MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Central Bridge Bundle Replacements in Newton, Madison, and Lauderdale Counties

US Department of Transportation, Federal Highway Administration Bridge Investment Program – Bridge Project Application FY2024

Notice of Funding Opportunity
Listing Number: 693JJ324NF00006
March 2024

Submitted by:
Brad White
Executive Director, MDOT

Table of Contents

Project Description

The Mississippi Department of Transportation (MDOT) is requesting $67,512,520 in Bridge Investment Program (BIP) funding to replace a total of thirteen (13) bridge structures in central Mississippi. Replacement will include five (5) bridges in Newton County constructed in 1929 - 1930, five (5) bridges in Madison County with construction dates ranging 1929 -1939, and three bridges in Lauderdale County constructed in 1928-1929. The aging bridges primarily serve as a connection between rural Mississippi to urban areas, including the capital City of Jackson, MS. The bridges in this proposal are not in compliance with current geometric design criteria, have extremely narrow lanes, are in poor to fair condition, and twelve of the thirteen structures are load posted according to NBI data. The purpose of the Central Bridge Bundle in Newton, Madison, and Lauderdale Counties Project (Project) is to eliminate these deficient bridges and restore safe crossings that are up to today's design standards and meet regional traffic requirements for safety and weight. MDOT intends to construct this Project as a bundle, letting all thirteen bridges as a single project to a single contractor. The thirteen bridges will be replaced with pre-stressed concrete beam bridges of similar design and will provide two 12-foot-wide lanes and 6-foot-wide shoulders on each structure to accommodate the safe movement of freight and traffic. The proposed project is part of a larger infrastructure investment effort by MDOT to address structurally deficient county bridges across the state of Mississippi.

Figure 1 Map of US 80 bridge replacements in Newton and Lauderdale Counties

Central MS Bridge Replacements in Lauderdale, Madison, and Newton Counties

The proposed project will address the deficiencies of 13 aging bridges with innovative solutions to include integration of longer spans to keep piers out of the channel and therefore reducing debris accumulation, enhanced hydraulic modeling techniques, and use of prestressed concrete girders to increase the overall lifespan of each structure, limit maintenance costs, and increase structural integrity. None of the bridges in this bundle meet current geometric standards and pose safety risks to travelers. Right of Way was previously acquired, utilities relocated, and final plans are prepared for all structures. The proposed project is part of a larger infrastructure investment effort by MDOT to address structurally deficient county bridges across the state of Mississippi.

Key Project features:

1. **Bridge Bundling** creates a streamlined process when addressing multiple project needs and expedites project delivery. Bundling also allows leveraging similar replacement strategies, leading to increased efficiency, and creates opportunity for cost and time savings.
2. **Integration of longer spans** significantly reduces the need for maintenance-intensive components that current structures possess, working to significantly decrease life cycle costs.
3. **Enhanced hydraulic design** will withstand scour and various hydraulic events, exceeding capabilities of the existing outdated structures.
4. **Material Innovation** includes a departure from conventional steel girder structures to precast prestressed concrete bridges, offering durability and minimal maintenance over the lifespan of the structures. Weathering steel will be utilized to mitigate the need for frequent painting and repairs, lending to increased structural integrity and replacement of steel thru trusses will eliminate recurring costs associated with repairs due to bridge impacts, improving safety and operational efficiencies.

Transportation Challenges

A report released in December 2023 conducted by the National Transportation Research Group (TRIP), examined current and projected levels of freight movement in the United States, large truck safety, and trends impacting freight movement. America's Rolling Warehouses: Opportunities and Challenges with the Nation's Freight Delivery System, reported Mississippi's freight system moved 486 million tons of freight, valued at $329 billion and this freight movement is anticipated to increase by 61 percent[1] by 2050. This increased demand will further highlight Mississippi's aging bridge infrastructure, especially the amount of frequently posted bridges forcing trucks with heavier loads to find alternate routes, increasing shipping costs as detour routes add significant miles to freight routes.

Continued bridge posting and closures not only disrupt commerce and economic development, but they negatively impact people's lives across Central Mississippi. The selection of BIP funding will enable MDOT to not only replace these aging structures but

[1] https://tripnet.org/reports/freight-mississippi-news-release-12-05-2023/

dedicate currently programmed funds to additional infrastructure needs. The Project will address the following BIP goals:

- Reduce infrastructure maintenance costs,
- Improve the safety, efficiency, and reliability of movement of people and freight in central Mississippi,
- Reduce the number of bridges in fair/poor condition by replacing seven existing bridges that are either structurally deficient (poor condition), or are considered at risk of becoming structurally deficient (fair condition) within the next three years,
- Reduce the number of bridges that do not meet current geometric design standards by replacing thirteen bridges with wider decks,
- Improve the structural capacity of thirteen bridges that currently do not meet the traffic requirements anticipated for the network, thus improving the local economy,
- Reduce the total person miles traveled over bridges that are in poor condition or at risk of falling into poor condition; and
- Leverage non-Federal contributions from MDOT in the final design and construction of the project.

Project History

MDOT has secured right-of-way acquisition, relocated utilities, completed environmental studies as well as preliminary and final design of the Project. Plans and environmental documents completed to date are available at MDOT BIP. To date, MDOT has encumbered $7,492,399 for preliminary engineering and environmental activities.

Project Location

US 80 in Lauderdale and Newton Counties

There are three bridges in Lauderdale County and five bridges in Newton County in need of replacement on US 80 including:

1. US 80 over Slough NBI 210008003812310 (123.1)
2. US 80 over Chunky River NBI 210008003812330 (123.3)

Figure 2 Bridges on US80

3. US 80 over Slough NBI 210008003812350 (123.5)
4. US 80 over Potterchitto Creek NBI 210008005111080 (110.8)
5. US 80 over Turkey Creek NBI 210008005111170 (111.7)
6. US 80 over Bethel Branch NBI 210008005111480 (114.8)

7. US 80 over Tonacana Creek NBI 210008005112140 (121.4)
8. US 80 over Chunky River NBI 210008005112250 (122.5)

US 51 in Madison County

There are five bridges in need of replacement in Madison County along US 51 including:

1. US 51 over Tildabogue Creek NBI 210005104512470 (124.7)
2. US 51 over Creek NBI 210005104512660 (126.6)
3. US 51 over Relief NBI 210005104513000 (130.0)
4. US 51 over Doaks Creek NBI 210005104513010 (130.1)
5. US 51 over Relief NBI 210005104513040 (130.4)

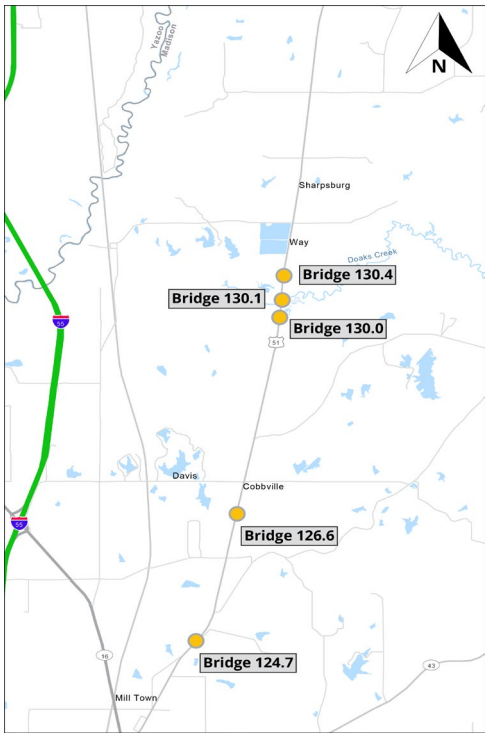

Figure 3 Bridges on US 51 in Madison County

Project Parties

The MDOT (UEI Number: CMKLXEA2MND4) will serve as the primary sponsor and lead agency for this BIP Bridge Project grant application. MDOT has successfully delivered previous transportation improvement projects funded by both federal discretionary grant and federal program funding.

NBI Data

NBI data for each bridge is provided in the application template.

Project Costs

MDOT is requesting $67,512,520 in BIP discretionary funding to construct the Project. Previously incurred project costs total $7,492,399 for right-of-way acquisition, preliminary engineering, and environmental reviews.

Table 1 Project Costs

Funding Source	State Program Funds	BIP	TOTAL Project costs
MDOT 20% match	$16,878,130		
Request		$67,512,520	$84,390,650

MERIT CRITERIA

State of Good Repair

The thirteen aging bridges proposed for BIP funding in this application are all in fair, poor, or poor-serious condition.

Six of the eight existing structures along US 80 through rural Mississippi are load posted, limiting the amount of weight each vehicle can carry over each structure. Of the thirteen bridges in the Project, eight are rated in "Fair" condition but given the age of each bridge, current state of repair, and future traffic impacts, they are at imminent risk of a "Poor" rating within the next three years. Structure 123.1 built in 1928 has moderate deck scaling and spalling, superstructure contains cracks at beam ends, and substructure shows signs of delamination and exposed rebar. Structure 123.3 built in 1929 has heavy deck scaling, curb spalling, collision damage, bridge rail and joints are failing, superstructure beam ends contain cracks and substructure has cracks, spalls, and exposed rebar. Structure 123.5 built in 1928 has moderate deck scaling, exposed rebar in soffits, superstructure contains vertical cracks at beam ends and exposed rebar, and the substructure has isolated exposed rebar in caps. Structure 111.7 built in 1930 is load posted, has moderate deck scaling and cracking, failing asphalt overlay, previous bridge rail repair is failing, guardrail damage, end of beam cracking in the superstructure and moderate scour at the channel banks as well as scour at bents 2 and 3. Structure 114.8 built in 1929 is load posted, with deck spalling and cracking, occasional overtopping of deck and approaches causing roadway delays, embankment damage, and scouring. Structure 121.4 built in 1929 is load posted, with heavy deck scaling, exposed rebar, and light collision damage, while the superstructure has cracked beams, exposed rebar, and substructure spalling.

The existing structures along this section of US 51 through rural Mississippi do not meet modern geometric designs, are rated in fair to poor-serious condition, and four out of the five bridges are load posted. Structure 130.4 built in 1939 is load posted, has light beam cracking, concrete slab spalling with exposed rebar, and light guardrail erosion. Structure 124.7 was constructed in 1929 with substructure spalling, exposed reinforcements, delamination, expansion of spans, cap and pile spalling, superstructure beam spalling, exposed reinforcements, heavy scour to channel banks. Structure 126.6 built in 1934 is currently load posted with deck cracking and scaling, spalls in superstructure beams, substructure spall and exposed rebar, failed collision repairs, exposed footing. Structure 130.4 built in 1939 is load posted, has light beam cracking, concrete slab spalling with exposed rebar, and light guardrail erosion. Bridge 130.1 constructed in 1935 is rated in "Poor-Serious" condition, is currently load posted, deck contains heavy transverse cracking, moderate deck scaling at all spans, light rusting on all beams, heavy section loss, minor scour at the channel. Bridge 130.4, built in 1939, currently load posted, has light beam cracking, concrete slab spalling with exposed rebar, and light guardrail erosion.

The state of the bridges in the Project negatively impacts the current and future transportation network. As mentioned above, freight movement in Mississippi is anticipated to grow at least 60% by 2050. As freight movement increases, so does the demand on state highways to accommodate the increase. US-80 serves as a diversion route for Interstate 20 and MDOT will detour traffic to US-80 if an incident causes a closure on the interstate. Similarly, US 51 serves as a diversion route for Interstate 55. At Jackson, MS US 51 joins five other arterial highways that provide a multi‐directional connection throughout the state. The bridge structures are located north of the Capital City of Jackson to connect rural parts of north Mississippi to the industrial growth in the state and continues south. Both US-80 and US-51 serve as major arterial passageways across the state and are vital industrial and agricultural thoroughfares. While the transportation network relies upon the state highways, the bridges in the Project area are dangerously narrow with 18-to-24-foot bridge roadway width and have less than 1-foot shoulders. The narrow width of the bridges does not support the movement of goods or services through the region and increases the safety risks for users.

Safety and Mobility

The latest five years (2019 to 2023) of crash data was reviewed for each bridge included in the Central Bridge bundle. Based on the reported crash data, there were a total of 12 bridge related crashes that occurred within the 5 years including 6 crashes located in Newton County (Bridges 110.8, 111.7, 114.8, and 121.4), 1 crash located in Madison County (Bridge 130.4), and 5 crashes located in Lauderdale County (Bridge 123.1 and 123.3). Of the 12 crashes, 3 crashes were suspected serious injury type, 2 crashes were possible injury type, and 7 crashes were property damage only (PDO) type. Review of the crash reports found the narrow bridge width as a contributing factor to the crashes. The majority of crashes were opposite direction sideswipe type crashes that occurred when the left sides of vehicles travelling on the bridge from opposing directions collided due to the narrow bridge width. Two of the 12 crashes were rear end crashes where a vehicle was rear ended when stopping/slowing down prior to the bridge to allow vehicle from opposing direction to pass. The bridges will be widened to accommodate 12 ft lanes and 6 ft shoulders. Based on the CMFs from the CMF Clearinghouse, the combined improvements would reduce K, A, B, C severity type crashes by 44% (CMF = 0.74 & CMF = 0.83) and O type crashes by 34% (CMF = 0.83 & CMF = 0.84).

Based on the reported crash data, there were a total of 12 bridge related crashes that occurred within the 5 years including 6 crashes located in Newton County (Bridges 110.8, 111.7, 114.8, and 121.4), 1 crash located in Madison County (Bridge 130.4), and 5 crashes located in Lauderdale County (Bridge 123.1 and 123.3). Of the 12 crashes, 3 crashes were suspected serious injury type, 2 crashes were possible injury type, and 7 crashes were property damage only (PDO) type.

The thirteen bridges proposed for BIP funding in this application do not meet today's design standards, with posting status on ten of thirteen bridges, meaning heavier vehicles

transporting goods and emergency vehicles cannot safely cross. Depending on the structure, the detour route varies from 16 to 40 miles one way, adding substantial travel time and increasing the safety risk and travel time of residents and businesses reliant on the route. Additionally, the long detour routes can hinder access to essential services and negatively impact emergency response times.

Of the thirteen structures in the Project, five are currently rated in "Poor" condition, and one rated in “Poor-Serious” condition. The risk of receiving closure status due to age and lack of structural integrity is a continuing concern for MDOT as they have included the bridge replacement in their Long-Range Transportation Plan.

These narrow bridges do not provide sufficient space for two-way traffic on the bridge and provide no refuge if a breakdown or collision were to occur on the bridge. None of the bridges meet current geometric standards and will be widened to accommodate two 12-foot-wide lanes and 6-foot-wide shoulders. Widening the lanes and shoulders would provide more room for recovery in near-crash situations and larger lateral clearances from the bridge barrier. Based on the CMFs from the CMF Clearinghouse, the combined improvements would reduce K, A, B, C severity type crashes by 44% (CMF = 0.74 & CMF = 0.83) and O type crashes by 34% (CMF = 0.83 & CMF = 0.84).

MDOT projects a 10.5 percent growth in Annual Average Daily Traffic (AADT) every 10 years along US-80 in Newton and Lauderdale Counties and US-51 in Madison County. Agriculture, poultry, and timber are major economic industries in the state, with large trucks required to move heavy loads through rural areas. Approximately 8% of ADT values consist of large trucks traverse structures 124.7 and 130.1, 7% on 110.8 and 111.7, 9% on structures 122.5, 123.1, 123.3, and 123.5, and 21% truck traffic accounts for AADT values on structure 130.4. All thirteen bridges in the bundle do not meet current geometric standards and will be widened to provide two 12-foot-wide lanes and 6-foot-wide shoulders, enabling larger freight trucks to move timber and agricultural/farm products throughout the state and the region. The replacement of the bridges will remove all load posting needs, furthering the ability of freight movement through the corridors running north and south on US-51 and east and west on US-80.

Economic Competitiveness and Opportunity

The MDOT State Long Range Plan indicates the cost of doing business and the cost of living in Mississippi is more expensive than the surrounding states due to higher transportation costs, which affects the state’s ability to attract new business, affects job growth, and limits retention of workers. Agriculture and forestry are two major components to Mississippi's economy. According to a study conducted by Mississippi State University Extension, in 2019 agricultural and forestry production and processing sectors directly account for 123,983 jobs, paying $5.63 billion in wages and salaries, accounted for $26.3 billion in sales with a value-added generation of $7.6 billion to the State's economy.

US-80 is a primary route used to transport poultry and timber, which are the two largest industries in Mississippi, while US-51 provides a short route for local delivery of agriculture and timber products. Of the thirteen bridges included in the project, twelve are load posted, restricting large capacity transport of goods and services, requiring local agriculture and timber transport to detour up to 40 miles one way on US-51 and up to 18 miles one way on US-80. Additionally, the extremely narrow width of the bridges in this bundle slows the movement of vehicles and decrease safety as noted in the above, as vehicles slow down or stop to avoid driving on the bridge while another vehicle is passing. MDOT anticipates a 10.5 percent growth in both ADT and Average 18 KIP Axles loads per 1,000 vehicles every 10 years. Current ADT within the project area ranges from 860 to 2900 vehicles per day, with truck traffic averaging 8-21% of ADT on the project routes.

Agriculture and forestry are two major components to Mississippi's economy. According to a study conducted by Mississippi State University Extension[2], in 2019 agricultural and forestry production and processing sectors directly account for 123,983 jobs, paying $5.63 billion in wages and salaries, accounted for $26.3 billion in sales with a value-added generation of $7.6 billion to the State's economy. US-80 in Newton and Lauderdale Counties is a detour route for Interstate 20. MDOT will detour traffic to Highway 80 anytime a wreck or other incident causes an interstate closure. Additionally, Lauderdale County is the 7th most populated county in Mississippi with high paying mining, oil/gas, and agriculture industries. The Project bridges were constructed between 1929 - 1939, are well over the AASHTO suggested lifespan of 75 years and will continue to deteriorate as repairs are failing. This deterioration and reduction in effectiveness and efficiency of repairs will lead to imminent closures, affecting the efficient access to high paying jobs and movement of oil/gas, timber, and agriculture products throughout the region, further driving up costs of goods. Replacing the extremely narrow, aging bridges in Newton, Madison, and Lauderdale Counties with safer 12-foot-wide lanes and up to 6-foot-wide shoulders enable the efficient movement of goods through rural Mississippi as well as highly populated urban cities in the project area.

Climate Change, Sustainability, Resiliency, and the Environment

Replacing the thirteen bridges in Newton, Madison, and Lauderdale Counties will reduce air pollution and greenhouse gas emissions from motor vehicles. Twelve of the thirteen bridges in the project area are load posted while every bridge in the Project have surpassed the AASHTO recommended 75-year lifespan, which is based upon modern design standards and materials. Twelve of the thirteen bridges are load restricted and all thirteen consist of narrow roadway widths, ranging from 18 feet to 24 feet and minimal shoulder (less than 1 foot), leading to traffic congestion and idling vehicles. Replacement of these aged-out structures to include 12-foot-wide lanes and up to 6-foot-wide shoulders will accommodate current and future traffic, improve movement, and lowering carbon emissions. Additionally, MDOT approves the use of Warm Mix Asphalt (WMA), which requires lower mixing temperatures compared to conventional Hot Mix Asphalt. This

[2] Economic Contribution of Agriculture & Forestry Production & Processing in Mississippi https://bit.ly/4afKQ1g (James E. Henderson, James N. Barnes, Josh Maples, Will Maples, & Shaun M. Tanger)

reduced temperature requirement translates to lower energy/fuel consumption during production, thereby reducing emissions of greenhouse gases such as carbon dioxide and air pollutants including nitrogen oxides and sulfur oxides.

Replacing the thirteen bridges in this project will eliminate the at-risk structures and increase resiliency of the transportation network. The bridges in the Project date as far back as 1928, with the last bridge in the Project built in 1939. The near century old structures not only pose a safety risk, but also impact local residents through increased fuel costs and decreased vehicle efficiency. Replacement of the bridges will remove the need for vehicles to take a longer detour route and reduce the total travel distance. Shorter distances mean less fuel consumption, resulting in lower emissions of pollutants and greenhouse gases per trip. Shorter, direct routes also increase the efficiency of vehicle operation. Constant acceleration, deceleration and idling associated with the long route detours can decrease fuel efficiency and increase emissions. The Vehicle Fuel Consumption and Pavement Characteristics by FHWA review the impact of roadway geometry on vehicle emissions and fuel consumption and indicate direct routes generally result in lower fuel consumption and emissions compared to detours. Newton County is an Area of Persistent Poverty (Census Tract 504) and Historically Disadvantaged Community (Census Tract 505), Madison County bridges 126.6, 130.0, 130.1, and 130.4 are in Area of Persistent Poverty (APP) Census Tracts 306 and 307, and Lauderdale County is an APP County, with the bridges located in APP Census Tracts 107, 102.01, and 102.4. Lowering fuel costs and emissions in this project could result in annual fuel costs and vehicle efficiency savings.

Equity and Quality of Life

The project will improve the quality of life for local and regional users as US 80 and US 51 serve as critical links to agriculture and timber activity. Replacing the thirteen aging bridges in Lauderdale, Madison, and Newton Counties will enable improved mobility for personal and business travel throughout the rural counties.

Though there was no public engagement for this project, the MDOT statewide MULTIPLAN, an integral component to the decision-making process for infrastructure investments, engages stakeholders across the state. The Mississippi Department of Transportation Unified Long-Range Transportation Infrastructure Plan 2045[3] (MULTIPLAN 2045) is the state's federally compliant Long Range Transportation Plan. MULTIPLAN 2045 leverages additional statewide, regional, and local planning efforts and includes close collaboration with the four metropolitan planning organizations (MPOs) across the state. The general public, MDOT partners, and other stakeholders were engaged in the development process to provide insight into local and regional concerns and priorities. As part of the MULTIPLAN 2040, MDOT staff and the project team coordinated outreach efforts with the state's MPOs to ensure consistency in the multijurisdictional planning MULTIPLAN 2040

[3] MULTIPLAN 45 pgs 16-17 & 62
https://mdot.ms.gov/documents/Intermodal%20Planning/Reports/Multimodal/MBI%20Multimodal%20Final%20Report.pdf

engaged diverse group of stakeholders through a statewide statistically valid survey that received over 1,200 responses, an interactive website that continuously updated the public and solicited feedback, and multiple public meetings across the state.

In an effort to prevent physical and economic disruptions during planning and construction of all infrastructure projects, a thorough planning and design process is implemented by MDOT to first include identification of known infrastructure needs, prepares Committee Location meetings that incorporate reports on build/no build scenarios, which addresses how the project will impact the location and surrounding communities. MDOT aims to enhance the quality of life of its residents through infrastructure improvements and intends to mitigate any negative impacts upon community members.

While MDOT seeks to enhance active transportation through infrastructure improvements, the bridge replacements in this Project are located in a rural area of Mississippi with little to no pedestrian or bicycle use. The roadways carried by these bridges are narrow with little to no shoulder. While pedestrian and bicycle use are technically allowed on US 80 and US 51, there is no designated accommodation for these modes. Adding sidewalks for pedestrians and bicycles on the bridges in this project would not serve an existing need and would be unlikely to generate additional benefits. All bridges in the project will incorporate 6-foot-wide shoulders to accommodate safety and ease of movement for freight and vehicles.

Innovation

Many innovative approaches to project delivery can be utilized with the bundling of multiple bridges. For a typical project, right-of-way acquisition and utility relocation have the potential to delay project delivery. With thirteen locations bundled into one project, the project benefits from economy of scale, utilizing a single contract award to save costs as well as construction and procurement time. Bundling is anticipated to save 15% over the costs of contracting as individual bridges.

MDOT will encourage the use of Warm Mix Asphalt (WMA) for contractors to utilize on the project. WMA is produced at lower temperatures than conventional Hot Mix Asphalt, resulting in lower emissions, less fuel consumption during production, improved compaction and portability during construction and a healthier and safer working environment for construction workers. Historically, when MDOT allows for contractors to choose to utilize either WMA or HMA for asphalt paving, the industry in Mississippi chose WMA for approximately 70% of the tonnage placed.

Benefit Cost Analysis

Benefit Cost Analysis

The period of analysis used in the estimation of benefits and costs is 44 years, including roughly 14 years of project development and construction and 30 years of operations.

Total project construction costs are estimated at $84,390,650 in 2024 dollars. In addition, $7,492,399 has been encumbered to date on tasks related to project development. The total (undiscounted) project costs are estimated at $91,883,049 (including previously incurred costs).

All relevant data and calculations used to derive the benefits and costs of the project are shown in the BCA tool that accompanies this grant application. Based on the analysis presented in that document, the project is expected to generate $2.7 billion in discounted benefits with $79.3 million in discounted development and construction costs, using a 3 percent real discount rate. Therefore, the project is expected to generate a **Net Present Value of $2.6 billion and a Benefit/Cost Ratio of 34.45**. Overall results are shown in Table 2.

Table 3 below compiles all project benefits evaluated. The majority of project benefits (at 55 percent) is accounted for by the reduction in vehicle operating costs (VOC). Travel time reductions account for the second largest at 31 percent of the total benefits. Environmental costs savings account for 13 percent, while residual value of assets accounts for approximately 1 percent of the total benefits.

Table 2 Overall Results of the Benefit Cost Analysis, 2024 Dollars

Total Discounted Benefits	$2,732,608,793
Total Costs	$91,883,049
Total Discounted Costs (3%)	$79,324,392
Net Present Value (NPV)	$2,653,284,401
Benefit Cost Ratio (BCR)	**34.45**

Table 3 Overall Benefits, Millions in 2024 Dollars

Benefit Categories	Bridge Bundle Total	Percent of Total Benefits
Travel Time	$854.12	31%
Vehicle Operating Cost Savings	$1,497.92	55%
Safety	$3.01	>1%
CO2 Emissions	$333.51	12%
Non-CO2 Emissions	$24.81	1%
Residual Value of Assets	$17.78	1%

Project Readiness and Environmental Risk

Technical Feasibility

MDOT has successfully administered previous transportation improvement projects funded with both federal program and/or federal discretionary funds and is well

positioned to administer the proposed BIP grant and other funds needed for this project. The agency has extensive experience completing projects of similar scope to the proposed project and has the resources in place to successfully deliver the replacement of the 13 bridges in this project. Cost estimates developed for the project are based upon recent historical construction bid prices received by MDOT on projects of comparable size and scope and were calculated using quantities from 90% completion plans. Design Criteria established for the project follows MDOT's Roadway Design Standards.

The Project will replace 13 bridges with updated geometric standards. The new bridges will include two 12-foot driving lanes, up to 6-foot shoulders, and guardrail to follow the current standards of geometric design. The hydraulic openings are designed under the new code to achieve a no rise in water surface elevation upstream of the new project. The bridge design is a balance of spanning the channel and creating an economical design to meet the needs of the traveling public. The new bridges on this project will be lengthened from the original bridge lengths from as far back as 1928, due to the everchanging factors that were considered in the past such water surface elevations and unobstructed flow of the river.

Project Schedule

The illustration of major Project milestones for each bridge or section of bridges is represented in **Tables 4-7** below. The schedule shows the start and completion dates for design, environmental approvals, right-of-way acquisition, utility relocations, and construction for the bundled Project.

Table 4 US 80 Newton County Schedule

County 51 - Newton	Route - US 80	US 80 [Bridge #s 110.8, 111.7, 114.8 & 121.4]
PROJECT ACTIVITY	**SCHEDULE**	
	Start Date	**Completion Date**
NEPA Determination – Categorical Exclusion	04/02/2021	02/23/2023
Right-of-Way Acquisition	04/02/2021	05/17/2023
Preliminary Design	02/01/2019	04/02/2021
Final Design	10/01/2021	10/18/2023
Construction	03/13/2025	03/30/2029

Table 5 Madison County Schedule

County 51 - Newton	Route - US 80	US 80 [Bridge #s 110.8, 111.7, 114.8 & 121.4]
PROJECT ACTIVITY	**SCHEDULE**	
	Start Date	**Completion Date**
NEPA Determination – Categorical Exclusion	09/09/2019	05/19/2023
Right-of-Way Acquisition	04/13/2021	05/19/2023
Preliminary Design	04/01/2015	04/13/2021
Final Design	08/02/2021	10/18/2022

Construction	03/13/2025	03/30/2029

Table 6 US 80 Lauderdale County Schedule

County 38 - Lauderdale	Route - US 80	US 80 [Bridge 123.1, 123.3 & 123.5]
PROJECT ACTIVITY	**SCHEDULE**	
	Start Date	**Completion Date**
NEPA Determination – Categorical Exclusion	08/01/2022	02/23/2023
Right-of-Way Acquisition	08/02/2022	10/09/2023
Preliminary Design	11/06/2017	06/08/2022
Final Design	06/09/2022	07/01/2024
Construction	03/13/2025	03/30/2029

Table 7 US 80 Newton Co Bridge 122.5

County 51 - Newton	Route - US 80	US 80 [Bridge # 122.5]
PROJECT ACTIVITY	**SCHEDULE**	
	Start Date	**Completion Date**
NEPA Determination – Categorical Exclusion	08/01/2022	02/23/2023
Right-of-Way Acquisition	08/02/2022	04/01/2024
Preliminary Design	11/06/2017	06/08/2022
Final Design	06/09/2022	07/01/2024
Construction	03/13/2025	03/30/2029

Required Approvals

The environmental process has been completed on all thirteen bridges and submitted to FHWA for approval.

Assessment of Project Risks and Mitigation Strategies

There is very little risk that would prevent the project from meeting the obligation deadline for FY2024 BIP project funds based on the completion of Right-of-Way acquisition, relocation of utilities, and preparation of final plans. MDOT is estimating an obligation date for BIP Funding in FY2024 with a construction letting date of November 26, 2024. The Notice to Proceed (NTP) with construction is scheduled by March 13, 2025, and anticipated project completion in March 2029.

DOT Priority Considerations

Due to the age and status of the bridges in this Project, MDOT plans to move forward with construction regardless of BIP funding to ensure the safety and resiliency of the transportation network. BIP funds will allow MDOT to further expand their efforts to

replace aging infrastructure across the state. The project is ready to proceed as detailed in the schedule above. Table 6 below summarizes the Priority Considerations in the application template.

Table 6 Priority Considerations

DOT Priority Consideration	Yes or No	If Yes, provide details how it supports the priority consideration. If No, provide a reason as applicable.
The applicants are a Federal Land Management Agency that owns the bridge and a State, and Bridge Project application provides evidence that upon completion of the project, the bridge will be divested.	*No*	*N/A*
The project is or will be ready to proceed to the next stage of project delivery within 12 months of a Categorical Exclusion Determination, Finding of No Significant Impact, or Record of Decision.	*Yes*	*All thirteen bridges in the proposed project have completed initial environmental reviews, including re-evaluation as necessary, right-of-way is acquired, utilities have been relocated, and final plans are prepared.*
The project includes accommodation for transit and/or multi-modal transportation such as the inclusion of bus rapid lanes on the bridge and pedestrian/bicycle facilities.	*No*	*The project is located along US-80 and US-51 where pedestrian and bicycle facilities are not utilized and would not provide a benefit to include in the project.*
The project considers Workforce Development, Job Quality and Wealth Creation such as the creation of good-paying jobs directly related to the project, that may result in equitable access to those jobs, with a free and fair choice to join a union, expand training programs, and incorporates strong labor standards and includes strategies such as targeted hiring preferences for bringing in and retention of historically underrepresented workers into the workforce. Examples of such consideration may include using a project labor agreement, putting in place a registered apprenticeship usage rate of at least 10 percent with supportive services provided to apprentices, and using local and economic hiring preferences to target hiring to economically disadvantaged areas.	*Yes*	*To ensure equity and opportunity during the construction process, the lowest responsive bidder on the project shall take all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises (DBEs) can compete for and participate in the performance of a portion of the work in the contract based on MDOT's DBE goal. The contractor shall make full use of workforce development training programs, i.e. apprenticeships and on-the-job training programs, for the geographical area of contract performance.*
Without a BIP grant, construction of the project is unlikely to commence before September 30 of the FY plus 3 years (September 30, 2026 for FY 2023 funds, September 30, 2027 for FY 2024 funds, September 30, 2028 for FY 2025 funds, and September 30, 2029 for FY 2026 funds.)	*No*	*Due to the age and current state of the structures in this project, MDOT has included replacement of the bridges within their Long-Range Transportation Plan and anticipate construction in FY2026 or FY2027 if BIP funding is not approved.*

Brad White
Executive Director
Jeff Ely, P.E.
Chief of Staff

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Earl Glenn, Jr., P.E.
Deputy Executive Director/Chief Engineer
Lisa M. Hancock, CPA
Deputy Executive Director/Administration

March 18, 2024

The Honorable Pete Buttigieg
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, D.C. 20003-3660

Re: MDOT Bridge Investment Program Application in Lauderdale, Madison, and Newton Counties

Dear Secretary Buttigieg:

The Bridge Investment Program (BIP) presents a great opportunity for the Mississippi Department of Transportation's (MDOT) to address critical infrastructure needs along multiple rural corridors in Mississippi, particularly focusing on the bridges in Lauderdale, Madison, and Newton counties in the central area of the state. This project bundles construction projects to replace thirteen (13) bridge structures across three (3) counties. This includes five (5) very narrow bridges in Newton County on SR 80, currently rated in poor to fair condition with load-carrying restrictions and are less than 20 feet wide, along with three (3) very narrow bridges in Lauderdale County on US 80, currently rated in fair condition with load-carrying restrictions and are less than 20 feet wide, and five (5) bridges in Madison County on US 51, featuring scour, timber substructure, and beam section loss, currently rated in poor to poor-serious to fair condition with load-carrying restrictions.

Investing in bridge infrastructure is vital for ensuring the safety of travelers and the efficient movement of goods. To address these deficiencies, the project will implement innovative solutions such as integrating longer spans, enhancing hydraulic design, and utilizing precast prestressed concrete bridges to extend their lifespan, reduce maintenance costs, and enhance structural integrity.

This letter serves as MDOT's formal commitment to provide the necessary $16,878,130 of matching state program funds if the project successfully secures the requested $67,512,520 million of BIP federal funding for FY 2023 - 2024.

Thank you for your consideration of MDOT's FY 2023 - 2024 BIP application.

Sincerely,

Brad White

P. O. Box 1850 • Jackson, MS 39215-1850
Telephone (601) 359-7249 • FAX (601) 359-7050 • GoMDOT.com