

Chapter 2: Alternatives

Introduction

An Environmental Impact Statement (EIS) is a procedural document. In other words, the environmental planning process follows a logical sequence of development. Subsequent to the identification of specific project needs, along with the purpose for a particular project, a range of alternatives are developed to address that stated purpose and need. Alternative development is the process of narrowing down a broad range of alternatives to a number of specific alternatives that are both feasible and reasonable. Once those reasonable and feasible alternatives are identified, then the impacts of those alternatives, both positive and negative, can be identified and evaluated. The evaluation of alternatives is the nucleus of an environmental study process, and all reasonable and feasible alternatives must be evaluated.

In an effort to meet the needs of the driving public, and to be consistent with the purpose of the proposed project as described in the *Purpose and Need* chapter, all reasonable and feasible alternatives were considered. The multi-step study of alternatives for this project provided for a full range of alternatives with increasing detail as the study progressed. In this fashion, the alternatives were evaluated in stages so that only those alternatives that met the project purpose and need, and minimized potential environmental impacts, were advanced to the next phase of study.

Once the Purpose and Need was established, several general highway locations or alternative corridors were identified within the study area. These six preliminary alternative corridors identified within the study area are presented in Figure B1, entitled *PRELIMINARY ALTERNATIVE CORRIDORS*.

These six corridors were presented to both the governmental agencies and the public at the formal Scoping meetings on March 28, 2000. The corridors were general in nature and approximately 1,000 feet (300 meters) in width. They were developed through an effort to avoid disruption of population centers, communities, or sensitive environmental resources. Each corridor was relatively narrow, but was capable of

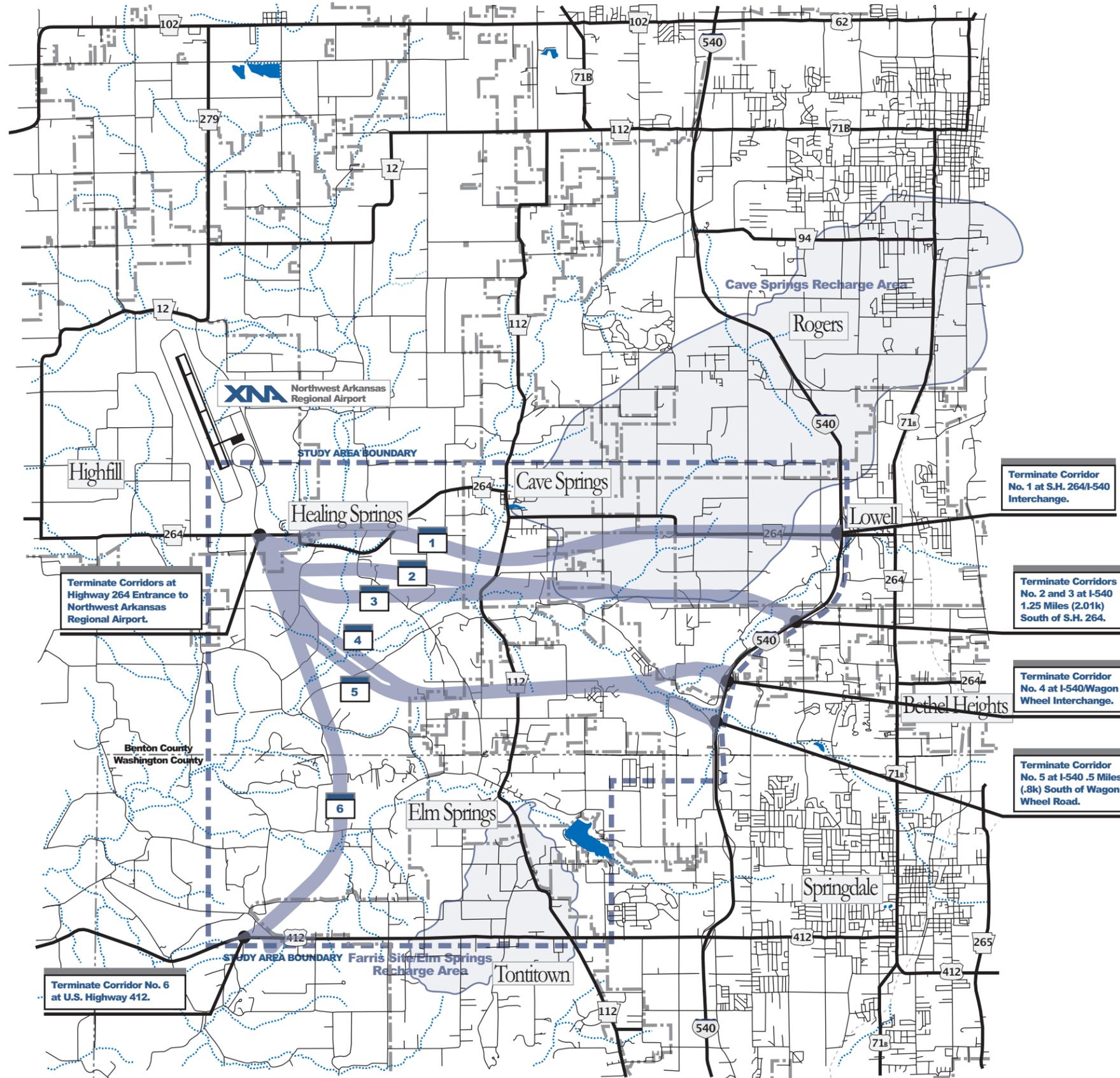


Figure B1 **Preliminary Alternative Corridors**

- Alternative Corridors
- Interstate Highway
- U.S. Highway
- State Highway
- Intermodal Access Road Alternatives
- Study Area Boundary
- Recharge Area

Terminate Corridors at Highway 264 Entrance to Northwest Arkansas Regional Airport.

Terminate Corridor No. 1 at S.H. 264/I-540 Interchange.

Terminate Corridors No. 2 and 3 at I-540 1.25 Miles (2.01k) South of S.H. 264.

Terminate Corridor No. 4 at I-540/Wagon Wheel Interchange.

Terminate Corridor No. 5 at I-540 .5 Miles (.8k) South of Wagon Wheel Road.

Terminate Corridor No. 6 at U.S. Highway 412.

N
Approximate Scale
1" = 8,500'

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accommodating one or more “specific alignments.” Public and agency comments were received concerning the corridors in both written and verbal form. These corridors were then analyzed to determine the impacts of each corridor and the feasibility for further evaluation. Not all corridors were carried forward in the evaluation process. Corridors were eliminated primarily for failure to meet the project purpose and need, and for potential substantial environmental impacts, including impacts to endangered species. It is preferable to eliminate corridors as early in the environmental screening process as possible. There are several reasons for this, the most important being to address the public’s concern with which corridors may be considered for further evaluation so that people can “go on with their lives” and not be subject to continued uncertainty concerning their homes, farms, or businesses. This was a general comment received from the Public at the Scoping meetings.

This chapter will identify the alignments to be evaluated in the *Environmental Consequences* chapter of this document. Each alignment will be evaluated, along with the No Action Alternative, to the same extent to identify both positive and negative impacts. Subsequent to that analysis, this Draft Environmental Impact Statement (DEIS) will be presented to the public for review. A Location Public Hearing will be held, comments received, and a Preferred Alignment identified in the Final EIS.

Alternatives Development

The following discussion presents the process used to determine the alternatives to be considered for more detailed evaluation. The environmental process requires analyses of each alternative in order to identify all reasonable and feasible alternatives that will minimize environmental impacts, meet the design criteria, and can achieve the purpose and need. Public input was provided during the alternative development process as described at the conclusion of this chapter.

No Action

This alternative, as the name suggests, is to keep Highway 264 as the primary southern access road to the Airport. This alternative consists of no improvement to the present system and no expenditures other than routine maintenance of the existing route.

Corridor Development

The first step in the process was to gather existing data to indicate physical and environmentally sensitive constraints that could influence corridor development. The next chapter, entitled *Affected Environment*, describes the existing environment in more detail, including the more relevant items such as sensitive land uses (residential areas,

cemeteries, churches, and nursing homes), floodplains, cultural resources (archeological, historical, and architectural sites), springs, caves, hazardous materials and known threatened or endangered species locations and habitat.

A constraint map of geographic, environmental, and physical resources within the study area was prepared so that alternative corridors could be developed that avoided or minimized impact to these resources. Because of the rather narrow study area, it was possible to identify corridors in great detail. The corridors were developed to minimize potential impacts to threatened or endangered species, minimize impact to population centers and other development, to serve the greatest population and traffic demand, and to coordinate and integrate with other planned transportation projects to avoid cumulative impacts. Figure C3 in the *Affected Environment* chapter identifies the potential constraints within the study area. The Arkansas State Highway and Transportation Department (AHTD) prepared an EIS for the Springdale Northern Bypass (SNB) and from the beginning of the two projects, commitments were made to closely coordinate the projects and investigate the possibility of shared roadway sections. This would reduce costs and minimize impacts to the region caused by road construction and operation of both facilities.

The initial corridors were developed utilizing this information. The study area was identified in the *Purpose and Need* chapter and is generally described as the area from the south boundary of the Airport south to Highway 412 and from the west boundary of the Airport east to Interstate 540 (I-540). The corridors are approximately 1,000 feet (300 meters) in width. While approximately 300 feet (100 meters) will be required for actual right-of-way, the larger corridor width was necessary to allow flexibility in routing of actual alignments within the corridors to avoid constraints and meet engineering design and construction criteria. The corridors are illustrated in Figure B1. The corridors were developed utilizing the information presented in the *Affected Environment* chapter, along with engineering requirements such as interchange locations, acceptable stream crossing locations, horizontal and vertical geometry and cut and fill slope limits. This information was used to form corridors that met design criteria and minimized the impact to several key environmental resources; including existing residential development, planned residential development (known at the time of the development of this DEIS), public facilities, known cultural resources, and natural resources.

All corridors originate at the NWARA, coinciding with the existing southern airport entrance road at Highway 264. Each corridor illustrates a potential route connecting to a major highway on the highway system, either I-540 or Highway 412. Corridors 1 through 5 connect to I-540 at the eastern edge of the study area; Corridor 6 connects to Highway 412 at the southern boundary of the study area. Corridors 1 through 5 cross Highway 112 and several county roads by grade separations to provide continuity of roads and local travel patterns. Corridor 6 is similar except it does not cross Highway 112.

Parts of Corridors 4, 5, and 6 are co-located with a portion of the SNB Selected Alignment. In an effort to avoid cumulative impacts, reduce community disruption, and maximize the use of scarce financial resources, the corridor evaluation and alignment identification process was coordinated with the AHTD's SNB EIS. Information concerning the Cave Springs Cave recharge area was shared with the agency, as one of the preliminary corridors considered by AHTD for the SNB was generally co-located with the eastern portion of Corridors 2 and 3 of this Study. In addition, interchange location and design, along with connectivity to the eastern portions of the SNB were discussed and coordinated with the AHTD.

Corridor Screening Criteria

Screening criteria were developed so that each corridor would be evaluated equally. At this stage of the process, the screening criteria were general and considered only the major factors that would be impacted by a roadway or relatively influence roadway alignment. The preliminary screening criteria, described in detail in the following paragraphs, allowed a general assessment of each corridor relative to environmental impacts (direct, indirect, and cumulative) and traffic data. The considerations for corridor evaluation are (a) the ability to develop a highway within a corridor that meets the Purpose and Need, (b) minimizing impacts to or avoiding sensitive resources, and (c) the ability to minimize cumulative and consequential impacts.

More specific impact evaluation criteria are presented for each alignment retained for further evaluation in the *Environmental Consequences* chapter of this document.

All of the corridors contain sensitive resources. The presence of a sensitive resource within a corridor is not an indication that the resource would be affected. Within a corridor that is 1,000 feet (300 meters) in width, the final alignment and right-of-way of approximately 300 feet (100 meters) could generally be located to avoid the most sensitive areas. The corridors were evaluated based on their potential to accommodate alignments that meet engineering criteria and minimize environmental impacts while meeting the Purpose and Need for the project. The preliminary screening criteria, and the results of the comparative evaluation of the corridors and the No Action Alternative, are combined into an evaluation matrix presented in Figure B2 entitled *CORRIDOR COMPARATIVE EVALUATION MATRIX*. These criteria were developed for screening to eliminate corridors from further consideration that are not reasonable and feasible.

Threatened and Endangered Species Preliminary Analysis. Impacts a corridor might have on federally listed threatened and endangered species, or habitat for such species, are included in this criteria category. Avoidance of such resources is the preferred option. These potential impacts could eliminate a corridor from further consideration if they cannot be minimized or mitigated. The major concern is the potential impact to

Cave Springs Cave and the water resources of the Cave Springs Cave recharge area. Cave Springs Cave is the home of the endangered Ozark Blind Cavefish and the Gray Bat. Direct impacts resulting from construction and/or operation of the facility, or the indirect induced development generated by such a facility within the recharge area, has the potential for a substantial impact to these species.

Figure B2

CORRIDOR COMPARATIVE EVALUATION MATRIX

Northwest Arkansas Regional Airport Intermodal Access Road DEIS

ISSUE/RESOURCE	No Action	Corridor						Comments
		1	2	3	4	5	6	
Threatened and Endangered Species	H	H	H	H	L	L	L	Recharge area to Cave Springs Cave impacted
Meets Purpose and Need	L	H	H	H	H	H	M	Satisfies Traffic Demand?
Consequential Impacts	H	H	H	H	L	L	M	Are there considerable indirect impacts associated if it is built?
Cumulative Impacts	L*	H	H	H	L	L	M	Are there considerable cumulative impacts associated if it is built?

High –Very likely to impact resource or address the issue.
Medium –Moderately likely to impact resource or address the issue.
Low – Least likely to impact resource or address the issue.
* Cumulative impacts only occur if a project is implemented. Since the No Action Alternative results in no improvements, no cumulative impacts will occur.

The issues of direct and indirect impacts on threatened or endangered species have been identified in previous FHWA/AHTD documents and studies. For example, the Highway 71 Relocation Fayetteville-McKissick Creek Final EIS addressed the recharge area of Cave Springs and the endangered species associated with the cave and recharge area. A section of Corridor 1 passes through the Cave Springs recharge area.

During the Scoping meetings, the Arkansas Nature Conservancy and representatives of the University of Arkansas, Department of Biological Sciences noted that the recharge area for Cave Springs Cave was larger than previously documented in the Highway 71 Relocation Final EIS and that Corridors 2 and 3 were also located within the recharge area. In an effort to determine conclusively the southern boundary of the recharge area, an extensive groundwater tracing investigation was performed to determine the potential for adverse impact to the six corridors under evaluation.

The results of this effort were included in a study entitled, *GROUNDWATER RECHARGE AREA DELINEATION AND VULNERABILITY MAPPING FOR A POPULATION OF *Cambarus aculabrum*, A CAVE CRAYFISH, NEAR ELM SPRINGS, ARKANSAS*. This study identified the eastern boundary of the recharge area and the probable southern boundary further south than previously believed from past studies, and this information is reflected in the evaluation matrix. The matrix shown in Figure B2 reflects that Corridors 1, 2, and 3 do not avoid the recharge area and could have impacts to these species, while Corridors 4, 5, and 6 avoid the recharge area. The No Action Alternative would not directly affect the Cave Springs Cave recharge area, but would cause increase potential for impacts. The growing traffic volumes on the existing roadways, especially Highway 264 where it passes through the recharge area, increases the potential risk for hazardous material spills and pollutants in stormwater runoff.

Purpose and Need Preliminary Analysis. All corridors are capable of accommodating some level of traffic in a safe and efficient manner, but the corridor that satisfies the highest level of traffic received the highest ranking. These corridors not only satisfy the current traffic, but also the projected traffic during the 20-year planning period. Each corridor will satisfy a slightly different level of traffic through the planning period based on the proposed location and alternative routes available. The corridors were compared to each other based on the traffic data contained in the Airport Trip Generation Report included in Appendix A1. The Report evaluated the traffic that would be satisfied if the project were constructed as a toll road or as a non-toll road within each corridor, as both funding options are under consideration

Table B1 reflects the traffic demand projections from the Airport Trip Generation Report for each corridor, as both a toll road and non-toll road facility. (The comparisons between the corridors can be seen in the forecasted 20-year planning horizon). A comparison is made between each corridor and the average traffic forecast for the two time periods.

Table B1
TRAFFIC DEMAND PROJECTIONS for TOLL and NON-TOLL ROAD FACILITY
Northwest Arkansas Regional Airport Intermodal Access Road DEIS

Corridor	Toll Road		Non-Toll Road	
	Forecasted Traffic ADT 2008	Forecasted Traffic ADT 2028	Forecasted Traffic ADT 2008	Forecasted Traffic ADT 2028
1	6,220	17,020	7,710	19,110
2	6,060	16,460	7,550	18,550
3	5,770	15,570	7,190	17,790
4	5,571	16,230	6,934	18,220
5	6,060	16,460	7,550	18,550
6	4,670	12,470	5,730	13,930

As shown in Table B1, there is only about a 7% variance between Corridors 1 through 5 in terms of projected traffic demand during the 20-year period from 2008 through 2028. Corridor 6 however accommodates about 20% less traffic demand than the average of the six corridors. This is due to the location of Corridor 6 and its connection to the existing highway system, which is less convenient for many airport users located north of Highway 412 (i.e., Rogers, Bentonville, and surrounding area), which accounts for approximately 45-50% of the traffic demand. This traffic movement would not be efficiently served by the Corridor 6 route of approximately 9.3 miles (14.9 kilometers), which would cause airport traffic utilizing the corridor to travel through the I-540/Highway 412 interchange and its two signalized intersections, as well as other signalized intersections of Highway 412 at Tontitown. The I-540/Highway 412 interchange is one of the busiest in Northwest Arkansas, and while it has been recently improved by AHTD (providing a LOS B or C according to a recent LOS analysis performed by AHTD), the interchange continues to experience a substantial volume of traffic with a high percentage of truck traffic. When the SNB is constructed this LOS would improve again.

To avoid this circuitous route, it is anticipated that a considerable amount of traffic generated from airport users located north of Highway 412 would continue to use the existing Highway 264 to access the Airport. Therefore Corridors 1 through 5 were given a relative “High” rank while Corridor 6 was given a relative “Medium” rank for satisfying traffic demand. The No Action Alternative receives a “Low” rank because it provides no improvements to the existing roadways that would increase safety and capacity.

Consequential or Secondary Impact. Although not a direct impact, consequential or secondary impacts would result as a consequence of implementing an alternative

corridor. For example, if a corridor did not accommodate a sizeable portion of the forecasted traffic demand, this would result in consequential impacts since additional or connected roadways would require upgrading to accommodate the remaining forecasted traffic demand. Additional consequential or secondary impacts could result from induced developed as a result of highway development close to or within the Cave Springs Cave recharge area.

Of the six corridors and the No Action Alternative considered in the Alternatives analysis, the No Action Alternative would serve the smallest amount of the forecasted traffic demand, due to its location, alignment, and congestion. Corridor 6 would be the next lowest in serving the forecasted traffic demand due to its location. The use of Corridor 6 could necessitate upgrading (i.e., widening, straightening, and improving) existing Highway 264 to produce an acceptable level of service for airport users located north of Highway 412. Since Highway 264 currently passes through the Cave Springs Cave recharge area, major improvements to the highway to accommodate the demand could result in impacts to the endangered species habitat. In addition, Highway 412 would experience additional traffic bound for the Airport which could require improvements from approximately I-540 to the connection with Corridor 6, west of Tontitown.

The increasing traffic demand on Highway 264 could not only necessitate highway improvements, but could cause increased ancillary related development, resulting in additional secondary or consequential impact to the recharge area of Cave Springs Cave. Existing Highway 264 has numerous exit/entry points, intersections, and other areas that enhance the possibility of off-highway land use development. This development would further contribute potential direct and indirect impacts within the recharge area. The U.S. Fish and Wildlife Service has expressed serious concern with potential new land use development in this area (public meeting, December 8, 2004, Jones Center for Families, Springdale) and its impact to Cave Springs Cave and its recharge area.

Because of these factors, Corridor 6 was rated “Medium” in the matrix for Consequential Impacts. Corridors 4 and 5 would have “Low” consequential impacts, as they are capable of accommodating the forecasted traffic. However, due to consequential impacts that could occur to the Cave Springs Cave recharge area, Corridors 1, 2 and 3 were ranked “High” in the matrix. A “High” ranking was given to the No Action Alternative because the consequential impacts of providing no improvements to the existing roadways results in the least favorable situation based on increasing traffic volumes, potential for ancillary development along Highway 264, and the increasing risk of pollutants and hazardous material spills.

Cumulative Impact. Indirect impacts that could occur due to the implementation of other planned projects in the area are called cumulative impacts. In other words, one project by itself may not result in major impacts, but the combined impacts (cumulative)

of two or more could have considerable impacts. A major concern is the cumulative impacts that could occur along with the SNB. Corridors 4 and 5 could take advantage of the SNB to the greatest extent because large portions of both highway projects [approximately 3.5 miles (5.6 kilometer)] would be co-located, thus minimizing cumulative impacts. Corridor 6 would be the next best in addressing these criteria because approximately one mile (1.6 kilometer) could be co-located, along with the intersection with Highway 412. Corridors 1, 2, and 3 would result in substantial cumulative impacts. Although they are in close proximity with the SNB, none of these three corridors take advantage of co-locating sections with the SNB. Corridors 1, 2, and 3 were ranked “High” in cumulative impacts, Corridor 6 was ranked “Medium” in cumulative impacts and Corridors 4 and 5 were ranked “Low” in cumulative impacts. The No Action Alternative receives a “Low” ranking also because it will not result in the implementation of any projects, thus having no cumulative impact when combined with the construction of the SNB.

Additional Corridor Alternative

The Northwest Arkansas Regional Airport Authority presented the Corridor Alternatives to be evaluated in this DEIS to the public and agencies in February 2001. Subsequent to that presentation the AHTD held a Location Public Hearing in April 2002 concerning the SNB DEIS. As a result of public comments received at that Hearing, the AHTD determined that two additional alignment alternatives would need to be examined, a “split” interchange alignment that uses a segment of I-540 as a part of the proposed bypass, and a “northern alignment”.

Based on the AHTD and FHWA evaluation, a determination was made that the “split interchange” alignment was not feasible based on current accepted engineering design principles related to future traffic volumes, overlapping routes, and route continuity and weaving movements.

The “northern” alignment crosses I-540 between the Wagon Wheel Road Interchange and the Highway 264 Interchange and is located north of Callahan Mountain. Evaluation by AHTD and FHWA led to the determination that this new alignment, designated SNB Line 5, is feasible and would be fully considered and documented in the Supplemental Draft Environmental Impact Statement (SDEIS). This led to the inclusion of the shared portion of SNB Line 5 being included in this EIS study process as Alignment 4A. This alignment avoids the Cave Springs Cave recharge area and potential impacts to the associated endangered species.

The SNB SDEIS prepared by AHTD evaluated four alignment alternatives within the center portion of their study area. These alignments are shown on the following

illustration, Figure B3 titled *ALIGNMENTS STUDIED BY THE AHTD FOR THE SNB SDEIS (MAY 2004)*. These are SNB Line 2 (blue), Line 3 (gold), Line 4 (dashed green) and Line 5 (red). SNB Lines 2 and 4 are concurrent west of the interstate and join Lines 3 and 5 just east of Highway 112. SNB Lines 2 and 4 are the same as NWARA Alignment 5 in this DEIS for approximately 3.5 miles (5.6 kilometers) and Line 3 is concurrent with NWARA Alignment 4 in this DEIS for approximately 3.5 miles (5.6 kilometers).

The AHTD held Location Public Hearings on the SNB SDEIS in June 2004. Line 5, as presented in the SNB SDEIS, was identified as the preferred alignment in August 2004. A Final EIS on the SNB was prepared in October 2005 which included Line 5 as the preferred alignment. The FHWA issued a ROD in February 2006 that approved a Selected Alignment Alternative for the proposed bypass. Based upon consideration of all the social, economic, and environmental evaluations contained in the DEIS, SDEIS, and FEIS, the FHWA determined that the Selected Alternative (i.e., Alignment 5 No Toll Funding Alternative) is the environmentally preferred alternative. In the future, if a decision is made that a toll facility will be needed for the SNB, environmental documentation will be prepared to address those additional impacts that could result from the construction and operation of a toll facility.

Therefore, for purposes of this DEIS, the Selected Alternative Alignment (Alignment 5 non-toll) identified in the SNB ROD that is co-located with the Intermodal Access Road will be considered the preferred alignment for a portion of the Intermodal Access Road in order to minimize cumulative impacts. That co-located portion is identified between the interchange with the SNB just west of Highway 112 east to the proposed interchange at I-540 and is composed of portions of Sections AB and BC from the SNB SDEIS. Since the alignments are the same, the only additional analysis to be presented in the *Environmental Consequences* chapter will be those associated with “changed conditions” that have occurred subsequent to the issuance of the ROD by the FHWA (such as new subdivisions) and those resource categories that will be associated with different average daily traffic counts. All other impacts identified in the SNB FEIS and in the ROD are incorporated by reference and will be presented in a Summary Impact Table for comparison.

Corridors Eliminated From Further Study

For the reasons described above, Corridors 1, 2, 3, and 6 were eliminated from further consideration due to failure of the corridors to either meet the purpose and need for the project, and to avoid the cumulative impacts resulting from the construction of two separate highway facilities that could serve the same area.. The reasons for elimination are discussed and presented in the following narrative.

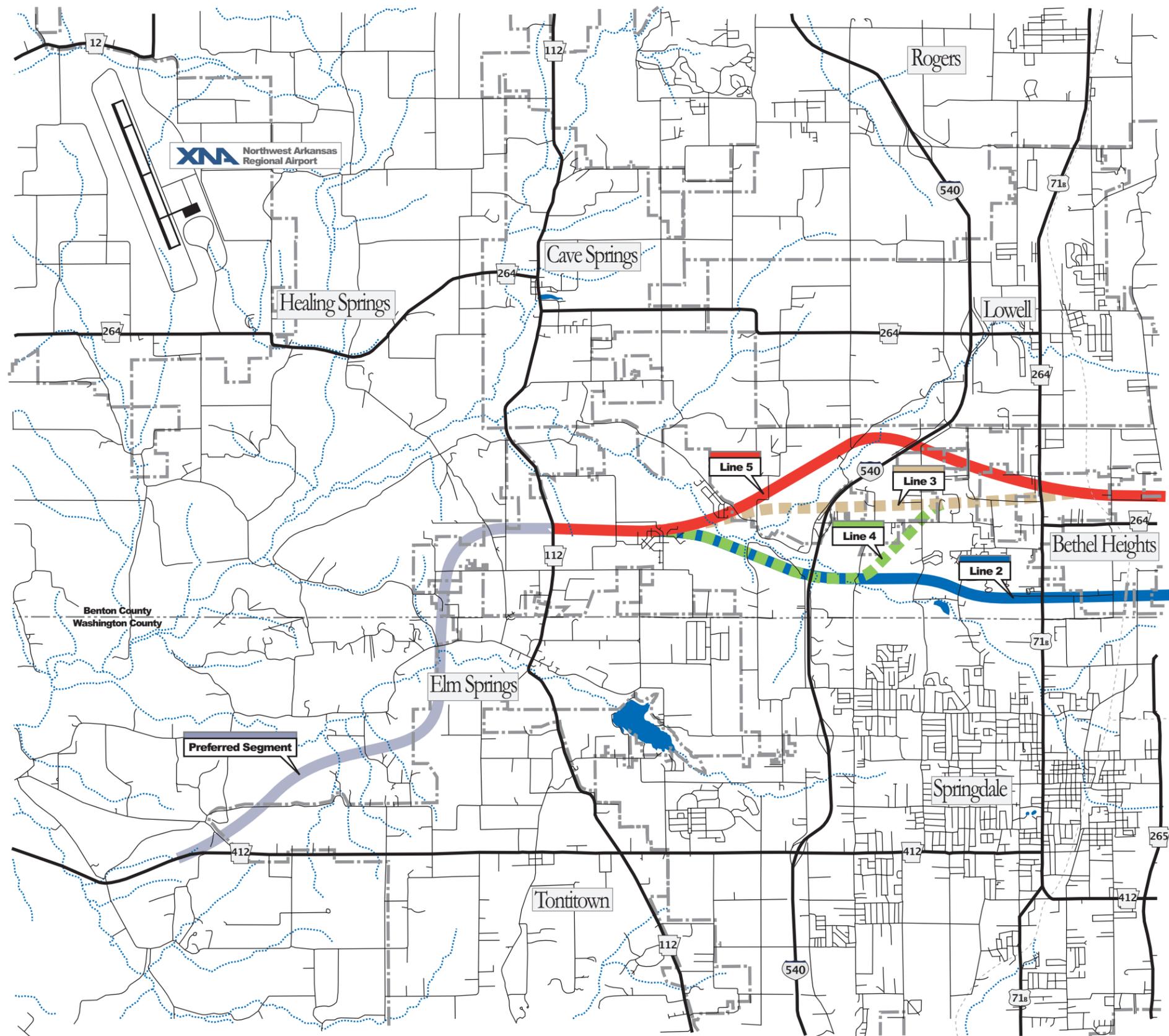


Figure B3 **Alignments Studied by the AHTD for the SNB SDEIS (May 2004)**

-  Preferred Segment
-  Line 2
-  Line 3
-  Line 4
-  Line 5
-  Interstate Highway
-  U.S. Highway
-  State Highway


 Approximate Scale
 1" = 6,000'

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Source: Arkansas Highway Transportation Department (AHTD)
 State Project Number 090069 -- FAP HPP-0238(1)

Corridor 1

Approximately four miles (6.4 kilometers) of the eastern portion of this corridor impacts the recharge area of Cave Springs Cave, home for the Ozark Blind Cavefish, and by association the Ozark Crayfish, as well as the Gray Bat. Additionally, the Arkansas darter, a candidate for listing as a Federal threatened and endangered species, is known to exist upstream of the Corridor 1 bridge crossing over Little Osage Creek. The impacts of Corridor 1 to the recharge area are both direct and indirect, or induced, impacts associated with highway construction or upgrading. Based on the information presented earlier, Corridor 1 was eliminated from further consideration.

Corridors 2 and 3

Based on information presented earlier, Corridors 2 and 3 will have potential direct impacts to the Cave Springs Cave recharge area and the associated species, as approximately 3.3 miles (5.3 kilometers) of the eastern portion of the corridor impacts the recharge area. In addition, Corridors 2 and 3 would also result in greater cumulative impacts since they do not share a section of the Selected Alternative for the SNB. Therefore, Corridors 2 and 3 were eliminated from further consideration.

Corridor 6

In comparison to the other corridors, Corridor 6 would serve the least amount of the anticipated traffic demand, and does not meet the needs of the project as well as other corridors. Compared to the other corridors evaluated, Corridor 6 has the greatest potential for indirect consequential and cumulative impacts to the Cave Springs Cave recharge area that could result from the possible future upgrade of Highway 264 and the additional related development that could occur. Also, this corridor does not address cumulative impacts as well as Corridors 4 and 5. Therefore, Corridor 6 was eliminated from further consideration as a reasonable alternative.

Other Alternatives Eliminated from Consideration

Other alternatives exist which were evaluated. These include other forms of transportation, such as mass transit. They also include Transportation System Management (TSM) alternatives of the existing transportation systems to enhance their capacity, improve safety, and meet the purpose and need of the project. These and other such alternatives are discussed below.

Mass Transit

Two mass transit systems serve the project area with passenger bus service. Razorback Transit operates a passenger bus system to provide service to the University of Arkansas at Fayetteville and some locations within Fayetteville. Ozark Transit serves the entire region and a multi-county area with rural transit services. The MPO 2030 Northwest Arkansas Regional Transportation Plan includes \$13.9 million for transit improvements and the Transportation Improvement Program FY 2007-2010 contains more than \$14.7 million in funding, primarily for the replacement of buses and operation and maintenance of the existing system. There has been some preliminary discussion in the region about increasing mass transit options, and Ozark Transit has announced plans to explore the feasibility of an expanded service. The vast majority of the citizens in Northwest Arkansas use personal vehicles for transportation. There has been no public demand for local mass transit with scheduled service, beyond what is currently in place. Without a public demand, there has been little governmental financial support for a mass transit system. Therefore, the mass transit alternative was eliminated from further consideration as a stand-alone alternative, but could be used as a supplemental mode of transportation when the selected alternative is implemented.

Transportation System Management (TSM)

TSM alternatives are normally considered in dense urban areas. The types of system management alternatives in those areas include high occupancy vehicle (HOV) lanes; reversible direction lanes to handle peak hour traffic that travels one direction in the evening and the reverse in the morning; ramp metering to control the flow of entrance ramp traffic onto the mainline during peak hours of traffic; changeable message signs that notify motorists well in advance of pending congestion, accidents and weather conditions ahead, and provide alternative route selections. All of these are very good applications in dense urban traffic areas with freeway or expressway facilities. However, adding additional HOV or reversible flow lanes in the existing roadway is not feasible as the existing roadway is not a controlled access roadway and has 76 at grade intersections and private driveways accessing the existing roadway between the NWARA and I-540. Furthermore attempting to modify the existing roadway for either HOV or reversible lanes would result in substantial widening and re-alignment of the roadway very similar to what is described in the following paragraph.

Widening of Highway 264

Widening of Highway 264 would improve traffic conditions and increase capacity. However widening to a four-lane highway and realignment to eliminate the 90-degree curves, as well as eliminate the controlled intersections within Cave Springs, could result in impacts to the Cave Springs Cave recharge area and the habitat of the associated endangered species. This impact has been documented in the previous studies related to

the protection of the endangered species of this area. Widening and realignment of the highway would result in the taking of additional right-of-way and could promote secondary impacts due to development along the improved alignment. Thus, widening of Highway 264 is not considered a reasonable alternative for further evaluation.

Northern Routes

One of the primary concerns in evaluating alternative corridor locations was the ability of a corridor to be coordinated with and integrated into the region's existing and planned major highway system (to avoid cumulative environmental impact). This was especially true with the SNB and its relationship to an alternative for the NWARA Intermodal Access Road that would use the northern airport entrance.

As compared to the other potential corridors, a northern corridor to the Airport was the least effective in its ability to be coordinated with and integrated into the planned development of the SNB, which would provide additional connectivity to other major highways in the area, and population and employment centers along I-540, Highway 412, and other connecting highways.

A north terminus location would provide good intermodal access to residents of northern Benton County and the approximate 77,800 people who reside in the population centers of Bentonville and Rogers estimated for 2005. However, as compared to other corridors with an I-540 terminus point farther south, the northern terminus location at I-540 would provide relatively less efficient intermodal access for the approximate 308,000 people who reside in Washington County and the population centers of Fayetteville and Springdale for that same year. The center of population for the metropolitan area is near the intersection of I-540 and Alternatives 4 and 5 and this population centroid is forecast to remain near to this location.

Southwestern Route

Like Corridor 6 and the northern corridor eliminated from consideration, a southwestern corridor connecting the Airport with Highway 412 would not be effective in utilizing the SNB or other major highways in the areas. Very little of the Northwest Arkansas population base resides to the west and southwest of the Airport, so very little traffic would be served by a corridor in this location. Therefore, it does not meet the Purpose and Need for the project and has a very high potential for indirect consequential and cumulative impacts to the Cave Springs Cave recharge area that could result from the possible future upgrade of Highway 264 and additional related development that could occur.

Corridors to be Further Evaluated

The SNB ROD identified the selected corridor and associated alignment of the bypass in three sections, two from the DEIS (AB and EF) and one from the SDEIS (BE). For the proposed Intermodal Access Road a section will be co-located with a portion of the SNB. This co-located section traverses east from the proposed interchange of the SNB and the Intermodal Access Road to the proposed interchange at I-540, or portions of Sections AB and BE from the SNB FEIS. No other corridors between these two interchanges will be evaluated. Impacts to that portion of the SNB are incorporated by reference and summarized in the *Environmental Consequences* chapter. This co-located portion is identified as Corridor BC for the Intermodal Access Road.

However, two corridors, Corridors 4 and 5, beginning at the Airport and terminating at the SNB interchange west of Highway 112 will be evaluated, along with the No Action Alternative. These corridors are presented in sections and labeled Corridor 4AB and Corridor 5AB shown in Figure B4 entitled *ALTERNATIVE CORRIDORS TO BE EVALUATED*. Corridor 4AB starts at the southern entrance of the NWARA and terminates at the SNB interchange, Corridor 5AB also starts at the southern entrance to the Airport and terminates at the interchange with the SNB. The two corridors are essentially parallel. The portion of the Intermodal Access Road from the interchange with the SNB to I-540 is the same for both corridors, representing that portion of the SNB that is common to both highway projects.

No Action

The No Action Alternative is to keep Highway 264 as the primary southern access road to the Airport. The only improvement would be routine maintenance to the existing highway, but no additional traffic lanes or other improvements would be constructed. The capacity of the roadway would remain the same and the level of service analysis contained in the *Purpose and Need* chapter indicates that travel efficiency and safety would deteriorate in the future as additional traffic is added to the existing highway.

Corridor 4AB

An alignment within Corridor 4AB would not result in either direct or indirect impacts to the endangered species habitat, would not result in consequential impacts associated with the widening of Highway 264 and would achieve the Purpose and Need of the project.

Corridor 5AB

As with Corridor 4AB, an alignment within Corridor 5AB would not result in either direct or indirect impacts to the endangered species habitat, would not result in consequential

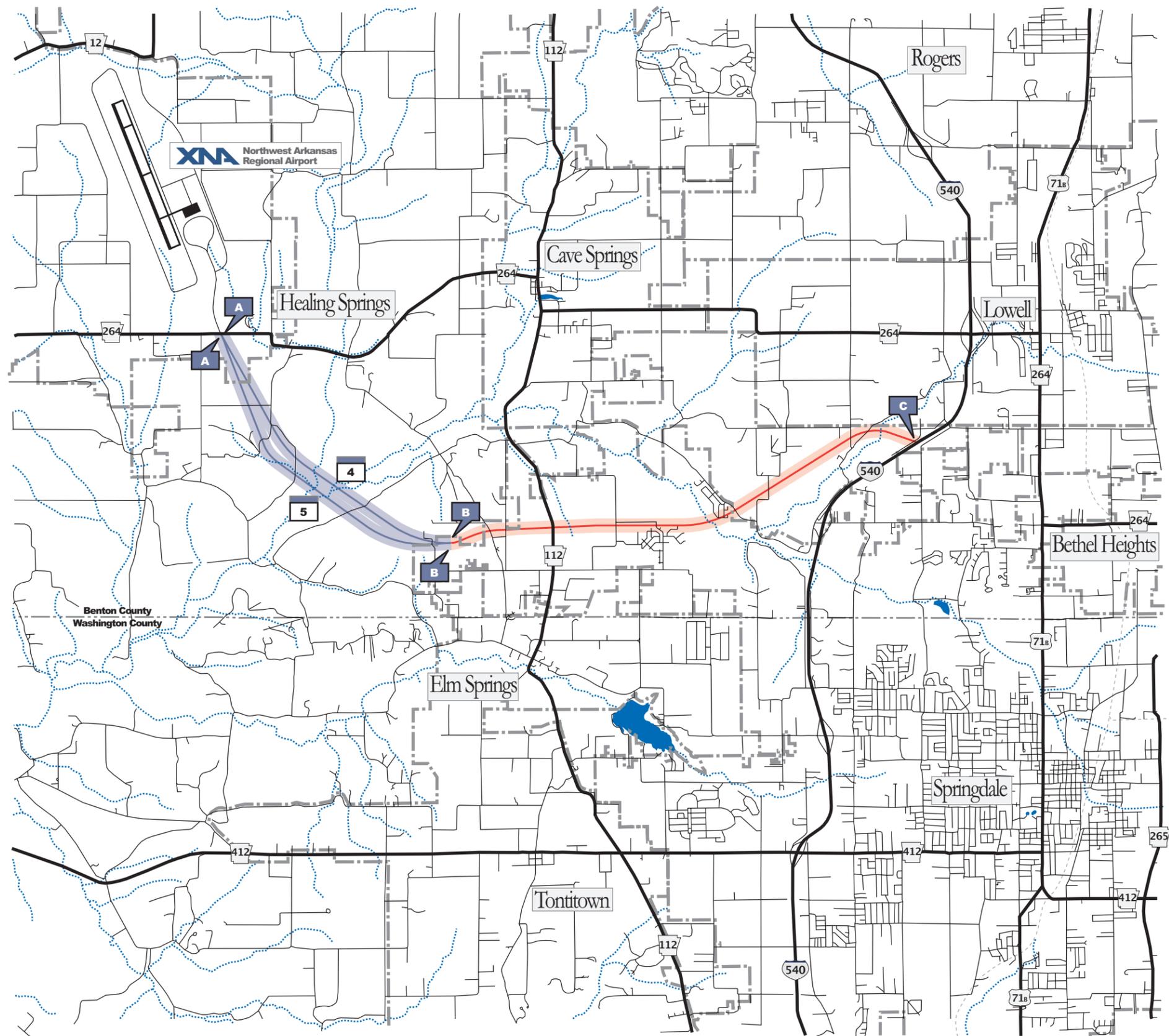


Figure B4 **Alternative Corridors to be Evaluated**

-  Section AB
-  Section BC
-  Interstate Highway
-  U.S. Highway
-  State Highway
-  Intermodal Access Road Alternatives

N
 Approximate Scale
 1" = 6,000'

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impacts associated with the widening of Highway 264 and would achieve the Purpose and Need of the project.

Corridor BC

This corridor interchanges with the SNB west of Highway 112 and interchanges with I-540 north of the existing Wagon Wheel Road Interchange. Corridor BC avoids the Cave Springs Cave recharge area and potential impacts to the associated endangered species. The implementation of this corridor would allow the existing I-540/Wagon Wheel Road Interchange to remain open. This corridor is co-located with the SNB for a distance of approximately 4.5 miles (7.2 kilometers).

Summary

As a result of the initial screening process public input and the ROD issued for the SNB, Corridors 4AB and 5AB were found to be the most feasible and reasonable of all the identified corridors as they related to Corridor BC. These three corridors, Corridor 4AB, 5AB, and BC were chosen for further evaluation and alignment development, have little if any potential of impacting federally listed threatened or endangered species or their habitat, they have less potential for consequential and cumulative impact; and they meet the Purpose and Need of the project. Now that the corridors have been identified, specific alignments within each corridor can be identified for detailed impact identification and evaluation. This is presented in the next section.

It is recognized that Corridors 4AB and 5AB appear to be very close and could be considered one corridor in some instances. However, as outlined above, all viable corridors were evaluated and these two were the only ones that minimized environmental impacts. In addition, each corridor is sufficiently wide to allow a “stand alone” most feasible alignment within each so as to avoid concern with a “single build” alternative.

Alignments Within the Corridors to be Evaluated

The remaining corridors with their associated alignments were presented in Figure B4. As stated above, a specific alignment was developed within each corridor to be evaluated in the *Environmental Consequences* chapter. Each alignment was developed to minimize the impact that the project would have on both human and natural resources. The screening criteria described below, along with those also used to screen the corridors, were considered when developing the alignments. The alignment identified in the SNB FEIS and described in the ROD is the alignment associated with Section BC. In addition to these build alignments, the No Action Alternative will also be evaluated.

Screening Criteria for Alignments

Residential Displacements. This assessment criterion involves the total number of constructed residential structures (i.e., houses and mobile homes) that each alignment could displace at the time of evaluation. No attempt has been made to evaluate the cost of each structure or relocation at this point in the Study. This assessment evaluates the total number of residential relocatees for use in the alignment comparison.

Cemeteries. Cemetery impacts are those impacts a roadway would have upon known cemeteries or gravesites. Known cemeteries were used as avoidance points during alignment development. Even though smaller cemeteries or individual gravesites have been discovered during the public involvement process, no cemeteries/gravesites appear to be located within any of the corridors. Thus, cemeteries were not a major factor in alignment identification.

Land Use Issues. Land use issues are the impacts a roadway might have on existing land uses adjacent to the required right-of-way. Specific land uses considered include residential, recreational facilities, businesses, farms and ranches, and quarry activities. Alignments were adjusted to minimize disturbance to existing land uses.

Springs/Stream Crossings. Springs were evaluated based on the number directly impacted by the alignments. Stream crossings were evaluated by the number of streams crossed, and the widths of the combined floodplains of the streams. This evaluation quantifies the number and length of bridges and the potential impacts to sensitive resources such as wetlands and wildlife habitat. Floodplain mapping by the U.S. Geological Survey (USGS) and flood mapping published by the Federal Emergency Management Agency (FEMA) were used to determine the widths of floodplains impacted by the potential alignments.

Consequential Impacts. This is the same concern as evaluated under the Corridor Screening Criteria. In other words, these refer to those indirect impacts that would result from the implementation of any of the alignments. Although not a direct impact, these would necessarily result as a consequence of implementing an alternative alignment. A major concern is with the habitat of the underground species.

Other Factors. Other relevant data included the roadway length, number of grade separations, length of grade separations, acres of right-of-way, and number of county roads closed based on the conceptual design plans and layouts for potential alignments. All of these items affect the amount of property that would be impacted, cost of construction, and impact on local transportation networks.

The alignments represent the more specific placement of the proposed Intermodal Access Road, and are approximately 300 feet (100 meters) in width. As stated, the alignments have been developed in an attempt to minimize displacement of residential, business and farm operations, avoid additional sensitive uses, minimize construction costs and traffic disruption, minimize induced land use impacts, and minimize impacts to natural processes. Each alignment has been conceptually developed in accordance with current AHTD and American Association of State Highway and Transportation Officials (AASHTO) highway design criteria for 70 mph (110 km/h) to achieve the level of service required. It must be remembered that the alignments are not final, and are subject to changes and modifications during the preparation of final plans and specifications due to currently unknown conditions. The alignments are presented in Figure B5 entitled *ALTERNATIVE ALIGNMENTS 4ABC and 5ABC*.

Each of the alternative alignments, along with the No Action Alternative, will be evaluated in the *Environmental Consequences* chapter of this DEIS for impacts that would result from the implementation of each. These specific alternative alignments will be evaluated for a variety of environmental categories, including land use impacts; relocations and displacements, prime and unique farmlands, social and economic impacts, air quality issues, noise impacts, water quality impacts, wetlands impacts, threatened and endangered species, floodplain impacts, wild and scenic rivers, historic/archeological and cultural impacts, parks and recreation properties, energy impacts, hazardous waste sites, as well as other categories. The alignments are described in the following paragraphs.

Section 4AB

Section 4AB is a fully controlled access roadway. A grade separation structure would ultimately be provided at the intersection of Highway 264 and the southern entrance to the Airport. Section 4AB traverses through a grade separation from the southern airport entrance road in a southeast direction to a point approximately 3.5 miles (5.6 kilometers) from the Airport and approximately 1.5 miles (2.4 kilometers) west of Highway 112. At this point, Sections 4AB and 5AB converge on a common alignment and traverse through a location (approximately 0.5 mile [0.8 kilometer] west of Highway 112) that would become a future interchange with the SNB that then continues east and north to interchange with I-540, identified as Section BC.

Section 5AB

Section 5AB is a fully controlled access roadway. At the intersection with Highway 264 at the southern entrance to the Airport a grade separation structure would ultimately be provided. Section 5AB somewhat parallels Section 4AB approximately 1,000 feet (300 meters) apart as they traverse from the southern airport entrance road southeast to a point approximately 3.5 miles (5.6 kilometers) from the Airport and approximately 1.5

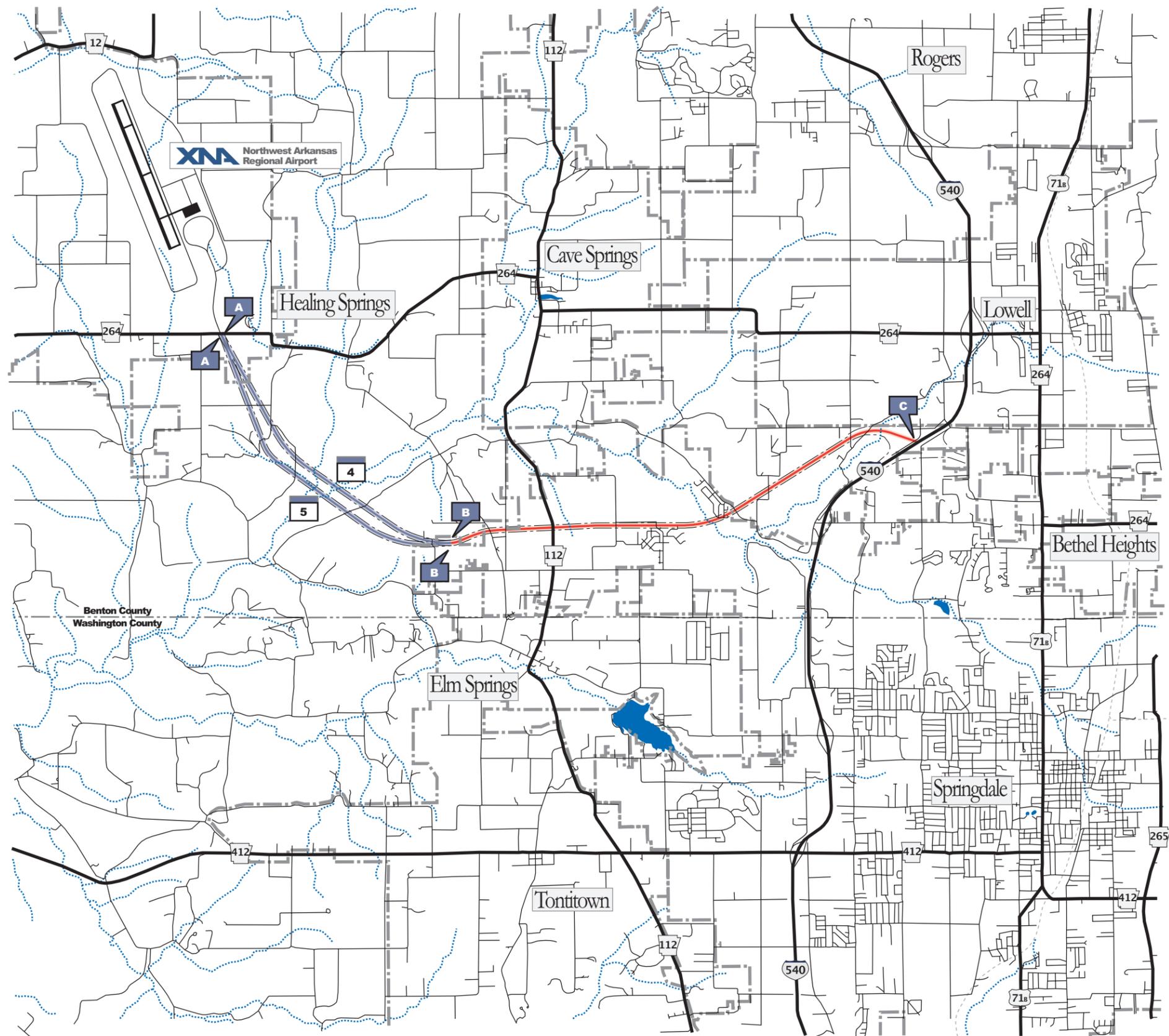


Figure B5 **Alternative Alignments 4ABC and 5ABC**

-  Section AB
-  Section BC
-  Interstate Highway
-  U.S. Highway
-  State Highway
-  Intermodal Access Road Alternatives

N
 Approximate Scale
 1" = 6,000'

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miles (2.4 kilometers) west of Highway 112. This is the point where Sections 4AB and 5AB converge on a common alignment and traverse through a location of a future interchange with the Springdale Northern Bypass that then continues east and north to interchange with I-540, identified as Section BC.

Section BC

Section BC matches the alignment of SNB Line 5 as determined by AHTD in the SNB FEIS and ROD. Therefore, it is the preferred alignment for the NWARA Intermodal Access Road for this section. It will connect with either Section 4AB or 5AB, whichever is selected based on this DEIS and planned future FEIS and ROD. As with Sections 4AB or 5AB, Section BC is a fully controlled access roadway (see Figure B6). This section will begin at the end of either Sections 4AB or 5AB, approximately 1.5 miles (2.4 kilometers) west of Highway 112. Section BC will then continue east and north to interchange with I-540.

Public Involvement in the Corridor Decision Process

Several public meetings were held to inform the public, the agencies, and the government officials about the corridor and alignment development process, and to solicit input concerning the alignments. The initial meetings were held in the Elm Springs Community Building on February 20, 2001. Please refer to Appendix B1, Public Meeting Information, for additional information concerning these meetings.

New Alignment Alternative Supplement

The Northwest Arkansas Regional Airport Authority, in conjunction with AHTD and the FHWA, is preparing this environmental document on a proposed Intermodal Access Road. The Authority held initial public and agency scoping meetings in February 2000, and a presentation of Corridor Alternatives to be evaluated in this DEIS was presented to the public in February 2001.

In January 2005 the Northwest Arkansas Regional Airport Authority held Public Scoping/Information Meetings to present the new additional alignment to the public, local, state, and federal officials and/or agencies in order to solicit input. An agency and public officials meeting was held in the afternoon and a public meeting was held in the evening (attendance sheets can be found in the Appendix). The major concerns expressed at those meetings are summarized below:

- Landowner/property
- Project scheduling
- Study process too lengthy
- Endangered species discovery

These concerns were addressed both verbally and in written format, and will continue to be addressed as the Study proceeds. Concerns regarding landowner/property and endangered species are addressed in the *Environmental Consequences* chapter. Project scheduling and the lengthy study process are valid concerns and will be completed as quickly as possible. However, environmental studies are process oriented and must be thoroughly conducted to fully analyze and evaluate the entire potential impacts to the environment.