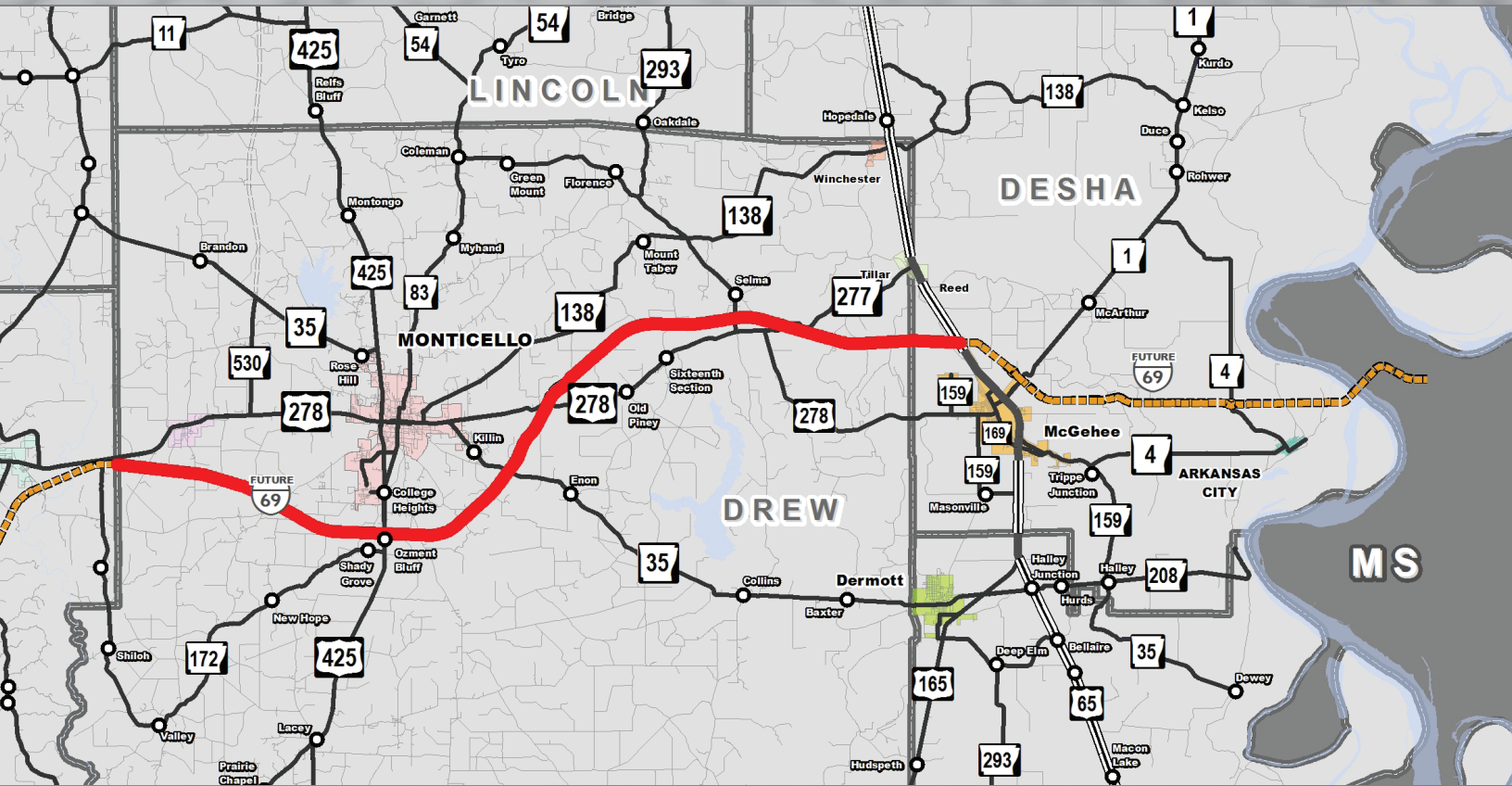


FASTLANE 2017 GRANT APPLICATION

I-69 (MONTICELLO BYPASS - US HIGHWAY 65)



Interstate 69 National Freight Corridor Improvements

Project Name	Interstate 69: Monticello Bypass – Highway 65
Was a FASTLANE application for this project submitted previously?	Yes
If yes, what was the name of the project in the previous application?	Interstate 69 Project Development
Previously Incurred Project Cost	\$19.3 million
Future Eligible Project Cost	\$99.2 million
Total Project Cost	\$118.5 million
FASTLANE Request	\$20.0 million
Total Federal Funding (including FASTLANE)	\$79.4 million
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 the National Highway Freight Network	Yes, upon completion of I-69
<ul style="list-style-type: none"> • Is the project or a portion of the project located on the National Highway System? • Does the project add capacity to the Interstate system? • Is the project in a national scenic area? 	<ul style="list-style-type: none"> • NHS – Yes • Interstate Capacity – Yes, upon completion of I-69 • 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 the requested NSFHP funds will be spent on each of these project components?	N/A
State(s) in which project is located	Arkansas
Small or Large Project	Large
Urbanized Area in which project is located, if applicable	Not applicable
Population of Urbanized Area	Not applicable
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 	<ul style="list-style-type: none"> • TIP – Not applicable • STIP – Yes • MPO LRTP – Not applicable • SLRTP – The Arkansas Long Range Plan is not project specific. • Arkansas SFP – SFP is in development. This project will be included.

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SUMMARY OF CHANGES

The project limits were modified to include the entire length of the Monticello Bypass and project development only to US Highway 65. The project scope was expanded to include construction. By including the entire length of the Monticello Bypass, both the project size and anticipated economic benefits will increase due to the reduction of congestion experienced by freight haulers in the region. Further, by increasing the limits of the overall project from design and right-of-way acquisition activities to also include construction; this application is now considered a LARGE project.

I. PROJECT DESCRIPTION

Interstate 69 is a nationally significant corridor for the movement of freight throughout the United States. The corridor spans Texas, Louisiana, Arkansas, Mississippi, Tennessee, Kentucky, Indiana, and Michigan. In addition to serving as a major trade corridor in the United States, Interstate 69 is part of High Priority Corridor 18, identified in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), connecting Laredo, Texas with Port Huron, Michigan.

The Project proposes to complete the construction of the Monticello Bypass as well as the project development and construction along a portion of the corridor between Monticello and US Highway 65.

Improvements to this 36.3-mile portion of Interstate 69 will move Arkansas one step closer to the goal of completion of the High Priority Corridor within the State. **Figure 1: Interstate 69 Corridor in Drew and Desha Counties, Arkansas** shows the requested project within the greater Interstate 69 corridor in Arkansas.

Figure 1: Interstate 69 Corridor in Drew and Desha Counties, Arkansas



As a demonstration of the Arkansas State Highway and Transportation Department's (AHTD) commitment to the completion of Interstate 69, the 2016-2020 Statewide Transportation Improvement Program (STIP) includes funding for completion of the Monticello Bypass and for project development using \$8 million in National Freight Program funds with a \$2 million match of state funds. If fully funded through this application, the 2016-2020 STIP will be amended to reflect an additional \$25 million including \$20 million in FASTLANE funding.



The FASTLANE funds combined with state matching funds and other Federal-aid funding will allow construction along the segment of the Interstate corridor between Monticello and US Highway 65.

This segment of Interstate 69 is part of a larger corridor spanning seven states and provides international border crossing to both Canada and Mexico. In Canada, the Interstate 69 corridor joins an Interstate-quality road that connects to Toronto, Montreal, and Quebec.

As a High Priority Corridor, Interstate 69 will make a notable impact on national and international shipping and travel trends providing a more direct north-south corridor for shipping goods as well as providing additional redundancy and resiliency to our national transportation network. **Figure 2: Interstate 69 Corridor** identifies how the segment of Interstate 69 in Arkansas is part of a national and international transportation facility that will serve not only those who travel across the United States, but it will also serve those who travel into Canada and Mexico.

Completion of this interstate will support and encourage multistate transportation development throughout the Delta region; forming vital social and economic connections to connect people to jobs, health care, and education in a way that not only enhances their quality of life, but also contributes to the regional economic growth and development by connecting businesses to customers, goods to markets, and tourists to destinations. It will enhance the movement of commodities from the Delta region to urban areas where they are consumed, processed, or sent out of the state or country. The funds awarded to this project will continue the development of the Delta Region's essential connection to the nation and the world.

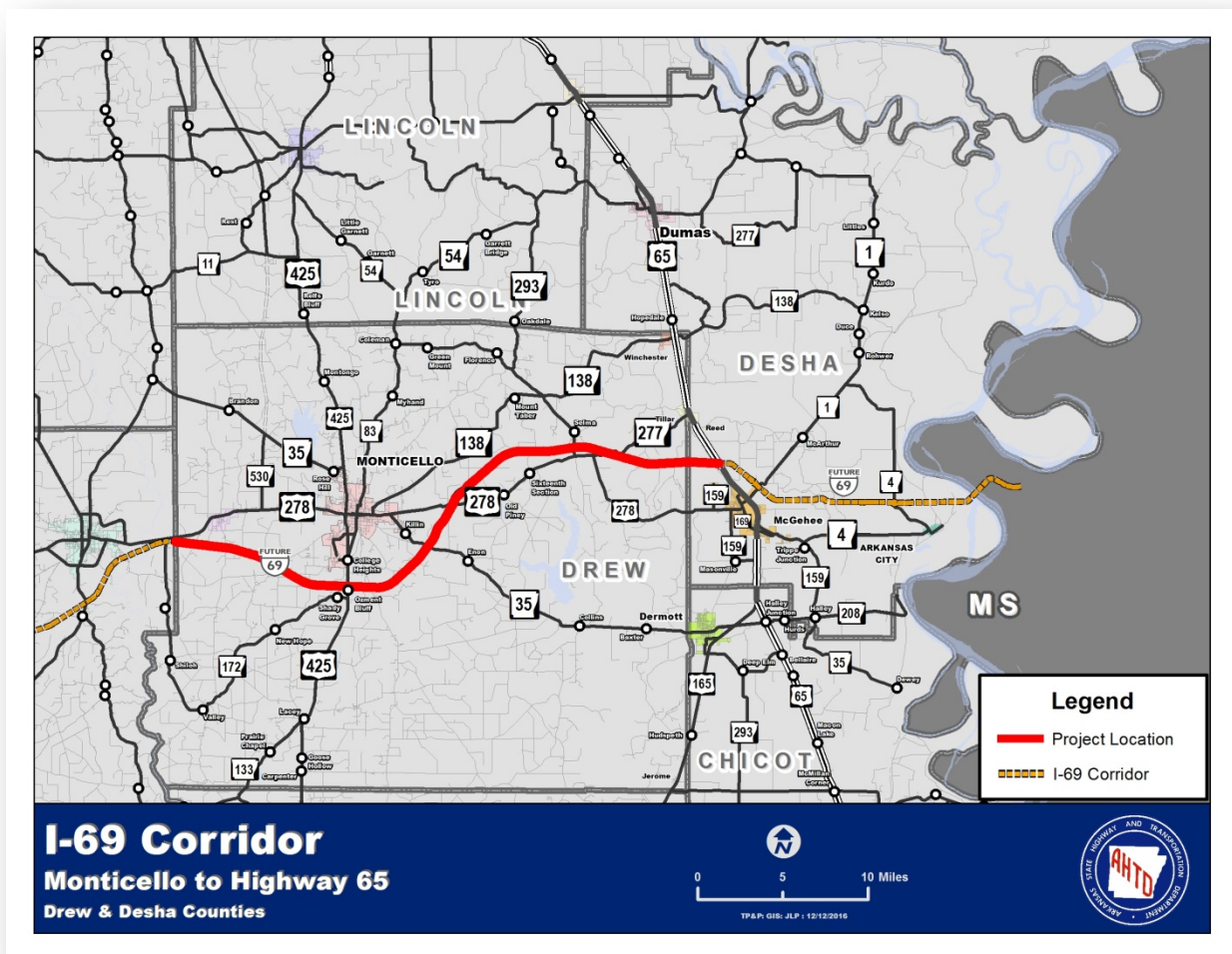
Figure 2: Interstate 69 Corridor



II. PROJECT LOCATION

This Project is located in the southeast corner of the State of Arkansas in Drew and Desha Counties. The segments of the Interstate 69 corridor for which funding is being requested begins at the intersection of the Interstate 69 corridor and Highway 278 west of Monticello, Arkansas and continues to the intersection with US Highway 65 in Desha County as shown in Figure 3: Interstate 69 Corridor (Monticello to US Highway 65).

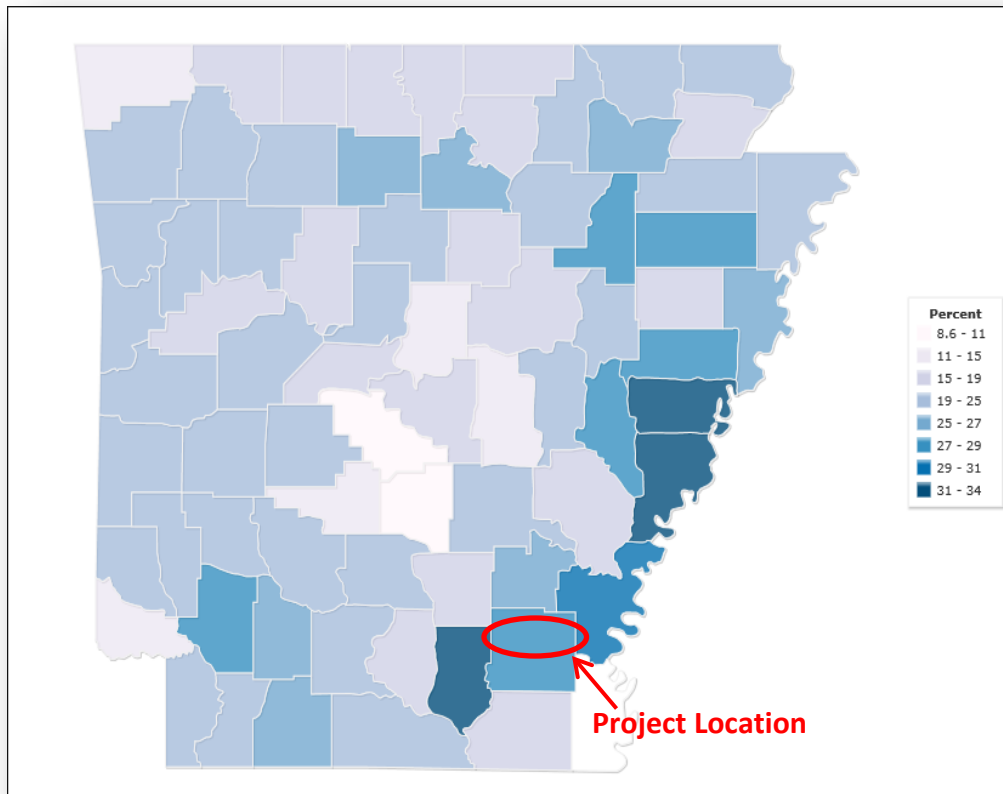
Figure 3: Interstate 69 Corridor (Monticello to US Highway 65)



As with many of the counties in the Delta region, Drew and Desha Counties are both considered to be economically depressed regions. For the period 2009-2013, Desha County recorded 30.1 percent of its population living at or below the poverty level. In the same period of time, Drew County reported 28.5 percent of its population living at or below the poverty level. By

comparison, the poverty level for Arkansas was 19.2 percent of the population. **Figure 4: Poverty Levels in Arkansas (by County)** highlights the economic challenge of life in the Delta.

Figure 4: Poverty Levels in Arkansas (by County)



Source: U. S. Census Bureau, American Community Survey, 5-Year Estimates.

III. PROJECT PARTIES

The Arkansas State Highway and Transportation Department (AHTD) is the sole sponsor of this project.

IV. GRANT FUNDS, SOURCES, and USES OF PROJECT FUNDS

Table 1: Sources and Uses of Funds (x \$1,000) identifies the sources and categories of funds anticipated to be used for the projects included in this application: under construction, scheduled, and for which funding is requested. 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. These projects will complete two lanes of the ultimate four-lane interstate facility.

The state matching funds for the Federal-aid funds committed to this corridor and the requested grant funds will be derived from the state motor fuels tax revenues. This funding source is considered stable and reliable.

Table 1: Sources and Uses of Funds (x \$1,000)

Monticello Bypass and Interstate 69 Development and Construction	Cost Estimate (x \$1,000)	Federal-aid Funding		State Match	
		Non-FASTLANE	FASTLANE	Non- FASTLANE	FASTLANE
Under Construction					
020471: Highway 425 – Highway 278 East (Grading and Structures)	\$19,282	\$15,426		\$3,856	
TOTAL PREVIOUSLY INCURRED COST	\$19,282	\$15,426		\$3,856	
Scheduled					
Job 012278: I-69 Project Development and Construction	\$10,000	\$8,000		\$2,000	
Job 020470/020611 Highway 278 West – Highway 425	\$46,700	\$37,360		\$9,340	
Job 020484: Highway 425 – Highway 278 East (Base and Surfacing)	\$17,500	\$14,000		\$3,500	
Funding Request					
I-69 Project Development and Construction (Proposed FASTLANE)	\$25,000		\$20,000		\$5,000
TOTAL FUTURE CORRIDOR FUNDING	\$99,200	\$59,360	\$20,000	\$14,840	\$5,000
		\$79,360 (80%)		\$19,840 (20%)	

If full funding of the grant request is received, the total future Federal-aid funding for these projects will be \$79.4 million or 80 percent of the total future project. The non-Federal-aid (State) portion of the project funding will be \$19.8 million or 20 percent of the total future project. If this grant request is not awarded, the development of the proposed Interstate 69 in Arkansas will be delayed, which will lead to an increase in cost due to inflation.

The AHTD is the designated recipient of nearly \$550 million from Federal-aid programs each year and has significant experience in managing Federal grants. The AHTD is fully compliant

with the financial planning provisions of 23 U.S.C. § 135, and recently adopted the fiscally-constrained, FY 2016 2020 Statewide Transportation Improvement Program (STIP).

V. REVIEW CRITERIA

Funding for transportation-related projects is competitive at the national and local level. The following list highlights the various merits of this project with a more detailed discussion below. This Project will impact the region through:

- Benefits which exceed the costs by a ratio of 2.3:1 to 3.9:1
- Sustaining over 2,595 short-term jobs and 125 long-term jobs.
- Providing \$5.9 million in labor income.
- Adding \$17.7 million to the annual Gross State Product.
- Improved national freight movements leading to and safer and more efficient travel on parallel two-lane facilities or other congested, urban freeways.
- Improving system reliability and freight movement through the region.

This Project will have a positive impact on both the immediate region and the nation as a whole.

ECONOMIC OUTCOMES

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 2,595 jobs. In the long term, the Project will increase the overall competitiveness of the region, translating into an additional 125 jobs, \$5.9 million in labor income, and \$17.7 million in Gross State Product (GSP), annually. Across Arkansas, movement of freight is a critical component to the economy. Of the total \$119 billion in economic output, 43 percent or \$51 billion is dependent on freight movement. **Figure 5: Freight Dependent Portion of Arkansas' Economy – Output** details the sectors of the economy most dependent on freight.

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 6: Freight Contribution to Employment in Arkansas** 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 it.

Figure 5: Freight Dependent Portion of Arkansas' Economy – Output

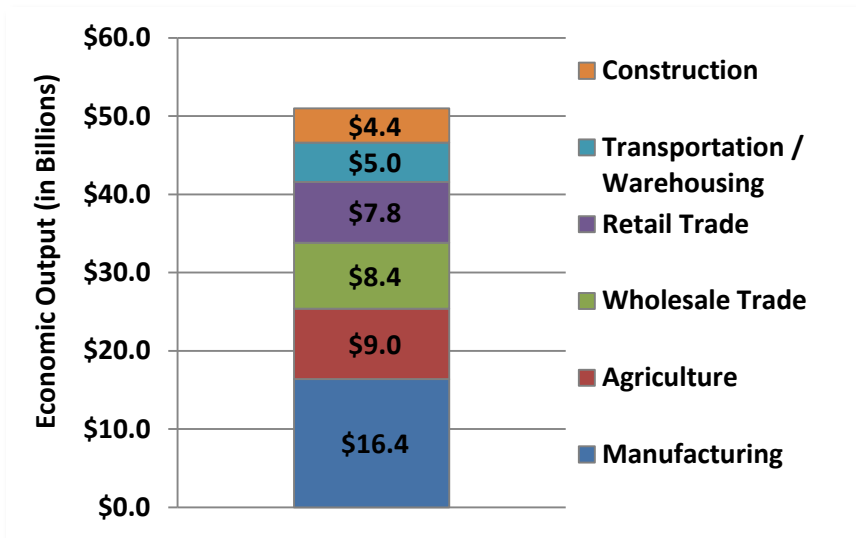
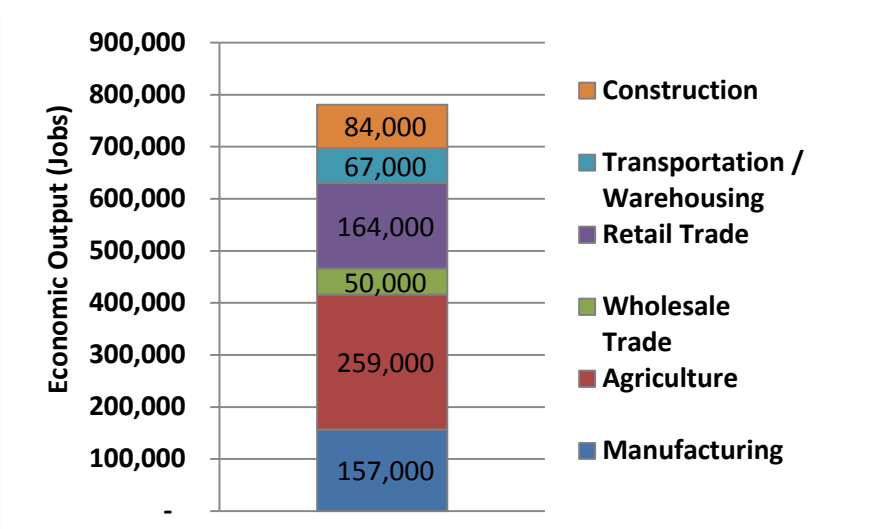
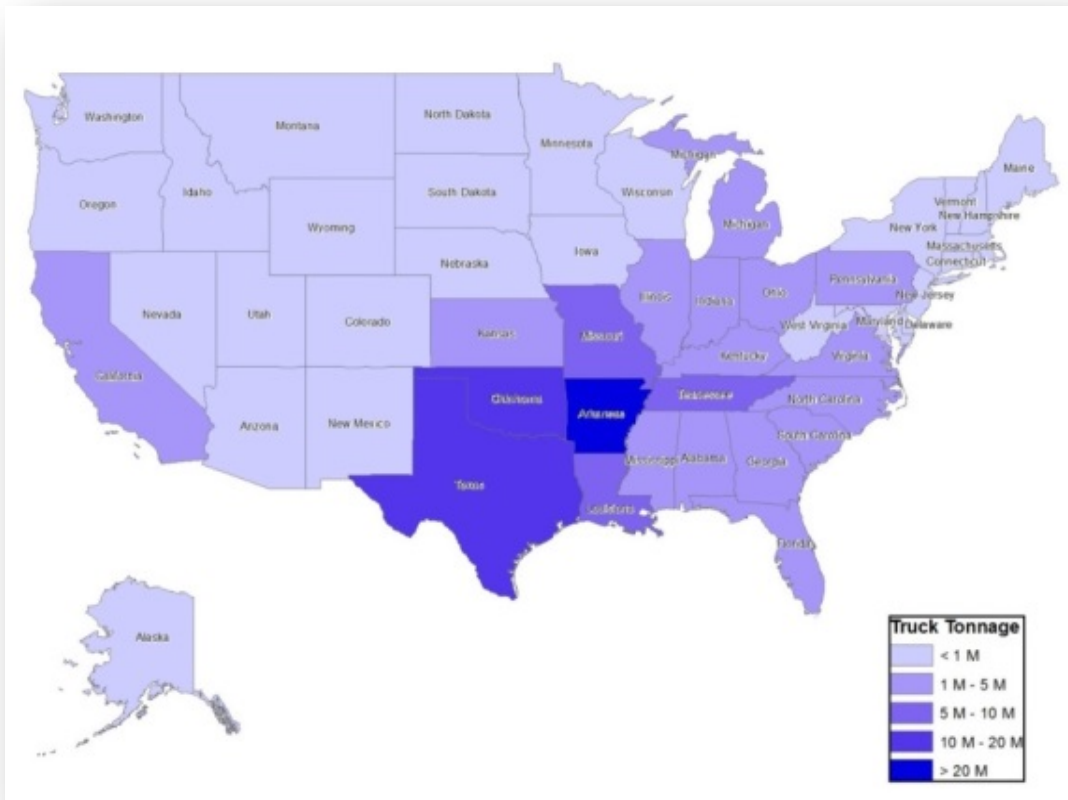


Figure 6: Freight Contribution to Employment in Arkansas



Relevant to this application are the truck-related freight movements in Arkansas. **Figure 7: Top Trading Partners** shows the 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. Next on the list would be Missouri, Louisiana, and Tennessee. This is important as the Interstate 69 corridor provides direct access from Arkansas to Mississippi and Louisiana.

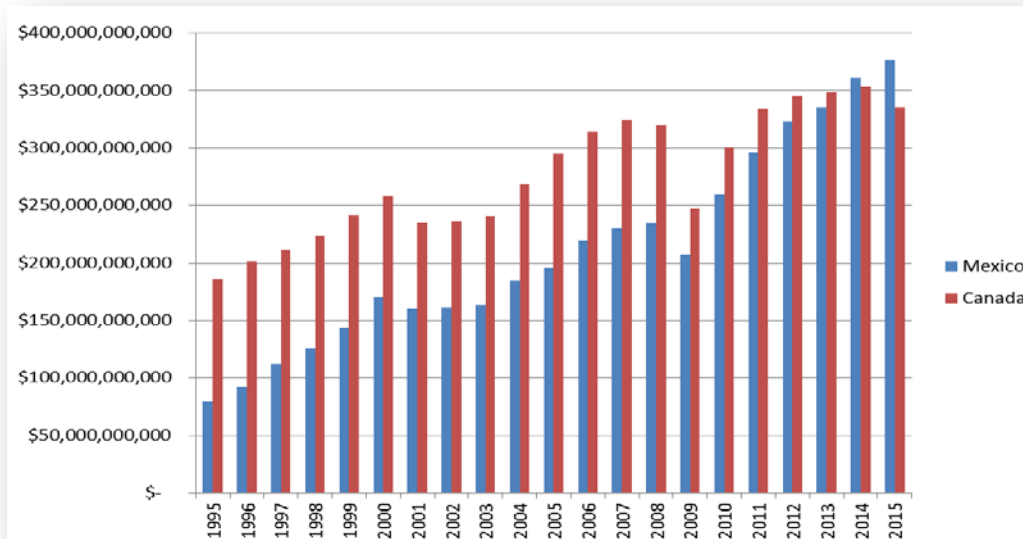
Figure 7: Top Trading Partners



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. This will result in additional commercial vehicles on the system, additional employees to handle the freight, and additional passenger traffic associated with the employees, their families, and the goods and services they require.

The Interstate 69 corridor will provide transportation options for freight movements from the United States to Canada and Mexico. Over the past 20 years, there has been a steady increase in international shipments with both Mexico and Canada. The annual average increase in the value of shipments to Mexico and Canada is 5.1 percent. **Figure 8: US Trade with Canada and Mexico** shows the overall growth in North American freight movements.

Figure 8: US Trade with Canada and Mexico



Source: http://transborder.bts.gov/programs/international/transborder/TBDR_QA.html

MOBILITY OUTCOMES

Based on the proposed alignment of the Interstate 69 corridor versus the use of existing routes, travelers along the entire length of the Interstate 69 corridor will realize nearly a 25 percent reduction in travel time, or nearly one day when traveling between Laredo, Texas and Port Huron, Michigan. The total mileage along the Interstate 69 corridor is approximately 1,660 miles, the average speed along the corridor is 65 miles per hour, and travel time along the entire route is expected to be 26 hours. The average speed along the existing highways is 54 miles per hour with approximately 1,900 miles which puts the travel time around 35 hours. **Table 2: Travel Time (in hours): Existing Routes vs. Interstate 69 Proposed Corridor** details the expected time savings with the three different southern termini for the entire Interstate 69 corridor.

Table 2: Travel Time (in hours): Existing Routes vs. Interstate 69 Proposed Corridor

Location	Google Search ⁽¹⁾	Proposed Corridor ⁽²⁾	Time Saved
Brownsville, TX to Port Huron, MI	34	27	7
Laredo, TX to Port Huron, MI	35	27	8
McAllen, TX to Port Huron, MI	35	28	7

(1) Google Search is taken from Google Maps on existing highways.

(2) Proposed Corridor defined by The National Interstate 69 Steering Committee Study.

Trade with Mexico has increased gradually since 2000 starting with a total number of exports and imports at \$247.2 billion increasing to \$346.7 billion for the year 2007. Trade with Canada, which is nearly twice that of Mexico, has increased gradually since 2000 starting with a total number of exports and imports at \$409.7 billion to \$565.8 billion for the year 2007. This is a 38.1 percent increase between Canada and the United States and a 40.2 percent increase between Mexico and the United States. With the Interstate 69 corridor, trade will be easier between the border countries. Interstate 69 from Indianapolis to Port Huron, Michigan and Laredo, Texas and the Lower Rio Grande Valley will establish an international trade route to serve these and other important economic functions.

Population is a factor in the growth of freight transportation as well as total transportation. Freight ton-miles in the US have grown faster than the US population. From 1970 to 2002, US per capita ton-miles grew 23 percent, from nearly 11,000 to 14,000. Looking ahead, the nation's freight tonnage is projected to increase nearly 70 percent by 2020 (USDOT-FAF, FHWA 2003). General cargo tonnage is projected to more than double, and some gateways may see a tripling in freight volumes between 1998 and 2020. As the demand for freight transportation grows, so will its overall contribution to the nation's economy. The expected growth in freight movements will result in capacity, congestion, and environmental challenges. Balancing the need for efficient movement of goods with concerns for safety, accessibility, and mobility will likely remain a major interest of the transportation community.

It is projected that Interstate 69 will carry 52 percent of US truck-borne trade with Mexico and 33 percent of truck-borne trade with Canada. The efficiency along the corridor will enable products to be shipped in a timely manner.

The Interstate 69 corridor will greatly aid in the travel time saved from Mexico to Canada. It will also encourage increased shipping from Canada and Mexico to the United States. Interstate 69 will enhance efficiency, reduce costs and allow the U.S. to be more competitive in the global economy. The corridor will be an important part of a sound highway network connected to other modal hubs and the resulting benefits can be closely tied with the nation's economic future.

As a new location corridor, there are no existing traffic volumes to present. Previous analyses for innovative financing have estimated the traffic volumes along this section of the project. The traffic volumes for 2040 and the accompanying forecast Levels of Service (LOS) are shown in **Table 3: Summary of Preliminary Analysis – 2040 Non-Tolled Traffic Volumes and Projected LOS**. These figures reflect traffic that will be diverted from the congested Interstate 30 and 40 corridors in Arkansas if this project is funded and constructed. Upon completion of the entire corridor, these diversions from congested urban areas will improve the travel time reliability of cross-country freight movements.

Locally, construction of this portion of the Interstate 69 corridor will remove heavy vehicle traffic through Monticello which created local congestion, safety, and accessibility issues. Regionally, it will reduce congestion, delay, and indirection for through movements along two-

lane rural roads. These improvements will enhance safety and increase transportation reliability in the Delta.

**Table 3: Summary of Preliminary Analysis –
2040 Non-Tolled Traffic Volumes and Projected LOS**

Segment of Independent Utility	Existing Facility	Preliminary 2040 Traffic (AADT)	2040 LOS
12 – Highway 82 (El Dorado) – Highway 65 (McGehee)	New Location	9,000	A

Source: Interstate 69 Innovative Financing Study – Final Findings

SAFETY OUTCOMES

The safety performance of Interstate 69 is expected to be better than the existing parallel Interstate freight corridor of I-30 and I-40 in Arkansas (Texarkana to West Memphis). Recent three years of crash data (2011-2013) show that this existing 274-mile corridor experienced a crash rate of 0.61 crashes per million vehicle miles (mvm). This existing corridor also experienced a fatal plus serious injury rate of 4.91 crashes per 100 million vehicle miles (100mvm) over the same time period. These rates are about 50 percent and 30 percent higher, respectively, than the average crash rates for rural freeways in Arkansas — which would be comparable to Interstate 69 (0.40 crashes per mvm and 3.77 crashes per 100mvm, respectively) over the same time period.

The relatively high crash rates along the existing I-30/I-40 corridor in Arkansas can be attributed to several factors.

- The existing I-30/I-40 corridor travels through three urbanized areas in Arkansas— Texarkana, Little Rock, and West Memphis—which contributes to the high number of total crashes.
- The large number of trucks in the existing corridor results in the need for frequent system preservation projects to maintain an acceptable state of good repair.
- There was a major construction work zone between Little Rock and West Memphis in this time period, which resulted in a higher number of crashes than in previous years. This construction activity involved reconstruction of existing pavement which, without an adequate alternative route for freight traffic, resulted in a number of rear-end collisions due to congestion as a consequence of the lane reductions.
- The large number of trucks in this existing corridor helped contribute to the high number of KA crashes. Of the 72 fatal crashes in this corridor from 2011 through 2013, 29 (40 percent) involved a large truck. A large truck collision with a passenger car at freeway speeds increases the likelihood of a fatal or serious injury crash.

Interstate 69, when completed, will provide a safer facility for not only freight movements but passenger vehicles as well. It bypasses urbanized areas that typically have higher traffic

volumes and more interchanges, which lead to greater conflicts and decision points and thus higher risks of crashes.

COMMUNITY AND ENVIRONMENTAL OUTCOMES

The Delta Region that will be served by the ultimate Interstate 69 corridor has a rich history in the development of not only Arkansas but the region and the nation. Southeast Arkansas has many small communities over 100 years old. The communities are closely tied to the agricultural economy of the region. With the modernization of agriculture production, there has been a downward trend for employment opportunities in the region. This has resulted in Arkansas' and the region's unemployment and poverty rates exceeding the national average. Drew and Desha Counties are both considered to be economically depressed regions. For the period 2009-2013, Desha County recorded 30.1 percent of its population living at or below the poverty level. In the same period of time, Drew County reported 28.5 percent of its population living at or below the poverty level. By comparison, the poverty level for Arkansas was 19.2 percent of the population.

The construction of the Interstate 69 corridor through the Delta will provide both short-term and long-term employment opportunities due to the construction and secondary commercial development that often accompanies transportation investments (travel plazas and driver services). After construction is complete, this project will provide infrastructure to this region that will help diversify the regional economy by linking this region to the nation. Providing competitive manufacturing and distribution opportunities that often locate along an Interstate facility will have a positive impact on the communities either through direct or indirect employment.

This project will also have a positive impact for environmental activities in the region. Currently, when shipments travel across southern Arkansas, they often travel on two-lane facilities with limited recovery areas for crashes. Providing an interstate-type facility will improve the safety of the region's transportation system, as well as provide a more efficient mode of travel with fewer travel speed changes allowing for improved emissions of the mobile fleet.

PARTNERSHIP AND INNOVATION

The recognition of the need for freight-related infrastructure demonstrates the understanding of the importance of efficient freight movement by various members of both private and public sectors including local and regional elected officials throughout the entire Interstate 69 corridor.

COST SHARE

Upon completion, this project will serve as a national freight corridor and will lead to the enhancement of the Interstate Highway System. As such, there are multiple funding sources available for project financing. AHTD has proactively and aggressively pursued numerous funding options in an effort to promote the completion of this project and the corridor as a whole. Within this corridor, AHTD has made it a priority to guarantee matching funds for all Federal-aid funds received.

VI. LARGE/SMALL PROJECT REQUIREMENTS

Due to the project limits being extended to the west to include construction of the Monticello Bypass, this project now qualifies as a large project. **Table 4: Large Project Requirements** addresses the factors used to screen the larger projects.

Table 4: Large Project Requirements

Requirement	How it is satisfied through this project?
1. Does this project generate national or regional economic, mobility, safety benefits?	Yes, see the following section.
2. Is the project cost effective?	Yes. The discounted Benefit Cost Ratio (BCR) is between 2.3 and 3.1. The current BCR is 3.9. See Table 8 for further details.
3. Does the project contribute to one of more of the National Goals listed under 23 USC 150 (and shown below)? <ul style="list-style-type: none"> a. Safety b. Infrastructure Condition c. Congestion Reduction d. System Reliability e. Freight Movement and Economic Vitality f. Environmental Sustainability g. Reduced Project Delivery Delays 	<p>Yes, this project contributes to reduction in congestion and improves safety along parallel routes as referenced above. Likewise, the implementation of this project will improve freight movement not only in the region and state but also within the nation. Subsequently, there will be an increase in the economic vitality of the region.</p> <p>The implementation of this project will also improve the reliability of the whole system by providing a more direct, safer, and less congested route than is in place.</p> <p>Finally, a FASTLANE grant will allow the timely and coordinated implementation of this project, reducing project delivery delays.</p>
4. Is the project based on the results of preliminary engineering?	Yes.

<p>5. With respect to non-Federal financial commitments, does the project have one or more stable and dependable funding or financing sources to construct, maintain, and operate the project?</p> <p>Are contingency amounts available to cover unanticipated cost increases?</p>	<p>In addition to the requested Federal funds, the project will also be funded with non-Federal funds originating primarily from the state motor fuel tax revenues. This is a stable and dependable funding source that is used to match Federal-aid and to maintain our transportation system.</p> <p>Yes.</p>
<p>6. Is it the case that the project cannot be easily and efficiently completed without other Federal funding or financial assistance available to the project sponsor?</p>	<p>Yes. This is the case. In the event this grant request is not fully funded, these improvements cannot be completed in a timely manner. This will cause an increase in road-user costs related to delayed safety improvements, congestion reduction, and wear and tear on vehicles. It will also result in the anticipated economic benefits being delayed.</p>
<p>7. Is the project reasonably expected to begin construction not later than 18 months after the date of obligation of fund for the project?</p>	<p>Yes. All of the projects referenced in this application are either included in the 2016-2020 STIP or will be upon full funding of this application.</p>

VII. COST EFFECTIVENESS

Travel demand benefits for the proposed improvements along Interstate 69 are summarized in **Table 5: Project-Level Impacts in 2040**. 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 Interstate 69 project only; they do not reflect any additional planned improvements in the region.

It is estimated that in 2040, the proposed project will lead to a reduction of 1.7 million vehicle hours traveled and over 60 million vehicle miles traveled.

Table 5: Project-Level Impacts in 2040

	Auto	Truck
Vehicle Miles Traveled	(19,343,893)	(41,824,287)
Vehicle Hours Traveled	(67,214)	(1,625,313)

A detailed Benefit-Cost Analysis (BCA) was conducted as part of the impact analysis for the proposed Interstate 69 project. In conducting the BCA, all federal guidance regarding evaluation criteria, discount and monetization rates, and evaluation methods prescribed in the 2017 FASTLANE Guidance and supporting documents were followed. The benefits and costs of

the project are calculated in 2015 dollars over a time horizon of 20 years. Benefits were estimated across the following categories:

- State of Good Repair
- Economic Competitiveness
- Environmental Sustainability
- Safety

The estimation of benefits involved establishing a base year Build and No-Build scenarios in 2010 and 2040, and calculating the differences between the Build and No-Build in the benchmark years, using straight line growth. The project is assumed to open to traffic in 2020. A horizon year of 2040 was applied for the Build and No-Build scenarios to provide a 20-year benefit stream.

Model outputs for each scenario included the following:

- Daily vehicle-miles traveled (VMT) by vehicle type (passenger cars and trucks), trip purpose (commute, business and leisure trips), and time period (a.m. peak period, mid-day, p.m. peak period, and night).
- Daily vehicle-hours traveled (VHT) by vehicle type (passenger cars and trucks), trip purpose (commute, business and leisure trips), and time period (a.m. peak period, mid-day, p.m. peak period, and night).
- Daily delays by vehicle type (passenger cars and trucks), trip purpose (commute, business and leisure trips), and time period (a.m. peak period, mid-day, p.m. peak period, and night)

A summary of the BCA methodology is provided in **Table 6** for each benefits category. Detailed technical documentation is included as Appendix A.

Table 6: Summary Methodology and Data Sources for BCA

Economic Benefit Category	Metrics	Methodology	Data Source
A. State of Good Repair	Pavement Maintenance Costs	Estimate marginal external cost associated with pavement maintenance (the additional spending (or saving) of maintaining pavements) due to a unit increase/decrease in VMT resulting from project Marginal pavement cost is multiplied by changes in VMT over 20-year analysis period	Addendum to the 1997 Federal Highway Cost Allocation Study Final Report, 2000. VMT: Arkansas Travel Demand Model

Economic Benefit Category	Metrics	Methodology	Data Source
B. Economic Competitiveness	Travel Time Costs	<p>Estimate vehicle-hours traveled (VHT)</p> <p>Calculate Average Vehicle Occupancy (AVO) by trip purpose</p> <p>Changes in VHT over the 20-year analysis period are multiplied by the corresponding AVO and Value of Time (VOT) estimates for autos and trucks</p>	<p>VHT: Arkansas Travel Demand Model</p> <p>AVO: Arkansas Travel Demand Model</p> <p>VOT: 2017 FASTLANE Benefit-Cost Analysis (BCA) Resource Guide</p>
	Vehicle Operating Costs (VOC)	<p>Estimate average per-mile VOC for passenger vehicles and trucks</p> <p>Assume 15,000 miles traveled per year</p> <p>Multiply the average marginal VOC for passenger cars and trucks by their corresponding changes in VMT over the 20-year analysis period</p>	<p>Auto VOC: Your Driving Costs, 2015 Edition (AAA)</p> <p>Truck VOC: An Analysis of the Operational Costs of Trucking: 2015 Update (ATRI, September 2015), Table 15, p. 27</p> <p>Fuel consumption, Auto: Environmental Protection Agency, Office of Transportation and Air Quality</p> <p>Fuel Consumption, Truck: U.S. Energy Information Administration</p> <p>Fuel Prices: US Energy Information Administration</p>
C. Environmental Sustainability	Social Cost (SCC) Emissions & Non-Carbon Emissions Costs	<p>Calculate emission rates for Carbon Dioxide (CO₂), Volatile Organic Compound (VOCs), Nitrogen Oxides (NO_x), Particular Matter (PM) and Sulfur Dioxide (SO_x) for passenger cars and trucks on urban restricted access roads as a function of travel speed</p> <p>Multiply emission rates by the changes in VMT resulting from project implementation</p> <p>Multiply emissions increase/decrease by emissions cost</p>	<p>Emission rates: Calculated using MOVES2014</p> <p>2016 TIGER Benefit-Cost Analysis (BCA) Resource Guide; Corporate Average Fuel Economy for MY2017-MY2025 Passenger Cars and Light Trucks (August 2012), page 922, Table VIII-16, "Economic Values Used for Benefits Computations (2010 dollars)."</p> <p>2016 TIGER Benefit-Cost Analysis (BCA) Resource Guide; Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866 (May 2013; revised July 2015), page 17, Table A1 "Annual SCC Values: 2010-2050 (2007\$/metric ton CO₂).</p>

Economic Benefit Category	Metrics	Methodology	Data Source
D. Safety	Motor Vehicle Crash Costs	Apply fatality, injury and property damage only (PDO) crash rates to changes in VMT resulting from project to estimate crash reduction/increase Multiply crash reduction/increase by the dollar value of crash	Crash Rates: Arkansas State Police, Highway Safety Office, "Arkansas 2013 Traffic Crash Statistics" Fatal Accident Cost: 2017 FASTLANE Benefit-Cost Analysis (BCA) Resource Guide supplement to the 2016 Benefit-Cost Analysis Guidance for Grant Applicants, <i>Guidance on Treatment of the Economic Value of a Statistical Life in U.S. Department of Transportation Analyses</i> (2016) Injury Accident Cost: estimated based on the KABCO/Unknown - AIS Data Conversion Matrix developed by the NHTSA (July 2011) and provided in the 2017 FASTLANE Benefit-Cost Analysis (BCA) Resource Guide, page 13 of 20 Source of PDO Crash Cost: <i>The Economic and Societal Impact of Motor Vehicle Crashes, 2010</i>

The benefits of implementing the project include cost savings due to reduced pavement maintenance cost, travel time, delays and vehicle operating cost, and motor vehicle crash costs. **Table 7** summarizes the findings of the Benefit Cost Analysis which yields a robust Benefit Cost Ratio ranging between 2.3 and 3.1, with a current ratio of 3.9.

Table 7: Summary of Benefit Cost Analysis

Benefits	2015\$	7% discount	3% discount
Reduction in Value of Time Costs	\$799,407,474	\$363,440,414	\$556,135,327
Reduction in Non-Fuel Vehicle Operating Costs	\$3,317,586	\$1,732,838	\$2,468,619
Reduction in Fuel Vehicle Operating Costs	\$2,716,527	\$1,418,893	\$2,021,370
Reduction in Safety Costs	\$1,619,817	\$846,061	\$1,205,307
Reduction in Emissions Costs	\$2,076,006	\$1,076,203	\$1,539,372
Reduction in Repair Costs	\$2,271,908	\$1,186,660	\$1,690,529
Total Benefits	\$811,409,317	\$369,701,068	\$565,060,524
Costs			
Construction Costs	\$199,563,516	\$157,935,464	\$180,047,871
Maintenance and Operations Costs	\$6,111,759	\$2,370,441	\$3,974,520
Total Costs	\$205,675,275	\$160,305,906	\$184,022,391
Benefits vs. Costs			
Net Benefits	\$605,734,043	\$209,395,162	\$425,975,403
Benefit-Cost Ratio	3.9	2.3	3.1

The Interstate 69 Corridor Project (Monticello Bypass – Highway 65) is estimated to provide significant benefit to the State of Arkansas as well as the nation as a whole. The construction of the Monticello Bypass as the next step in the Interstate 69 corridor in Arkansas will facilitate trade and lead to over 435,000 fewer hours of travel for trucks in 2040. 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 \$17 million more per year with the project than without it. The expansion in GSP translates into an additional 125 permanent jobs per year and nearly \$6 million in additional personal income per year for residents throughout the state.

It should be noted that **Table 1** refers to the total future corridor funding (\$99.2 million) for construction of the first two lanes of an ultimate four-lane facility. For the Benefit Cost Analysis the total investment included construction of the improvements as a four-lane cross-section to determine total savings and benefits. A total construction cost estimate of nearly \$200 million was used to adequately account for the construction of the completed Bypass.

VIII. PROJECT READINESS

Within Arkansas, the Interstate 69 Corridor has received a Record of Decision (ROD) for all three segments of independent utility within the state (**Table 8**). This indicates environmental handling is proceeding as planned and scheduled.

Table 8: Environmental Clearance Status

Corridor Segment	Date	Environmental Clearance Status
SIU 14: Louisiana State Line to Highway 82	April 2012	Record of Decision Approved
SIU 13: Highway 82 to Highway 65 (McGehee)	May 2006	Record of Decision Approved

In the time since the RODs were issued, there have been few changes within the project corridor segments in terms of population, employment, or other demographic factors. However, appropriate efforts will be taken to ensure these documents are still pertinent. There are no anticipated or expected delays impacting the ability to let to contract the proposed corridor projects. There are no legislative actions required to proceed with these improvements. Construction projects will be let to contract when construction funding commitments can be met.

Interstate 69 and the Monticello Bypass

Location and environmental studies for the El Dorado, Arkansas and McGehee, Arkansas segment of Interstate 69 are complete. The Draft EIS, which evaluated five alternative alignments within a 2-mile wide “preferred corridor”, was signed in May 2004. Location Public Hearings were held in June 2004 and in August 2004 the Department’s Interdisciplinary Staff selected the preferred alignment, to be located south of Monticello, Arkansas. The Final EIS was approved by FHWA in August 2005 and a ROD was issued in May 2006.

In September 2011, a contract was awarded to construct the grading and structures for the Monticello Bypass from Highway 425 to Highway 278 East, a distance of 8.5 miles. This project is estimated to be complete in mid-2017. Upon completion of the grading and structures project, a contract for the base and surfacing will be awarded. These two contracts will complete two lanes of the ultimate four-lane facility. Plan development is also underway for the section from Highway 278 West to Highway 425, including a connection to the Interstate 69 Connector near Wilmar. This section will also construct two lanes of the ultimate four-lane facility. This work is scheduled for 2017. See **Figure 1**.

TECHNICAL FEASIBILITY

Technical feasibility of the project is demonstrated by the following table. The major phases of project development are shown with their completion status at the time of this application.

TABLE 9: Technical Feasibility

Job Number	Job Name	Design Survey	Roadway Design	Environmental	Right of Way	Utilities
020470	Hwy. 278 West – Hwy. 425 (Gr. & MDS)	100%	50%	90%	20%	45%
020484	Hwy. 425 – Hwy. 278 East (Base & Surfacing)	N/A	85%	100%	100%	N/A
012278	I-69 Corridor Development and Construction (Phase I) (Proposed NSFHP)	10%	5%	75%	0%	0%

PROJECT SCHEDULE

A schedule of the various milestones for the proposed project segments is provided in **Table 10**. This project will be ready for obligation when FASTLANE awards are announced in 2017. Matching funds are available from the dedicated motor fuel tax revenues. If full funding is received, these dates will be accelerated to ensure that all FASTLANE funds are obligated well in advance of the statutory obligation deadline for large projects (September 2020). Likewise, construction would begin well in advance of the construction start deadline (March 2022).

Table 10: Project Schedule by Component

Job Number	Job Name	Project Obligation	Let to Contract	Mobilization of Project	Project Substantially Complete	Open to Traffic
020470/ 020611	Hwy. 278 West – Hwy. 425	8-2017	9-2017	10-2017	7-2021	8-2021
020484	Hwy. 425 – Hwy. 278 East (Base & Surfacing)	5-2017	7-2017	8-2017	8-2018	9-2018
012278	I-69 Corridor Development and Construction (Proposed NSFHP)	6-2017	N/A	N/A	5-2018	N/A

REQUIRED APPROVALS and PUBLIC INVOLVEMENT

The majority of environmental handling has been completed for the two phases of the construction project shown above. Public Hearings were held for the western half of the Monticello Bypass in 2015 and for the eastern half in 2009. No additional environmental handling is required for construction of the western portion of the Monticello Bypass. However, normal permitting activities are anticipated as a part of project delivery. Project development activities for the segment from Monticello to the east will include project-specific public hearings as Right-of-Way and construction plans are prepared as well as all necessary permitting activities.

The Project is included in the required State Transportation Improvement Plan. Development of the Arkansas State Long Range Intermodal Transportation Plan is ongoing, but that Plan will not be project specific. Development of the Arkansas State Freight Plan is also ongoing, and the Project will be included in that Plan.

ASSESSMENT OF PROJECT RISKS and MITIGATION STRATEGIES

Risk management is an on-going activity with all projects. There are risks with NOT moving forward with the proposed projects, as displayed in **Table 11: Risk Register**.

Table 11: Risk Register

Functional Area	Potential Risks	Scope (Impact/Likelihood)	Schedule (Impact/Likelihood)	Estimate (Impact/Likelihood)	Overall Risk (High, Med, Low)	Outcomes and Mitigation Activities
Construction Impacts						
Planning, Environmental, and Permitting	No Permitting anticipated	Low/Low	Medium/Medium	Low/Low	Medium	Update environmental documentation, as needed.
Roadway Design	N/A	N/A	N/A	N/A	N/A	N/A
Bridge Design	N/A	N/A	N/A	N/A	N/A	N/A
Construction	N/A	N/A	N/A	N/A	N/A	N/A
Other Project Impacts						
Right of Way	N/A	N/A	N/A	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A
Railroad	N/A	N/A	N/A	N/A	N/A	N/A
Other (Funding Availability and Inflation)	Directly related to funding availability	High/High	High/High	Medium/High	High	Pursue all opportunities for funding of improvements.

**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 2017 funding unless this certification is made and posted.



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



Date