

1 PURPOSE AND NEED

1.1 INTRODUCTION

The National Environmental Policy Act of 1969 (NEPA) requires that all federal agencies prepare a detailed Environmental Impact Statement (EIS) for major federal actions that may significantly affect the quality of the human environment. The FHWA is, therefore, required to prepare an EIS on proposals that are funded under its authority if the proposal is determined to be a major action that has the potential to significantly affect the quality of the human and/or natural environment. The North Belt Freeway proposed by the AHTD would be a federally-funded project through the FHWA, and it has been determined a major action that requires an EIS. A key part of the environmental review process requires an explanation of why a project is needed and what purpose it would serve. The following chapter explains the rationale for the proposed project and presents evidence supporting its purpose and need.

1.2 PROPOSED PROJECT DESCRIPTION

The completion of the eastern segment of the North Belt Freeway between Highway 67 and the Interstate 40/440 Interchange left this proposed facility as the only remaining segment of the area's circumferential Interstate highway to be implemented. The proposed highway project, located in northern Pulaski County, Arkansas, consists of a four-lane, divided highway built to Interstate standards and located between Highway 67 and the Interstate 40/430 Interchange. Although adjacent sections of the circumferential freeway are six-lane, forecast traffic volumes for the proposed project only warrant a four-lane highway. The project is 12.7 miles (20.4 kilometers) in length and would be constructed on new location with an average estimated right of way width of 300 feet (91 meters). Access would be fully controlled with interchanges and grade separations utilized at selected locations. Figure 1.2-1 illustrates the basic design features of the project in cross-section.

The funding source for the right of way acquisition and construction of this project has not been determined. The North Belt Freeway project was not placed on the current Central Arkansas Regional Transportation Study (CARTS) TIP or STIP due to the history of uncertainty related to a Selected Alternative. After receipt of a ROD, an appropriate

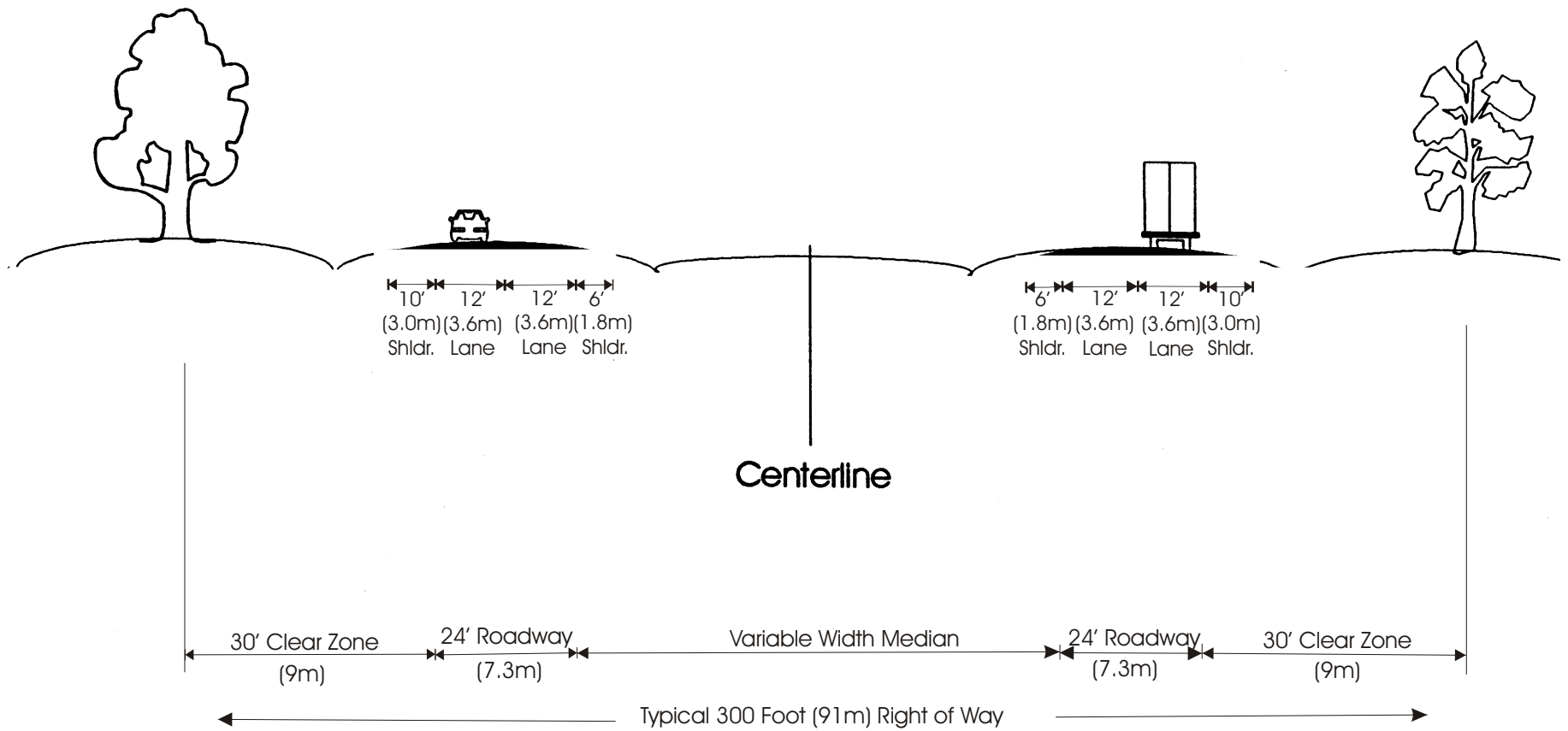


Figure 1.2-1
Typical Section of Improvement
North Belt Freeway

development phase will be amended into the TIP/STIP. Tolling is a financing option that could be considered, if additional funding is needed. If it was determined that this project would be a toll facility, additional environmental analysis would be conducted to assess any impacts associated with the conversion of this proposed freeway into a toll facility.

1.3 PROJECT HISTORY

The proposed North Belt Freeway is included in the CARTS Metro 2030 Metropolitan Transportation Plan and has been part of the transportation planning efforts in northern Pulaski County since 1941. Since 1979, the Pulaski Area Transportation Study, now expanded to the CARTS, has shown the proposed North Belt Freeway essentially in the same general corridor as the alternative identified in the FEIS and ROD in 1994. Metroplan, the local metropolitan planning organization did not include the North Belt Freeway project in the CARTS Transportation Improvement Program in 1997. This decision was made because a portion of the Selected Alternative was not compatible with the City of Sherwood's Master Street Plan. Reassessment of the Selected Alternative became necessary after being unable to proceed with activities on the North Belt Freeway within a three-year period after the Record of Decision.

In 2003, a Preliminary Evaluation was conducted by the AHTD in the hopes of resolving issues necessary to proceed with a FEIS Reassessment. Public comment from the growing residential neighborhoods along the Selected Alternative and the City of Sherwood's continuing opposition resulted in a decision to produce the SDEIS.

1.4 DEVELOPMENT OF PURPOSE AND NEED

The following project needs were identified in the project's 1994 FEIS:

- 1) Provide a direct east/west facility connecting the developing northeast and northwest parts of Pulaski County;
- 2) Increase safety and decrease congestion on existing streets and highways, especially on Highway 67 and Highway 107;
- 3) Provide traffic service for local traffic demands;

- 4) Provide a highway facility consistent with the Pulaski Area Transportation Study and related Land Use Plans by providing a facility which would:
 - a) Serve as a bypass for east-west through traffic in northern Pulaski County.
 - b) Provide improved access to the traffic generated by the population growth in northern Pulaski County; and
 - c) Complete the northern link in the Little Rock/North Little Rock metro area's circumferential freeway by providing a more direct connection of Highway 67 with the interchange of Interstate 40 with Interstate 430.

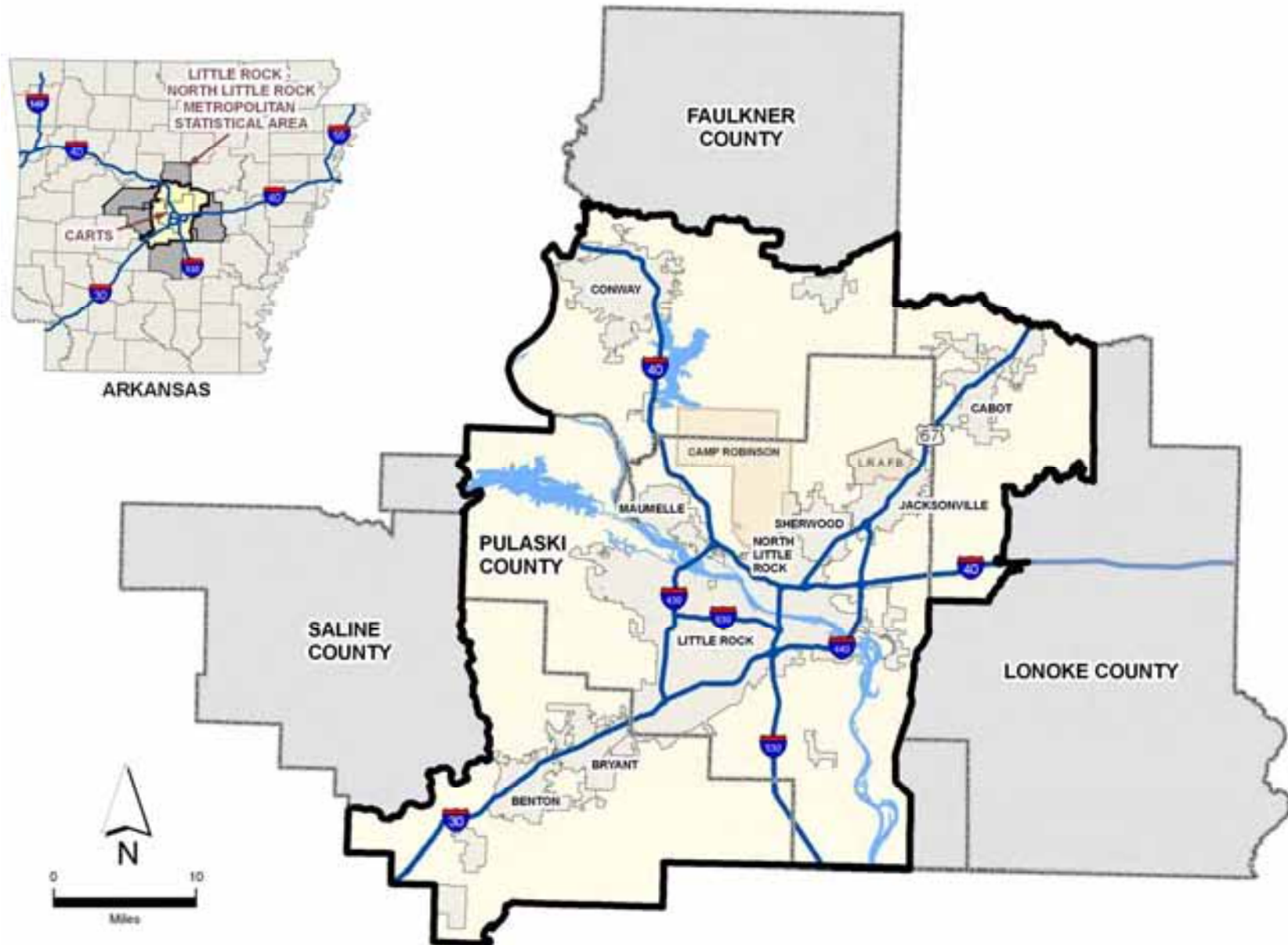
These needs were reviewed in light of changes in the study area as discussed in the following sections.

1.4.1 Description of the Study Area

Pulaski County is located in the center of Arkansas at the junctions of Interstate 40, Interstate 30, Interstate 530 and Highway 67. It is the largest urban area in Arkansas and serves as the retail trade center for a large portion of a predominantly rural state.

The study area of the CARTS and associated municipalities are depicted in Figure 1.4-1. The primary focus of this document is the study area north of the Arkansas River with additional emphasis on factors affecting travel across the project corridor. Included in the project corridor are a portion of the incorporated limits of Jacksonville, Sherwood, and North Little Rock. Development within the corridor can be characterized as small subdivisions with medium to large lot home sites throughout a semi-rural to suburban landscape. For location details of the communities in the corridor, refer to Figure 3.6-1. Large undeveloped tracts exist in northern Sherwood primarily due to a history of single ownership of most of the land. These tracts of land are slated for future large-scale residential and commercial developments, which are now beginning to occur. The west central portion of the corridor is located predominantly within Camp Robinson, an Arkansas National Guard Training Center.

Figure 1.4-1 Central Arkansas Regional Transportation Study Area



1.4.2 Population Growth

Since the North Belt Freeway was first envisioned, population growth has continued to occur around the fringes of the metropolitan area. The central portion of the region has grown modestly, with decline in some areas balancing the growth in others. The counties surrounding the metropolitan area, especially those to the north and east, have grown rapidly in recent years, as Table 1.4-1 illustrates. Table 1.4-2 further emphasizes that the population growth in the region has been occurring primarily away from the traditional urban core cities. The cities within Pulaski County have grown modestly over the last 15 years, with Little Rock growing 5%. Cities on the north side of the Arkansas River grew 10% despite the City of North Little Rock losing population. Sherwood and Maumelle increased by 24% and 122% respectively, and accounted for virtually all the county's net population growth on the north side of the river within Pulaski County.

The northeastern corridor primarily served by Highway 67 and Highway 107 outside of Pulaski County is one of the metropolitan area's high growth regions. Table 1.4-2 indicates that the five incorporated cities in this area have grown by 131% in just 15 years with the Cabot area experiencing the most dramatic transformation. In addition to population growth in this region, a decrease in average household size has produced a large percent increase in the number of households. This, coupled with low numbers of car-pool commuters, has increased the total number of vehicles on the road and vehicle miles traveled.

1.4.3 Development Trends

During the last three decades, the Little Rock/North Little Rock metropolitan area has grown in four primary directions: (1) northwest along the Interstate 40 corridor to Conway; (2) northeast along the Highway 67 corridor toward Cabot; (3) west between Chenal Parkway and Highway 10 in Little Rock; and (4) southwest along the Interstate 30 corridor toward Benton. The first two corridors connect directly to the proposed freeway and the third begins less than four miles (6.4 kilometers) from the western end of the project at the Interstate 40/430 Interchange.

	1990	2006*	1990-2006 Change	
			#	%
Pulaski County	349,569	367,319	17,750	5
Lonoke County	39,268	62,902	23,634	60
Faulkner County	60,006	100,685	40,679	68
Saline County	64,183	94,024	29,841	46
Grant County	13,948	17,493	3,545	25
Perry County	7,969	10,411	2,442	31
Metro Total	534,943	643,272	108,329	20.25

* US Bureau of the Census Annual Estimates Program.

	1990	2006*	% Change
			1990-2006
Central - North			
North Little Rock	61,829	58,896	-5
Jacksonville	29,101	30,506	5
Maumelle	6,714	14,901	122
Sherwood	18,878	23,422	24
Total	116,522	127,725	10
Central - South			
Little Rock	175,818	184,422	5
Northeast			
Cabot	8,319	22,186	167
Austin	235	1,037	341
Beebe	4,455	5,926	33
Ward	1,269	3,508	176
Vilonia	1,133	2,947	160
Total	15,411	35,604	131
Northwest			
Conway	26,481	55,334	109
Greenbrier	2,130	3,745	76
Mayflower	1,415	1,9068	39
Total	30,026	61,047	103
Southwest			
Benton	18,177	27,077	49
Bryant	5,269	13,613	158
Total	23,446	40,690	74

* US Bureau of the Census Annual Estimates Program.

The northwest corridor is dominated by Maumelle and Conway. Maumelle, which has grown considerably since the 1980s, has become more than a bedroom community for the Little Rock/North Little Rock urban area. Along with increased residential development, Maumelle has experienced growth at its industrial park with the addition of several large distribution centers, which now total over 3,000 employees. Rapid development of residential subdivisions in Maumelle continues.

North Little Rock extends west of Interstate 430 along Highway 100 (Maumelle Boulevard) to Maumelle. The Highway 100 corridor has become a center for the construction industry with numerous suppliers and showrooms for various building materials. Large-scale apartment complexes are being constructed near Highway 100, and a significant retail center anchored by a Wal-Mart Supercenter is in development near the Maumelle City Limits. In addition, the North Shore Office Park on Highway 100, to the southeast of the Interstate 430 Interchange, is attracting a mixture of quiet business and office. The Arkansas Department of Environmental Quality has relocated to a new multi-story building in this development.

Farther to the northwest along Interstate 40, Conway has been known as a college town for many years because of the University of Central Arkansas, Hendrix College, and Arkansas Baptist College. Conway started growing rapidly in the early 1990s and continues to be one of the faster growing communities in the state. Although it continues to serve as a bedroom community for many Little Rock area employees, it has developed into a well-rounded community with a broad employment base that attracts many commuters to the city.

The growth of the area to the northeast along Highway 67 is apparent with the recent residential and commercial development in Sherwood and Cabot. Sherwood, which comprises the eastern and central portions of the proposed freeway corridor, experienced rapid growth during the 1970s and early 1980s. It's primarily a residential community with some retail development along the Highway 107 and Highway 67 corridors. After a pause in the pace of development during the 1990s, Sherwood once again began experiencing rapid growth around 2000. Due to the amount of land available for large-scale development and in limited ownership, Sherwood is expected to remain a fast-growing area for some time.

Since the completion of this project's FEIS in 1994, growth of residential development farther to the northeast in communities such as Cabot, Beebe, Ward, and even Searcy, emphasizes the originally identified need for the proposed facility. Cabot, in Lonoke County just across the Pulaski County Line, has grown rapidly from a small town to a prosperous suburban community. Employment is currently limited to local services and retail, as Cabot's growth has been fueled by relatively affordable new housing. The rapid growth of Cabot, in particular, is having an impact on daily traffic flow on Highway 67 as a growing number of commuters travel into the Little Rock/North Little Rock urban area.

Between Sherwood and Cabot is Jacksonville, home of the Little Rock Air Force Base. In addition, Jacksonville has an industrial park located west of Highway 67. Due in part to environmental contamination from a defunct chemical manufacturing plant, Jacksonville's land use development was stifled during the 1980s and 1990s. However, that environmental issue has been resolved, and residential and commercial development can be seen, particularly along the Highway 67 corridor. National retailers are taking advantage of increasing visibility along the Highway 67 corridor, while new subdivisions are appearing in the study area on the west side of the city between Highway 67 and Highway 107.

West of Jacksonville, along Highway 107, is an unincorporated area of approximately 3,200 residents known as Gravel Ridge. Farther to the west, focused on the intersection of Batesville Pike and Jacksonville-Cato Road, is a similar area of approximately 4,700 residents known as Runyan Acres. These areas grew rapidly in the 1970s and 1980s but grew little in the 1990s. However, they too are showing signs of new growth.

West of Runyan Acres, North Little Rock, and Sherwood is Camp Robinson, an Arkansas National Guard training center. This large 32,800-acre (13,274-hectare) facility is used daily for the training of National Guardsmen from Arkansas and throughout the nation. The facility is constantly being modernized and has expanded its importance to the National Guard's training program. Permanent buildings used for offices, training, and housing are generally located in the southern portion of Camp Robinson. Northern areas contain extensive small arms and artillery ranges and drop zones for maneuvers. The southwestern portion of Camp Robinson includes an airstrip used by fixed-wing aircraft and helicopters.

Camp Robinson is massive, stretching north ten miles (26 kilometers) from North Little Rock into Faulkner County and presents a substantial barrier to cross-county traffic flow in the northern portion of Pulaski County. As northern Pulaski County and Lonoke County continue to expand, the presence of this barrier would increasingly become a hindrance to traffic flow.

South of both Gravel Ridge and Runyan Acres is Kellogg Creek and its wide floodplain. This wetland corridor has also been a barrier to growth in the area because it is expensive to provide roadway links connecting areas in the north to the rest of the metropolitan area. This has resulted in virtually all traffic traveling into the city being focused on Highway 67 and Highway 107. Batesville Pike also serves this purpose, but it is relatively close to Camp Robinson, where growth is limited by public lands.

Across the Arkansas River in northwest Little Rock, growth continues to spread to the northwest, especially between Highway 10 and Chenal Parkway. The most significant development is 7,000-acre Chenal Valley project being built by the Deltic Farm and Timber Company. Chenal Valley extends westward from the Pleasant Valley area between Highway 10 and Kanis Road and has substantial amounts of land set aside for commercial, public, and residential uses. The growth in western Little Rock includes extensive commercial and office developments that provide employment opportunities for workers from all over the metropolitan area. The most direct route to such opportunities for workers from northern Pulaski County and Lonoke County would be via Interstate 430. The current interchange at Interstate 40 and Interstate 430 is the western terminus of the proposed North Belt Freeway.

From Sherwood and Cabot in the northeast, to Maumelle and Conway in the northwest, to northwest Little Rock, major growth areas located at opposite ends of the proposed freeway create an increasing demand for trips across the northwest quadrant of the metropolitan area and need for the proposed facility.

1.4.4 Traffic Growth

Since the completion of the FEIS in 1994, the estimated daily traffic volume on Highway 67 just north of the Wildwood Avenue (Sherwood) Interchange increased from 53,900 vehicles per day (vpd) in 1995 to 63,400 vpd in 2006. The 9,500 vehicles per day increase is remarkable considering that in 2001, Highway 440 was opened to traffic from Highway 67 southeastward to Interstate 40, diverting some traffic in the corridor. Highway 440 south of Highway 67 is carrying an estimated 23,300 vpd in 2006. This clearly illustrates the rapidly growing traffic demand in the Highway 67 corridor accompanying the growth in Sherwood and Cabot. Table 1.4-3 presents traffic growth in the area generated by recent developments since the 1994 FEIS. All locations experienced strong annual growth rates, and five were approaching a growth rate that would double traffic within 20 years. Although these growth rates would not likely be sustained, there is ample developable land in the area to keep traffic growing for many years to come.

	<u>1995</u>	<u>2006</u>	1995-2006 Average Annual Growth (%)
Brockington Rd.: north of Highway 176 (Kiehl Ave.)	11,000	17,500	4.31
Highway 107: at Kellogg Creek	12,000	17,200	3.33
Highway 107: at Woodruff Creek	14,500	19,000	2.49
Highway 107: south of General Samuels Rd.	6,300	9,000	3.30
Highway 67: south of Redmond Rd.	56,000	75,500	2.75
Interstate 40: east of Interstate 30	99,400	118,900	1.64
Kiehl Ave. (Hwy. 176): west of Brookwood (Hwy. 176)	14,000	20,100	3.34
Main St.: west of Redmond Rd.	6,800	10,100	3.66
Military Dr.: north of Sunset Drive	6,800	9,800	3.38
Remount Rd.: north of Camp Robinson Rd.(Highway 176)	10,100	12,490	2.25

Figure 1.4-2 illustrates a conservative traffic forecast for many key locations in the project area. The 2030 forecasts were developed using the CARTS regional traffic forecast model

jointly developed and maintained by Metroplan and the AHTD. The project area's roadway network of interest is bounded by Interstate 40 to the south. Interstate 40 is a major cross-country freeway carrying a large number of commercial trucks and is vital on a national as well as a regional scale. Highway 67 has an interchange with Interstate 40 approximately one mile (1.6 km) to the east of Interstate 30, which is the main route into Little Rock from the north side of the Arkansas River. Commuter traffic from the northeast part of the metropolitan area headed to the central business district must travel a mile along Interstate 40 while making two lane changes before exiting to Interstate 30 on the left. Through traffic on Interstate 40 has a similar maneuver to the right.

The multiple lane changes that the over 118,000 vehicles per day perform on this eight-lane freeway create a very challenging operational environment. Highway 67 between Interstate 40 and the southern interchange for Jacksonville (Redmond Road) is currently being widened to six lanes. Approximately 1.5 miles (2.4 kilometers) south of Redmond Road, Highway 440 intersects with Highway 67. Construction of Highway 440 has provided an alternative route for Highway 67 traffic headed to the east, to downtown Little Rock, and when there is an accident on Highway 67. Although Highway 440 has helped Highway 67 in general, the merging of the two traffic streams during the evening peak traffic creates considerable congestion between Highway 440 and Redmond Road.

Table 1.4-4 presents the traffic and forecast Level of Service (LOS) for key locations in the area's freeway system and in the vicinity of the proposed North Belt Freeway corridor. LOS is a quality measure describing conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six LOS designations, A through F, are defined and described in Appendix A. The *2000 Highway Capacity Manual Software* version 5.2 was utilized for the capacity analysis.

Although not ideal, LOS D is currently recognized as a reasonable goal for traffic operations during peak traffic periods in urban areas. It can be seen in Table 1.4-4 that there are several key locations forecast to operate at LOS E and even LOS F. The most critical locations are

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on the regional freeway network such as on Highway 67 south of Redmond Road. Highway 67 is forecast to operate at LOS D by 2030, with completion of widening to six travel lanes. However, that volume is at the limits of LOS D and only 3,000 more vehicles would place it at LOS E. The main lane widening now underway on Highway 67 between I-40 and Redmond Road would provide some relief. However, since the two new main lanes are not currently being carried all the way through to Interstate 40, the highway can be expected to operate at LOS F in peak periods south of the ramps to and from Interstate 40 east. Interstate 40 between Interstate 30 and North Hills Boulevard is also forecast to operate at a LOS F with the current eight travel lanes. This is a critical section of freeway as it is part of a major cross-country Interstate and carries a large volume of truck traffic from both Interstate 30 and Interstate 40.

	<u>2006</u> <u>ADT</u>	<u>2006</u> <u>LOS</u>	<u>2030</u> <u>ADT</u>	<u>2030</u> <u>LOS</u>
Brockington: north of Highway 176 (Kiehl Ave.)	17,500	E	28,100	C ^{**}
Highway 107: at Kellogg Creek	17,200	B	29,100	C
Highway 365: east of Crystal Hill Rd.	9,300	D	13,000	D
Highway 67: south of Redmond Road	75,500	F	105,200	E ^{**}
Highway 67: south of Highway 440	60,500	E	71,900	C ^{**}
Highway 67: south of McCain	72,000	E	90,600	D ^{**}
Highway 67: north of Interstate 40 and south of Interstate 40 east ramps	64,100	D	82,200	F ^{**}
Interstate 40: east of Crystal Hill Interchange	67,900	C ^{**}	89,100	D ^{**}
Interstate 40: east of Interstate 30	118,900	D	139,700	F
Main St.: west of Redmond Rd.	10,100	D	16,600	E
Remount Rd.: north of Camp Robinson Rd.(Highway 176)	12,900	D	17,800	E

[#] Average Daily Traffic (ADT)

* Reflects basic main lane freeway analysis. Weave, merge, and diverge levels of service may vary.

** Reflects widening planned or underway.

1.5 SUMMARY OF PURPOSE AND NEED

Review of land development and traffic growth in the region since the completion of the 1994 FEIS does not indicate a change in the purpose or need for the proposed North Belt

Freeway. Population growth has continued and even accelerated in the proposed corridor and in areas served by this facility. Growth in vehicular miles traveled has continued to reflect the development trends in the region.

The existing and planned roadway network is not sufficient to provide the desired quality of traffic operations. Camp Robinson, an Arkansas National Guard training center, continues to create a 10-mile (16-km) long barrier to civilian travel that would focus east-west travel in northern Pulaski County onto Interstate 40 if a significant alternative route is not developed. Connecting Highway 440 with Interstate 430 would complete a major missing link in the region's highway network.

The purpose and need for North Belt Freeway is to:

- 1) Provide a highway directly connecting the rapidly growing northeast and northwest parts of Pulaski County;
- 2) Mitigate local travel impacts in the area of Camp Robinson on regional travel in North Pulaski County;
- 3) Increase safety by decreasing congestion on existing streets and highways, especially on Highway 67 and Highway 107;
- 4) Provide traffic service for local traffic demands; and
- 5) Provide a highway facility consistent with the Central Arkansas Regional Transportation Study and related plans by providing a facility which:
 - a) Serves as an Interstate 40 and Highway 67 bypass for through traffic in northern Pulaski County;
 - b) Provides improved access to northern Pulaski County; and
 - c) Completes the northern link in the Little Rock/North Little Rock urban area's circumferential highway network.