



FASTLANE 2016 GRANT APPLICATION I-49 PROJECT



ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
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Arkansas State Highway and Transportation Department
 Fostering Advancements in Shipping and Transportation for the
 Long-term Achievement of National Efficiencies (FASTLANE) Grant

Interstate 49 National Freight Corridor Improvements	
Project Name	Interstate 49 National Freight Corridor Improvements
Previously Incurred Project Cost	\$0
Future Eligible Project Cost	\$188,400,000
Total Project Cost	\$188,400,000
NSFHP Request	\$40,130,000
Total Federal Funding (including NSFHP)	\$150,720,000
Are matching funds restricted to a specific project component? If so, which one?	No
Is the project or a portion of the project currently located on National Highway Freight Network	Yes
Is the project or a portion of the project located on the National Highway System <ul style="list-style-type: none"> • Does the project add capacity to the Interstate system? • Is the project in a national scenic area? 	NHS – Yes Interstate Capacity – Yes Scenic – No
Do the project components include a railway-highway grade crossing or grade separation project?	No
Do the project components include an intermodal or freight rail project, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?	No
If answered yes to either of the two component questions above, how much of requested NSFHP funds will be spent on each of these project components?	Not applicable
State(s) in which project is located	Arkansas
Small or Large project	Large
Also submitting an application to TIGER for this project?	No
Urbanized Area in which project is located, if applicable	Fayetteville – Springdale – Rogers, AR
Population of Urbanized Area	295,081
Is the project currently programmed in the <ul style="list-style-type: none"> • TIP • STIP • MPO Long Range Transportation Plan • State Long Range Transportation Plan • State Freight Plan? 	<u>TIP</u> – Yes <u>STIP</u> – Yes <u>MPO LRTP</u> – Yes <u>SLRTP</u> – This is not a project specific plan. <u>SFP</u> – Current SFP is not project specific. The update is underway and this will be included in some manner.

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PROJECT DESCRIPTION

Interstate 49 (I-49), formerly Interstate 540 (I-540), is the surface transportation spine of the Northwest Arkansas region and is included in the recently designated National Multimodal Freight Network. This facility provides a central corridor which national and international retailers, food suppliers, and third-party logistics companies depend upon for freight shipments.

Substantial growth in population and commercial activity in this area of the state has contributed to traffic congestion along this Corridor. This has also resulted in queues backing up onto interstate ramps, occasionally interfering with interstate operations, and negatively impacting the adjacent surface transportation system. Additionally, a recent analysis of commercial freight vehicle congestion along the Corridor shows that during the afternoon peak period, truck speeds are often less than 55 miles per hour and in some situations less than 25 miles per hour. The travel forecast indicates a need to improve the traffic operations at interchanges and provide additional capacity on I-49.

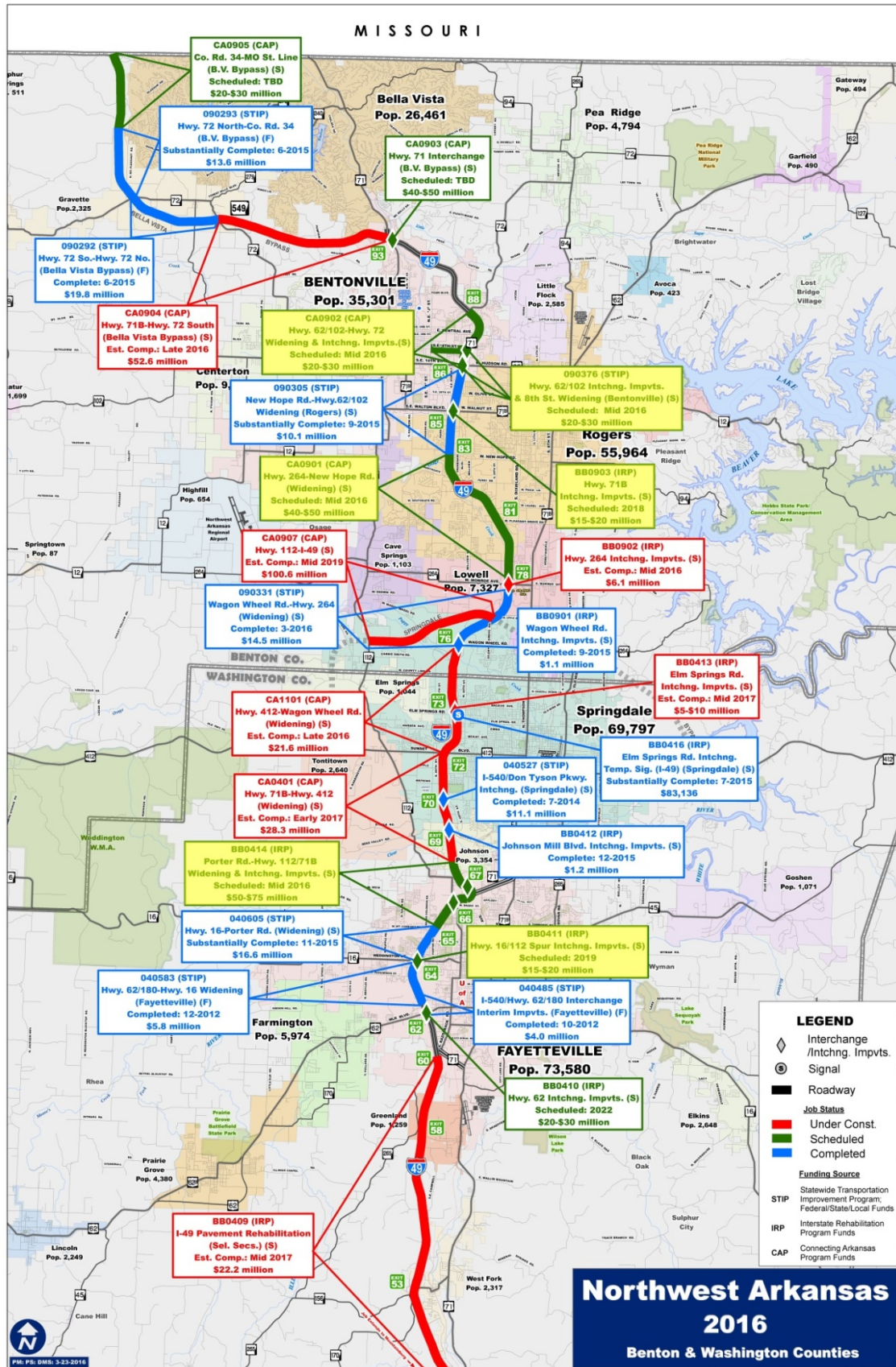
In response to the needs of this Corridor, the Arkansas State Highway and Transportation Department (AHTD) has completed or has under construction 21 projects totaling nearly \$217 million in improvements. These projects include intersection improvements to reduce congestion and bottlenecks at specific interchanges and major widening of the main lanes from four- to six-lanes. To demonstrate AHTD's continued commitment to improving this Corridor, an additional \$188 million of work for the Corridor is included in the 2016-2020 Statewide Transportation Improvement Program (STIP).

This application is seeking additional funding which will allow for continued improvements to this Corridor which includes a total of 88 miles of I-49. For purposes of this application, we have bundled six of the remaining projects together. While these six projects will be let and constructed separately, each project, along with each project that has been completed or is under construction, is a critical piece to the overall performance of the Corridor.

This application is specifically requesting additional funding for two of the six projects. These two projects are scheduled to be let to contract in 2016, and obligation of these funds will occur as soon as an award is made. Figure 1 provides a map of projects completed, under construction, and scheduled within the Corridor. The projects that are highlighted in yellow on "Figure 1 [Project Area and Improvements]" on page 2 on page 4 are the six remaining projects that have been bundled together for the purpose of this application.

It is important to note that the solution to the transportation issues this Corridor is experiencing requires a substantial effort due to the scope of the needs. AHTD began many years ago to address these needs, but we are not finished. Receiving FASTLANE funds for these projects will help us to move closer to the solution which will support and encourage commercial development in the area and it will enhance the quality of life for those that live and work in this area of Arkansas.

Figure 1 [Project Area and Improvements]



PROJECT LOCATION

The Interstate 49 Corridor, identified as High Priority Corridor 1 in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), encompasses transportation improvements in three states. Further legislation has extended the study corridor definition to include High Priority Corridor 72, along the same general location.

Benton and Washington Counties in Arkansas, and a portion of McDonald County, Missouri comprise the Northwest Arkansas Regional Transportation Study. The Northwest Arkansas Regional Planning Commission houses the metropolitan planning organization for the Fayetteville-Springdale-Rogers, Arkansas Urbanized Area. This region has experienced population growth above the state average for the past thirty years and is expected to continue to grow at a similar rate. From the 1960s to 2010, the population in the region almost doubled every 25 years.¹ Benton and Washington counties grew 47 percent between 1990 and 2000.

The metropolitan area is the home of Walmart and Tyson Foods — global leaders in retail and meat and poultry processing, respectively. J.B. Hunt Transport Services, Inc., North America’s second largest publicly owned transportation and logistics company, is also based in the area. “Table 1 [Major Northwest Arkansas Employers]” on page 4 lists major employers in northwest Arkansas, their product/service, and employment information. According to the Bureau of Labor Statistics, in December 2015 the Northwest Arkansas region as a whole had an unemployment rate of 3.2 percent. This unemployment rate gave Northwest Arkansas a rank of 31 out of 382 metropolitan areas in the United States. As employment opportunities, population, and consumer demand increase, commercial vehicle traffic to and from, as well as within, the region will also grow.

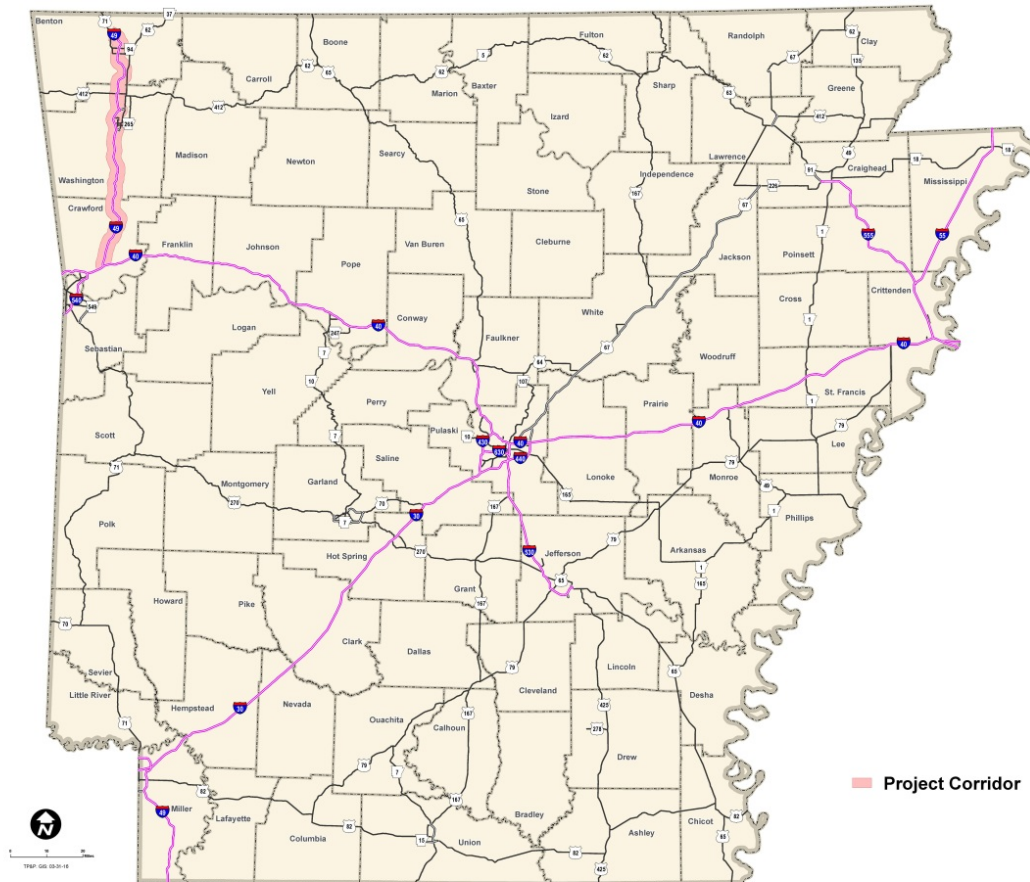
The limits of the Corridor, shown in “Figure 2 [Project Location]” on page 4, are from the southern terminus at the interchange of Interstates 40 and 49 in Crawford County to the northern interchange of I-49 and Highway 72

1 <http://www.aiea.uar.edu/csdc.html>

Table 1 [Major Northwest Arkansas Employers]

Company Name	Product/Service	Employment
WalMart Corp.	Retailer	7,500
Tyson Foods, Inc.	Protein Processing	4,300
University of Arkansas	Education	4,000
George's, Inc.	Poultry Processing	2,500
J.B. Hunt	Motor Freight Carrier	2,500
Springdale Schools	Education	2,235
Mercy Health of NWA	Healthcare	2,000
Washington Regional Medical	Medical	1,750
Pinnacle Foods Int'l	Frozen Dinners	1,750
Superior Industries	Cast Aluminum Wheels	1,750
Bentonville School District	Education	1,500
McKee Foods	Snack Foods	1,400
Rogers Public Schools	Education	1,300
Simmons Foods	Food Products	1,206
Cargill, Inc.	Poultry Processing	1,200
Rockline Industries	Moist Wipes	930
Northwest Medical	Healthcare	900

Figure 2 [Project Location]



I-49 Project Location



PROJECT PARTIES

Statewide Project Partners

The primary partner in this project is the Arkansas State Highway and Transportation Department (AHTD). AHTD has partnered with the Cities of Fayetteville, Bentonville, and Rogers, who are committed to the success of these projects. State funds dedicated to the project are based upon a partnership with the citizens of Arkansas through Interstate Rehabilitation Program (IRP) and Connecting Arkansas Program (CAP) dollars.

Interstate Rehabilitation Program

In a special election held November 8, 2011, the citizens of Arkansas voted to allow the Arkansas Highway Commission to issue up to \$575 million in Grant Anticipation Revenue Vehicles bonds to help finance improvements and repairs to existing interstates in Arkansas. This program, in combination with existing federal and state revenues, is expected to support \$1.2 billion in construction on our interstate highways over the life of the program. This program will provide \$40.37 million to the proposed corridor improvements.

Connecting Arkansas Program

This program is the largest highway construction program ever undertaken by AHTD. In early 2011, the Arkansas Legislature voted to include Issue #1 on the General Election ballot. On November 6, 2012, Arkansas voters approved this ten-year, half-cent sales tax to improve highway and infrastructure projects throughout the State. This constitutional amendment will provide revenue to finance widening, improvements of certain state highways. Thirty-six projects in 19 corridors across Arkansas are included in the CAP which improves transportation connections to the four corners of Arkansas, increases capacity by widening highways, improves traveler safety, eases congestion, and supports Arkansas' job growth and economy. The \$1.8 billion CAP is financed revenues from a temporary half-cent sales tax that will end after 10 years when the bonds are retired. The temporary tax is shared by consumers and road users statewide. Taxes were not raised on groceries, medicine, or motor fuels. This program provides \$17.37 million to the proposed corridor improvements.

GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS/ COST SHARE

The funding sources and categories that are anticipated to be used for the proposed projects are shown in “Table 2 [Sources and Uses of Funds (X \$1,000)]”. As the designated recipient for Federal-aid funding, AHTD is confident in the stability and reliability of the federal-aid funds committed to these improvements. For the non-Federal funding categories, financial commitments have been made from the Cities of Fayetteville and Bentonville. Both of these communities have successfully partnered with AHTD on previous projects.

There are two categories of state funds identified for these projects. The first category is derived from the half-cent sales tax associated with the CAP. The second state category includes funds from the state motor fuels tax revenues. Both of these state funding sources are considered stable and reliable.

Table 2 [Sources and Uses of Funds (X \$1,000)]

Projects	Cost-Estimate (X1,000)	Federal-aid Funding		Non-Federal-aid Funding		
		Non-NSFHP	NSFHP	Local	CAP	State
Hwy. 16/112 Intchng. Impvts. (BB0411)	19,300	17,370				1,930
BB0414 – Porter Road – Hwy.112/71B Widening and Intchng. Impvts.	55,000	46,200		560		8,240
CA0901 – Hwy.264 – New Hope Road (Widening)	41,400	2,200	27,350		11,850	
BB0903 – Hwy.7B Intchng. Impvts.	23,000	18,700		3,000		1,600
CA0902 – Hwy.62/102 – Hwy.72 Widening and Intchng. Impvts.	24,800	6,500	12,780		5,520	
090376 – Hwy.62/102 Intchng. Impvts. and 8 th Street Widening	24,900	19,920		4,660		320
TOTAL CORRIDOR FUNDING	188,400	110,590	40,130	8,220	17,370	12,090
		150,720 (80%)		37,680 (20%)		

If full funding of the grant request is received, total Federal-aid funding for this group of projects will constitute 80 percent, or \$150,720,000 of the total project cost. The non-Federal-aid portion of the project funding will be \$37,560,000 or 20 percent, including both state and local funds. If full funding of the grant request is not received, the shortfall will be accommodated with CAP funds.

“Table 3 [Projects Completed and Under Construction]” on page 7 lists the projects that AHTD has completed over the last 10 years and projects that are currently under construction, in the Corridor.

Table 3 [Projects Completed and Under Construction]

Job Number	Job Name	Funds Obligated		
		Federal-aid	Other	Total
Projects Completed in the Last 10 Years				
090180	I-540/Perry Rd. Interchange (Rogers)	\$17,728,019	\$1,883,161	\$19,611,180
040484	I-540 Overpass Repair (Fayetteville)	\$1,530,660	\$382,665	\$1,913,325
012069	I-540 Interchanges Short-Term Impvts.	\$2,643,837	\$157,632	\$2,801,469
040485	I-540/62/180 Intchnng Interim Impvts. (Fayetteville)	\$4,043,075	\$1,010,768	\$5,053,843
012111	Hwy. 112/265-Hwy. 62/102 Cable Median Barrier	\$5,291,946	\$170,000	\$5,461,946
040583	Hwy. 62/180-Hwy. 16 Widening (Fayetteville) (F)	\$5,150,221	\$810,473	\$5,960,694
040643	Chester-Hwy. 74 Slide Repair (S)	\$3,825,469	\$956,368	\$4,781,837
040527	I-540/Don Tyson Pkwy. Intchnng. (Springdale)	\$3,382,275	\$845,568	\$4,227,843
040605	Hwy. 16-Porter Rd. (Widening)	\$15,288,000	\$3,822,000	\$19,110,000
090331	Wagon Wheel Rd.-Hwy. 264 (Widening)	\$14,425,815	\$1,605,091	\$16,030,906
BB0412	Johnson Mill Blvd. Intchnng. Impvts.	\$1,461,265	\$162,364	\$1,623,629
BB0901	Wagon Wheel Rd. Intchnng. Impvts.	\$1,410,177	\$295,289	\$1,705,466
040646	Crawford Co. Line-Fayetteville (Sel. Secs.) (Cable Median Barrier)	\$927,608	\$103,067	\$1,030,675
090305	New Hope Rd.-Hwy. 62/102 Widening (Rogers)	\$9,584,555	\$2,396,138	\$11,980,693
BB0416	Elm Springs Rd. Intchnng. Temp. Sig. (I-49) (Springdale)	\$86,046	\$9,560	\$95,606
SUB-TOTAL		\$86,778,968	\$14,610,144	\$101,389,112
Projects Under Construction				
BB0409	I-49 Pavement Rehabilitation (Sel. Secs.)	\$21,972,418	\$2,441,379	\$24,413,797
BB0413	Elm Springs Rd. Intchnng. Impvts.	\$6,492,584	\$721,398	\$7,213,982
BB0902	Hwy. 264 Intchnng. Impvts.	\$8,294,143	\$1,007,273	\$9,301,416
CA0401	Hwy. 71B-Hwy. 412 (Widening)	\$28,057,826	\$3,117,536	\$31,175,362
CA0907	Hwy. 112-I-49	\$17,006,111	\$4,183,695	\$21,189,806
CA1101	Hwy. 412-Wagon Wheel Rd. (Widening)	\$21,484,511	\$381,428	\$21,865,939
SUB-TOTAL		\$103,307,593	\$11,852,709	\$115,160,302

COST-EFFECTIVENESS

Travel Demand Impacts

Travel demand benefits for the proposed improvements along I-49 are summarized in “Table 4 [Projects Level Impacts]”. Benefits reflect corridor-level impacts compared to a future 2040 No-Build scenario. The project’s proposed opening to traffic is in year 2020. A future/horizon

year for the No-Build and Build project scenarios is set at 2040 to provide a 20-year benefit stream for the impact analysis. Impacts are isolated to the I-49 project only; they do not reflect any additional planned improvements in the region.

Table 4 [Projects Level Impacts]

	Base Year No Build	Base Year Build	% Change
Hours of Delay/Auto	64,320	54,256	-16
Hours of Delay/Truck	55,000	46,200	-30

It is estimated that in the base year, the proposed project will reduce truck delay by around 30% percent during (AM and PM) peak periods of travel and about 16% for autos.

The benefits of implementing the project include cost savings due to reduced pavement maintenance cost, travel time, delays and vehicle operating cost, motor vehicle crash costs. “Table 5 [Summary of Benefit-Cost Analysis]” on page 9 summarizes the findings of the benefit-cost analysis which yield a robust BCR ranging between 2.2 and 3.2

Economic Impacts

The transportation cost savings arising from the Project will support additional economic growth and development in the region. It is estimated that the short-term impact of the increased construction spending will lead to an additional 2,527 jobs. In the long term, the Project will increase the overall competitiveness of the region, translating into an additional 145 jobs, \$6.7 million in labor income, and \$20.1 million in Gross State Product (GSP), annually.

Summary Benefits

The I-49 corridor project is estimated to provide significant benefit to the Northwest Arkansas region and the State of Arkansas. Capacity upgrades yield a significant and immediate 30 percent delay reduction for trucks and 16% reduction in delay for autos in the region. Improved mobility and reliability resulting from the project will support reduced air pollution and ensure the region and the state’s economy grows bigger and faster. The Gross State Product (GSP), a measure of the size of the state’s economy, is projected to grow by about \$20 million more per year with the project than without it. The expansion in GSP translates into an additional 145 permanent jobs per year and \$6.7 million in additional personal income per year for residents throughout the state.

Table 5 [Summary of Benefit-Cost Analysis]

Cost Benefit Analysis (Discounted)	Discount Rate:	
	7%	3%
Change in Travel Efficiency (Build - No-Build)		
Vehicle Miles Traveled	-193,169,484	-193,169,484
Vehicle Hours Traveled	-76,208,381	-76,208,381
Hours of Delay	-76,208,381	-76,208,381
Benefits		
Reduction in Value of Time Costs (Widening)	\$273,429,301	\$438,206,425
Reduction in Value of Time Costs (Interchange)	\$1,502,083	\$2,503,989
Reduction in Non-Fuel Vehicle Operating Costs (Widening)	\$7,573,241	\$11,220,844
Reduction in Fuel Vehicle Operating Costs (Widening)	\$9,093,119	\$13,481,413
Reduction in Safety Costs (Widening)	\$12,904,071	\$19,146,776
Reduction in Safety Costs (Interchange)	\$59,252,241	\$95,728,385
Reduction in Emissions Costs	\$13,053,430	\$19,394,728
Reduction in Repair Costs	\$3,205,950	\$4,744,151
Total Benefits	\$380,012,016	\$604,424,450
Costs		
Construction Costs	\$170,055,680	\$183,294,016
Maintenance and Operations Costs	\$2,589,443	\$4,129,906
Total Costs	\$172,645,123	\$187,423,922
Benefits vs. Costs		
Net Benefits	\$207,366,893	\$417,000,528
Benefit-Cost Ratio	2.2	3.2

PROJECT READINESS/ COMMUNITY AND ENVIRONMENTAL OUTCOMES

Of the six projects included in the proposed corridor improvements, four are scheduled to be let to contract during summer 2016. These four projects listed below have received environmental clearance either through a Finding of No Significance or a Categorical Exclusion. There are not expected environmental delays related to the remaining two projects.

Table 6 [Environmental Clearance Status]

Job Number	Job Name	Letting Date	Environmental Clearance Status
090376	Hwy.62/102 Interchange Improvements. & 8 th Street Widening	June 2016	Finding of No Significance – August 2013
BB0414	Porter Road – Hwy.112/71B Widening & Interchange Improvements	August 2016	Tier 3 Categorical Exclusion – December 2014
CA0901	Hwy.264 – New Hope Road (Widening)	June 2016	Tier 3 Categorical Exclusion – April 2015
CA0902	Hwy.62/102 – Hwy.72 Widening & Interchange Improvements	June 2016	Tier 3 Categorical Exclusion – March 2015
BB0903	BB0903 – Hwy.7B Interchange Improvements	2018	Environmental Handling – 5% complete
BB0411	Hwy. 16/112 Interchange Improvements	2019	Environmental Handling – 10% complete

There are no expected delays impacting the department’s ability to let all of the proposed corridor improvements to contract. There are no legislative actions required before proceeding with the corridor improvements. In the event of a loss of Federal-aid or state motor fuels tax revenue, projects will be deferred until existing construction commitments can be met.

Public meetings have been held on three of the projects in this section of the I-49 Corridor. A public involvement meeting was held for Job BB0414 (Porter Road – Highway 112/71B Widening and Interchange Improvements) on September 25, 2014. Handouts, including a comment sheet, were provided to the public. A hundred percent of the people commenting supported the proposed improvements at the interchange and seventy-seven percent believe there will be beneficial impacts due to the proposed project. A public involvement meeting was held for Job BB0411 (Highway 16/112 Interchange Improvements) on March 20, 2014 with sixty percent of the fifty-two comments indicating support for the proposed improvements. There were four opportunities for the public to participate in the project development process for Job 090376 (Highway 62/102 Interchange Improvements and 8th Street Widening): a public involvement meeting (February 28, 2008), a local public hearing (December 15, 2011), a property owner-tenant open house (February 16, 2012), and a design public hearing (March 7, 2013). At the February 2008 public involvement meeting, eighty-one percent of the comments indicated support for the 8th Street improvements and sixty-seven percent indicated support of a new interchange. Opportunities for public engagement will be scheduled for the remaining Corridor projects at the appropriate time.

ECONOMIC OUTCOMES

Across the state, transportation is a critical factor in the movement of freight. Freight traffic forecasts indicate the tonnage of freight shipped to, from, and within Arkansas will nearly double between 2012 and 2040 from 299 million tons to over 439 million tons. The sectors of the economy most dependent on freight are illustrated in “Figure 3 [Freight Dependent Portion of Arkansas’ Economy]”.

Likewise, nearly 781,000 jobs or half of the total employment in Arkansas, is dependent on freight movement either as a resource for manufacturing or for delivery of finished goods for retail sales. “Figure 4 [Freight Dependent Portion of Arkansas’ Economy - Employment]” on page 12 displays the distribution of freight-dependent employment in Arkansas. Of course, agriculture is very heavily dependent on freight movement as both a sector of the economy as well as a major employer with over 259,000 jobs attributed to the agricultural sector.

Relevant to this application are the truck-related freight movements in Arkansas. “Figure 5 [U.S. Truck Tonnage]” on page 12 shows Arkansas’ top trading partners based on the tonnage of freight shipped by truck. Oklahoma and Texas qualify as the largest tonnage-based trading partners with more than 20 million tons being shipped by truck. The next on the list would be Missouri, Louisiana, and Tennessee. This is important to the proposed project corridor as I-49 provides direct access from Arkansas to Missouri and Louisiana.

Figure 3 [Freight Dependent Portion of Arkansas’ Economy]

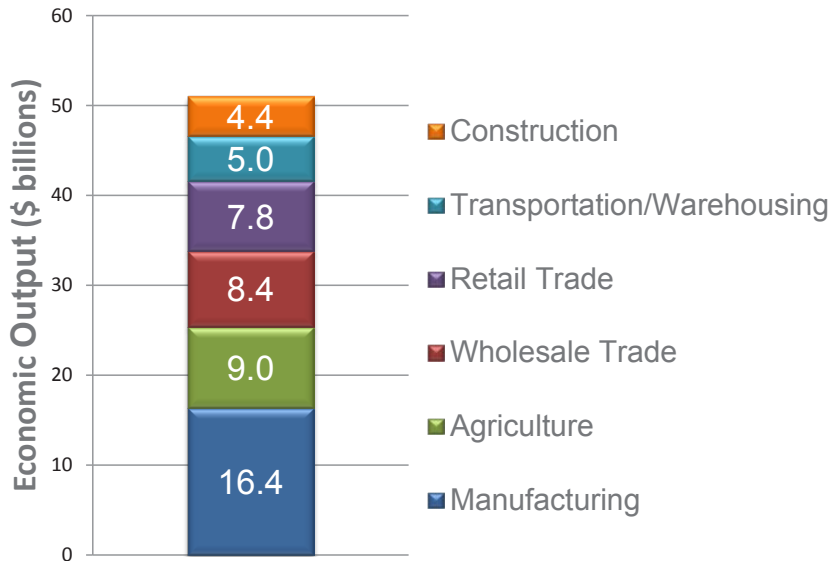


Figure 4 [Freight Dependent Portion of Arkansas' Economy - Employment]

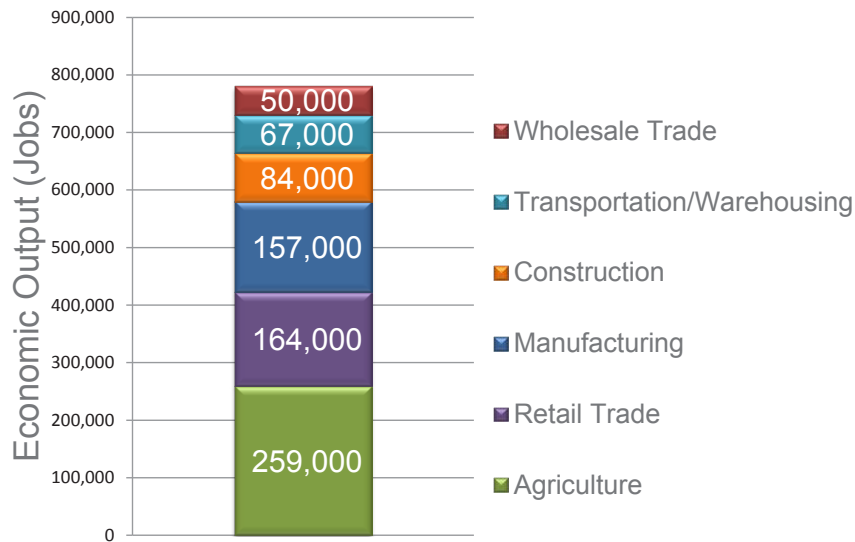
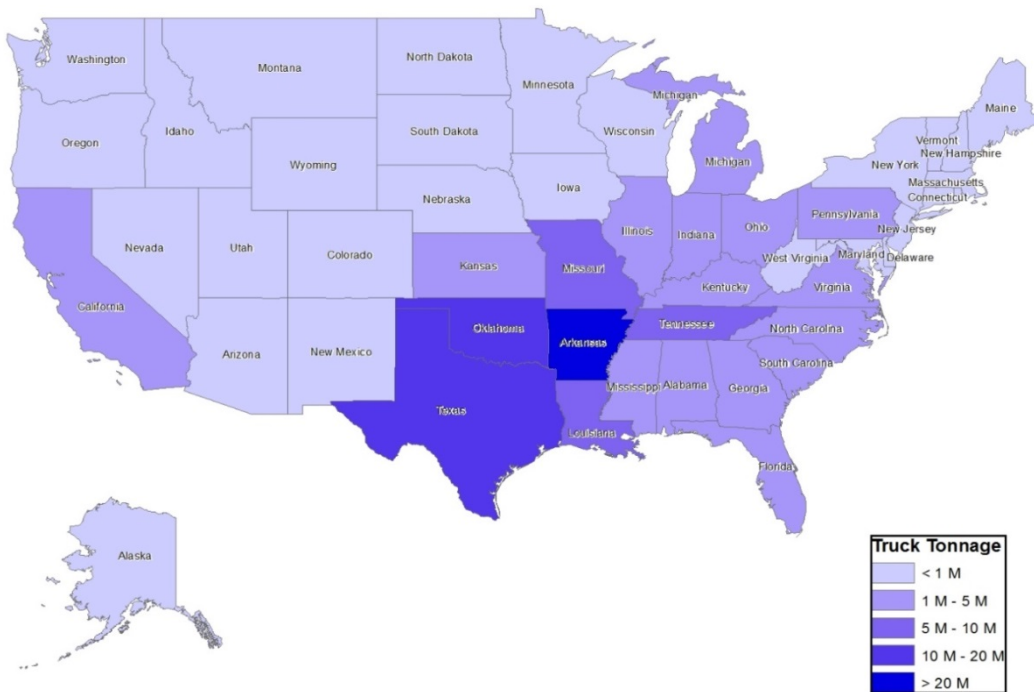


Figure 5 [U.S. Truck Tonnage]



MOBILITY OUTCOMES

The varied analyses of the main lanes and interchanges throughout the corridor typically indicate a reduction in delay usually associated with the interchange improvements. The interchange/intersection analyses report improvements to the intersection level of service after the implementation of the short-term, interim, and long-term improvements. Intersection level of service is based upon the amount of delay at the intersection. If the level of service improves, a reduction in delay is implied and therefore travel time savings will be realized through the implementation of the proposed project.

In 2006, the Arkansas Highway Commission accepted the “Interstate 540 Improvement Study” which made recommendations regarding main lane improvements along I-540 (now I-49) in Benton and Washington Counties.¹ Analyses of the traffic volumes along I-540 (I-49) indicated a 2004 Level of Service (LOS) between B and D. This information is shown in “Table 7 [Basic Freeway Segments on I-49: HCS Freeway Findings]”.² However, by 2024, with no capacity improvements it is anticipated the facility will operate at LOS F.³ Recommendations in the study included the widening of I-49 to at least six lanes from the Highway 62/Highway 180 interchange to the Highway 72 interchange in Bentonville. The specific sections within the 26-mile corridor recommended for widening to eight lanes are listed below:

- Highway 16/Highway 112-Spur through the Highway 71B Interchange
- Highway 412 (Springdale) to Highway 102/Highway 62 (Bentonville)

Table 7 [Basic Freeway Segments on I-49: HCS Freeway Findings]

	2012				2035					
	AM		PM		AM			PM		
	DHV	LOS	DHV	LOS	DHV	LOS		DHV	LOS	
						6 LN	8 LN		6 LN	8 LN
NB, South of Hwy 71B	3609	D	2955	C	6208	E	D	4830	D	C
NB North of Hwy 71B	2521	C	2512	C	4898	D	C	4291	C	B
SB, South of Hwy 71B	2537	C	2965	C	4382	C	C	5196	D	C
SB, South of Hwy 71B	2930	D	3717	E	4739	D	C	5951	E	C

HCS: Highway Capacity Software
 DHV: Design Hourly Volume
 LOS: Level of Service

In addition to the mainlane improvement analyses, the study also addressed the need for interchange improvements at 18 interchanges within the corridor. Recommended improvements range from short-term, low-cost intersection improvements to full interchange reconstruction.

Analyses along the corridor completed as part of the proposed Interchange Justification Reports have identified operation deficiencies within the corridor. The Highway 71B Interchange in Bentonville is representative of the observations made: “Field observations of long queues

1 <http://arkansashighways.com/outgoing/fastlane/I-49/1-11-105%20I-540%20Improvement%20Study%20OCR.pdf>

2 <http://arkansashighways.com/outgoing/fastlane/I-49/Interchange%20Justification%20Reports/BB0903%20-%20Hwy%2071B%20intch.%20Imp/>

3 Ibid, Table 5 and Table 6.

forming on the exit ramps...” are related to “stop-and-go ‘shock waves’ ... that travel upstream as vehicles enter the back of the queue ... extending onto the I-49 main lanes”.⁴ Considering the density of the development, the number of interchanges, and the significant daily flows within the region, these types of stop-and-go conditions will only worsen with time.

Additionally, main lane capacity analyses conducted along the northern portion of the project corridor reveal the following level of service results based on the assumption of major widening to three or four lanes in each direction along I-49.

The merging and diverging of the interchange ramps were also investigated. Existing ramp conditions of the Highway 71B interchange, which are representative of other interchanges in the Corridor, are presented in “Table 8 [Highway 71B (Walnut Street Interchange) Ramp Junctions Operating Conditions: HCS Ramp Findings]”.⁵

The northbound exit ramp indicated a capacity problem represented by LOS F in the forecast year which can be resolved by providing a two-lane exit ramp. Merging issues appear to be resolved by the proposed freeway widening. Likewise, the Level of Service for the southbound entrance ramp will be improved by the additional main lanes, improving the merging conditions.

Additionally, analysis of the turning movement data at the ramp ends for the I-49/Highway 71B interchange indicate the passenger vehicles and commercial vehicles share the same peaking characteristics. Both the northbound and southbound ramp intersections on Highway 71B have their peak movements during the middle of the day. The southbound ramp intersection peak hour begins at 11:30 AM. The northbound ramp intersection peak hour begins at 12:15 PM.

At both the Highway 71B interchange and at the Highway 112 interchange, trucks are a part of the peak hour traffic and as such impact the overall operations of the interchange and ultimately of the main lanes. While there is not a high percentage or a large total volume of commercial vehicle traffic, its interaction with the passenger traffic creates impedances through the intersections and in some instances impacts the main lane operations.

Table 8 [Highway 71B (Walnut Street Interchange) Ramp Junctions Operating Conditions: HCS Ramp Findings]

	2012				2035 (No-Build)			
	AM		PM		AM		PM	
	DHV	LOS	DHV	LOS	DHV	LOS	DHV	LOS
Northbound Exit	1385	E	1023	D	2316	F	1707	D
Northbound Entry	297	C	580	C	496	C	969	C
Southbound Exit	503	D	426	D	840	C	702	D
Southbound Entry	896	D	1178	D	1497	C	1967	D

⁴ <ftp://arkansashighways.com/outgoing/fastlane/I-49/Interchange%20Justification%20Reports/BB0903%20-%20Hwy%2071B%20intch.%20Imp/>

⁵ Ibid.

SAFETY OUTCOMES

The proposed projects will improve safety by reducing congestion, thereby reducing the risk of crashes associated with stop-and-go traffic flow. It enhances safety by also improving key interchanges that currently experience some level of queuing from the ramp terminals onto the Interstate mainlanes.

The most recent three years of crash data (2011-2013) show that the corridor experienced a crash rate of 0.87 crashes per million vehicle miles traveled (mvm). This corridor also experienced a fatal (K) plus serious injury (A) rate of 4.91 crashes per 100 million vehicle miles (100mvm) over the same time period. These rates are about 53 percent and four percent higher, respectively, than the average crash rates for freeways in Arkansas over the same time period. The crash data also reveals that the portion of rear-end collisions among all freeway crash types is 53 percent. This is greater than the statewide average of 44 percent on all Arkansas freeways. This information suggests that there is a need to improve safety performance by addressing congestion.

PARTNERSHIP AND INNOVATION

On the local level, the Cities of Fayetteville, Bentonville, and Rogers have committed local funds to these proposed improvements. The proposed improvements are included in the Northwest Arkansas Regional Transportation Study Metropolitan Transportation Plan as well as their 2016-2020 Transportation Improvement Plan. Likewise, local road users were engaged through public involvement activities during the development of the “Interstate 540 Improvement Study” and through the development of the Metropolitan Transportation Plan.

Additional public support for this suite of projects is evidenced by the letters of support submitted to the Secretary of Transportation. The recognition of the need for freight-related improvements demonstrates the understanding of the importance of efficient freight movement by various members of both private and public sectors.

**WAGE RATE CERTIFICATION
FOR
FIXING AMERICA'S SURFACE TRANSPORTATION ACT**

Pursuant to the Fixing America's Surface Transportation Act (Pub. Law 114-94), I, Scott E. Bennett, Director of Highways and Transportation for the State of Arkansas, certify that all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the federal government pursuant to the Act shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of Chapter 31 of Title 40, United States Code, the Davis-Bacon Act.

I understand that the Arkansas State Highway and Transportation Department may not receive FASTLANE 2016 funding unless this certification is made and posted.



Scott E. Bennett, P.E.
Director of Highways and Transportation



Date