



AMERICA'S RIVER CROSSING

Bridge Investment Program (BIP)
Large Bridge Grant Application
Supplemental Information

March 18, 2024



United States Secretary of Transportation Pete Buttigieg:



"I appreciated the chance to see the Hernando de Soto Bridge firsthand, and to learn more about the work to make it safe for use once again. As our national conversation about infrastructure and safety continues, I'll carry the stories I heard in Memphis with me. It's an important reminder to my team and me that the work of the U.S. Department of Transportation has a real, lasting impact on the lives and livelihoods of Americans in Memphis, and in communities across the nation."

—United States Secretary of Transportation Pete Buttigieg, 6/3/21

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I. INTRODUCTION

The Tennessee Department of Transportation (TDOT), in partnership with the Arkansas Department of Transportation (ARDOT), submitted a Bridge Investment Program (BIP) – Large Bridge grant application on December 4, 2023, for the America's River Crossing Project, which will replace the existing I-55 bridge over the Mississippi River connecting Memphis, Tennessee, and West Memphis, Arkansas. This document is being submitted as a supplement to the December 2023 grant application, in response to the preliminary assessment by FHWA of the Project's Merit Criteria, Economic Analysis, and Project Readiness.

II. MERIT CRITERIA

State of Good Repair

Requirement: The application provides verifiable evidence that demonstrates the project is consistent with the objectives of an asset management plan.

The America's River Crossing Project is directly consistent with the objectives of both the TDOT and ARDOT Transportation Asset Management Plans (TAMPs) because it replaces a bridge that is structurally deficient; anticipated to deteriorate into poor condition (as reported in the National Bridge Inventory (NBI) data); and cannot be rehabilitated nor maintained in a state of good repair. The evidence for this consistency can be found in TDOT's [TAMP](#) and ARDOT's [TAMP](#). The America's River Crossing Project directly supports ARDOT's goals and objectives of Safety and Security; Infrastructure Condition; Congestion Reduction, Mobility, and System Reliability; and Economic Competitiveness as articulated in the [TAMP](#) (pages 1-4), as well as TDOT's mission of providing "a safe and reliable transportation system that supports economic growth and quality of life." TDOT's Vision, Mission, Values and Operational Goals set the context for the TAMP's efforts and align with the fundamental principles of asset management: "data-driven, a strong emphasis on safety, and methods to sustain the infrastructure" ([TAMP](#), page 6). The new replacement bridge will be maintained in a state of good repair upon completion as described in our December 2023 BIP Large Bridge grant application.

The construction of the America's River Crossing Project is expected to have significant impacts on both TDOT's and ARDOT's TAMP bridge condition values. Bridge condition in both states is measured by the deck area that is in good, fair, or poor condition. The current NBI data indicates that the existing I-55 bridge is in fair

condition. An illustrative analysis of how the America’s River Crossing Project impacts the bridge condition ratings within both TDOT’s and ARDOT’s TAMPs was conducted to compare how the overall bridge condition in both states would be impacted under No-Build and Build scenarios for the America’s River Crossing Project. Note that this analysis assumes no changes in the condition of other National Highway System (NHS) Interstate bridges in order to isolate the impact of the I-55 bridge on current bridge condition.

Under the No-Build scenario, the existing I-55 bridge degrades from fair to poor condition; under the Build scenario, the bridge replacement improves the condition from fair to good. Table II-1 and Table II-2 summarize the results of this analysis for TDOT and ARDOT, respectively. In summary, replacing the current bridge would improve the percentage of bridges in good condition by 1.3% in Tennessee and by 1.6% in Arkansas.

Table II-1: TDOT Bridge Condition, Based on 2021 NHS Interstate Bridge Condition*

Bridge Condition	Baseline	No-Build	Build
POOR	3%	4.3%	3%
FAIR	66%	64.7%	64.7%
GOOD	31%	31%	32.3%

* For illustrative purpose. Assumes condition for all other bridges remains constant.

Table II-2: ARDOT Bridge Condition, Based on 2020 NHS Interstate Bridge Condition*

Bridge Condition	Baseline	No-Build	Build
POOR	2.7%	4.3%	2.7%
FAIR	62%	60.4%	60.4%
GOOD	35.3%	35.3%	36.9%

* For illustrative purpose. Assumes condition for all other bridges remains constant. Only for NHS Interstate bridges. The ARDOT TAMP combines all NHS Interstate and non-Interstate bridges.

A change to the bridge condition at this level, while it may appear small, is significant under this scenario of replacing the existing I-55 bridge, with all else remaining constant. The TDOT TAMP forecasts the share of bridges in good condition for NHS Interstate Bridge to remain at about 31% over the next decade at the current level of investment (TAMP, Figure 7-8), without the America’s River Crossing Project. Changes to the percent of bridge deck area in good or poor condition over that 10-year period is anticipated to change at most, by only a few tenths of a percentage point each year under the baseline condition. While a change in condition from fair to poor will not impact the bridge condition targets for Interstate bridges (TN: Good > 32% and Poor < 6% | AR: Good > 39% and Poor <

6%), a change of this magnitude from fair to good will allow TDOT to meet its target for bridges in good condition. In addition, replacing the existing I-55 bridge could free up resources that otherwise would be required to maintain the existing I-55 bridge and reallocate them to improve the condition of other bridges in both Tennessee and Arkansas.

According to both State's TAMP, the 10-year budget for all bridges (for construction/reconstruction, maintenance, preservation, and rehabilitation on NHS and non-NHS bridges) is estimated at \$1.65 billion for TDOT ([TAMP](#), Table 7-4) and \$1.37 billion for ARDOT ([TAMP](#), page ES-6). Of that funding, TDOT has budgeted about \$1 billion for reconstruction and ARDOT has budgeted \$282 million. At that level of funding, both TDOT and ARDOT would not be able to fully fund the I-55 bridge replacement, at an estimated cost of \$787.5 million, without deferring other bridge needs and significantly impacting the overall bridge condition.

Safety and Mobility

Requirement: Demonstrate how the project will protect motorized and non-motorized travelers or communities from safety risks including improvements to, the addition of, or continuation of, safety features.

The America's River Crossing Project will provide improved and additional safety features to protect motorized and non-motorized travelers.

Safety for Motorized Travelers

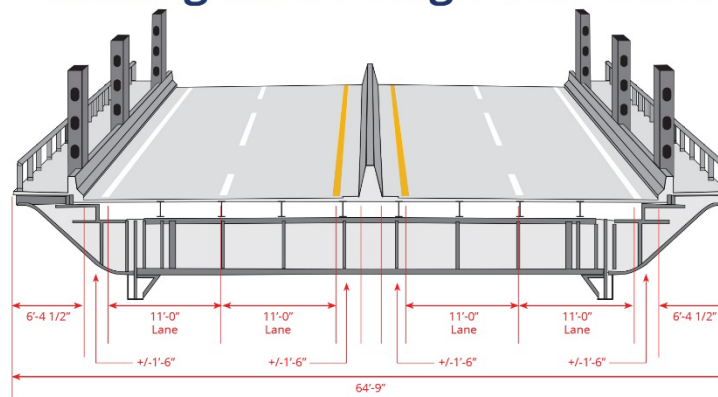
Figure II-1 shows the existing cross-section of the I-55 bridge and the proposed cross-section of the America's River Crossing Project. Currently, the corridor provides two 10-foot travel lanes in each direction, with less than 2-foot shoulders on either side of the roadway in both directions of travel and a concrete divider, contributing to the high number of crashes on the existing I-55 bridge. The bridge replacement will benefit tremendously from updated, current design criteria and guidelines. These improvements will enhance the interstate and bridge performance by modifying the roadway, such as adding auxiliary lanes between the E.H. Crump Interchange in Memphis and the Bridgeport Road Interchange in West Memphis, that will improve operations and significantly reduce weaving and merging-involved collisions. This will be further augmented by addressing needed changes to the geometric configuration and physical characteristics of the roadway to improve safety performance. Additionally, the 12-foot shoulders will be utilized for temporary relief during lengthy travel-time delays due to incidents and

emergency events. The proposed bridge and roadway design includes the following listed upgrades for added safety and mobility benefits:

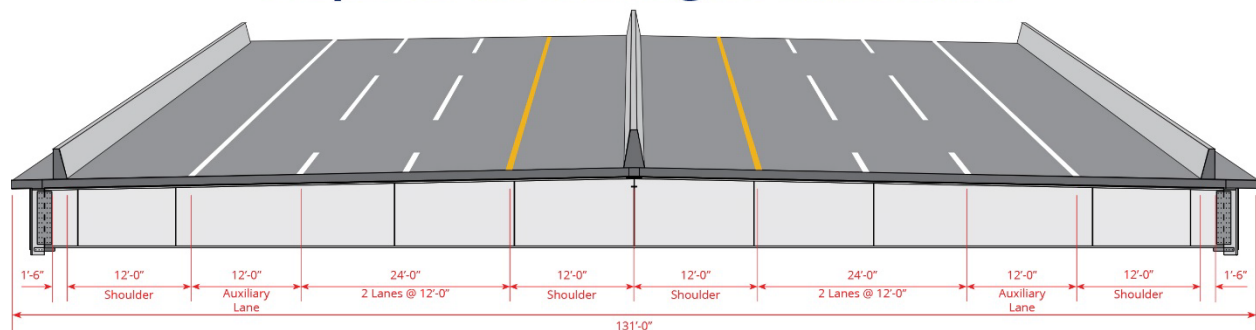
Protection from Safety Risks
Two 12-foot travel lanes in both directions.
Two 12-foot shoulders (one inside and one outside) in both directions.
One outside 12-foot auxiliary lane in each direction.
Center concrete median barrier parapet railing.
Overhead signs will be installed using the arrow per lane designation. This will result in increased driver awareness and compliance with national standards on signing.

Figure II-1: Existing and Proposed Cross-Section

Existing River Bridge Deck Section



Proposed River Bridge Deck Section



Additional Key Safety Features:

- The shoulders and auxiliary lanes will allow for safer inspection and maintenance activities, further improving the existing operations, which require a lane closure with no lateral work zone buffer (see Figure II-2).

- Full width left-hand shoulders will be provided, which have shown to reduce fatal crashes by 7-17% and injury crashes by up to 2%, according to a study in Illinois ([*Research on left-hand shoulder width of super multilane highway based on PTSU operation, June 23, 2023, Page 3*](#)).
- [Auxiliary lanes](#) will be leveraged to balance the traffic load and maintain a more uniform level of service on the highway.
- Upgraded bridge [lighting](#) will be installed.
- The new bridge will be built adjacent to the existing bridge, which will optimize worker safety during construction while also minimizing traffic disruptions to the tie-in points.
- Bridge piers will be designed to resist the full dynamic effect of vessel allision in accordance with AASHTO LRFD Bridge Design Specifications without the need for fenders, dolphins or other protective measures which may present an obstruction to navigation.
- Traffic rails will be crash tested and conform to MASH TL-4 or TL-5

Figure II-2: Routine Maintenance on the I-55 Bridge in August 2022



Safety for Non-Motorized Travelers

Pedestrian and non-motorized vehicles are currently prohibited on the existing I-55 bridge (even though there is a sidewalk on both directions of travel) as shown in Figure II-3 (see Appendix A for full resolution). In 2016, a significant public-private investment was made by providing a non-motorized connection across the Mississippi River adjacent to the existing I-55 bridge (known as the [Big River Crossing](#)). As part of the America's River Crossing Project, TDOT and ARDOT are currently in the process of exploring the feasibility of expanding the existing shared-use path, connecting non-motorized travelers in the project area through

Memphis and West Memphis to jobs, parks, and recreation, as well as improving connections to the Big River Crossing, which is parallel to I-55.

There are currently two shared-use path alternatives being considered as part of the America's River Crossing Project that would significantly increase non-motorized accessibility and safety on the Tennessee side of the Mississippi River, both of which will be fully vetted through open community engagement during the project development process. Both options propose eliminating the existing sidewalk along the bridge to prevent pedestrians from traveling in such uncomfortable and unsafe conditions.

Figure II-3: Existing Multimodal Network near I-55 bridge (Memphis side)



Figure II-4 and Figure II-5 (see Appendix A for full resolution) display two options for providing an unobstructed non-motorized connection. The proposed extension (Figure II-4) of the shared-use path serves as a vital connection from north to south along the Tennessee side of the Mississippi River. This connection not only enhances accessibility to the Big River Crossing, parks, and recreation, but also provides essential access to considerable employment opportunities in the downtown Memphis area. Figure II-5 outlines a slightly different approach: a new

shared-use path extending underneath I-55 and the railroad, connecting Alston Ave to Virginia Ave, south to north. Both proposed multimodal connectivity options will greatly improve access, safety, and reduce travel time for non-motorized travelers.

Figure II-4: Proposed Multimodal Network (Option 1)

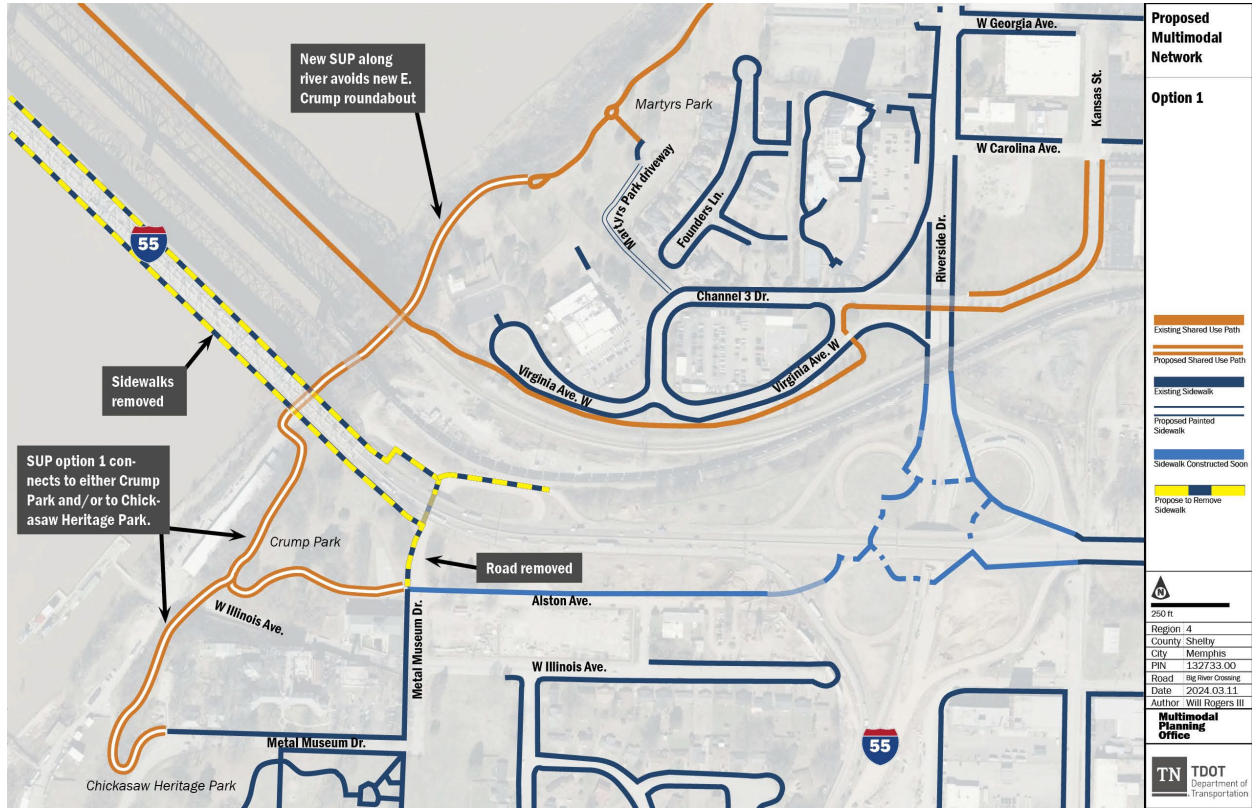
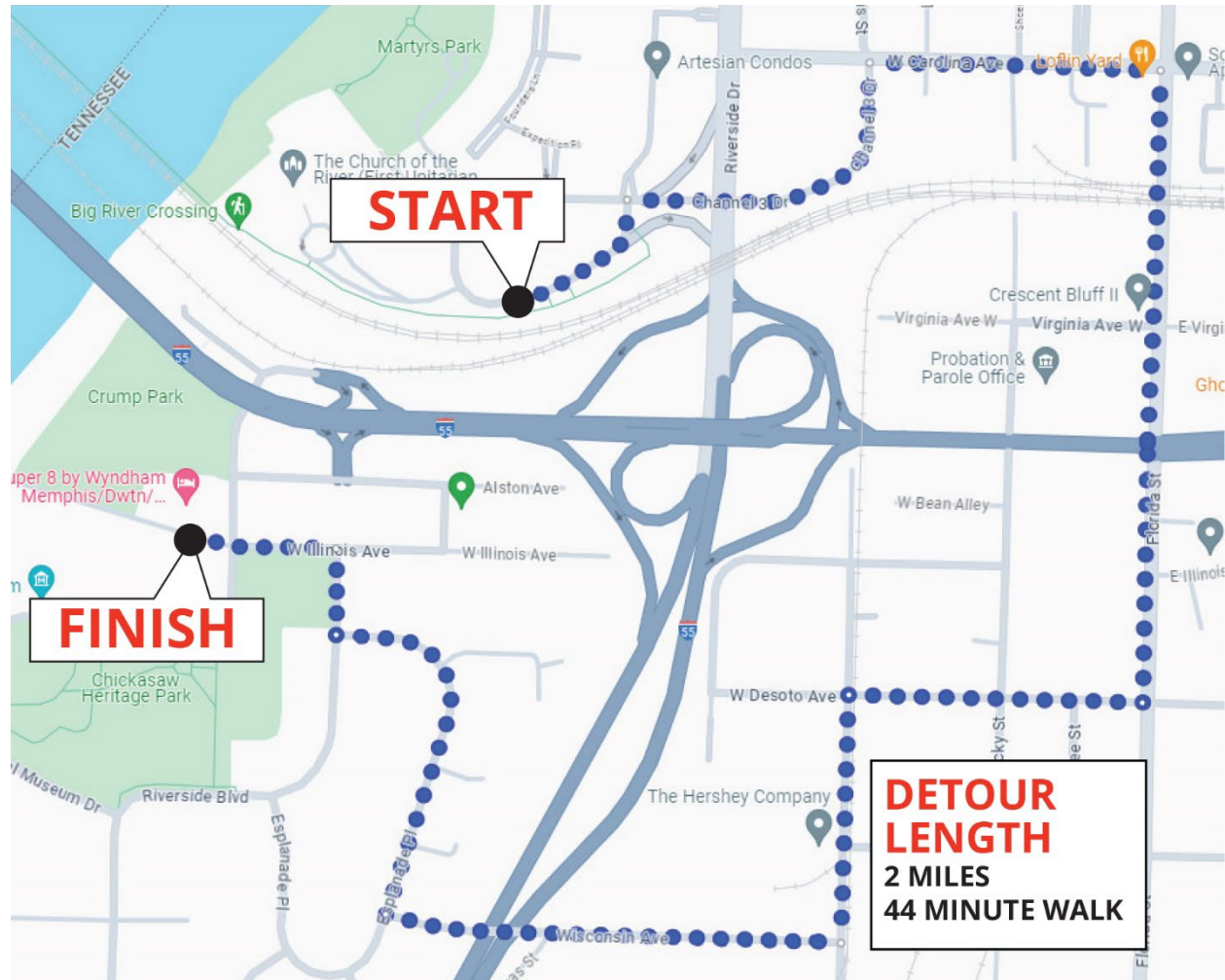


Figure II-5: Proposed Multimodal Network (Option 2)



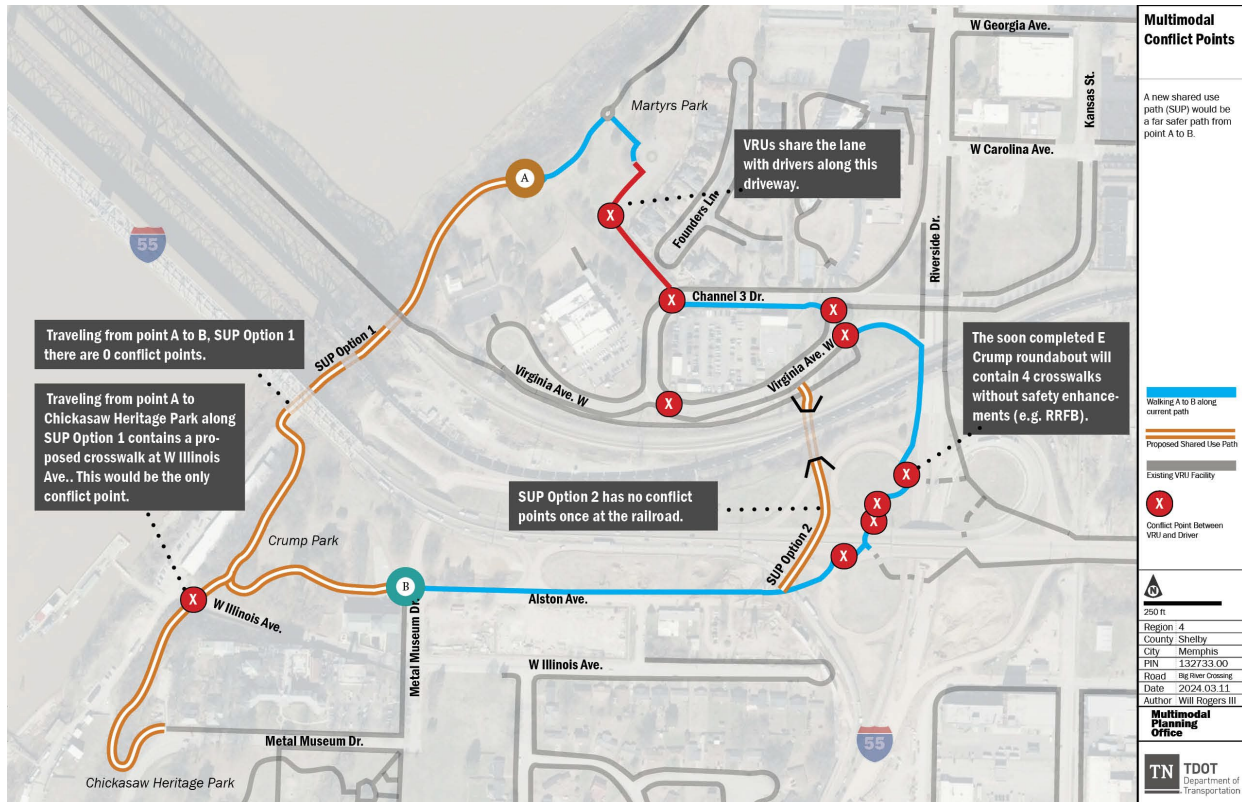
Without this vital connection, individuals are prevented from making safe and accessible non-motorized trips as the I-55 corridor is a barrier to such travel. As illustrated in Figure II-6, today a non-motorized trip would take over 40 minutes and require an individual to walk about 2 miles in comparison to an approximate 0.3-mile walk trip that would take less than 10 minutes.

Figure II-6: Illustrative Non-Motorized Trip



While the construction of the new I-55 Interchange at Crump Boulevard (scheduled to be open in 2025) will be replacing the existing cloverleaf interchange with a roundabout intersection, providing improved access to and from I-55 and existing local roadways, non-motorized travel will still have to navigate considerably high vehicular traffic at the roundabout. A shared-use path as part of the America's River Crossing Project would greatly reduce non-motorized user exposure to vehicular traffic. As shown in Figure II-7 (see Appendix B for full resolution), a shared-use path could reduce non-motorized user exposure to vehicular traffic from eight conflict points to as few as one conflict point (or four conflict points under the second option).

Figure II-7: Multimodal Conflict Points



TDOT and ARDOT are fully committed to increasing non-motorized accommodations within the project area – enhancing accessibility, safety, and transportation choices that support a Safe Systems Approach as part of the America’s River Crossing Project. Both TDOT and ArDOT recognize there will likely be the need for additional pedestrian and bicycle provisions on both the Arkansas and Tennessee sides of the Mississippi River, improving safety and connectivity of non-motorized accommodations between the Big River Crossing, the Big River Trail, shared-use paths, area parks, neighborhoods, and other roadways associated with the America’s River Crossing Project. FHWA’s [Proven Safety Countermeasures](#) provide a collection of countermeasures and strategies effective in reducing roadway fatalities and serious injuries. These countermeasures will be considered in the project development process to address existing safety locations and enhance safe access for non-motorized users within the project area. FHWA Proven Safety Countermeasures that may be employed include crosswalk visibility enhancements, median and pedestrian refuge islands, leading pedestrian intervals at signalized intersections, and the use of rectangular flashing beacons (RRFBs).

As described in our December 2023 BIP Large Bridge grant application, the project supports the [National Roadway Safety Strategy \(NRSS\) Safe System Approach](#) and will integrate all the Safe Systems Approach elements into its development, design, maintenance, and operations - protecting both motorized and non-motorized travelers as part of the America's River Crossing Project.

Economic Competitiveness and Opportunity

Requirement: Describe actions an applicant has considered to support the Economic Competitiveness and Opportunity criterion during the development of the project and how the project supports the creation of good-paying jobs directly related to the project and equitable access to those jobs, which could include, for example, a free and fair choice to join a union, the expansion of training programs, and the incorporation of strong labor standards which could include strategies such as targeted hiring preferences for bringing in and retention of historically underrepresented workers into the workforce that will result in hiring and retention of historically underrepresented groups into good-paying jobs.

Receipt of federal funds for the America's River Crossing Project would mean that the City of Memphis, which is currently the nation's largest Minority Majority city with a total population of 630,027 and an African American population of 405,463, which is 64.4% of the total City population¹ will benefit greatly with improved mobility and job opportunities. According to the 2020 US Census, the Memphis, TN-AR-MS Metropolitan Statistical Area (MSA) had the highest share of African Americans (45.8 %) of any MSA in the United States, with a population of over one million. 612,104 African Americans lived in the Memphis, TN-AR-MS MSA in 2020 out of a total population of 1,337,779.

A significant effort would be made to recruit, hire, train, retain and promote local community workforce from this diverse City and region. Between 2026-2030, construction of the America's River Crossing Project will support an estimated 1,845 jobs per year. This includes about 1,250 jobs in construction and demolition, design and engineering, and equipment leasing, as well as in concrete, steel, and other manufacturing. The total also includes approximately 590 jobs at local restaurants, retail stores, and other businesses that will benefit from spending by the workers supporting the Project's construction.²

¹ Source: US Census Bureau, American Community Survey, 2022.

² Based on an analysis using 2021 RIMS II multipliers for the Memphis Metropolitan Statistical Area. RIMS II multipliers are developed by the U.S. Bureau of Economic Analysis.

The America's River Crossing Project represents an opportunity not only to demonstrate how significant investment is needed in our nation's transportation system but also how specific transportation investments like the America's River Crossing Project can improve access to good-paying jobs, foster the inclusion of populations that are underrepresented in the infrastructure workforce, and support long-term economic opportunities for historically underrepresented groups through targeted efforts to create a needed workforce in the transportation and construction industry.

TDOT and ARDOT have a long history of advancing and promoting the hiring and retention of historically underrepresented groups of workers and small and disadvantaged businesses in highway construction and the workforce. The agencies have continued to advance these practices through well-established [Small Business Development / Disadvantaged Business Enterprise \(DBE\)](#) programs and commitments through programs, policies, and procedures in Equal Employment Opportunity (EEO) and Affirmative Action (AA).

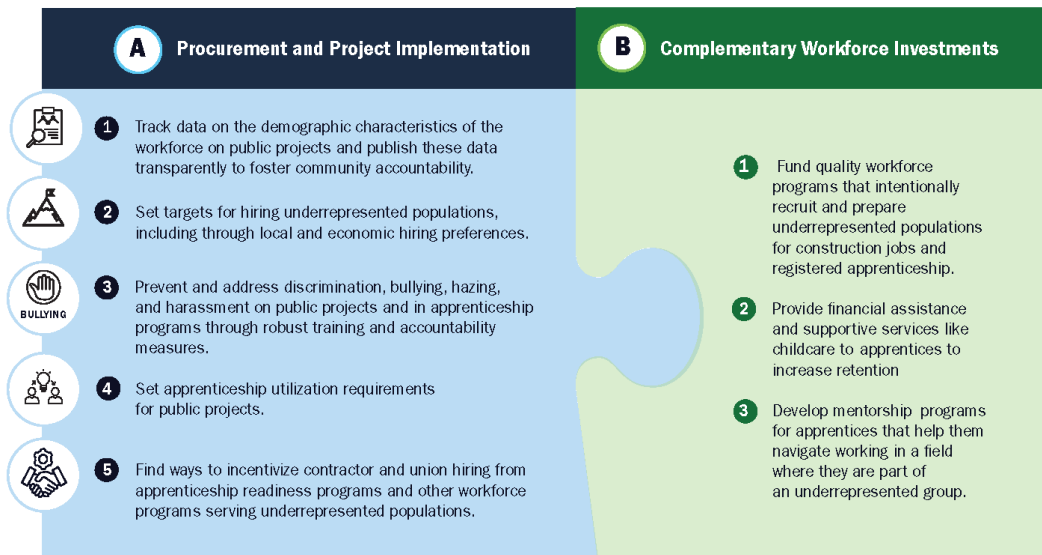
For certified DBEs, both TDOT and ARDOT offer in-depth training to these entities on bidding and estimating, job cost accounting and pricing, financial planning and budgeting, and assistance with how to work/contract on transportation projects. TDOT and ARDOT also offer business development services assisting with business plans, marketing plans, capability statements, and much more. TDOT and ARDOT also conduct outreach meetings throughout our respective states to inform and educate potential DBEs of highway construction projects, ensuring that qualified DBEs who are ready, willing, and able to work on TDOT and ARDOT projects are continuously recruited to meet project goals.

Our agencies are committed to meeting or exceeding the requirements of the Build America, Buy America Act, the Davis-Bacon Act, Executive orders (including 11246, 12898, 13166, 13985, 14005, 14008, 14025, and 14053), Presidential Policy Directive 21, the Americans with Disabilities Act (ADA), Title VI and Title VII of the Civil Rights Act of 1964 requirements, and other applicable Federal procurement, compliance, reporting, and assessment requirements on the America's River Crossing Project.

USDOT's report entitled, [Investing in America: Best Practices to Expand Access to Jobs and Economic Opportunity Through Transportation Infrastructure Investments \(2024\)](#), details barriers for underrepresented populations to access construction jobs, and provides recommendations for states and local jurisdictions to expand access to

jobs in the construction workforce. The report lists two sets of strategies for increasing diversity of the construction workforce to expand economic opportunity as they implement construction projects. Figure II-8 separates recommendations into those that must be implemented through the procurement process by a transportation entity and those that can be implemented as complementary workforce policies.

Figure II-8: Recommendations for Transportation Agencies to Enhance Construction Workforce Diversity



Source: [Investing in America \(transportation.gov\)](https://www.transportation.gov/investing-in-america)

TDOT and ARDOT have both reviewed our respective Affirmative Action/EEO policies and construction provisions and feel the America’s River Crossing Project, given the demographics and number of certified businesses within its geographic area, align well with achieving the recommendations stated in USDOT’s *Investing in America* report. Both TDOT and ARDOT have a goal of 6.9% for female participation in each trade statewide, and a goal of 32.3% for minority participation for each trade (given the project is located in Shelby County, Tennessee, and Crittenden County, Arkansas, which have the same participation goal based on county level representation of the labor force). It is important to note that these minority participation percentages are significantly higher than other portions of Tennessee and Arkansas and highlight the opportunities the America’s River Crossing Project offers in good-paying jobs and equitable access to those jobs.

Additionally, TDOT and ARDOT have reviewed our respective on-the-job training program requirements and minimum wage scales (for both Federal-aid contracts and for state funded contracts). Given that the America's River Crossing Project will include state funds, Tennessee will include the Tennessee minimum wage scales in addition to the USDOL Davis-Bacon minimum wage scale, and Tennessee's contract provisions ([SP1320](#)) which require the contractor to pay the greater of the two (2) rates for each classification. It is important to note, [Tennessee's minimum wage scales](#) are significantly higher than the [Federal minimum wage rate](#) for these same classifications, furthering the opportunity to promote good-paying jobs.

Prior to the passage of the Infrastructure Investment and Jobs Act (IIJA), state and local agencies had to seek special approval from USDOT for use of local, geographic, or economic hiring preferences. Since enactment of the IIJA, the USDOT has been actively encouraging state and local agencies to use local, geographic, or economic hiring preferences in an effort to bring underrepresented populations into the construction workforce. Section 25019 of the IIJA allows grant recipients and subrecipients to include hiring preferences of a geographic or economic nature in any solicitation for a contract bid or in pre-hire agreements (such as project labor agreements (PLAs)) if they comply with state and local laws and procedures. TDOT and ARDOT will fully explore hiring preferences in the America's River Crossing Project as a way to bring underrepresented populations into the construction workforce.

Furthermore, there are numerous organizations with whom TDOT and ARDOT have partnered on the America's River Crossing Project that are already involved locally in workforce development and training. TDOT and ARDOT will fully engage these organizations in our workforce development, recruitment, and training for the America's River Crossing Project not only to meet the goals for this project, but also to create opportunities for the expansion of our programs and practices. Through these efforts, TDOT and ARDOT are confident that such an approach will create long lasting jobs and careers that can add to the economies of these communities, the states of Tennessee and Arkansas, and our Nation.

TDOT and ARDOT are fully committed to supporting and advancing good-paying jobs; hiring and retaining historically underrepresented groups of workers; applying local and economic hiring preferences; and investing in high-quality workforce development programs as part of the America's River Crossing Project. TDOT and ARDOT are committed to exploring opportunities recommended in USDOT's

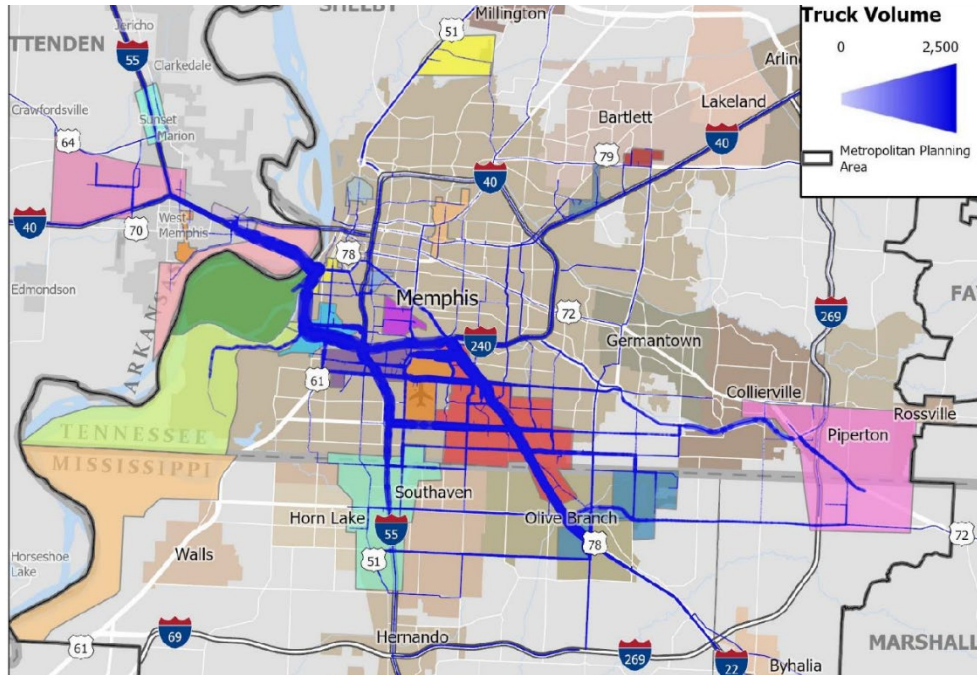
Investing in America report and demonstrating how the America's River Crossing Project can be a model for others in the transportation industry.

Requirement: Provides verifiable data on how the project improves supply chains by reducing congestion and improving travel-time reliability, accounting for current traffic demands and estimated future demands, as a result of addressing current geometric conditions of the bridge and ensuring conditions are sufficient for current and future load and traffic requirements of the regional network, highlighting the increase of the value of freight moving across the project.

As described in our December 2023 BIP Large Bridge grant application, Memphis is a key freight hub for the Mid-South region. As such, benefits on travel-time savings (almost \$500 million in discounted 2022 dollars in the updated BCA) realized with the America's River Crossing Project will have a significant impact on freight movements and logistics in the region. Our December 2023 BIP Large Bridge grant application also highlighted that the existing bridge ranks in the top 10-12% (southbound and northbound, respectively) of Tennessee Interstate bottlenecks. By reducing congestion and improving travel times, the America's River Crossing Project will expand businesses' access to customers, suppliers, and workers, thereby increasing their productivity, sales, and ability to create new jobs. As discussed in our December 2023 BIP Large Bridge grant application, the logistics costs (loss of driver and sales revenue) of closing the I-55 bridge were valued at \$174,413 per day (in 2017 dollars) due to lost trips. This avoided cost will unlock additional revenue and job creation among regional shippers and carriers.

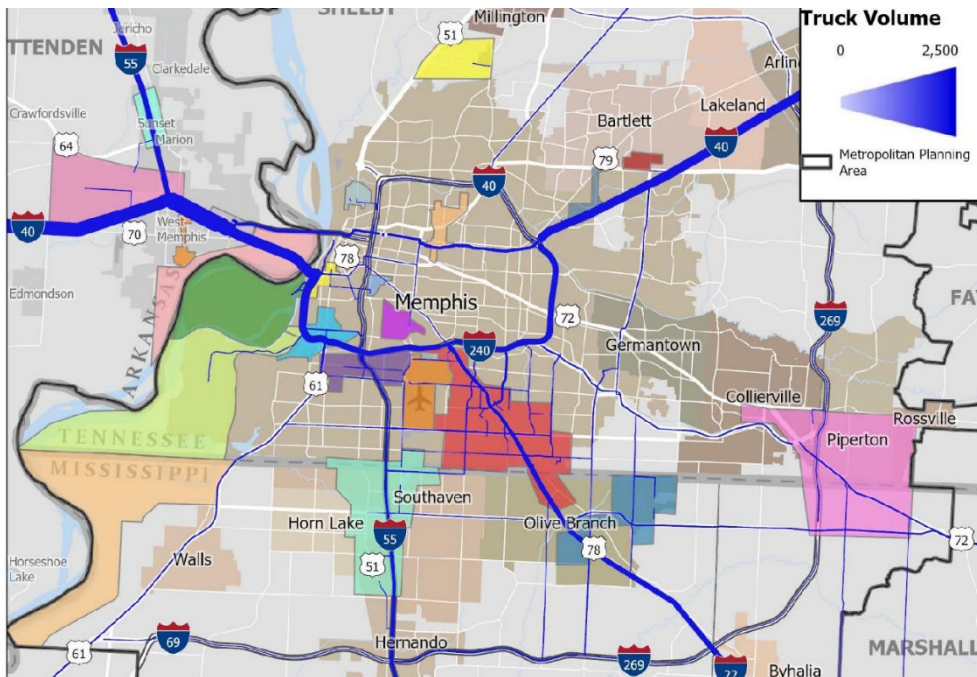
[The Mid-South Freight Flows & Industry Analysis study](#) defined 24 freight clusters that include truck terminals, warehouses, wholesale establishments, rail intermodal terminals, ports, and the Memphis International Airport in the Mid-South region. Many of these freight clusters are located in South Memphis. In 2021, these freight clusters generated over 70,000 truck trips, which is about 30% of all trips in the region. Based on analysis of Replica data, the study shows that a significant share of the trips between freight clusters (Figure II-9) and from the freight clusters to regions outside the Mid-South (Figure II-10) use the existing I-55 bridge, with I-55 being one of the primary roads used to access freight clusters and other freight facilities in the region.

Figure II-9: Daily Truck Volumes of Trips Between Clusters



Source: [Mid-South Freight Flows & Industry Analysis](#) (2023), Figure 3-15, based on analysis of Replica Data

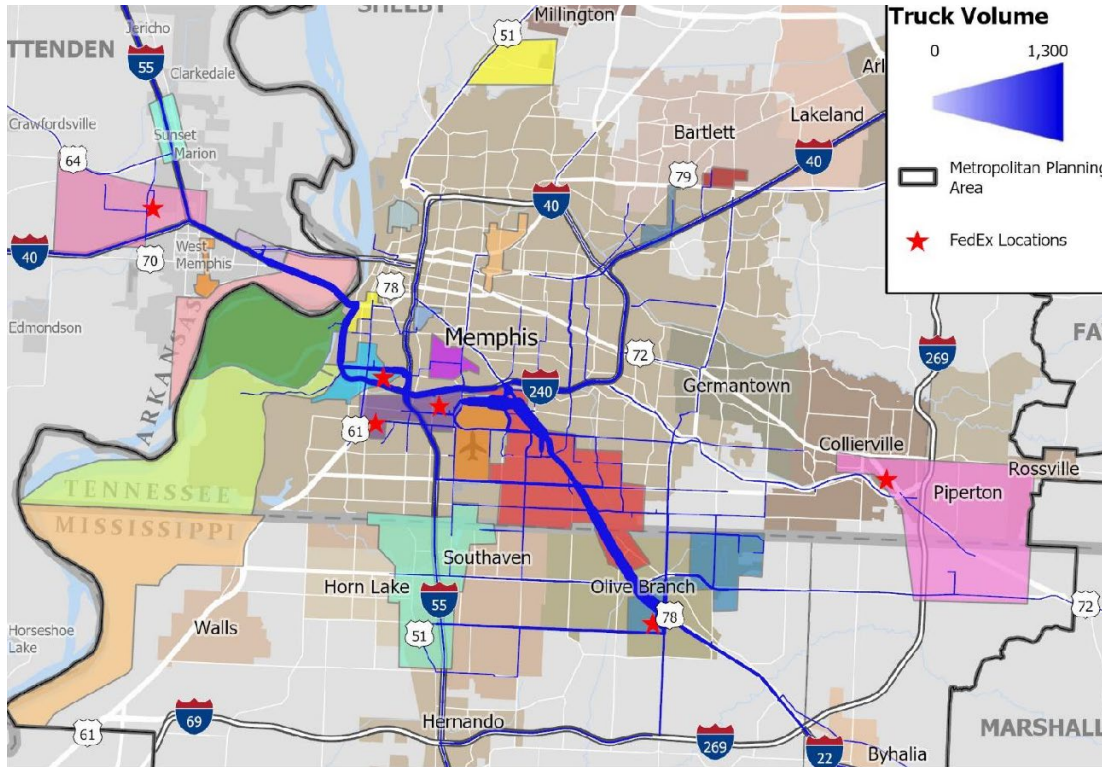
Figure II-10: Daily Truck Volumes of Trips from Freight Clusters to Regions Outside the Mid-South



Source: [Mid-South Freight Flows & Industry Analysis](#) (2023), Figure 3-16, based on analysis of Replica Data

Another key factor to these freight clusters and freight flows is the fact that Memphis is home to the headquarters of FedEx Corporation, FedEx Express, FedEx Freight, FedEx Dataworks, and FedEx Logistics. FedEx is the largest employer in the Memphis area and one of the most important logistics firms in the region. FedEx's Memphis World Hub, located at the Memphis International Airport, is the busiest airport in the United States by landed weight in 2020, and the second busiest cargo airport in the world. FedEx operates over 400 flight operations per day, and their facility can process over 484,000 packages per hour. In addition to the airport operation, there are many off-airport locations that support and complement FedEx's airport operation. Using Replica data, the Mid-South Freight Flows & Industry Analysis study identified the roads that are used by trucks visiting these FedEx facilities. As can be seen in Figure II-11, Lamar Avenue is the road most used by trucks leaving FedEx facilities, primarily because the large FedEx Ground facility located in Olive Branch off Lamar Avenue, and the significant amount of truck activity leaving FedEx facilities at Memphis International Airport heading on Lamar Avenue. I-55 and I-240 also carry a large amount of FedEx traffic as they link the two FedEx facilities previously mentioned, as well as to Arkansas to the west over the I-55 bridge and to the areas east of Memphis. Because of the nature of FedEx operations and the time sensitivity of the cargo, ensuring that these roadways have fast and reliable operations is critical for FedEx.

Figure II-11: Daily Truck Volumes Serving Major FedEx Facilities



Source: [Mid-South Freight Flows & Industry Analysis](#) (2023), Figure 3-23, based on analysis of Replica Data

A significant addition to freight movements in the region that will increase in the next two-years is the opening of the [Ford Motor Plant at BlueOval City](#), which is scheduled to be operational in 2025. BlueOval City is a \$5.6 billion automotive manufacturing and assembly complex under construction near Stanton, Tennessee, which is approximately 40 miles east of Memphis. BlueOval City will be operated by Ford Motor Company and SK Innovation. It will primarily consist of an automotive assembly plant to produce electric pickup trucks and a plant to manufacture electric vehicle batteries, as well as a battery recycling facility, suppliers, and a training center. Total employment at the two plants is expected to reach 6,000. On the freight movement side, Ford estimates that an average of approximately 3,280 trucks per day, round trip, Monday–Friday, will enter or exit the BlueOval City campus.³ Ford estimates approximately 30%, or 984 of the 3,280 trucks, are projected to cross the Mississippi River in Memphis. These trucks will have as their origin or destination other Ford facilities and suppliers located West of the Mississippi River, which will be serving the BlueOval City campus.

³ Kyle Klein, Ford Motor Company Material Planning and Logistics, Material Flow Engineering Supervisor.

The 2023 [Targeted Approach for Crossing the Mississippi River study](#) found that commercial trucks comprise over 40% of total crossings on the existing I-55 bridge. By 2050, the number of daily truck crossings is expected to reach 23,400, an increase of 14.7% over the 2022 level. The America's River Crossing Project will enhance the efficiency of the critical supply chain network throughout the region and Nation.

Requirement: Provides data on the national or regional economic benefits that are anticipated as a result of the project by supporting a strong economy and labor market.

The America's River Crossing Project will support a regional economy that has seen over \$11.1 billion in private-sector capital investment since 2019.⁴ During this period, over 160 projects and 23,000 jobs have been committed in West Tennessee, which includes Greater Memphis. Over \$6.6 billion of the private-sector investment between 2019-2024 has been in the automotive sector, with an additional \$1.7 billion in transportation, distribution, and logistics. The development of both these industries is critically dependent on a reliable river crossing, particularly as shipments of lithium from the Smackover Formation in southern Arkansas to battery manufacturers in Tennessee increase with the growth of the electric vehicle industry.

The America's River Crossing Project will also support a significant number of commuters who cross the Mississippi River. There are about 3,900 daily work-related vehicle trips from Arkansas into Tennessee that utilize the existing I-55 bridge.⁵ There are another 1,750 daily work-related trips from Tennessee into Arkansas that use the bridge. Job access is particularly important for workers in Crittenden County, Arkansas, and Shelby County, Tennessee, which are connected by the existing bridge.

Equity and Quality of Life

Requirement: The application provides verifiable evidence that demonstrates the project has or will engage Historically Disadvantaged Communities or populations, or Areas of Persistent Poverty with effective public participation that is accessible to all persons regardless of race, color, national origin, disability, age, and sex and taking into account

⁴ Business Development Project Activity, Tennessee Department of Economic and Community Development, <https://www.tn.gov/transparenttn/state-financial-overview/open-eed/openecd/tnecd-performance-metrics/openecd-business-development-quick-stats/new-job-commitments.html>.

⁵ Replica analysis.

consideration of such input in the planning, development, and implementation of the project decision-making process.

A [Public Involvement Plan](#) was developed and published in December 2023, and is currently under review and being updated to expand on the strategies for public engagement, including engagement with Environmental Justice communities (which encompass Historically Disadvantaged Communities and Areas of Persistent Poverty) near the America's River Crossing Project. The overall public involvement strategy for the America's River Crossing Project aims to ensure effective communication and engagement throughout the proposed project development process, considering diverse populations and their communication preferences. Key points of the strategy include providing clear and timely information, targeting historically disadvantaged communities through various communication methods, utilizing digital tools for populations who have digital preferences, and employing the use of communication methods such as printed flyers, neighborhood posters, and in-person community meetings for minority, low-income, or older communities.

The strategy also involves translated materials; distributing printed newsletters to specific communities who might not have internet access; and offering paper surveys accessible through various community locations. Informational materials, such as flyers and fact sheets, will be delivered to property owners and businesses, with emphasis on areas where digital access may be limited. The use of flyer boxes in high-traffic locations and media releases to major outlets further expands outreach, especially for populations with limited internet access. Additionally, the strategy includes targeted engagement efforts, accommodating diverse needs, ensuring ADA compliance, and involving stakeholders for broader community reach. Throughout the project life cycle, TDOT and ARDOT are committed to tailoring outreach to promote equal access and participation for all populations, recognizing potential impacts beyond just the immediate America's River Crossing Project Area.

To ensure effective Environmental Justice (EJ) community outreach, a specific comprehensive EJ Community Outreach Strategy will be employed as a vital element of the public involvement and engagement plan for the America's River Crossing Project. This strategy aims to facilitate full and equitable participation for communities potentially impacted by the project's decisions. The approach involves various components, such as data collection through location mapping to identify suitable meeting places, collaboration with stakeholders, local planners, organizations, TDOT and ARDOT staff, elected officials, and engagement with

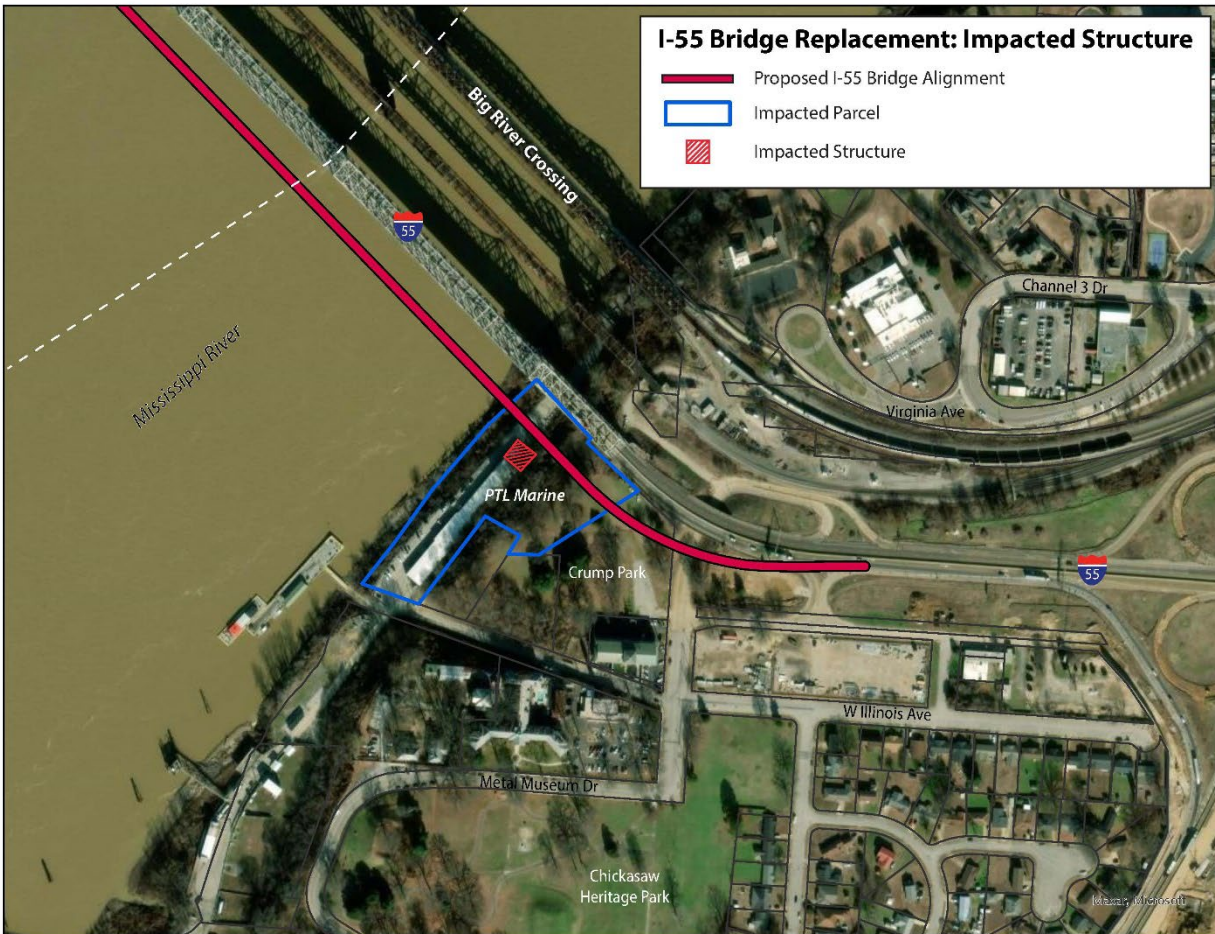
residents near the proposed America's River Crossing Project. Recognizing limited internet access for certain populations, in addition to a project website, various tactics will be employed to reach these communities, including working with local agencies, hosting pop-up meetings at local events, participating in and organizing community meetings, implementing a targeted digital engagement strategy, and offering translation and interpretation services for materials and meetings as needed. This multifaceted approach ensures outreach is tailored to the needs and accessibility of Environmental Justice communities.

Several meetings have already been tentatively scheduled, including one stakeholder meeting on April 4, 2024, and two public meetings to be held in Memphis, Tennessee (April 18, 2024), and West Memphis, Arkansas (April 25, 2024). A public hearing is also tentatively planned for mid-August 2024. A schedule for a social media campaign and press releases to support community outreach is under development.

Requirement: The application demonstrates how the planning and engagement in the project design phase will mitigate and, to the greatest extent possible, prevent physical and economic displacement, as may be required by the project.

The horizontal realignment for the proposed I-55 Bridge replacement was purposely planned and developed, to the greatest extent possible, to prevent physical and economic displacement. No residential displacements are required. No commercial businesses will be displaced. PTL Marine, a marine fuel and supplies provider, located along the eastern shore of the Mississippi River, may have impacts to its northernmost building, as shown in Figure II-12. Those impacts will be mitigated through the right-of-way acquisition process by either compensating the owner for the loss of the structure or compensating the owner for constructing another building elsewhere along its riverfront location.

Figure II-12: Potential Impacts to Commercial Property



Requirement: The project incorporates nonvehicular and/or public transportation into the project, thus increasing affordable transportation choices and expanding active transportation usage or significantly reducing vehicle dependence and provides quantifiable benefits to the quality of life of the users.

Pedestrian and non-motorized access to existing sidewalks along I-55 is prohibited. Even if they were open to non-motorized users, the sidewalks do not provide a safe or enjoyable experience for those walking or biking alongside highway traffic. The proposed bridge and roadway design improvements for the America's River Crossing Project include significant bicycle and pedestrian improvements in the surrounding areas, rather than on the bridge itself. Instead, it will focus on the [Big River Crossing](#), which is a mile-long pedestrian bridge running parallel to the current I-55 bridge from Martyrs Park on the Tennessee side of the Mississippi River to Ducks Unlimited Park on the Arkansas side. On the Tennessee side of the

bridge, cyclists and pedestrians must follow faded painted markers in mixed traffic to get from the Big River Crossing to Martyrs Park. There is an existing shared-use path running along Virginia Avenue from the Big River Crossing, but there is limited infrastructure along the Mississippi River for non-motorists to travel north and south of the I-55 bridge.

To address these concerns, one option for additional bicycle and pedestrian infrastructure surrounding the I-55 bridge would be to build a shared-use path connecting Chickasaw Heritage Park and Crump Park to the south of the I-55 bridge, onward connecting to Martyrs Park in the north (Figure II-4). This would connect to the Martyrs Park parking lot, allowing cyclists and pedestrians to access the Big River Crossing and the shared-use path without having to enter mixed traffic. The second option would be to construct a new, shared-use path between Virginia Avenue and Alston Avenue, with a tunnel under the railroad tracks and bridge over I-55 (Figure II-5). This would allow access to sidewalks on either side of I-55 to access Crump Park and Chickasaw Heritage Park on the south side of the highway, as well as Martyrs Park on the north side, without having to enter mixed traffic. In both options, the sidewalks along the I-55 bridge would be removed. Additionally, in both options, Metal Museum Drive will be closed under I-55 just before the bridge begins.

Both of these options will provide a more seamless alternative to access jobs and recreation on either side of the Mississippi River and provide better access to [Explore Bike Share](#) which provides a network of e-bikes (pedal-assist, electric bicycles) that can be rented on-demand from stations located around the cities of Memphis and West Memphis. There are two Explore Bike Share [stations](#) (one on each side of the Mississippi River) located at the base of the Big River Crossing. The proposed shared-use path accommodations being considered as part of the America's River Crossing Project will greatly increase access to and availability of these e-bikes, thereby expanding mobility options, increasing options to access existing transit stops and stations in Memphis, and promoting greater active transportation for residents and visitors. It is important to note that these non-motorized enhancements as part of the America's River Crossing Project will not only increase active transportation access to essential daily destinations (such as housing, jobs, healthcare, shopping, schools, and places of worship), but also to the Big River Crossing and [Big River Trail System](#) in Arkansas. The Big River Crossing and Big River Trail System are major economic destinations in and of themselves, as is evident by comments, ratings, and reviews posted on [Tripadvisor](#), [AllTrails](#), and visitor websites and articles (e.g., [Memphis Walking Bridge - Big River Crossing -](#)

[The Must-See Attraction \(wearememphis.com\)](https://wearememphis.com), [Big River Crossing | West Memphis, Arkansas \(explorewestmemphis.com\)](https://explorewestmemphis.com); [Big River Trail | West Memphis, AR \(westmemphisutilities.com\)](https://westmemphisutilities.com), [Big River Crossing sparks investment in Downtown \(commercialappeal.com\)](https://commercialappeal.com)). Data from the City of Memphis was obtained for pedestrian and bicycle counts on the Big River Crossing through the City's Eco Counters. From 2021 to 2023, data shows that over 280,000 pedestrians and cyclists use the Big River Crossing annually. Shared-use path improvements and other non-motorized investments that will be made as part of the America's River Crossing Project will greatly add to and support active transportation, quality of life, safety, and economic opportunities.

On the Arkansas side of the Big River Crossing, [Ducks Unlimited is partnering with Big River Park Conservancy \(BRPC\) and others](#) to restore 1,500 acres of wetlands and promote recreational and tourism opportunities. This public-private partnership will invest \$29 million to restore the land's natural features and build recreational facilities, and will connect users to over [110 miles of hiking and cycling trails](#). Proposed non-motorized accommodations as part of the America's River Crossing Project further highlight how the project will foster expanded active transportation usage given increased connectivity to the Big River Crossing.

In addition, the City of Memphis and the Memphis Area Transit Authority (MATA) have entered in a partnership with the City of West Memphis to provide [on-demand transit service](#) (called Ready!) between these two cities across the Mississippi River. This new service will use the I-55 bridge to provide West Memphis residents with access to jobs, healthcare, and other public transportation services (e.g., Hudson Transit Center) in Memphis.⁶ The creation of this service, which will utilize the I-55 bridge, underscores the importance of the America's River Crossing Project and the importance this critical connection plays in ensuring that area residents have affordable and reliable transportation choices. Without the I-55 bridge, residents of West Memphis would have limited access to good-paying jobs, healthcare, commerce, and other destinations in the City of Memphis, Tennessee. As part of public engagement process for the America's River Crossing Project, TDOT and ARDOT will engage the public and stakeholders to ensure the needs of all users are fully known and incorporated into the design, construction, and operations of the America's River Crossing Project.

⁶ Ready! service is not yet available in West Memphis. Source: phone conversation with MATA booking agent on March 14, 2024.

Requirement: The application demonstrates, through verifiable evidence, how the project improves access to daily destinations such as housing, jobs, healthcare, grocery stores, schools, places of worship, recreation, or parks through vehicles, transit, and/or active transportation.

Approximately 15,000 residents of Arkansas and Missouri, on the west side of the Mississippi River, travel to work each day in Tennessee and Mississippi, on the east side of the river.⁷ These people must use either the I-55 bridge or the I-40 bridge at Memphis to get to their workplace. The 14 counties in Arkansas and the two counties in Missouri that are within a 75-mile radius of Memphis have a total population of 409,119, with 26% being African American.⁸ Furthermore, these counties had a significant number of households in poverty (21%),⁹ accentuating the need to have ready access to the jobs in Memphis, North Mississippi, and West Tennessee. The existing I-55 bridge provides a daily link between the workers living in Arkansas and Missouri and their jobs in Tennessee and Mississippi.

Crittenden County, Arkansas, is the largest county on the west side of the Mississippi River from Memphis and depends on the existing I-55 bridge to reach employment, healthcare, cultural, and other opportunities. In 2022, Crittenden County had a population of 48,163,¹⁰ of which about 56% was African American. The median household income was \$51,860 and the poverty rate 21.8%,¹¹ which is nearly twice the U.S. poverty rate.¹² Almost 60% of the labor force in Crittenden County (6,765 out of 11,635 employees) work in Tennessee or Mississippi and are required to travel over the I-55 or I-40 bridges in Memphis.¹³

West Memphis is Crittenden County's largest city, with a total population estimated at 23,795 in 2022, of which 62.3% is African American and 25% is in poverty.¹⁴ The Mayor of West Memphis, Marco McClendon, has been a major advocate for the I-55 replacement bridge since his election in 2019. He believes it will be a major factor in raising living standards and reducing poverty in West Memphis.

From an active transportation perspective, as previously stated, TDOT and ARDOT are exploring options for improved non-motorized connections that will be fully

⁷ Source: U.S. Census Bureau (2024) LEHD.

⁸ Source: Lightcast, 2024.

⁹ Sources: Lightcast and the American Community Survey by the U.S. Census Bureau, 2022.

¹⁰ Source: U.S. Census Bureau.

¹¹ Ibid.

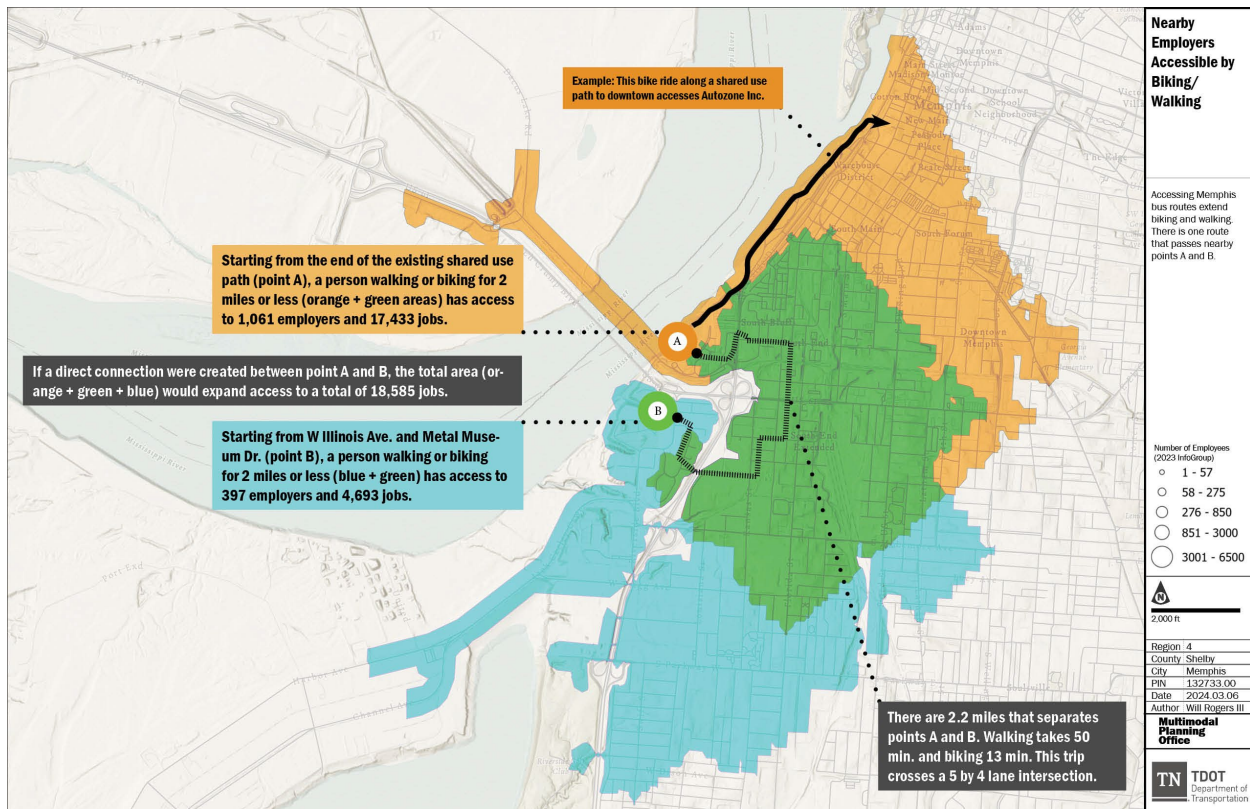
¹² According to U.S. Census data, the poverty rate in the US was 11.5% in 2022.

¹³ Source: West Memphis Economic Development Workforce Analysis Report; US Census 2020.

¹⁴ Source: U.S. Census Bureau.

evaluated during the America’s River Crossing Project’s development process as described under the Safety and Mobility merit criterion. The goal is to provide pedestrians and cyclists with unobstructed access to the Big River Crossing pedestrian bridge and Riverwalk on both sides of the river. Figure II-13 (see Appendix C for full resolution) illustrates how job access will be significantly improved for pedestrians and cyclists if the connection between the north and south sides of the bridge is improved. Using the existing street network, a pedestrian or cyclist originating from the north side of the bridge has access to about 17,400 jobs (orange and green areas), whereas someone originating from the south side of the bridge has access to about 4,700 jobs (blue and green areas). Providing a direct connection between the north and south sides of the bridge would give pedestrians and cyclists access to nearly 18,600 jobs (orange, blue, and green areas). Not only are these jobs available for non-motorized travelers, but motorized travelers would also have improved access to these jobs with the proposed bridge replacement.

Figure II-13: Multimodal Accessibility from Either Side of I-55



In addition to jobs, the existing I-55 bridge is critical to access major medical institutions in the region. The city of Memphis is home to the only [Level 1 Trauma](#)

Center within 150 miles and the only full service and certified burn center within a 400-mile radius, serving high-risk and severe burn patients from Tennessee, Mississippi, Arkansas, Missouri, and other states. The St. Jude/Le Bonheur Children's Hospital is one of the biggest and best pediatric surgical brain tumor programs in the nation, and the only Pediatric Level 1 Trauma Center in the region. Furthermore, Crittenden County has four medical facilities compared to more than 180 in Shelby County, making it even more important for Crittenden County residents to have access to medical facilities east of the Mississippi River for their healthcare needs.¹⁵ Patients across the Mississippi River rely on the I-55 and I-40 bridges to access these medical services.

Innovation

Requirement: The application includes quantitative benefits for the use of an innovative project design or construction technique, technology, financing, or planning and environmental review process improvements.

The America's River Crossing Project is planned for design and construction at a time when innovation and technology are moving at light speed. Accordingly, there are several innovative technologies applicable to the design and construction of the bridge. Some are beneficial insofar as they address the bridge's proximity to the New Madrid Seismic Zone, while others are applicable for constructability and cost reduction reasons.

Seismic Innovations

The design of the replaced bridge will be based on the "displacement-based seismic design" philosophy. Instead of force-based approaches that seek to resist seismic forces through brute strength and/or "fusing" of selected components, displacement-based design seeks to assess the displacement capacity of a structure and its inherent hysteretic damping under a given loading. Using this approach, the bridge will be designed to remain undamaged and operational after a 1,000-year return period seismic event, and resist collapse with a 2,500-year seismic event. Additionally, structural dampers or lock-up devices are incorporated to push seismic displacements and forces around the structure and into elements better suited to the seismic-resisting elements of the bridge. Together, these seismic innovations can reduce the seismic demand on the bridge foundations by 25% or more, resulting in a savings of 10% in the bridge foundation cost. Based on the

¹⁵ Source: Greater Memphis Chamber analysis of ESRI ArcGIS Community Analyst data.

preliminary data, this equates to a **savings of over \$11 million** in foundations alone.

TDOT's application of a cable-stayed bridge will provide additional seismic-related advantages. These include the following:

- Articulation of the superstructure at the cable-stay pylons, together with the use of dampers, will substantially improve seismic behavior and cost-effectiveness. The use of damping devices at the pylon to superstructure connections are a cost-effective, proven technology. Seismic isolation bearings will also be utilized, particularly at the side-span piers.
- Seismic modular joints will be utilized at the main span to approach span interfaces to enhance seismic performance and reduce the potential for joint damage during moderate and large seismic events.

Wind Performance

Wind performance of the bridge will be improved by using open traffic rails and a taller-than-normal median barrier. When used together, these changes to the superstructure cross-section will provide a marked increase in the wind speed for the onset of flutter, minimizing or eliminating the need for other wind-performance-enhancing improvements such as fairings and baffles. The elimination of the need for wind baffles or fairings can **save up to \$3 million** in the construction of the bridge.

Material Innovations

Modern steel reinforcement of 80 KSI yield strength (Grade 80) is readily available and will be incorporated into foundation and tower elements of the bridge. A National Institute of Standards and Technology (NIST) report ([NIST GCR 14-917-30, "Use of High-Strength Reinforcement in Earthquake-Resistant Concrete Structures"](#)) showed a cost savings of about 4% of the cost of the concrete structure when using Grade 80 reinforcement instead of Grade 60. Using Grade 80 bars could result in **cost savings of approximately \$2 million**.

[High-performance concretes](#) defined as ultra-high compressive strength, high-chloride resistance, and/or self-consolidating characteristics will also be used as applicable for the various components of the bridge including foundations, substructures, and deck.

[High-performance steels](#) with high-yield strength, ductility, and toughness will be incorporated in the superstructure. Atmospheric corrosion resistant weathering steel will be evaluated for this location. Additionally, for the extended service life, the key structural steel elements will be protected by painting, galvanizing or metalizing.

Construction Innovations

The following construction technologies will verify the quality of drilled shaft foundations for seismic considerations, reduce the time and cost of inspections, and minimize or eliminate the need for rework.

- [Miniature Drilled Shaft Inspection Device](#) (Mini-SID) to evaluate the cleanliness of the bottom of the drilled shaft.
- [SONICaliper](#), which uses sonar to evaluate verticality and shape of the shaft excavation in the dry, water, and mineral or polymer slurry.
- [Cross-hole Sonic Logging](#) (CSL) to determine the integrity of the completed shaft within the reinforcing steel cage.
- [Thermal Integrity Profile](#) (TIP) testing to evaluate concrete placement quality both inside and outside the reinforcing steel cage.
- [Concrete maturity meters](#) may be employed either at the contractor's initiative or by specification to determine maximum, minimum, and differential temperatures within a concrete mass to inform curing methods and durations to minimize delayed ettringite formation (DEF) and surface cracking.
- [Maturity meters](#) may also be used to determine the in-situ strength of a freshly placed concrete mass to reduce the reliance on cylinder breaks and inform the contractor when it is safe to strip forms.

Maintenance Innovations

The bridge will include a [structural health monitoring](#) (SHM) system. The SHM system can include such features as listening for wire breaks in the stay cables and detection of seismic events at a predetermined level of shaking. These systems may be passively monitored with notifications sent to the proper recipient. Wireless accelerometers will also be used to monitor the motion of the deck under normal and seismic events and report on recorded changes in the bridge response indicating a potential issue with the bridge, thereby providing a near real-time response by trained bridge inspection personnel to evaluate the incident. Cameras will also be used to detect and report vessel allisions. Since 1972, there have been at least five allision events with the existing bridge; that is an average of one allision

every 5 years. At this rate, one could assume 20 such events over the service life of the bridge. These proposed cameras may eliminate the need for inspections in half of the events, thereby saving an estimated inspection cost of \$100,000 or more for each event. This results in a **savings of over \$1 million** over the life of the bridge in 2024 dollars.

Incorporating a cable-stayed bridge will provide additional maintenance cost reduction-related advantages. These include the following:

- Current stay-cable systems are designed as fully replaceable, with no reduction in live, load-carrying capacity during cable change-out.
- Inspection travelers can be integrated into the superstructure design to avoid the need for traffic disruption for underdeck inspection.

Security Innovations

Web-connected security cameras will be used to detect a variety of incidents from crashes to intruders. The bridge will be connected by wireless, wired, fiber optic or a combination of camera systems both above and below deck. Cameras may include capabilities for tilt, pan and zoom; passive or infrared night vision; and thermal imaging with local and/or cloud-based recording capabilities.

Safety Innovations

The bridge will include the implementation of an air draft monitor that detects and reports, in real time, the distance between low steel and the water surface to provide mariners with real-time under-clearance to eliminate vessel collisions with the bridge superstructure. There will also be camera coverage of the navigation channel at the request of the Coast Guard.

The towers will be fitted with ladders and platforms that incorporate fall arrest systems for maintenance and inspection staff that may need to access the inside of the towers.

[Stay-cable systems can be designed to incorporate highly effective fire protective measures at deck level](#) to reduce the potential for damage in the event of a truck or car fire adjacent to the stay cables.

Other traffic management technology-enabled safety innovations include the following:

- Changeable message signs

- Weather monitoring for fog zone detection or potential icing
- Image stabilizing cameras for better visual reference
- Roadside units for future connected vehicle applications
- Lane-use control signs that enable:
 - 12-foot shoulders for part-time shoulder running for incident management
 - Active lane management for incidents, resulting in less traffic diversion to surface streets and, consequently, fewer conflicts with vulnerable road users

ITS Smart Corridor applications on I-24 in Nashville, which include lane-use control signs and other innovations that could be implemented on I-55, have demonstrated significant benefits since implemented in 2023. In a preliminary analysis conducted by TDOT, it was estimated that within the first five months of operations, I-24 travelers experienced a reduction of 11% in crashes on I-24 in the Lane Control and Variable Speed Limit segment when compared to the same time frame in 2022. These traffic management technologies have also resulted in improved throughput, with an approximate 9% increase in traffic volume along the corridor.

TDOT recently started implementation of Weigh-in-Motion (WIM) technology at 28 sites throughout Tennessee. As part of the America's River Crossing Project, TDOT will install Weigh-in-Motion technology as an integral addition to its statewide WIM system to measure several factors as trucks come into Tennessee from Arkansas. Aligned with data currently collected on the I-40 bridge, TDOT will now have valuable information to measure the number of trucks coming into Tennessee, including weight, bobtails, empties, and other information from a planning perspective. In addition to the WIM, TDOT will install over height vehicle detection technology on the replacement bridge for over dimensional trucks coming into Tennessee. Currently, there have been multiple instances of bridge strikes at the Third Street (US61/SR14) overpass from trucks entering Tennessee via the existing I-55 bridge. Since October 2019, Tennessee has reported 22 strikes on this specific bridge (and this amount does not account for the number of non-reported bridge strikes in this corridor). The over height detection system will notify trucks immediately and prevent these costly bridge strikes that not only affect the structural integrity of the impacted structures but could also result in safety risks to other drivers from falling debris and crashes that may result in the loss of life.

Energy-Saving Enhancements

Bridge lighting elements from safety lighting at ramps to navigation and aerial obstruction lighting will be accomplished with high-intensity LED lamps. This change alone **can save more than 2.4 million kWh** in electricity over the life of the bridge.

Innovative Delivery

As presented in our December 2023 BIP Large Bridge Application, both TDOT and ARDOT currently use several methods of alternative delivery including Construction Manager/General Contractor (CM/GC). At this point, CM/GC is being considered to optimize the delivery of the critical and complex America's River Crossing Project. As a whole, TDOT's alternative delivery program has resulted in measurable benefits, with an estimated \$22 million in cost savings and almost 70% faster delivery compared to traditional delivery. CM/GC projects delivered through TDOT's alternative delivery program have resulted in significant measurable benefits which include, but are not limited to: the opportunity to evaluate cost, constructability, and asset management impacts of various design alternatives; identifying, mitigating, and reducing project risks; and acceleration through early material procurement and early construction packages resulting in significant time savings and reducing material escalation costs. Delivery with CM/GC processes also facilitate the proactive inclusion of the diverse perspectives of impacted stakeholders aiming to create a bridge that not only serves as a functional infrastructure, but also fosters a sense of belonging for all residents and visitors.

III. PROJECT READINESS

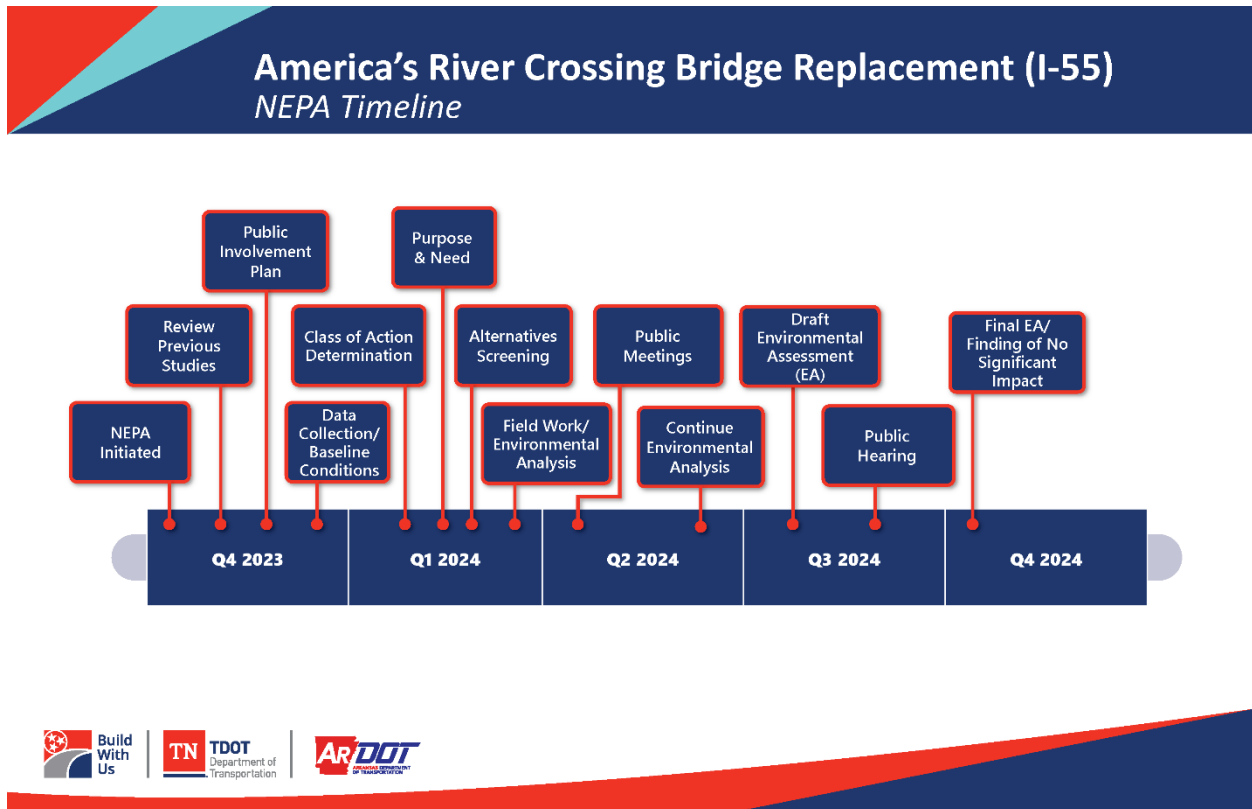
Environmental Process Update

The NEPA phase was initiated in November 2023. In February 2024, the NEPA class of action was determined to be an Environmental Assessment (EA) by TDOT, ARDOT, and FHWA. Based on the purpose and need and ongoing preliminary design, an alternatives screening was conducted, and a preferred alternative was identified.

NEPA tasks completed include previous studies and baseline conditions memorandums, production of the public involvement plan (PIP), purpose and need, alternatives screening, and cultural resources fieldwork. The PIP was revised to incorporate targeted Environmental Justice outreach and coordination with the French Fort Neighborhood, which is located within a Historically Disadvantaged Community/Area of Persistent Poverty and is eligible for the National Register of

Historic Places. Tasks currently underway include traffic/safety operations analysis and environmental technical studies including, but not limited to, environmental justice/community impacts, visual impacts assessment, cultural resources, hazardous materials, ecology, traffic noise, air quality, and Section 4(f) evaluation of the I-55 bridge. Environmental clearance is anticipated by Q4 2024. Figure III-1 illustrates the timeline of the NEPA activities through environmental clearance.

Figure III-1: NEPA Timeline



IV. BENEFIT-COST ANALYSIS (BCA)

The BCA prepared for our December 2023 BIP Large Bridge grant application was updated as follows:

1. Applied the most recent update of FHWA's BIP BCA tool
2. Updated discount rates per most recent USDOT BCA guidance (December 2023)
3. Refined assumptions based on FHWA debrief:
 - a. Updated data sources to support assumption regarding the share of business travel and the share of long-distance travel

- b. Added previously incurred costs (estimated at \$1.3 million)
 - c. Refined crash modification factors to ensure appropriateness for this project
 - d. Included disbenefits associated with project construction
4. Adjusted operations and maintenance costs for both the No-Build and Build scenarios based on revised project specifications

The revised benefit-cost ratio (BCR) is estimated at 2.82, indicating that the benefits to society exceed the project’s costs. A summary of the discounted costs and benefits is shown in Table IV-1. The BCA technical memorandum (Appendix D) provides additional details on the methodology and assumptions and is being provided as part of this grant application update.

Table IV-1: Benefit-Cost Analysis Results for America's River Crossing Project

Factor	BIP Grant Application Update (March 2024) BCA Tool V1.0.4 Discounted Total (2022\$)	BIP Grant Application (December 2023) BCA Tool V1.0.0 Discounted Total (2021\$)
Benefits		
Safety – Reduced Crash Costs	\$41,832,349	\$107,304,997
Travel Time Savings	\$498,582,861	\$200,912,791
Vehicle Operating Cost (VOC) Savings	\$512,735,336	\$131,290,893
Resilience (Seismic)	N/A	\$10,154,403
Pedestrian/Bicycle Amenities and Health Benefits	N/A	N/A
Reduced CO2 Emission	\$145,997,115	\$26,723,383
Reduced Non-CO2 Emission	\$9,578,560	\$2,716,303
Other Environmental Benefits	\$901,353	\$261,158
Maintenance Savings	\$348,150,037	\$30,507,078
Other Benefits (Maritime)	\$22,071,489	\$9,829,144
Residual Value	\$74,015,162	\$9,947,967
Total Benefits	\$1,653,864,262	\$529,648,117
Total Discounted Costs	\$586,313,661	\$414,690,112
B/C Ratio (BCR)	2.82	1.28
Net Present Value (NPV)	\$1,067,550,601	\$114,958,005