during the NEPA process.

Table 7. Impacts Comparison for Safety

		No Action	8-Lane C/D Reasonable Alternative		10 Main Lane Reasonable Alternative		10-Lane C/D Reasonable Alternative
			3 main lanes + 1 C/D lane widening (each direction)		3 main lanes + 2 main lane widening (each direction)		3 main lanes + 2 C/D lane widening (each direction)
Goals	Measures		West	East	West	East	
System Reliability	Potential crash reductions (number of annual crashes)	0 annual crash reductions	175 annual crash reductions		159 annual crash reductions		229 annual crash reductions
	Emergency vehicle travel time from Fire Station 1 to incident west of North Hills Blvd in PM (minutes)	7 minutes	11 minutes		4 minutes		4 minutes
Improve Safety	Total number of main lane conflict points (count)	31 conflict points	20 conflict points		26 conflict points		19 conflict points
	Total number of C/D conflict points (count)	0 conflict points	6 conflict points		0 conflict points		7 conflict points
	Total number of arterial connection conflict points (count)	411 conflict points	515 conflict points				
	Ramps on I-30 in the study area - main lanes (EB/WB) (count)	14/15 ramps	13/11 ramps		14/12 ramps		12/10 ramps
	Ramps on I-30 in the study area – C/D (EB/WB) (count)	0/0 ramps	3/3 ramps		0/0 ramps		3/5 ramps
	Deficient Ramps and Weaving Lengths (count)	26	6		6		7
	I-30 roadway and bridge structural conditions (qualitative)	— —	++				

Table 8. Impacts Comparison for Cost

		No Action	8-Lane Scenario		10-Lane Scenario		
			3 main lanes + 1 C/D lane widening (each direction)		3 main lanes + 2 main lane widening (each direction)		3 main lanes + 2 C/D lane widening (each direction)
Goals	Measures		West	East	West	East	
Optimize Cost	Total conceptual cost to AHTD	\$0	-13%		Base		+4%
	Total cost of ROW acquisition	\$0	-7%	-1%	+4 %	Base	+10%
	Total cost	\$0	-13%	-13%	+1%	Base	+4%
	Total investment required by others	0	To be determined in NEPA				

2.5.4 Environmental

Results of the Level 3 environmental screening for the No Action and three Reasonable Alternatives are shown in **Table 9**. The comparisons of impacts between the environmental measures were fairly analogous between the Reasonable Alternatives, with the following measures anticipated to have no difference in impacts:

- EJ/LEP;
- Recorded archeological sites;
- High probability areas for archeological sites;
- NRHP and NRHP-eligible structures;
- Emergent Wetlands;
- Forested/Shrub Wetlands;
- Riparian Vegetation; and
- Traffic Noise Receptors.

The following environmental measures were anticipated to have slight impact differences between the Reasonable Alternatives. The maximum difference in impacts between the three Reasonable Alternatives is shown in parentheses:

- ROW (+1.5 acres);
- Parcels (+9 parcels);
- Displacements (+3 commercial); Structures Impacted (+1 billboard)
- Parks (+0.4 acre);
- Water Features (+0.1 acre);
- Non-Maintained Herbaceous Vegetation (+0.1 acre);
- Woodland Vegetation (+0.6 acre); and
- Hazardous Materials (+2 hazardous materials sites).

Most public comments² did not cite favoritism for a specific Reasonable Alternative, but instead included specific improvement recommendations (e.g., ramping, weaving). For those commenters that did acknowledge preference, in general, the public cited more support for the 8-lane C/D Alternative, with the next highest support for the 10-lane C/D Alternative, and least support for the 10 Main Lane Alternative.

The 8-lane C/D Alternative (west and/or east bridge widening) exhibited the least amount of impacts for more environmental measures than the 10 Main Lane (west and/or east bridge widening) or 10-lane C/D Alternatives. These results were as predicted given the overall smaller footprint of the 8-lane C/D Alternative compared to the other alternatives. Even with the overall smaller footprint, because all three Reasonable Alternatives are aligned along the same I-30/I-40 corridor, they generally impact similar resources with nominal differences between those impacts.

² Feedback obtained from Public Meeting #3, which presented the Reasonable Alternatives.

Table 9. Impacts Comparison for Environmental Measures

Measures	No Action	8-Lane C/D Reasonable Alternative		10-Lane GP Reasonable Alternative		10-Lane C/D Reasonable Alternative
		West	East	West	East	
ROW (acres)	None	7.5	8.7	8.6	8.9	9.0
Parcels (count)	None	39	47	48	46	46
Displacements / Structures (count)	None	16 Total • 5 Residential • 5 Commercial • 6 Billboards	17 Total • 5 Residential • 6 Commercial • 6 Billboards	20 Total • 5 Residential • 8 Commercial • 7 Billboards	19 Total • 5 Residential • 7 Commercial • 7 Billboards	19 Total • 5 Residential • 7 Commercial • 7 Billboards
EJ / LEP ³	None	All other EJ/LEP impacts same between Reasonable Alternatives: • 6 displacements in EJ/LEP areas: 5 residential and 1 commercial • Decent, safe and sanitary replacement housing available (8 homes for sale, 8 rentals, 33 Section 8 properties) • ROW and property acquisition to follow Uniform Relocation Act • No anticipated impacts to community cohesion • Ramping changes not anticipated to eliminate access • Sensitive noise receptors identified in EJ/LEP areas (6 schools, 1 church, 2 daycares, and 36 residences) for all Reasonable Alternatives; mitigation anticipated to be possible (e.g., noise walls if determined feasible and reasonable and voted on by adjacent property owners) • Beneficial impacts to mobility, safety and E-W connectivity for EJ/LEP populations				
Parks (name / acres) ¹	None	North Shore Riverwalk Park / 1.4 Julius Breckling Riverfront Park / 0.7 William J. Clinton Presidential Center and Park / 0.3	North Shore Riverwalk Park / 1.6 Julius Breckling Riverfront Park / 0.5 William J. Clinton Presidential Center and Park / 0.5	North Shore Riverwalk Park / 1.5 Julius Breckling Riverfront Park / 1.0 William J. Clinton Presidential Center and Park / 0.3	North Shore Riverwalk Park / 1.4 Julius Breckling Riverfront Park / 0.5 William J. Clinton Presidential Center and Park / 0.4	North Shore Riverwalk Park / 1.7 Julius Breckling Riverfront Park / 0.5 William J. Clinton Presidential Center and Park / 0.4
Parks (total acres) ¹	None	2.4	2.6	2.8	2.3	2.6

Measures	No Action	8-Lane C/D Reasonable Alternative		10-Lane GP Reasonable Alternative		10-Lane C/D Reasonable Alternative
		West	East	West	East	
Cultural Resources ^{1, 2}	None	No anticipated impacts to recorded archeological sites. One NRHP-eligible historic property (Site #18 – Locust St. Bridge over UPRR) would be impacted by the Reasonable Alternatives. Number of areas along existing and proposed ROW determined to have a high probability for archeological resources similar for all Reasonable Alternatives (36 areas).				
Waters (acres)	None	0.8	0.8	0.8	0.8	0.9
Emergent Wetlands (acres)	None	0.3	0.3	0.3	0.3	0.3
Forested/Shrub Wetlands (acres)	None	0.9	0.9	0.9	0.9	0.9
Non-Maintained Herbaceous Vegetation (acres)	None	0.5	0.5	0.5	0.4	0.4
Woodland Vegetation (acres)	None	1.3	1.3	1.9	1.9	1.9
Riparian Vegetation (acres)	None	0.1	0.1	0.1	0.1	0.1
Hazardous Materials (count)	None	6	6	7	7	8
Traffic Noise Receptors (count)	None	184 sensitive traffic noise receptors (churches, schools, daycares, residences) directly adjacent to ROW potentially impacted				
Meeting comments (feedback from Public Meeting #3)	None	67%		11%		22%

Notes:

- Section 4(f) regulations govern the use of land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites for Federal highway projects. Section 4(f) applicability to be determined during the NEPA process for impacts to parks and cultural resources.
- Cultural resources assessment to be completed in accordance with the CA0602 I-30 Cultural Resources Survey Methodology Memo (AHPP Tracking Number 90015.02). Memo coordinated with the Arkansas Historic Preservation Program, State Historic Preservation Officer; concurrence received 2/6/15 (**Appendix G**).
- EJ/LEP evaluated in accordance with the following, as detailed in Attachment B: Executive Order (EO) 12898, EO 13166, Title VI of the Civil Rights Restoration Act of 1987 and FHWA's Guidance on Environmental Justice and NEPA (Dec. 2011).

A brief explanation of the results of the Level 3 Screening process for each of the alternatives is provided below.

- **No Action** – Although the No Action has no environmental impacts and zero cost, the corridor already exhibits severe LOS F congestion over a long duration in several areas. By 2041, the section of I-30 north of the Arkansas River would operate at LOS F congestion almost continuously throughout the AM peak period. Peak hour travel speeds would be near 20 mph, and the poor crash rates along the route would continue to worsen. This alternative will be advanced for further evaluation as required by NEPA.
- **8-lane C/D** – This alternative has the lowest cost and the least environmental impacts of the Reasonable Alternatives. The addition of the C/D system does substantially reduce crashes by separating the slower moving traffic destined for the downtown areas from the main lanes, but this alternative performs poorly in the mobility measures. By 2041, several locations will experience peak hour travel speeds below 25 mph and the southbound direction will experience LOS F congestion for nearly the entire AM peak period. The afternoon peak period also has several locations with LOS F congestion lasting more than an hour. Therefore, this alternative does not meet the purpose and need, or the study goals of the project, and will not be advanced to NEPA as a PEL Recommendation.
- **10 Main Lanes** – This alternative was comparable to the other alternatives for the environmental measures and costs slightly less than the 10-lane C/D Alternative, though more than the 8-lane C/D Alternative. The 10 Main Lane Alternative performed well on the mobility measures, having peak hour travel speeds of 58 mph through much of the corridor. Travel time through the study area in the year 2041 was reduced to 7 minutes in the southbound direction, compared to 17 minutes for the No Action. Crashes were also reduced significantly, though not as much as the 10-lane C/D Alternative.
- **10-lane C/D** – This alternative performed well in all mobility measures, having average peak hour travel speeds of 59 mph through the study corridor. The addition of the C/D lanes removed slower moving traffic destined for the downtown areas from the main lanes, thereby eliminating 70 crashes per year. Moreover, the slower speeds traveled on the C/D lanes are anticipated to result in less severe crashes than the higher speed main lanes. The C/D lanes also serve to create a new local connection between Little Rock and North Little Rock across the Arkansas River Bridge, allowing motorists to travel between the downtown areas without entering the main lanes of the interstate. Serving as an additional crossing of the Arkansas River that is separate from main lane traffic, the C/D lanes would provide more convenient access to and between the downtown economic districts and support improved connectivity and cohesion of these financially viable commercial and tourist areas. This qualitative assessment of the additional mobility, safety, connectivity and economic benefits

of the 10-lane C/D Alternative demonstrates a substantial improvement compared to the 10 Main Lane Alternative that outweighs the slight differences in environmental impacts and cost of the 10 Main Lane Alternative.

2.6 PEL Recommendation

The PEL study team recognized that several improvements could be made to the 10-lane C/D Reasonable Alternative that would benefit cost and mobility. The following improvements were made to the PEL Recommendation.

1. Moved the C/D system's northern limits from Curtis Sykes Avenue south to Broadway Street to increase the weaving distance between the north terminal and the C/D system.
2. Added bus on shoulder in each direction.
3. Eliminated the Cantrell Interchange at-grade intersections at River Market Avenue and Sherman Street.
4. Reassigned traffic from I-630 eastbound off-ramp from College Street to I-30 eastbound.
5. The bridge location of the 10-lane C/D Alternative was initially expected to be built as closely as possible to the centerline of the existing bridge, which would have required construction of the bridge in stages. After further analysis of the design, the study team decided that construction of the bridge in stages would result in a higher cost and significant constructability issues. The study team now proposes that the bridge location be analyzed with an east or west location.

These improvements were modeled and evaluated as a new alternative, the 10-lane Downtown C/D Alternative, which is compared to the other alternatives in **Table 10** and further described below.

Table 10. Level 3 Matrix with Downtown C/D										
	Color Codes for Measures			8-Lane C/D Reasonable Alternative		10-Lane GP Reasonable Alternative		10--Lane C/D Reasonable Alternative	10--Lane Downtown C/D PEL Recommendation	
	Mobility	Safety		3 GP Lanes + 1 C/D Lane Widening (each direction)		3 GP Lanes + 2 GP Lane Widening (each direction)		3 GP Lanes + 2 C/D Lane Widening (each direction)	3 GP Lanes + 2 C/D Lane Widening (each direction)	
	Cost	Environmental		No Action						
	Maximum Width (Sq. Ft. of Pavement)	Bridge Location		102(2.55M)		190 (3.74M)		166(4.15M)	214(4.54M)	
Goals	Measures			West	East	West	East			
Enhance Mobility	Mobility in PEL Study Area	Distance and duration of LOS E or F (Miles/Minutes during PM Peak)	9. 67/120	5. 85/120		. 67/60		0/0	0/0	
	Mobility in PEL Study Area	Distance and duration of LOS F (Miles/Minutes during PM Peak)	9. 67/120	5. 31/120		. 67/45		0/0	0/0	
	Total travel time	Hwy. 67 to S. Terminal AM SB/PM NB travel time (minutes)	16/18	15/22. 4		6/6		6/6	6/6	
	Average peak hour travel speed through corridor	Hwy. 67 to S. Terminal AM SB/PM NB average speed (mph)	22/20	24/15		58/58		59/59	58/58	
	Mobility of key intersections within PEL Study Area	# of intersections at E/F	20/19	13/10		4/3		5/3	3/1	
Access to Downtown	Travel time to key destinations in PEL Study Area	Between McCain and Capitol (To Capitol in the AM and From Capitol in the PM)	24/39	23/24		8/8		8/8	8/8	
East-West Connectivity	Locations allowing for local street connectivity	Re-evaluate qualitatively	--	+	+	+	+	+	+	
Connect Bicycle/Pedestrian Friendly Facilities	Designs that allow for open spaces across I-30	Re-evaluate qualitatively	--	+	+	+	+	+	+	
Accommodate Existing Transit and Future Transit	Grade separated bike / ped accommodations across I-30 (East-West Connectivity)	Re-evaluate qualitatively	0	+	+	+	+	+	+	
Minimize Roadway Disruptions	Transit ridership in the PEL Study Area	Re-evaluate qualitatively	-	++	++	+	+	+	+	
Minimize River Disruptions	Severity of I-30 lane closures, detours during construction	Re-evaluate qualitatively	++	-	-	-	-	-	-	
Opportunity for Economic Development	Severity of river closures during construction	Carry Forward	++	-	-	-	-	-	-	
Commitment to Voters	Location of navigational impediments (Bridge Piers)	Re-evaluate qualitatively	--	++	++	++	++	++	++	
System Reliability	Access to existing / potential business sites within the PEL Study Area	Re-evaluate qualitatively	--	-	-	+	+	+	+	
	Mobility on I-30 Main Lanes (qualitative)	Re-evaluate qualitatively	--	-	-	+	+	+	+	
	Potential accident reductions	Number of Annual Crashes	0	175		159		229	197	
Improve Safety	Emergency Vehicle Travel Time	Fire Station 1 to Incident west of N. Hills Blvd. in the PM (minutes)	7	11		4		4	4	
	I-30 PEL conflict points in weaving / merge / diverge areas - Main	Count	31	20		26		19	21	
	I-30 PEL conflict points in weaving / merge / diverge areas - C/D Lanes	Count	--	6		--		7	4	
	Total Conflict Points (Main Lanes and C/D)	Total	31	26		26		26	25	
	Number of ramps on I-30 in the study area - Main Lanes	Count	15/15	13/11		14/12		12/10	13/12	
	Number of ramps on I-30 in the study area - C/D	Count	--	3/3		--		3/5	3/3	
	Ramp acceleration, deceleration and weaving lengths	lengths not meeting current standards	26	6		6		7	5	
	I-30 Roadway and bridge structural conditions	Re-evaluate qualitatively	--	++	++	++	++	++	++	
	Arterial connection conflict points	Count	411	515		515		515	483	
	Construction Cost	Projected cost	0	-13%		Base		+4%	+4%	
Maximize Cost Efficiency	Total cost of ROW acquisition	Projected cost	0	-7%	-1%	+4%	Base	+10%	+10%	
	Total Cost To AHTD	Construction + ROW	0	-13%	-13%	+1%	Base	+4%	+4%	
	Total investment required by others	Re-evaluate qualitatively	0	TBD	TBD	TBD	TBD	TBD	TBD	
	ROW Impacts	Acres	0. 00	7. 5		8. 6		8. 9	9. 0	
Community Impacts	Parcels Impacted	Count	0	39		48		46	46	
	Displacements	Count	0	16: 5 Residential 5 Commercial 6 B I I I boards	17: 5 Residential 6 Commercial 6 B I I I boards	20: 5 Residential 8 Commercial 7 B I I I boards	19: 5 Residential 7 Commercial 7 B I I I boards	19: 5 Residential 7 Commercial 7 B I I I boards	19: 5 Residential 7 Commercial 7 B I I I boards	
	Are EJ/LEP populations present in the study area?	Re-evaluate qualitatively	yes	yes	yes	yes	yes	yes	yes	
EJ/LEP	Is there a potential for displacements to EJ/LEP populations?	Count	0	6: 5 Residential 1 Commercial *	6: 5 Residential 1 Commercial *	6: 5 Residential 1 Commercial *	6: 5 Residential 1 Commercial *	6: 5 Residential 1 Commercial *	6: 5 Residential 1 Commercial *	
	If YES to displacements, is there a potential for mitigation to offset displacements to EJ/LEP populations - Replacement properties of similar value in same area (count)	Homes for sale under \$50,000	N/A	8 homes for sale	8 homes for sale	8 homes for sale	8 homes for sale	8 homes for sale	8 homes for sale	
		Apartment rent of \$500 - \$600 per month	N/A	8 homes/apts for rent	8 homes/apts for rent	8 homes/apts for rent	8 homes/apts for rent	8 homes/apts for rent	8 homes/apts for rent	
		Section 8 housing - all considered decent, safe and sanitary	N/A	33 Section 8 properties	33 Section 8 properties	33 Section 8 properties	33 Section 8 properties	33 Section 8 properties	33 Section 8 properties	
		Hud.gov	N/A	yes	yes	yes	yes	yes	yes	
	If YES to displacements, is there a potential for avoidance, minimization, and/or mitigation to offset displacements to EJ/LEP populations - displacement/relocation will follow the Uniform Relocation Act?	Re-evaluate qualitatively	N/A	yes	yes	yes	yes	yes	yes	
	Is there a potential for adverse impacts to the community cohesion of EJ/LEP populations?	Re-evaluate qualitatively, mapping evaluation	no	no	no	no	no	no	no	
	If YES , is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts to the community cohesion of EJ/LEP populations?	Re-evaluate qualitatively	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Is there a potential for adverse impacts to access for EJ/LEP populations?	Mapping evaluation	no	No - ramping would not eliminate access	No - ramping would not eliminate access	No - ramping would not eliminate access	No - ramping would not eliminate access	No - ramping would not eliminate access	No - ramping would not eliminate access	
	If YES, is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts to access for EJ/LEP populations?	Re-evaluate qualitatively	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Are sensitive noise receptors located in EJ/LEP areas? If YES (and noise impacts are assumed), is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts resulting from noise for EJ/LEP populations? Is there a potential for beneficial impacts to mobility for EJ/LEP populations? Is there a potential for beneficial impacts to safety for EJ/LEP populations? Is there a potential for beneficial impacts to E-W connectivity for EJ/LEP populations?	Count of receivers directly adjacent in EJ/LEP areas	0	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	6 schools, 1 church, 2 daycares and 48 residential parcels in low income areas; 1 church, 2 daycares and 96 residential parcels in high minority areas	
		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	yes	
		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	yes	
		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	yes	
		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	yes	
		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	yes	
		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	yes	
		Re-evaluate qualitatively	no	yes	yes	yes	yes	yes	yes	
Cultural Resource Impacts	Recorded archaeological sites potentially impacted	Count	0	0	0	0	0	0	0	
	NRHP or NRHP-eligible sites potentially impacted	Count	0	1	1	1	1	1	1	
	Number of areas along existing and proposed ROW determined to have a high probability for archeological resources	Count - Evaluation of 1913 Sanborn Fire Insurance Maps and USGS Topographic	0	36	36	36	36	36	36	
Natural Resource Impacts	Park impacts (acres)	Park impacts	0	3	3	3	3	3	3	
		North Shore Riverwalk Park	0. 0	1. 4	1. 6	1. 5	1. 4	1. 7	1. 7	
		Julius Breckling Riverfront Park	0. 0	0. 7	0. 5	1. 0	0. 5	0. 5	0. 5	
		William J. Clinton Presidential Center and Park	0. 0	0. 3	0. 5	0. 3	0. 4	0. 4	0. 4	
	Surface water crossings / wetlands	Total Park Impacts	0. 0	2. 4	2. 6	2. 8	2. 3	2. 6	2. 6	
		Impacts - Acres of water features permanent fill impacts	0. 0	0. 8	0. 8	0. 8	0. 8	0. 9	0. 9	
		Impacts - Acres of emergent wetlands permanent fill impacts	0. 0	0. 3	0. 3	0. 3	0. 3	0. 3	0. 3	
		Impacts - Acres of forested/shrub wetlands permanent fill impacts	0. 0	0. 9	0. 9	0. 9	0. 9	0. 9	0. 9	
	High quality vegetation/habitat	Impacts - Acres of non-maintained herbaceous habitat impacted	0. 0	0. 5	0. 5	0. 5	0. 4	0. 4	0. 4	
		Impacts - Acres of woodland (forested/shrub) impacted	0. 0	1. 3	1. 3	1. 9	1. 9	1. 9	1. 9	
		Impacts - Acres of riparian habitat impacted	0. 0	0. 1	0. 1	0. 1	0. 1	0. 1	0. 1	
Other Impacts	Number of hazardous material sites that could have negative effect on the project	Count - Type of site, proximity to project, type of construction activities occurring at or adjacent to site.	0	6	6	7	7	8	8	
	Traffic noise receptors directly adjacent	Count	0	184	184	184	184	184	184	
Public / Agency Input	Meeting comments and local resolutions		Input from Technical Work Group and the public	None	67%		11%		22%	n/a

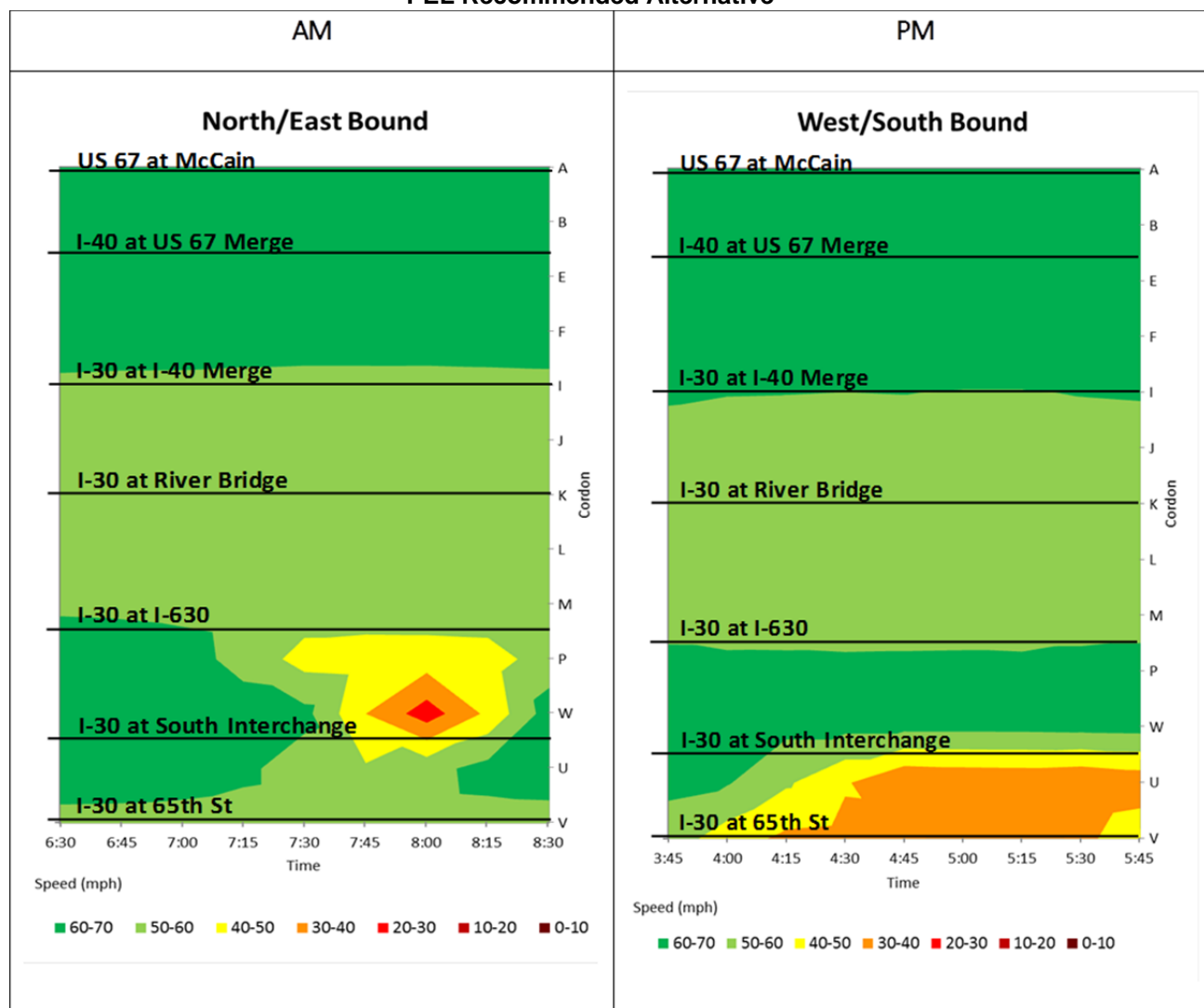
*Commercial displacement listed as 10th Street Warehouse Association, LLC

2.6.1 Mobility

Table 10 shows that the PEL recommended 10-Lane Downtown C/D is comparable to the 10-Lane C/D from a mobility perspective. Minor improvements to weaving were achieved at the north end of the corridor between the C/D system and the north terminal. In addition, the Bus on Shoulder operation was confirmed to operate successfully.

In **Figure 8**, future 10-lane Downtown C/D Alternative travel speeds for AM and PM peak periods are shown throughout the length of the corridor.

**Figure 8. Future (2041) 10-lane Downtown C/D Speed Profiles
PEL Recommended Alternative**



Source: I-30 PEL Vissim models

Note: See the I-30 PEL Traffic and Safety Report (**Appendix F**) for additional speed profiles.

As shown in **Figure 8**, slowdowns only occur for a brief amount of time in the AM and PM peak period simulations in 2041. Compared to the future No Action Alternative, and

the existing conditions, the duration and severity of congestion is minimal in the 10-lane Downtown C/D Alternative.

The two areas where slowdowns are evident are related to constraints outside of the PEL study area. In the AM north/eastbound direction, traffic experiences a slowdown just south of the I-30 eastbound to I-630 westbound flyover ramp. This is because the demand slightly exceeds the capacity for vehicles using the flyover ramp by the 2041 design year. In the PM south/westbound direction, slowdowns occur mostly outside of the PEL study area due to demand exceeding capacity on I-30 westbound by the 2041 design year. Although the speed profiles for the 10-lane Downtown C/D look similar to the 10-lane C/D, there were improvements in corridor travel speeds at the north end of I-30 that do not show up within the 10 mph speed bins.

From a mobility standpoint, this alternative achieves the purpose and need and study goals. The 10-lane Downtown C/D Alternative and the 10-lane C/D Alternative performed very similarly, but the 10-lane Downtown C/D Alternative operates slightly better.

2.6.2 Safety

The effects of the shortened C/D system on safety measures were mostly negligible. The 10-lane Downtown C/D alternative did have slightly fewer crash reductions due to the shortened C/D system, but the safety benefits still remained high in comparison to the other Reasonable Alternatives.

2.6.3 Cost

The cost of the 10-lane Downtown C/D Alternative will be somewhat lower than the cost of the original 10-lane C/D Alternative as a product of shortening the C/D system, resulting in an overall reduction in pavement and bridge structures.

2.6.4 Environmental

The ROW required for the 10-lane C/D Alternative and the 10-lane Downtown C/D Alternative are almost identical, so the difference in the environmental impacts of the two alternatives is minimal.

2.7 Conclusion

The lane configuration for the 10-lane Downtown C/D Alternative is shown in **Figure 9**.

As shown in **Figures 10** and **11**, the 10-lane Downtown C/D Alternative meets all elements of the I-30 PEL purpose and need and study goals.

The 10-lane Downtown C/D Alternative has the best performance overall from a mobility standpoint, provides substantial crash reductions, and has a reasonable cost and minimal environmental impacts. Therefore, the 10-lane Downtown C/D Alternative has been advanced to NEPA as the I-30 PEL Recommendation.

Figure 9. 10-lane Downtown C/D Lane Configuration

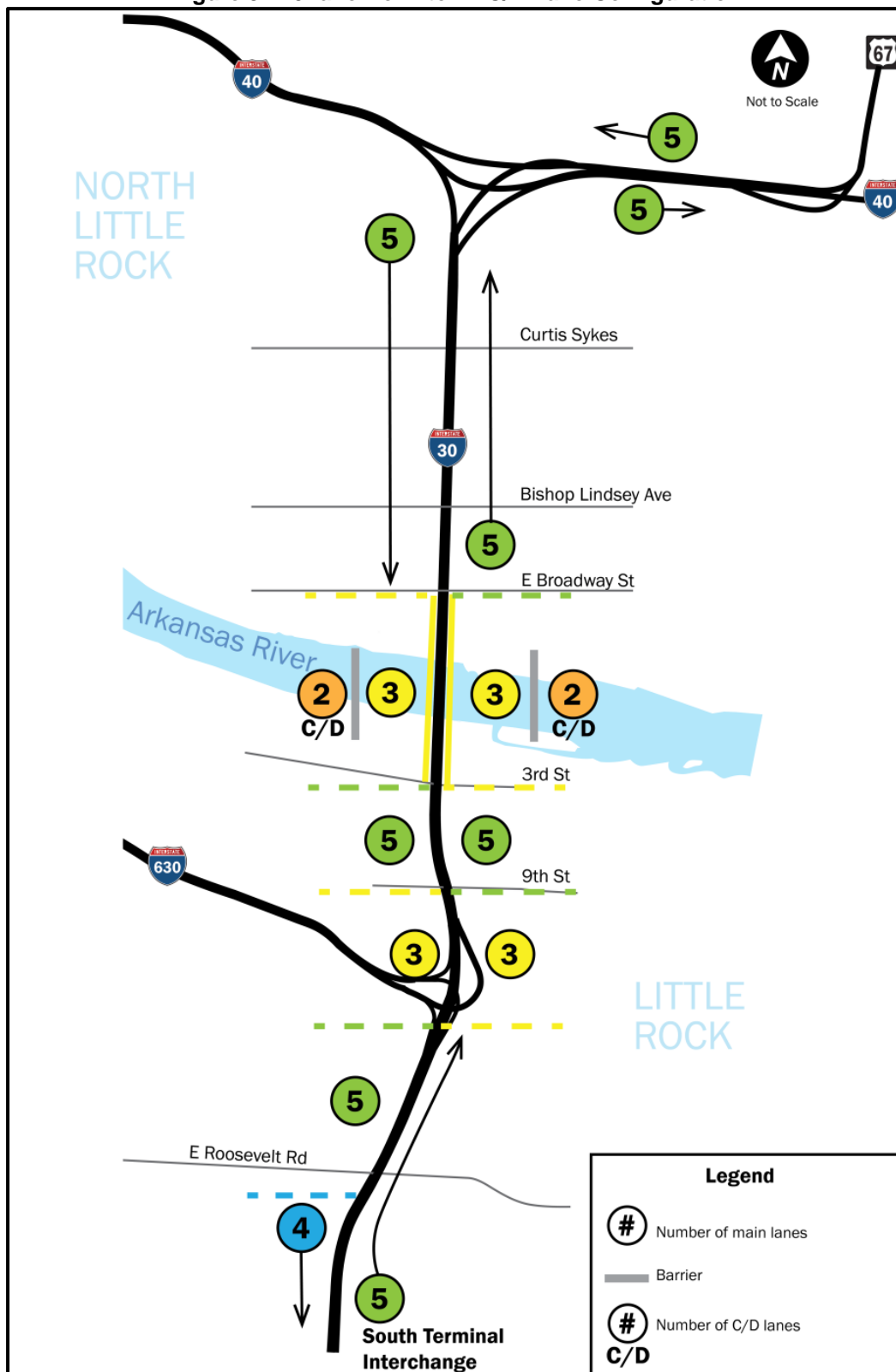


Figure 10. I-30 PEL Purpose and Need

Purpose & Need	
Traffic Congestion	✓
Roadway Safety	✓
Structural and Functional Roadway Deficiencies	✓
Navigational Safety	✓
Structural and Functional Bridge Deficiencies	✓

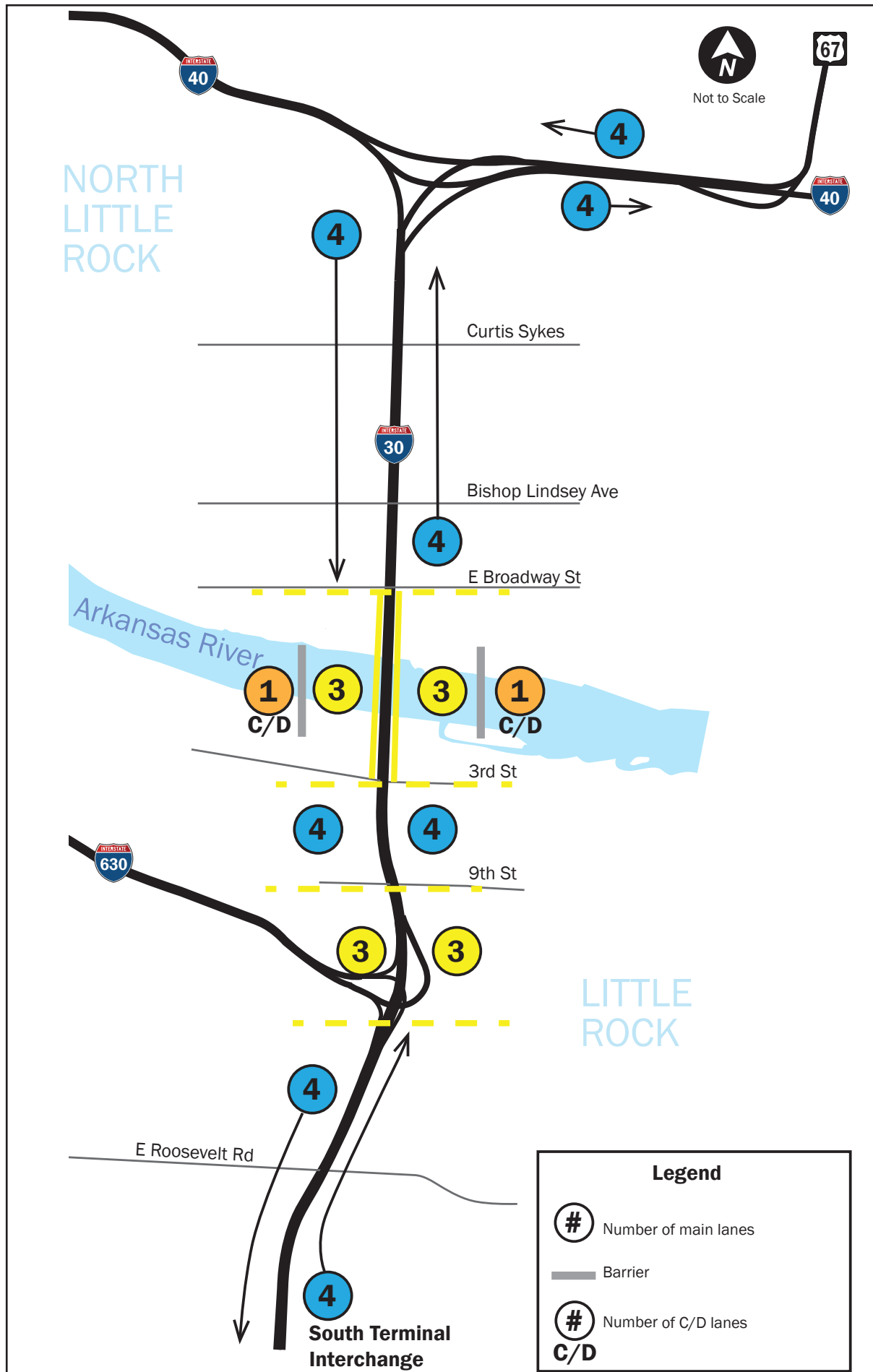
Purpose & Need and Study Goals listed in no particular order.

Figure 11. I-30 PEL Study Goals

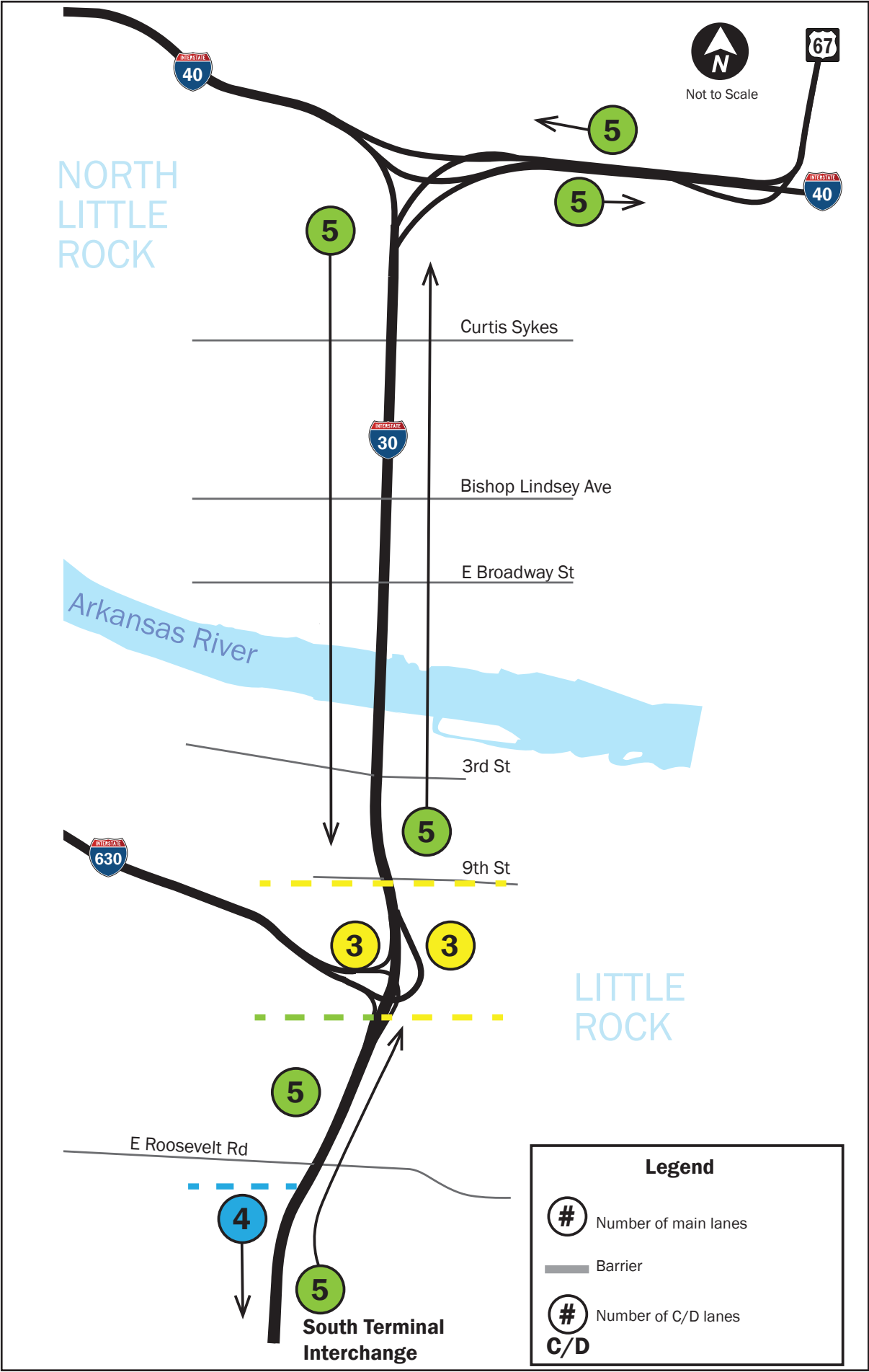
Study Goals	
Improve opportunity for east-west connectivity	✓
Improve local vehicle access to downtown Little Rock and North Little Rock	✓
Accommodate existing transit and future transit	✓
Minimize river navigation disruptions during/after construction	✓
Sustain public and agency input and support for the I-30 corridor improvements	✓
Maximize I-30 cost efficiency	✓
Enhance mobility	✓
Connect bicycle/pedestrian friendly facilities	✓
Improve system reliability	✓
Improve safety	✓
Follow through on commitment to voters to improve I-30 as part of the Connecting Arkansas Program	✓
Avoid and/or minimize impacts to the human and natural environment, including historic and archaeological resources	✓
Optimize opportunities for economic development	✓
Minimize roadway disruptions during construction	✓

Attachment A:
Lane Configurations for the Reasonable Alternatives

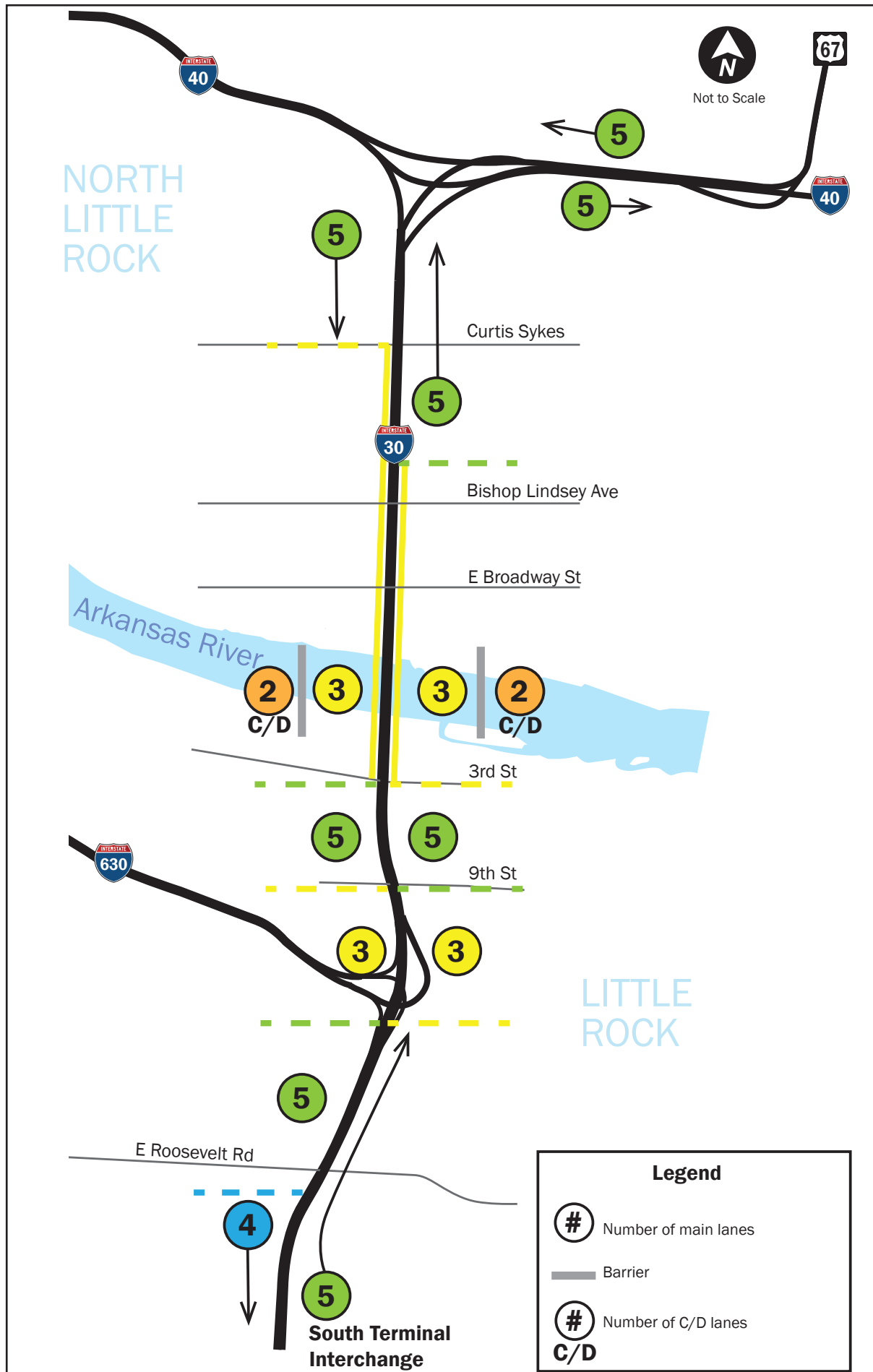
Lane Configuration - 8-Lane C/D Alternative



Lane Configuration - 10 Main Lane Alternative



Lane Configuration - 10-lane C/D Alternative



Attachment B:
EJ/LEP Level 3 Screening Evaluation

EJ/LEP Level 3 Screening Evaluation

The PEL-level analysis of Environmental Justice/Limited English Proficiency (EJ/LEP) was evaluated in accordance with the following regulations and guidance, which will also govern the NEPA-level analysis of potential impacts to EJ/LEP populations:

- Executive Order (EO) 12898 entitled “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” mandates that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs on minority and low-income populations.
- EO 13166, “Improving Access to Services for Persons with Limited English Proficiency” requires federal agencies to examine services they provide, to identify any need for services and ensures that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.
- Title VI of the Civil Rights Restoration Act of 1987 and Title VI regulations against national origin discrimination ensures that LEP persons can effectively participate in or benefit from federally assisted programs and activities.
- FHWA’s “Guidance on Environmental Justice and NEPA” (December 2011) provides guidance for documenting the potential social, economic and environmental impacts considered in the selection and implementation of highway projects. The guidance describes compliance with the principles of EJ.

Similar to the Level 2 Screening, potential direct impacts to EJ/LEP populations were assessed utilizing a series of questions, as described below. A listing of all the environmental measures and their descriptions is presented in **Section 2.3.4** of the *I-30 PEL Level 3 Screening Methodology and Results Memorandum*.

- ***Question 1: Are EJ/LEP populations present in the study area?***

Although the presence of EJ/LEP populations was established in the Level 2 screening, Question 1 was repeated as part of Level 3 screening to serve as a starting point for the EJ/LEP impacts evaluation. As Question 1 determined presence or non-presence only, the Level 3 screening matrix values were either “yes” or “no”.

- ***Question 2: Is there a potential for displacements to EJ/LEP populations?***

Matrix values included the specific number of residential and/or commercial structures located fully or partially within proposed ROW for each Reasonable Alternative.

- **Question 3: If displacements were identified, is there potential for mitigation to offset displacements to EJ/LEP populations - decent, safe, and sanitary replacement housing of similar value in the study area?**

Property values of the potentially displaced residences ranged from approximately \$20,000 to \$50,000¹. Based on this price range, the following parameters were established for researching the availability of housing of similar value in the study area:

- a) Homes for sale under \$50,000 – Matrix values included the number of homes identified via an online search of real estate websites as of March 2015 (e.g., Zillow.com and Realtor.com).
 - b) Apartments for rent of \$500 - \$600 per month - Matrix values included the number of apartments for rent within this set price range via an online search of real estate websites as of March 2015 (e.g., Zillow.com and Realtor.com).
 - c) Section 8 housing available – Matrix values included the number of locations where available Section 8 housing was identified as of March 2015 (HUD.gov).
- **Question 4: If yes to displacements, is there a potential for avoidance, minimization, and/or mitigation to offset displacements to EJ/LEP populations – displacements/relocations will follow the Uniform Relocation Act?**

Matrix values were either 'yes' or 'no'. To receive a value of 'yes' the following assumptions were required:

- a) The Reasonable Alternatives, as designed in the PEL are preliminary and further design refinements will occur for the PEL Recommendation(s) during the NEPA phase.
- b) The NEPA alternative(s) will be specifically evaluated for their ability to address the needs within the study area, as well as for their potential impacts on structures.
- c) Efforts would be made, if practical, to avoid and/or minimize impacts associated with the proposed alternative(s) to structures through the minimization of ROW impacts, alignment shifts, or other design refinements.
- d) Efforts would be made to mitigate potential impacts associated with the proposed alternative(s) to structures. Real property would be acquired in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* which provides important protections and assistance for people affected by Federally funded projects. It ensures that people whose real property is acquired, or who move as a result of projects receiving Federal funds, will be treated fairly and equitably and will receive assistance in moving from the property they occupy.

¹ Source: Pulaski Appraisal District

- **Question 5: *Is there a potential for adverse impacts to the community cohesion of EJ/LEP populations?***

Matrix values were either 'yes' or 'no'. To receive a value of 'no' the alignment of a Reasonable Alternative could not spatially divide a neighborhood or community recognized as a single unit, nor displace public facilities such as churches and schools that if displaced, would affect the ability of people to communicate and interact with each other in ways that lead to a sense of community.

- **Question 6: *If yes to community cohesion impacts, is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts to the community cohesion of EJ/LEP populations?***

Matrix values were either 'yes' or 'no'. To receive a value of 'yes' the following assumptions were required:

- a) Same assumption in Question 4.
- b) Same assumption in Question 4, but for community cohesion.
- c) Efforts would be made, if practical, to avoid and/or minimize impacts associated with the proposed alternative(s) to community cohesion through the minimization of ROW impacts, alignment shifts, or other design refinements.
- d) Efforts would be made to mitigate potential impacts associated with the proposed alternative(s) to community cohesion through public involvement efforts such as community meetings and working with EJ/LEP populations to identify and implement context sensitive solutions (CSS) or other factors that work to improve the cohesive nature of their community.

- **Question 7: *Is there a potential for adverse impacts to access for EJ/LEP populations?***

Matrix values were either 'yes' or 'no'. To receive a value of 'no', the Reasonable Alternative could not eliminate access to existing neighborhoods/communities. Adverse impacts to access were not assumed due to ramp modifications as long as access was not eliminated.

- **Question 8: *If yes to adverse access impacts, is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts to access for EJ/LEP populations?***

Matrix values were either 'yes' or 'no'. To receive a value of 'yes' the following assumptions were required:

- a) Same assumption in Question 4.
- b) Same assumption in Question 4, but for access.

- c) Efforts would be made, if practical, to avoid and/or minimize impacts associated with the proposed alternative(s) to access through modifications to ramps, modifications to C/D roads, or other design refinements.
- d) Efforts would be made to mitigate potential impacts to access associated with the proposed alternative(s) through prospective design refinements, if practical, and public involvement efforts that work to identify, promote, and/or improve alternative access routes, as applicable.

- ***Question 9: Are sensitive noise receptors located in EJ/LEP populations?***

Matrix values included a specific number of sensitive noise receptors located adjacent to the Reasonable Alternatives. Sensitive noise receptors were identified as residences, schools, daycares and churches.

- ***Question 10: If yes (and noise impacts are assumed) is there a potential for avoidance, minimization, and/or mitigation to offset adverse impacts resulting from noise for EJ/LEP populations?***

- a) Same assumption in Question 4.
- b) Same assumption in Question 4, but for noise.
- c) Efforts would be made, if practical, to avoid and/or minimize noise impacts associated with the proposed alternative(s) through the minimization of ROW impacts, alignment shifts, or other functional design refinements (e.g., type of pavement).
- d) Efforts would be made to mitigate potential noise impacts associated with the proposed alternative(s) through noise walls, if determined feasible and reasonable. Construction of noise walls is subject to approval by affected residents, who will be given the opportunity to vote on their preference if applicable.

- ***Question 11: Is there a potential for beneficial impacts to mobility for EJ/LEP populations?***

Matrix values were either 'yes' or 'no'. To receive a value of 'yes' the Reasonable Alternative was required to improve mobility in future year 2041 as evaluated through the Vissim modeling described in **Appendix B** of the I-30 PEL Report.

- ***Question 12: Is there a potential for beneficial impacts to safety for EJ/LEP populations?***

Matrix values were either 'yes' or 'no'. To receive a value of 'yes' the Reasonable Alternative was required in 2041, for example, to reduce the number of crashes, result in faster emergency vehicle travel time, reduce the total number of conflict points; and/or reduce the number of ramp lengths not meeting current standards. Details on the safety analysis are presented in **Appendix B** of the PEL Report.

- **Question 13: *Is there a potential for beneficial impacts to east-west connectivity for EJ/LEP populations?***

Matrix values were either 'yes' or 'no'. To receive a value of 'yes', the Reasonable Alternative must be designed such that some underpasses are broadened and designed with features that promote an open gateway between the east and west sides of I-30 through CSS, as applicable.