

# FY 2017/2018 INFRA GRANT APPLICATION INTERSTATE 30 (U.S. HIGHWAY 70 – SEVIER STREET)

## FY 2017/2018 INFRA Grant Application

Project Name	Interstate 30 (U.S. Highway 70 – Sevier Street)
Was an INFRA application for this project submitted previously?	Yes. This application has been updated to reflect new program objectives and necessary changes in Project scope.
If yes, what was the name of the project in the previous application?	Interstate 30 (U.S. Highway 70 – Sevier Street)
Previously Incurred Project Cost	\$6.4 million
Future Eligible Project Cost	\$181.3 million
Total Project Cost	\$187.7 million
INFRA Request	\$57.9 million
Total Federal Funding (including INFRA)	\$57.9 million
Are matching funds restricted to a specific project component? If so, which?	No
Is the project or a portion of the project currently located on the National Highway Freight Network?	Yes
Is the project or a portion of the project located on the NHS? <ul style="list-style-type: none"> <li>• Does the project add capacity to the Interstate System?</li> <li>• Is the project in a national scenic area?</li> </ul>	<ul style="list-style-type: none"> <li>• National Highway System – Yes</li> <li>• Interstate Capacity – Yes</li> <li>• National Scenic Area – No</li> </ul>
Do the project components include a railway-highway grade crossing or grade separation project? <ul style="list-style-type: none"> <li>• If so, please include the grade crossing ID.</li> </ul>	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 INFRA 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
Urbanized Area in which project is located, if applicable	The majority of the Project (approximately 65%) is located in the Little Rock/North Little Rock, AR Urbanized Area
Population of Urbanized Area	431,388
Is the project currently programmed in the: <ul style="list-style-type: none"> <li>• TIP</li> <li>• STIP</li> <li>• MPO Long Range Transportation Plan</li> <li>• State Long Range Transportation Plan</li> <li>• State Freight Plan?</li> </ul>	<ul style="list-style-type: none"> <li>• TIP – Yes, CARTS TIP</li> <li>• STIP – Yes</li> <li>• MPO LRTP – Yes, CARTS MTP</li> <li>• State LRTP – The Arkansas LRITP is not project specific.</li> <li>• SFP – No. However, this Project is located on the Arkansas Freight Highway Network.</li> </ul>
If selected, would you be interested in participating in a new environmental review and permitting approach?	Environmental review and permitting activities are nearly complete for this Project.

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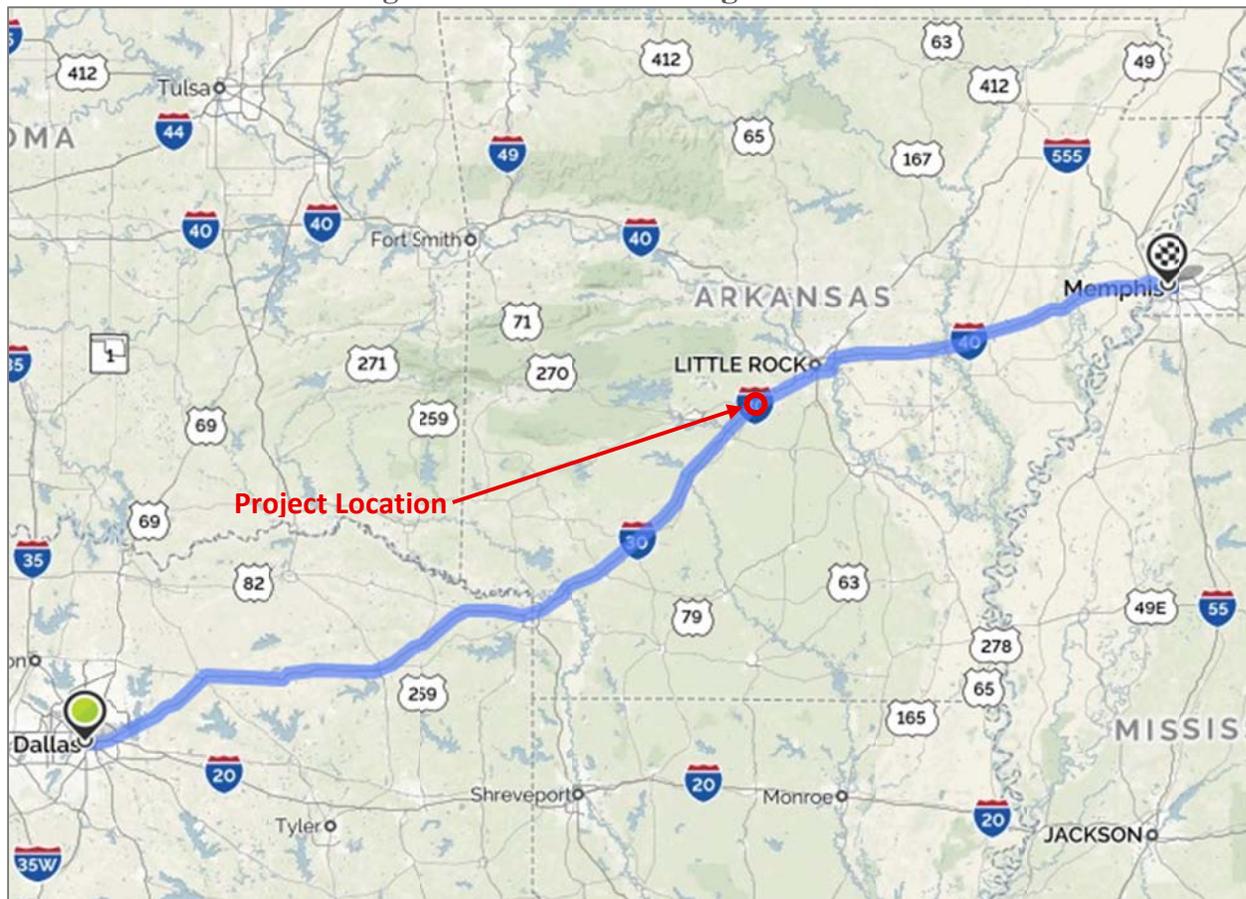
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<sup>1</sup> Supporting materials for this application are available at: <http://www.ardot.gov/INFRA/INFRA2017.aspx>.

## I. PROJECT DESCRIPTION

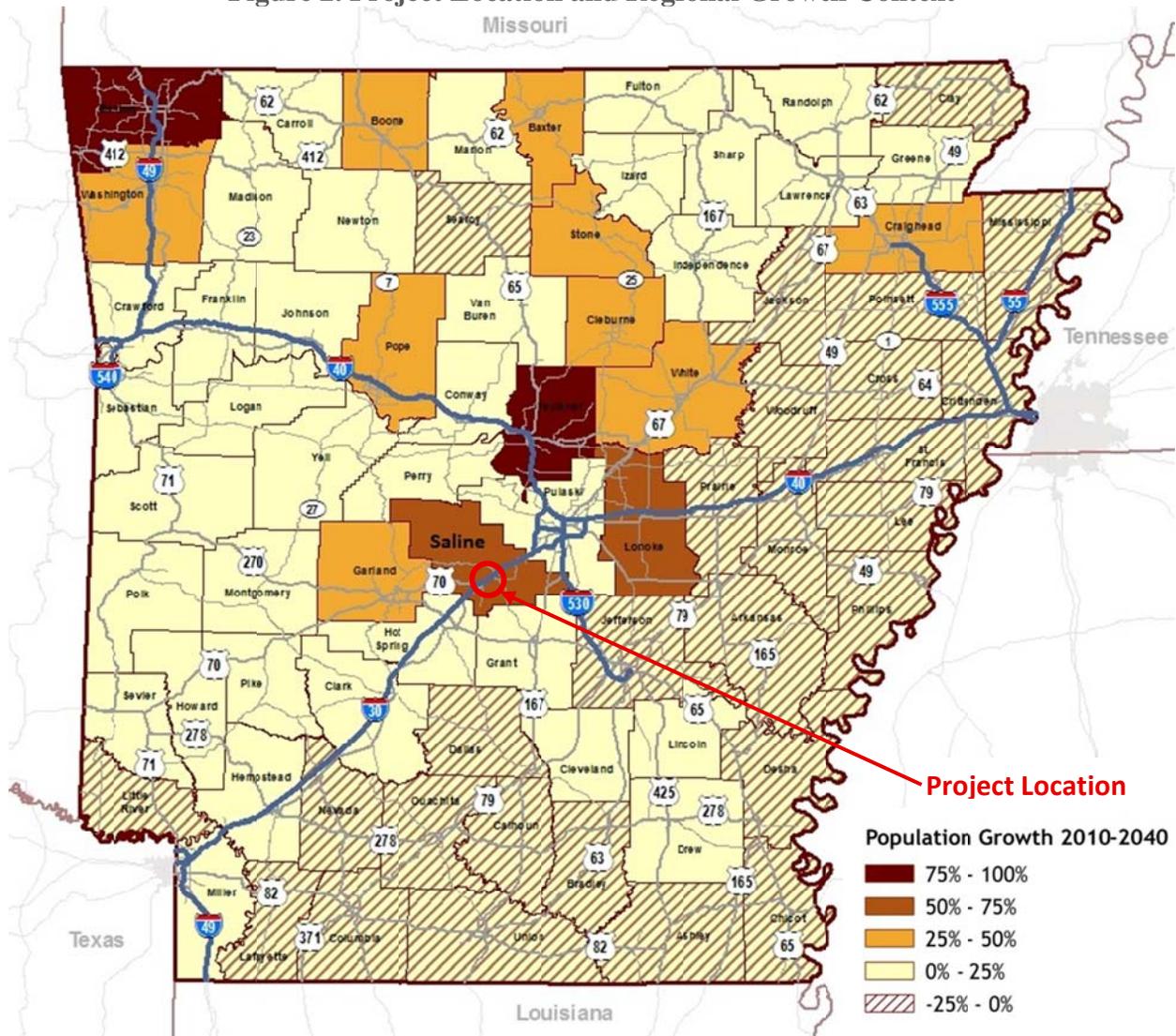
Interstate 30 is a regional, national, and international freight corridor providing a direct connection between the Dallas-Fort Worth, Texas area and Memphis, Tennessee (via Interstate 40), as depicted in **Figure 1**. From Central Arkansas, Interstate 30 provides system connectivity to the East and West Coasts via Interstate 40 and the Midwest and Canada via Interstate 55. From the Dallas-Fort Worth area, Interstate 30 provides system connectivity to the Southwest via Interstate 20 and to Mexico via Interstate 35. As an element of the National Highway System (NHS) and National Highway Freight Network (NHFN), Interstate 30 plays a critical role in moving people and goods through the South and Southwest. This role is recognized in the Congressional designation of Interstate 30 as an element of High Priority Corridor 55.

**Figure 1. Interstate 30 Freight Corridor**



In Central Arkansas, Interstate 30 serves local, regional and national travelers with varied destinations and trip purposes. The area is home to dozens of trucking companies – including national carriers such as CalArk and Maverick – who depend upon Interstate 30 to safely and efficiently move products to market. Each work day, Interstate 30 conveys thousands of commuters between Little Rock and neighboring communities and rural areas. On weekends, recreational travelers in Central Arkansas rely on Interstate 30 to connect them to popular destinations such as Hot Springs National Park. Indeed, Interstate 30 plays a role in all aspects of the lives of many Arkansans.

Figure 2. Project Location and Regional Growth Context

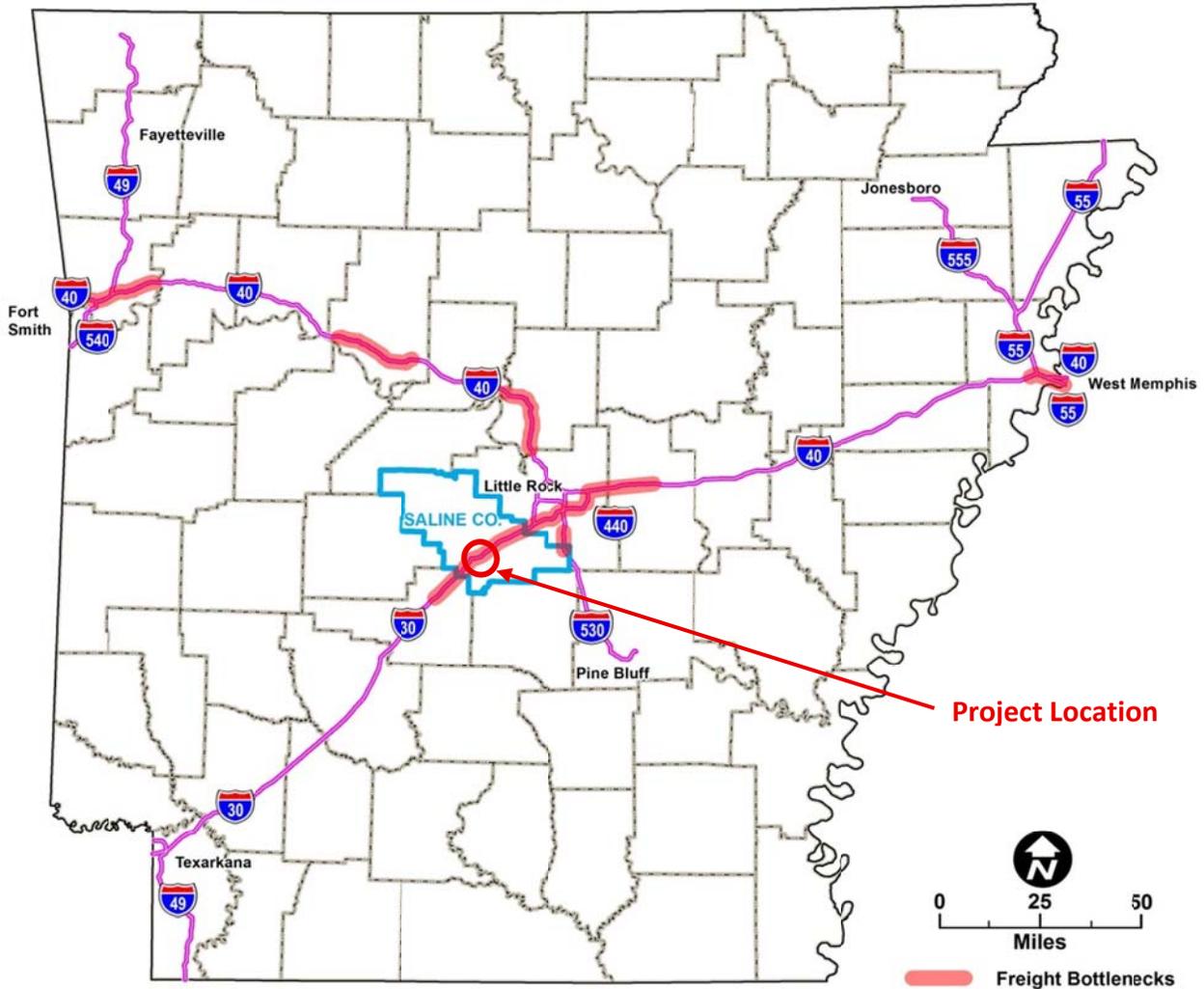


This Project proposes to invest approximately \$188 million in State and Federal funds to improve a 5.8 mile segment of Interstate 30 in Saline County, Arkansas (**Figure 2**) – a location that impacts freight, commuter and recreational users alike. When completed, the Project will support economic vitality at the national and regional level by:

**1. Relieving a freight bottleneck on Interstate 30.**

- Interstate 30 through Saline County is identified as one of seven Interstate freight bottlenecks in Arkansas based on capacity, projected traffic volume and composition, and congested speed (**Figure 3**).
- The existing four-lane cross-section carries approximately 50,000 passenger vehicles and 10,000 trucks per day in the current year (*Appendix A*).

Figure 3. Interstate Freight Bottlenecks



- As many as 110,000 passenger vehicles and 23,000 trucks are anticipated at this location in 2038 (*Appendix A*).
  - Currently, approximately \$35 billion in commodities are transported through the Project area each year.
- 2. Improving travel times, reliability and service for local, regional, and interstate traffic.**
- It is anticipated that the Project will improve peak-hour mainlane and ramp operations by one or more levels of service at several locations in both the opening year and the design year (*Appendix B*).

**3. Accommodating population growth in Central Arkansas.**

- The Interstate 30 corridor through Saline County is experiencing tremendous growth. The population of Saline County is projected to grow from approximately 120,000 now to approximately 190,000 in 2038.
- Benton Town Center, a five-hundred acre multi-use development, is planned adjacent to Interstate 30 within the Project area (*Appendix A*).

**4. Improving safety by reducing the frequency and severity of crashes.**

- Congested conditions within the Project area increase the frequency of rear-end crashes (*Appendix B*).
- Single-vehicle crashes account for more than 40 percent of all crashes in the Project area.
- With the existing cross-section (two travel lanes in each direction), trucks impede fast-moving traffic in the inner lane and create friction with merging traffic in the outer lane.

**5. Returning the Project area to a state of good repair.**

- The existing pavement consists of a distressed jointed concrete, overlaid with asphalt showing signs of severe stripping. (**Figure 4**).
- Four structurally-deficient mainlane bridges have been identified within the Project area (*Appendix C*).

**Figure 4. Pavement Condition**



To address these challenges and achieve the desired facility and performance, the scope of the Project will:

- Widen Interstate 30 from four lanes to six lanes;
- Improve alignments, signage and safety systems to meet modern safety standards;
- Modify four interchanges to improve ramp access, increase capacity and add traffic control devices;
- Improve ramp access at one system interchange;
- Fully reconstruct the pavement and replace deficient structures.

In addition to supporting national and regional economic vitality, the Project will meet other key objectives of the U.S. Department of Transportation (USDOT) by:

***1. Leveraging Federal funds with non-Federal funds.***

- Under the proposed funding matrix (see Table 1), approximately \$123.4 million of future eligible Project costs would be accounted for by non-Federal funds, resulting in a leverage ratio of greater than 2:1.

***2. Utilizing innovative approaches to project delivery and safety.***

- This Project will be contracted using A+C bidding, which is a method of rewarding a contractor for completing a project as quickly as possible. By providing a cost for each working day, the contract combines the cost to perform the work (A component) with the cost of the impact to the public (C component) to provide the lowest cost to the public. A+C bidding had been proven to be effective in minimizing impacts to the traveling public due to a section of roadway being under construction for an extended period of time.
- A suite of work-zone management and public information tools will be utilized to enhance work-zone safety and ensure that the motoring public is well-informed about potential traffic impacts within the Project area.

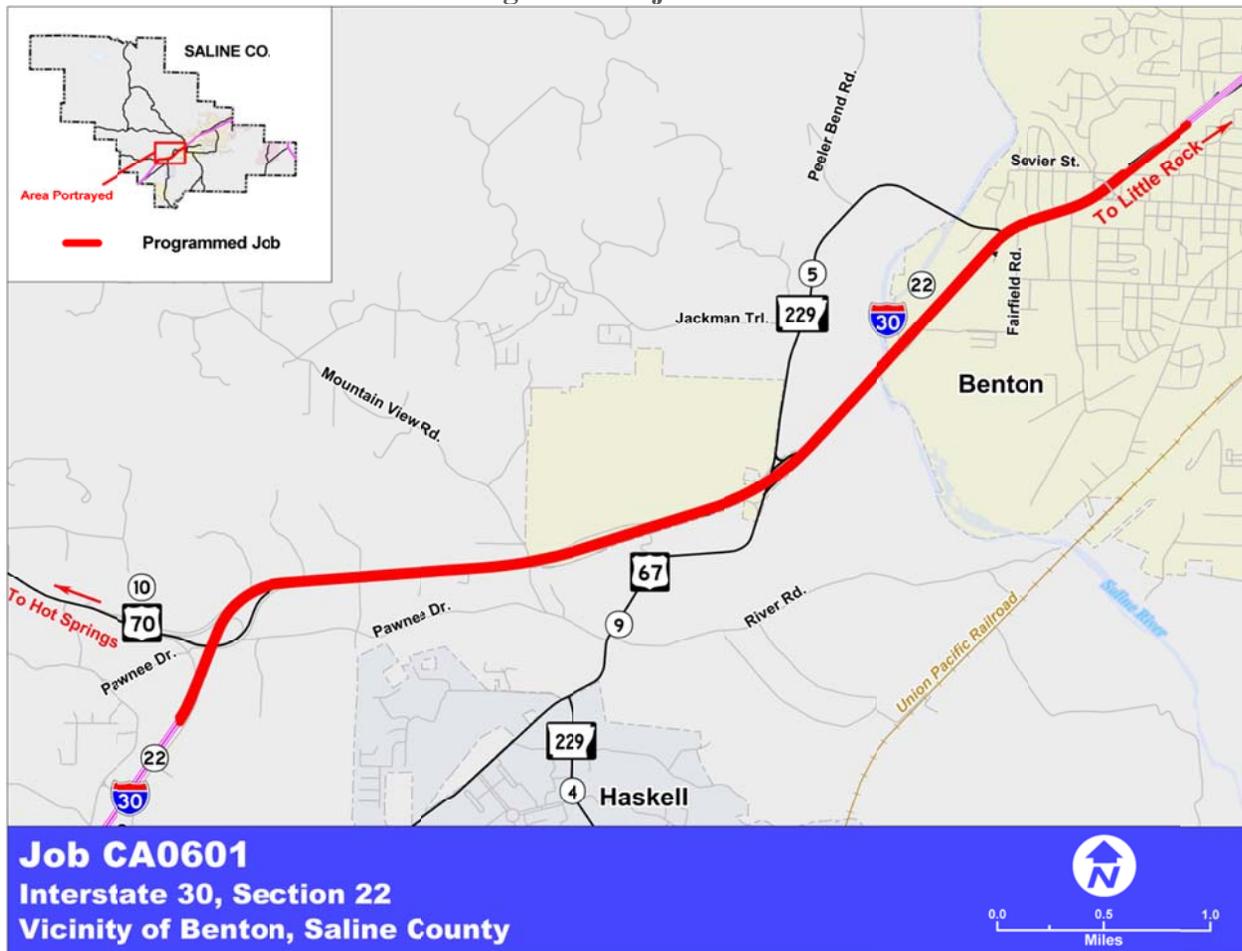
***3. Creating accountability for timely project delivery.***

- Under this proposal, the Project would be conditioned on timely project delivery.

## II. PROJECT LOCATION

As illustrated in **Figure 5**, the Project begins at the U.S. Highway 70 interchange in Saline County (at log mile 110.46). From U.S. Highway 70, the Project extends eastward, passing north of the City of Haskell before entering the City of Benton. The Project ends east of the South Street interchange in the vicinity of Sevier Street (at log mile 116.24), where the existing cross-section is six lanes.

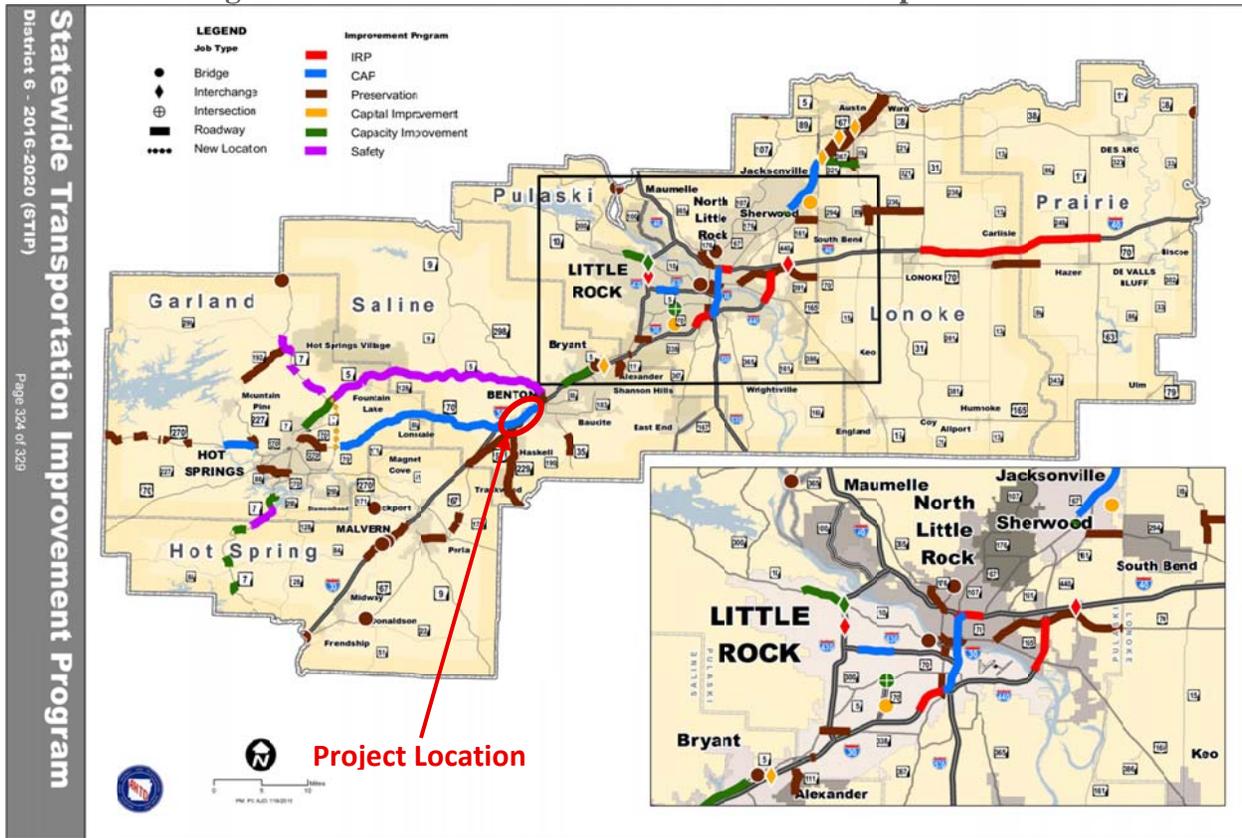
**Figure 5. Project Area**



The Project area is generally fronted by light commercial development between U.S. Highway 70 and U.S. Highway 67/State Highway 229. As the Project enters the City of Benton (and the Little Rock/North Little Rock, AR Urbanized Area) to the east, the area is largely built out, with a mix of residential, commercial, and public uses at the fringe of a major center of commerce and employment.

As illustrated in **Figure 6**, the Project is part of a larger program of improvements on Interstate 30 and other critical highways in Central Arkansas.

**Figure 6. Central Arkansas FY 2016-2020 STIP Improvements**



The cumulative impact of these projects will be transformative for the movement of people and goods into, out of, and through Central Arkansas. This Project will play a critical role in the success of the Central Arkansas freeway network by relieving a bottleneck at a primary gateway to the region.

### III. PROJECT PARTIES

The Arkansas Department of Transportation (ARDOT) is the Project sponsor and would be the grant recipient.

#### IV. GRANT FUNDS, SOURCES, AND USES OF ALL PROJECT FUNDING

The proposed funding matrix for the Project is presented in **Table 1**. State matching funds for the Project are generated by the Connecting Arkansas Program (CAP). In 2012, the citizens of Arkansas passed a temporary, half-cent, general sales tax to improve the State’s highway system. The CAP will invest approximately \$1.8 billion to widen or improve approximately 200 miles of state highways and interstates, including the section of Interstate 30 described in this application.

**Table 1. Proposed Funding Matrix – Future Eligible Project Costs Only**

Source of Funding	Dollar Share (in Millions)	Percentage Share	Type of Funding	Funding Status
Connecting Arkansas Program	\$123.4	68.1%	State	Committed
<i>INFRA</i>	\$57.9	31.9%	<i>Federal</i>	<i>Proposed</i>
<b>TOTAL</b>	<b>\$181.3</b>			

Under the proposed funding matrix, INFRA would account for approximately 32% of future eligible Project costs. No other Federal funds would be utilized for the Project, and no other Federal funding requests have been made for this Project. A phase breakout for the Project is reported in **Table 2**.

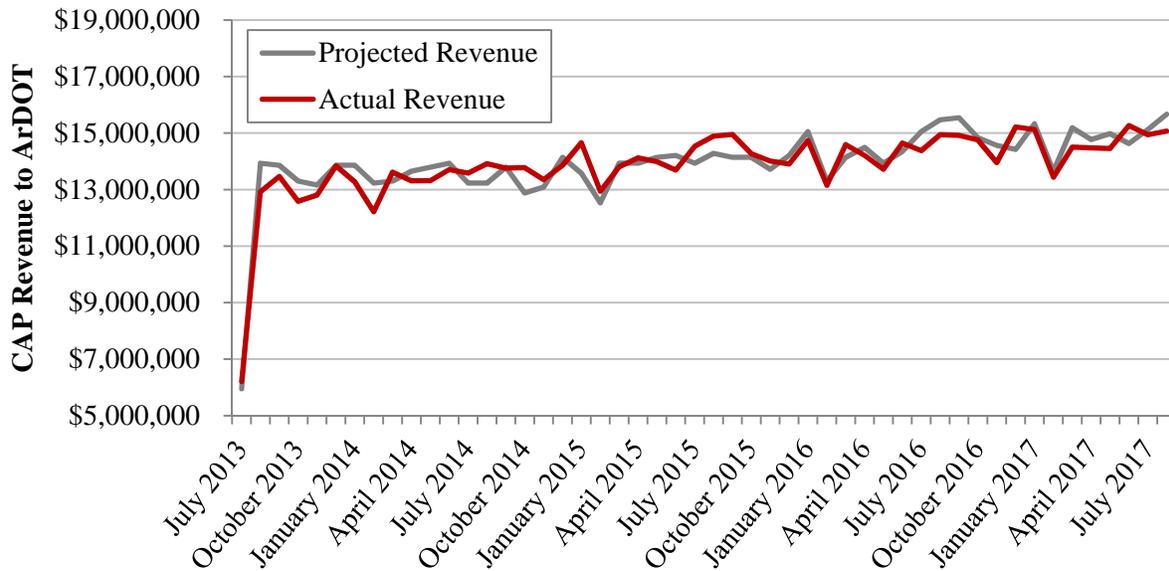
**Table 2. Phase Breakout (thru October 2017) – All Project Costs (in millions)**

Activity	State Funding		Federal-Aid Funding		Total Estimate
	To Date	Remaining	To Date	<i>INFRA</i>	
Surveying	\$0.6	–	–	–	\$0.6
Preliminary Engineering	\$3.2	\$1.1	–	–	\$4.3
Right-of-Way Acquisition	\$2.6	\$2.1	–	–	\$4.7
Utility Relocation	–	\$2.0	–	–	\$2.0
Construction Engineering and Inspection	–	\$16.1	–	–	\$16.1
Highway Construction	–	\$71.0	–	\$40.2	\$111.2
Highway Bridge Construction	–	\$31.1	–	\$17.7	\$48.8
<b>TOTAL</b>	<b>\$6.4</b>	<b>\$123.4</b>	<b>–</b>	<b>\$57.9</b>	<b>\$187.7</b>
	<b>\$129.8 (69.2%)</b>		<b>\$57.9 (30.8%)</b>		

To date, approximately \$6.4 million have been expended on the Project, all from the CAP. If INFRA funds are awarded, pre-construction activities would be completed using CAP funds only, and INFRA funds would leverage CAP funds for construction activities.

Because CAP funding is ultimately derived from a statewide, general sales tax, ARDOT is confident in the stability and reliability of CAP funding for the State portion of the Project. As illustrated in **Figure 7**, annual collections under the CAP have generally been in-line with forecasts. However, the revenue history does exhibit some variation in cash flow between actual and projected revenues, and actual revenues for FY 2017 were below projections. Collection of the sales tax will continue until 2023.

**Figure 7. Monthly CAP Revenue History: July 2013 – August 2017**



ARDOT is the designated recipient of nearly \$550 million from Federal-aid programs each year and has significant experience in managing Federal grants. ARDOT’s financial portfolio currently includes two bond programs:

- The CAP; and
- The Interstate Rehabilitation Program (IRP), which is financed using Grant Anticipation Revenue Vehicle (GARVEE) bonds that will be retired by 2026 using National Highway Performance Program (NHPP) funds.

ARDOT is fully compliant with the financial planning provisions of 23 U.S.C. § 135, as demonstrated by the approved FY 2016-2020 Statewide Transportation Improvement Program (STIP). ARDOT is committed to maintaining its Interstate highways, as illustrated by the significant Interstate highway investments in the STIP and continuing investments under the CAP and IRP.

## V. MERIT CRITERIA

As discussed below, the Project satisfies each of USDOT’s key objectives: supporting economic vitality, leveraging Federal funding, utilizing innovative approaches, and achieving accountability.

### A. SUPPORTING ECONOMIC VITALITY

The Project is expected to generate significant benefits to the region and the nation, including:

- Creating economic efficiencies by improving the safety and reliability of freight movements;
- Providing additional highway capacity to accommodate anticipated population and traffic growth;
- Improving mobility by reducing congestion;
- Returning an Interstate facility with heavy freight volumes to a state of good repair; and
- Improving the safety of Interstate operations for all motorists.

Each of these points is discussed at length below.

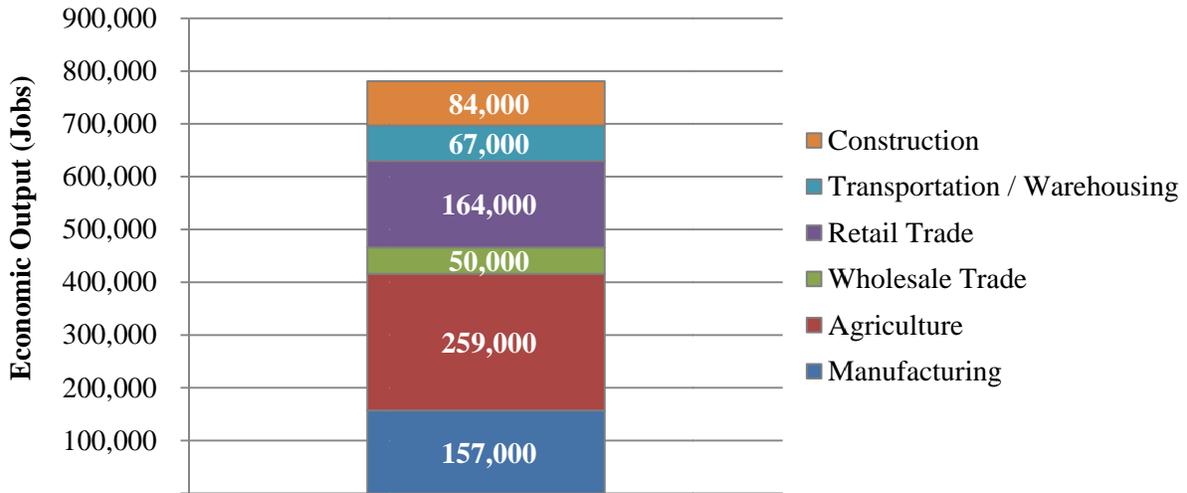
#### 1. Economic Outcomes

In the course of developing the Arkansas State Freight Plan (SFP), ARDOT and its consultants analyzed the freight sector using data from the American Transportation Research Institute (ATRI), Transearch, and the U.S. Census Bureau. The data indicates that the economy of the State of Arkansas is heavily dependent upon freight, both for the movement of raw goods to manufacturers and processors and for the delivery of finished goods to market. Sectors of the economy that are most dependent upon freight are depicted in **Figure 8** and **Figure 9**.

**Figure 8. Freight Contribution to Productivity in Arkansas**

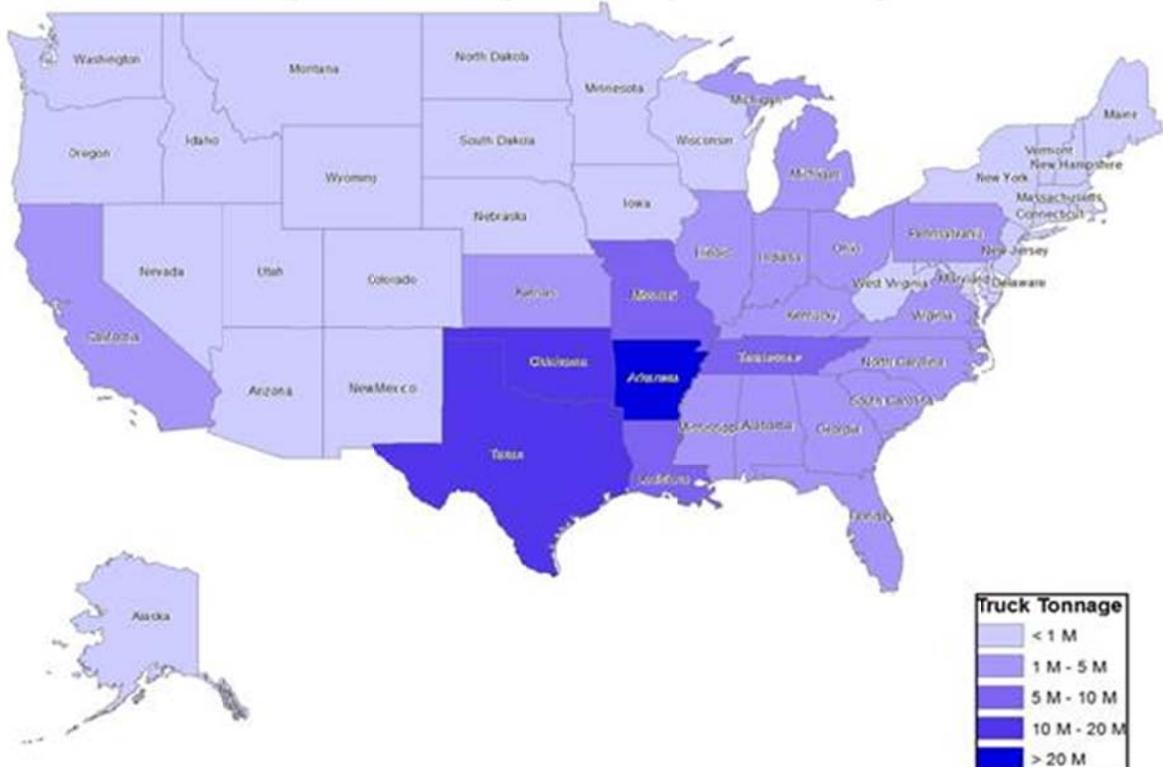


**Figure 9. Freight Contribution to Employment in Arkansas**



More than 40 percent of the total economic output of the State of Arkansas depends either directly or indirectly on freight, as well as nearly half of all employment. Agriculture and manufacturing, in particular, make significant contributions to the economy of Arkansas. Without a safe and efficient system of Interstate highways, Arkansas would not be able to compete in these national and international markets. Relevant to this application is the movement of freight along Interstate 30. As illustrated in **Figure 10**, Arkansas' top trading partners include Texas, Missouri, Tennessee and Louisiana.

**Figure 10. Trading Partners by Truck Tonnage**



Interstate 30 plays a critical role in each of these trade relationships, providing a direct connection between Arkansas and Texas, and system connectivity to Tennessee (via Interstate 40), Missouri (via Interstate 40 and Interstate 55), and Louisiana (via Interstate 49). Trading activity with these and other partners is expected to increase significantly over the next three decades. Forecasts developed for the SFP indicate that freight tonnage into, out of, and within Arkansas will increase from 299 million tons in 2012 to an estimated 439 million tons in 2040. Likewise, as depicted in **Figure 11**, data from the Freight Analysis Framework (FAF) indicate that freight volumes on Interstate 30 are expected to nearly double between 2007 and 2040.

**Figure 11. NHS Freight Truck Traffic: 2007 and 2040**

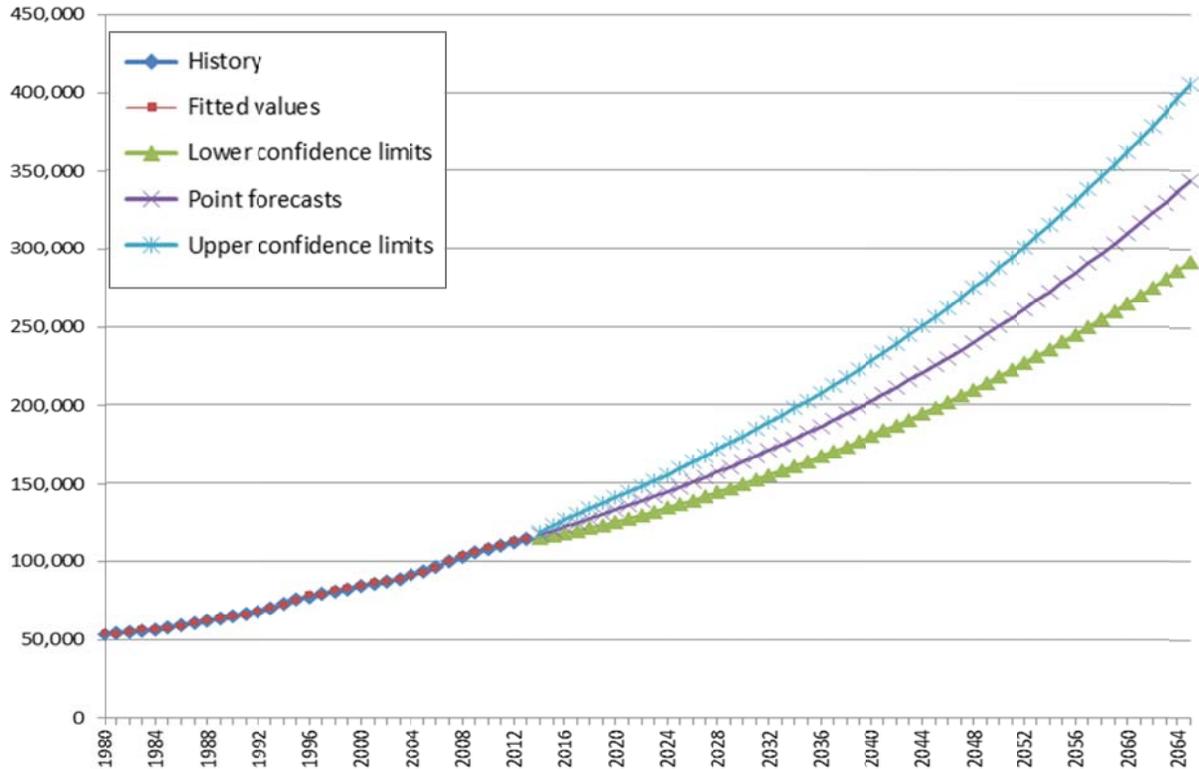


This Project is expected to yield significant economic benefits to the region and the nation by improving the reliability and security of freight flows along this vital Interstate corridor. At the same time, the Project is expected to improve the mobility of the rural workforce. According to data from the Census Transportation Planning Products Program (CTPP), approximately 20% of daily passenger car trips within the Project area are attributable to commutes to and from Garland and Hot Spring counties to and from the Little Rock/North Little Rock urbanized area.

The Project is also necessary to accommodate the continuing growth of Saline County. According to the Institute for Economic Advancement at the University of Arkansas at Little Rock, the population of Saline County is expected to grow by nearly 60% over the next two

decades, from approximately 120,000 today to nearly 190,000 in the design year of the Project (Figure 12).

Figure 12. Saline County Population Projections



Population growth in the cities of Benton and Haskell, in particular, will create new demand within the Project area that cannot be accommodated without adding capacity and improving access to Interstate 30.

## 2. Safety Outcomes

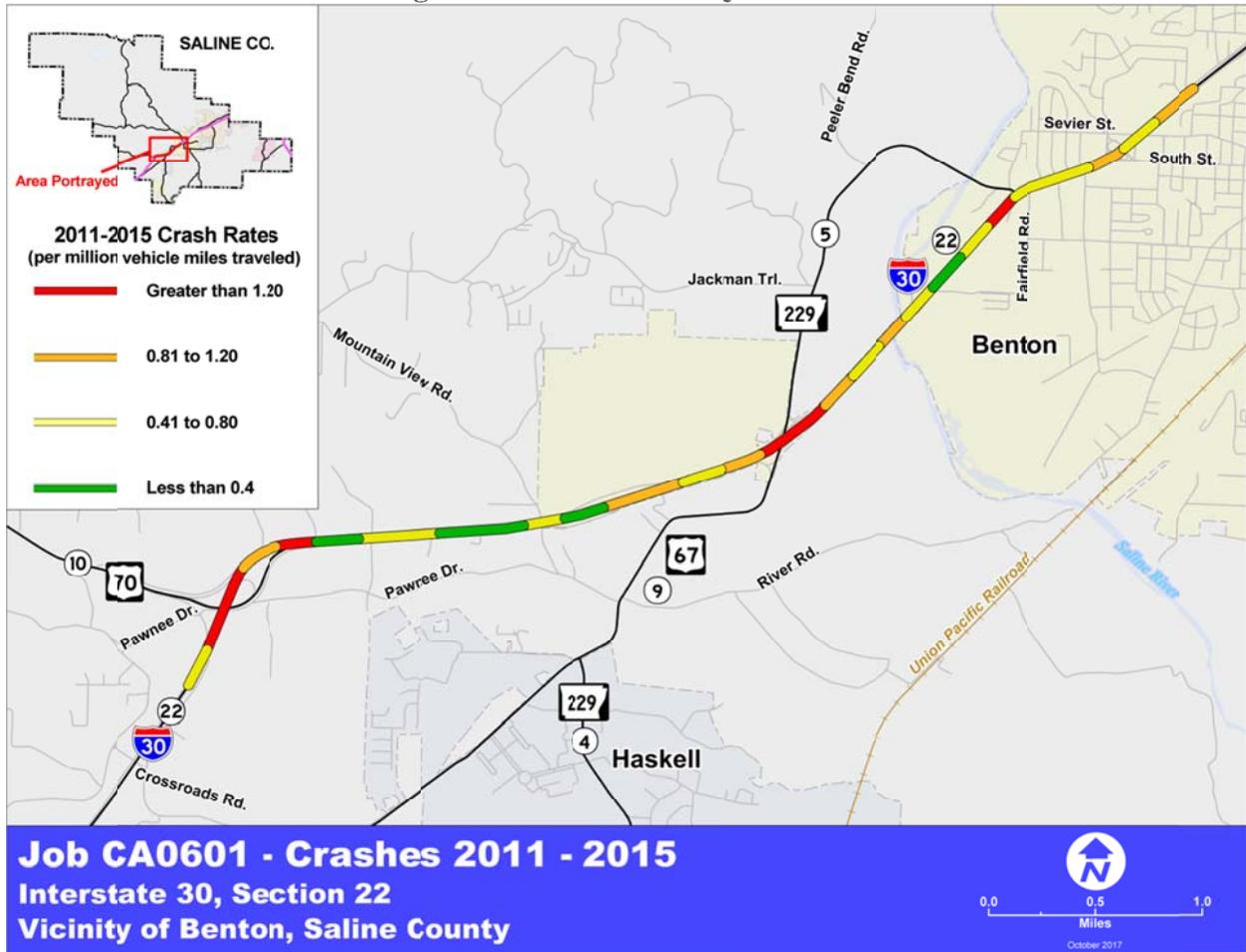
The five-year crash history (2011 thru 2015) of the Project area is summarized in **Table 3**. Over that period, 537 crashes were documented within the Project area (including main lanes, ramps and the cross-street approaches of U.S. Highway 67 and State Highway 229). Of those 537 crashes, 38 resulted in loss of life or serious injury. As this data indicates, the predominant crash types within the Project area are rear-end and single-vehicle crashes, which primarily occurred on the Interstate mainlanes and ramps. Those two crash types also account for the majority of fatal or serious injury crashes within the Project area. Between 2011 and 2015, the fatal or serious injury crash rate within the Project area was 6.59 crashes per 100 million vehicles miles. By comparison, the statewide average fatal or serious injury crash rates for four-lane freeways in urban and rural areas were 4.65 and 3.56 crashes per 100 million vehicle miles, respectively.

**Table 3. Crash History: 2011 – 2015**

Crash Type	Severity					TOTAL
	Fatal	Serious Injury	Minor Injury	Possible Injuries	Property Damage Only	
Angle	1	5	2	9	29	46
Backing	–	–	–	–	1	1
Head-On	1	–	–	–	3	4
Rear-End	1	7	12	28	116	164
Sideswipe, Opposite	–	–	–	–	2	2
Sideswipe, Same	–	4	2	19	90	115
Single-Vehicle	4	15	9	29	145	202
Other	–	–	–	–	3	3
<b>TOTAL</b>	<b>7</b>	<b>31</b>	<b>25</b>	<b>85</b>	<b>389</b>	<b>537</b>

**Figure 13** illustrates the distribution of crashes on Interstate 30. Between 2011 and 2015, the statewide average crash rates (all types and severities) for four-lane freeways in urban and rural areas were 0.85 and 0.42 crashes per million vehicle miles, respectively. Areas highlighted in orange or red in **Figure 13** represent locations where the localized crash rate is higher than the statewide average.

**Figure 13. Crash Rates by Location**



The proposed improvements are expected to improve safety in the following ways (*Appendix B*):

- The Project will add capacity to Interstate 30. Adding capacity is expected to reduce the rear-end crash rate by reducing vehicle density and mitigating peak-hour congestion.
- The Project will revise curve sections, improve the vertical profile of the mainlanes, add rigid safety barriers to the median, and update signage. All of these improvements are expected to reduce the frequency and severity of single-vehicle crashes.
- The Project will eliminate conflict points, add or lengthen acceleration and deceleration lanes, signalize ramp terminals, replace one ramp terminal with a roundabout, and add capacity at approaches and overpasses/underpasses. All of these improvements are expected to improve safety at interchange areas.
- The Project will add a third mainlane in each direction, which will allow trucks to avoid fast-moving vehicles in the inner lane and merging vehicles in the outer lane. Thus, the Project is expected to improve interactions between trucks and passenger vehicles.

The proposed improvements support four primary emphasis areas from the Arkansas Strategic Highway Safety Plan (2017) – reducing roadway departures, improving intersection safety, improving safety in work zones, and improving safety for commercial vehicles – three of the Federal Highway Administration’s (FHWA) Proven Safety Countermeasures – improving curve sections, use of median barriers, and installation of roundabouts – and two strategies from the FHWA’s Every Day Counts initiative – installation of modern roundabouts and use of smarter work zones.

### 3. Mobility Outcomes

Within the Project area, Interstate 30 currently carries approximately 50,000 passenger vehicles and 10,000 trucks per day (*Appendix A*). Under existing conditions, traffic volumes approach or exceed capacity for several movements during peak periods, resulting in delay to commuters and freight movers alike. Over the next two decades, traffic volumes could grow to approximately 110,000 passenger vehicles and 23,000 trucks per day (*Appendix A*).<sup>2</sup> The findings of design-year, peak-hour operational analyses are discussed in *Appendix B* and reported in **Table 4** and **Table 5**. (For the results of additional operational analyses, including opening-year and cross-street operations, see *Appendix B*)

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<sup>2</sup> Within the Project area, two significant developments were identified – Benton Town Center (a 500-acre, planned, mixed-use development to be located in the northwest quadrant of the U.S. Highway 67 interchange) and Riverside Park (a recently-opened campus of community and recreational facilities located southwest of the South Street interchange) (*Appendix A*). To account for the traffic potential of those developments, two forecasts were prepared: one forecast assumes traffic growth based on linear trending only; a second forecast adds the anticipated trip generation of those developments to background traffic growth. This application generally assumes full build-out of those developments by the design year of the Project.

**Table 4. Design Year (2038) Peak-Hour Operational Analysis – Eastbound**

Location	Roadway Element	No Build		Build	
		Mainlane or Ramp LOS		Mainlane or Ramp LOS	
		AM	PM	AM	PM
West of Hwy. 70	Mainlane	B	C	B	C
Exit Ramp to Hwy. 70	Exit Ramp	C	D	C	D
Between Hwy. 70 Exit & Entrance Ramps	Mainlane	B	C	B	C
Entrance Ramp from Hwy. 70	Entrance Ramp	D	D	C	C
Between Hwy. 70 Entrance Ramp & Hwy. 67 Exit Ramp	Mainlane	D	E	C	C
Exit Ramp to Hwy. 67	Exit Ramp	E	E	C	C
Between Hwy. 67 Exit & Entrance Ramps	Mainlane	D	D	B	B
Entrance Ramp from Hwy. 67	Entrance Ramp	F	F	D	D
Between Hwy. 67 Entrance Ramp & South St. Exit Ramp	Mainlane	F	F	D	D
Exit Ramp to South St.	Exit Ramp	F	F	D	D
Between South St. Entrance Ramp & Hwy. 5 Exit Ramp	Mainlane	F	F	C	C
Entrance Ramp from South St.	Entrance Ramp	D	D	E	D
Between South St. Entrance Ramp & Hwy. 5 Exit Ramp	Mainlane	D	D	E	E
Exit Ramp to Hwy. 5	Exit Ramp	E	E	E	E
Between Hwy. 5 Exit & Entrance Ramps	Mainlane	C	C	C	C

**Table 5. Design Year (2038) Peak-Hour Operational Analysis – Westbound**

Location	Roadway Element	No Build		Build	
		Mainlane or Ramp LOS		Mainlane or Ramp LOS	
		AM	PM	AM	PM
Between Hwy. 5 Exit & Entrance Ramps	Mainlane	B	D	B	D
Entrance Ramp from Hwy. 5	Entrance Ramp	B	D	B	D
Between Hwy. 5 Entrance Ramp & South St. Exit Ramp	Mainlane	C	E	C	E
Exit Ramp to South St.	Exit Ramp	C	E	C	E
Between South St. Exit & South St. Overpass	Mainlane	B	D	B	D
Between South St. & South St. Entrance Ramps	Mainlane	C	F	B	D
Entrance Ramp from South St.	Entrance Ramp	C	F	B	E
Between South St. Entrance Ramp & Hwy. 67 Exit Ramp	Mainlane	D	F	B	E
Exit Ramp to Hwy. 67	Exit Ramp	D	F	A	C
Between Hwy. 67 Exit & Entrance Ramps	Mainlane	C	F	B	D
Entrance Ramp from Hwy. 67	Entrance Ramp	C	F	B	C
Between Hwy. 67 Entrance Ramps	Main Lane	N/A	N/A	B	D
Entrance Ramp from Hwy. 67	Entrance Ramp	N/A	N/A	B	C
Between Hwy. 67 Entrance Ramp & Hwy. 70 Exit Ramp	Mainlane	C	F	B	D
Exit Ramp to Hwy. 70	Exit Ramp	C	F	B	D
Between Hwy. 70 Exit & Entrance Ramps	Mainlane	B	C	B	C
Entrance Ramp from Hwy. 70	Entrance Ramp	B	C	B	C
West of Hwy. 70	Mainlane	B	C	B	C

Under the no-build scenario, peak-hour operations are expected to degrade to unacceptable levels by the design year. By implementing the Project, operations are expected to improve by one or

more levels of service at many locations, resulting in significant delay reductions, as summarized in **Table 6**.

**Table 6. Travel-Time Impacts**

Scenario	Peak-Period Delay (hours/day)
2022 No-Build	2322
2022 Build	2082
<b>Reduction</b>	<b>240 (10.3%)</b>
2041 No-Build	14,961
2041 Build	5,838
<b>Reduction</b>	<b>9,123 (61.0%)</b>

Thus, the Project is expected to significantly improve operations on Interstate 30 and increase mobility for local, regional and national travelers alike. Because there are no nearby parallel routes that have the potential to relieve congestion on Interstate 30, the proposed Project is the only plausible way to realize those benefits.

The proposed improvements will also return the Project area to a state of good repair. The existing pavement consists of a jointed concrete of varying condition (mostly poor), with severely faulted and deteriorating joints; overlaid with asphalt showing signs of severe stripping. In 2012, the Project area was overlaid with a composite geosynthetic joint tape and four-inch overlay meant as a stop-gap pending reconstruction (*Appendix D*). Additionally, structural deficiencies have been identified on four of the nine bridges within the Project area (*Appendix C*). The Project will completely reconstruct existing pavements and replace all existing bridges. Without reconstruction of deficient pavement and structures, Interstate 30 may not be able to reliably and safely accommodate anticipated traffic volumes.

#### 4. Other Outcomes

This Project enhances personal and freight mobility while minimizing adverse effects on the built and natural environment. The construction limits of the project are expected to be almost entirely within the existing right-of-way limits, with the exception of interchange areas, where some right-of-way acquisition is anticipated (*Appendix B*). Currently, ARDOT is anticipating 11 relocations as a result of the Project. A Tier 3 Categorical Exclusion has been approved, and only minor environmental impacts have been identified (*Appendix C*).

#### 5. Cost Effectiveness

A detailed benefit-cost analysis (BCA) was conducted for the Project in accordance with *Benefit-Cost Analysis Guidance for TIGER and INFRA Applications* and related guidance. Detailed technical documentation supporting the BCA is included as *Appendix E1* and *Appendix E2*.

The benefits and costs of the Project (in 2016 dollars) are summarized in **Table 7**. The benefits of the Project are expected to be derived from travel time savings, safety improvements, reduction in vehicle operating costs, emissions reductions, maintenance savings, and the residual value of new structures.

**Table 7. Summary of Benefit-Cost Analysis**

<b>Cost-Effectiveness Indicator</b>	<b>Discounted 3%</b>	<b>Discounted 7%</b>
<b>NET PRESENT VALUE = (B) - (C) =</b>	<b>\$157,425,674</b>	<b>\$20,161,998</b>
<b>BENEFIT-COST RATIO = (B) / (C) =</b>	<b>1.94</b>	<b>1.14</b>
<b>Project Costs</b>	<b>Discounted 3%</b>	<b>Discounted 7%</b>
Capital Costs	\$167,921,200	\$145,607,646
<b>Total Costs (C) =</b>	<b>\$167,921,200</b>	<b>\$145,607,646</b>
<b>Project Benefits/Disbenefits</b>	<b>Discounted 3%</b>	<b>Discounted 7%</b>
Travel Time Savings	\$173,776,583	\$84,002,767
Safety Improvements	\$125,913,513	\$71,564,974
Net Operations and Maintenance	\$21,258,075	\$15,031,681
Work Zone Impacts	(\$8,411,874)	(\$9,771,802)
Residual Value	\$12,810,576	\$4,942,024
<b>Total Benefits (B) =</b>	<b>\$325,346,874</b>	<b>\$165,769,644</b>

The benefit-cost ratio for the Project is expected to be between 1.14 and 1.94 (assuming discount ratios of seven percent and three percent, respectively). The Project is expected to yield substantial benefits to the motoring public, particularly by reducing travel-time and vehicle-operating costs and improving traffic safety.

The short-term economic impact of the Project was evaluated using published Federal guidance on short-term job creation. It is estimated that construction expenditures will result in the creation of 2,081 short-term jobs. The long-term economic impact of the Project was evaluated using the American Association of State Highway and Transportation Officials' (AASHTO) EconWorks Assess My Project tool. Over the long term, the Project is estimated to directly or indirectly create 8,707 jobs, \$396 million in wages, and \$1.224 billion in economic output.

## **B. LEVERAGING FEDERAL FUNDING**

### **1. Cost Sharing**

As discussed above, the State matching funds for the Project are derived from a temporary, half-cent, general sales tax, approved by voters for the specific purpose of improving the State's multi-lane highway system through the Connecting Arkansas Program (CAP). If the proposed INFRA award is received, approximately 68% of future eligible Project costs will be financed by State funds, and 32% will be financed by Federal funds. On average, approximately 46% of ARDOT's annual expenditures come from non-Federal sources.

While Federal law does permit tolling of new lanes on Interstate facilities, implicit in the structure of the CAP is the understanding that the facilities that are improved with CAP funds would be open to the general public. Other options for private financing were deemed not feasible.

## **2. Accounting for Life-Cycle Costs**

ARDOT is committed to sound financial planning for operations and maintenance activities on Interstate 30. As illustrated by the significant Interstate investments in the STIP, and continuing investments under the CAP and IRP, ARDOT recognizes the need to proactively invest in its Interstate highway assets. Additionally, ARDOT is in the process of developing a Transportation Asset Management Plan (TAMP) to provide strategic direction for operating and maintaining the State's multimodal infrastructure.

## **C. INNOVATION**

### **1. Environmental Review and Permitting**

Because environmental review and permitting are nearing completion for this Project, ARDOT is not proposing any innovative practices in this area.

### **2. Use of Experimental Delivery Authorities**

The Project will be delivered using a combination of A+C (cost plus time) bidding and contractual incentives and disincentives. The use of A+C bidding recognizes the monetary value of time to road users, who often experience significant disruption during major construction projects. Contractual incentives and disincentives encourage balanced bidding and ensure that the Project is delivered on time.

### **3. Safety and Technology**

ARDOT intends to deploy a suite of tools to maintain a safe work zone and keep the public informed about traffic conditions in the Project area. First, ARDOT will deploy an automated work-zone information system (AWIS) consisting of incident detectors, dynamic message signs and other alert systems to identify incidents and inform the public about traffic conditions within the Project area. Second, incident management will be accelerated during the construction period using a combination of dedicated wrecker vehicles and regular motor patrols. Third, ARDOT's traveler information portal – [www.IDriveArkansas.com](http://www.IDriveArkansas.com) – will be used in combination with aggressive public outreach to inform motorists of traffic conditions.

## **D. PERFORMANCE AND ACCOUNTABILITY**

ARDOT is proposing to condition INFRA funding as follows: ARDOT plans to let the Project by October 2018, with anticipated completion of construction in 2021. If construction is not completed by the end of 2021, ARDOT will charge disincentives to the contractor.

## VI. PROJECT READINESS

As discussed at length below, the Project is expected to be shovel-ready when INFRA awards are announced in calendar year 2018. Thus, INFRA funds are expected to be obligated well in advance of the statutory deadline, and construction is expected to begin well in advance of the construction start deadline.

### A. TECHNICAL FEASIBILITY

Technical feasibility of the Project is demonstrated by the following accomplishments, among others:

- FHWA approval of a Tier 3 Categorical Exclusion for the Project, indicating that no significant environmental impacts are anticipated (*Appendix C*);
- FHWA finding that the access modifications proposed in the December 2015 Interchange Justification Report (IJR) are acceptable from an engineering and operational standpoint (*Appendix F*);
- Completion of right-of-way plans; and
- Preparation of cost estimates based on 90% design documents.

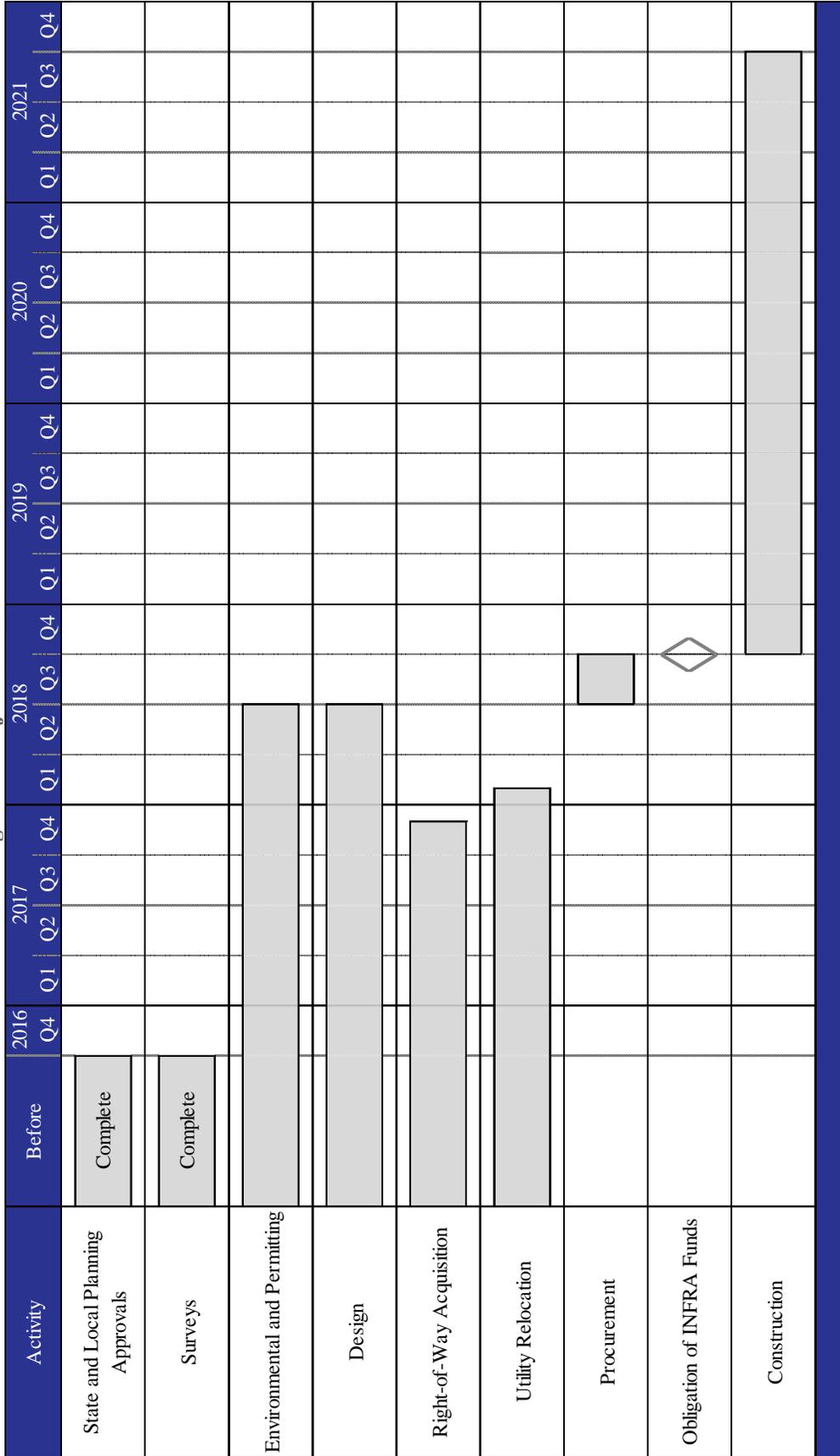
For a detailed description of proposed improvements, see *Appendix B*.

A necessary minor change in the Project scope brought in additional improvements at the interchange of Interstate 30 and US 70 that are not reflected in the accomplishments listed above. The change in scope includes revision of a horizontal curve, additional ramp improvements and replacement of overpasses. This change in scope is not expected to result in any additional right-of-way acquisition or utility relocation. No revisions to the IJR will be required. It is anticipated that any changes to the environmental documentation will be addressed through an addendum to the Categorical Exclusion. The costs reflected in Table 2 include the change in scope, as does the schedule discussed below.

### B. PROJECT SCHEDULE

A schedule of Project milestones is presented in **Figure 14**. This Project will be shovel-ready when INFRA awards are announced in calendar year 2018, and matching funds will be secured under the dedicated revenue streams of the CAP. INFRA funds would be obligated by October 2018, well in advance of the statutory obligation deadline for large projects (September 2020). Likewise, construction is scheduled to begin as weather permits in late 2018 or early 2019, well in advance of the construction start deadline (March 2022). Property and right-of-way acquisition activities are being performed in accordance with 49 CFR Part 24 and other applicable legal requirements, with a scheduled completion date of November 2017.

Figure 14. Project Schedule



### C. REQUIRED APPROVALS AND PUBLIC INVOLVEMENT

The environmental review process is nearing completion. A Tier 3 Categorical Exclusion was approved by the FHWA on June 30, 2016 (*Appendix C*). All necessary permitting is expected well in advance of the INFRA obligation deadline. Formal consultation with the United States Fish and Wildlife Service concluded with the Biological Opinion issued on June 22, 2016 (*Appendix G*). Detailed studies, anticipated Project impacts and a list of environmental commitments are included in *Appendix C* and *Appendix G*.

The Project is included in each of the required State and Metropolitan planning documents. The Arkansas Long Range Intermodal Transportation Plan (LRITP) has been adopted, and while the LRITP does address freight needs, that plan is not project specific. The Arkansas State Freight Plan (SFP) has also been adopted. The SFP identifies freight needs for all modes, and specifically recommends improvements at Interstate freight bottlenecks. This Project is included on the Arkansas Freight Highway Network.

In September 2015, ARDOT submitted an IJR to the FHWA describing the Project's proposed access modifications. By letter dated December 22, 2015, the FHWA communicated its acceptance of the proposed access modifications from an engineering and operational standpoint, with final approval pending completion of the NEPA process and a review of final plans (*Appendix F*).

Stakeholders were engaged throughout the project-development process, including:

- Coordination with staff from the metropolitan planning organization (Metroplan) on August 13, 2013, pertaining to future traffic volumes;
- Consultation with staff and public officials from the cities of Benton and Haskell on September 26, 2013, pertaining to anticipated development, design preferences for Interstate 30, and local infrastructure improvements;
- Consultation with staff from Saline County on September 26, 2013, pertaining to recent infrastructure improvements, anticipated development, and specific concerns about the existing conditions of Interstate 30;
- Coordination with public officials on March 25, 2014; and
- An open-forum public-involvement meeting on November 5, 2015, where 60% designs were presented (*Appendix C*).

The public can visit [www.connectingarkansasprogram.com](http://www.connectingarkansasprogram.com) to stay informed about this and all other projects under the CAP.

### D. ASSESSMENT OF PROJECT RISKS AND MITIGATION STRATEGIES

Risk management is an ongoing activity on this Project. The most recent risk assessment was completed in February 2017 at the 90 percent design stage, as reported in **Table 8**. Subsequent outcomes and risk-mitigation activities are summarized in the **Table 9**. At this stage of the Project, the risk to scope, schedule and costs is considered low.

Table 8. Risk Register (90% Design Stage)

Functional Area	Potential Risks	Scope (Impact/Likelihood)	Schedule (Impact/Likelihood)	Estimate (Impact/Likelihood)	Overall Risk (High, Med, Low)
<b>Construction</b>					
Planning, Environmental and Permitting	No known issues to report at this time.	Low/Low	Low/Low	Low/Low	Low
Roadway Design	No known issues to report at this time.	Low/Low	Low/Low	Low/Low	Low
Bridge Design	No known issues to report at this time.	Low/Low	Low/Low	Low/Low	Low
Construction	No known issues to report at this time.	Low/Low	Low/Low	Low/Low	Low
<b>Other Project Phases</b>					
Right of Way	One relocatee remaining.	Low/Low	Low/Low	Low/Low	Low
Utilities	No known issues to report at this time.	Low/Low	Low/Low	Low/Low	Low
Railroad	N/A	—	—	—	—
Other	N/A	—	—	—	—

Table 9. Outcomes and Mitigation Activities

Discussion
Minor effort may be required to update environmental document due to change in scope.
Preparation of 100% plans underway.
Preparation of 100% plans underway.
—
Relocation efforts underway. No additional right of way anticipated due to change in scope.
No additional utility work anticipated due to change in scope.
—
—

## VII. LARGE/SMALL PROJECT REQUIREMENTS

The Project satisfies each of the requirements for eligibility as a large project, as summarized below and discussed at length elsewhere.

1. Does the project generate national or regional economic, mobility or safety benefits?

Yes. Within the Project area, Interstate 30 currently serves more than 50,000 passenger vehicles and 10,000 trucks per day. Volumes are projected to increase significantly over the next two decades. Approximately 20 percent of weekday passenger car traffic is attributable to work commutes, and more than \$35 billion worth of freight flows through the Project area each year. The Project will reduce congestion on Interstate 30 by adding capacity at a bottleneck, as well as make geometric and access improvements along the route. As a result, operations on Interstate 30 will be safer and more efficient. For more information, see Section V.

2. Is the project cost effective?

Yes. The benefit-cost ratio for the Project is expected to be between 1.14 and 1.94 (assuming discount ratios of seven percent and three percent, respectively). For more information, see Section V and *Appendix E1* and *Appendix E2*.

3. Does the project contribute to one or more of the Goals listed under 23 USC 150?

Yes. The Project will:

- Improve traffic **safety** through congestion reduction and geometric and access improvements;
- Return the length of the facility to a **state of good repair**;
- Reduce **congestion** by adding capacity;
- Improve **system reliability** by reducing recurring congestion and non-recurring congestion (particularly due to traffic incidents);
- Improve **freight movement** and promote **economic vitality** by reducing congestion along a busy freight corridor;
- Respect the built and natural **environment** by being constructed almost entirely within existing right-of-way (thereby minimizing impacts on existing development) and implementing appropriate environmental mitigation; and
- Expedite **project delivery** by using A+C bidding.

For more information, see Section V.

4. Is the project based on the results of preliminary engineering?

Yes. The environmental review process is nearing completion, and a Tier 3 Categorical Exclusion has been approved. The Federal Highway Administration (FHWA) accepted the access modifications proposed in the Interchange Justification Report from an engineering and operational standpoint, with final approval pending environmental clearances and final design. Preparation of 100% plans is underway. Recent changes to the scope of the Project are not expected to significantly impact the environmental or interchange-access approvals, result in any additional right-of-way acquisition or utility relocation, or impact the proposed Project budget or schedule. For more information, see Section VI.

- 5a. With respect to non-federal financial commitments, does the project have one or more stable and dependable funding sources to construct, maintain, and operate the project?

Yes. The State match for the Project is derived from a dedicated sales tax. Funds for maintenance and operations derive from annual Federal-aid and State revenue streams. For more information, see Section IV.

- 5b. Are contingency amounts available to cover unanticipated cost increases?

Yes. Appropriate contingency amounts are included in line item budget figures in lieu of a separate cost classification.

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?

Yes. As discussed in Section IV, this Project is one of several large projects financed by the CAP. The revenues generated by the CAP are considerable, and ARDOT and the CAP manager have taken appropriate steps to manage project risk and cash-flows limitations. However, the Project has experienced some cost escalation and necessary scope expansion that threaten the delivery of the Project. Receipt of INFRA funds will allow the Project to proceed to construction without delay or scope reduction.

7. Is the project reasonably expected to begin construction not later than 18 months after the date of obligation of funds for the project?

Yes. Under the proposed schedule, the letting of the Project would be by October 2018, and construction would start in late 2018 or early 2019, weather permitting. For more information, see Section VI.