



U.S. Department of Transportation - Office of the Secretary

**FY 2021 RAISE Grant Application
Project Narrative + Attachments**

**QUITMAN COUNTY MISSISSIPPI:
RIVERSIDE ROAD
IMPROVEMENT PROJECT**



Quitman County Board of Supervisors
220 Chestnut Street • Marks, MS 38646 • Phone: (662) 326-3520 • www.quitmancountymiss.org

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To the Evaluation Team:

The Quitman County Board of Supervisors is pleased to submit our application for the Riverside Road Improvement Project for funding consideration under the FY 2021 RAISE: Department of Transportation's National Infrastructure Discretionary Grant. Funding this project will help to prevent future flooding, property loss, displacement of families, and will provide a safer route for residents to connect with State Highway 322. This project will bring an economic boost to this underserved community with the potential to create tourism jobs, attract new businesses and most importantly, provide an opportunity for the residents and tourists to see a part of the iconic Delta landscape that the Coldwater River offers that can only be access by traveling down Riverside Road. Additionally, there are several historic sites which include; the National Shady Grove Indian Mound, the National Wildlife Refuge for the Morning Star Cutoff, and two historic black churches dating back to the 1860s, that are part of the trek experience driving down Riverside Road.

Quitman County is a small, rural underserved community with a current poverty rate of 40.9%. However, the Board of Supervisors is hopeful that RAISE Transportation Discretionary Grants is a viable option to help improve the infrastructure of Riverside Road, which will make this road safer and open up a corridor that can provide opportunities for this community.

Our application addresses the required criteria outlined in the grant guidelines. We appreciate the opportunity to submit this application and ask that it be given consideration for funding.

Sincerely,



Manuel Killebrew, President
Quitman County Board of Supervisors



I. Project Description

The Quitman County Riverside Road Improvement Project will elevate and stabilize Riverside Road above flood stage level and will prevent flooding, which in the past has caused road closures, property damage, isolation from homes, and millions of dollars to be spent in cleanup and helping displaced families. ([Click for more photos](#))

[Riverside Road](#) is a rural gravel road approximately 22 feet wide running northerly from Mississippi Highway 322 for 4.25 miles to the city limits of Marks, Mississippi. For most of the 4.25 miles, the Coldwater River runs parallel and adjacent on the east side of the road. In the city limits of Marks, Riverside Road connects Coldwater and Main Streets that tie into the county's historic downtown district. The proposed improvements to Riverside Road will make this road safer and allow for increased traffic on this route that connects the two most populated communities, Marks and Lambert.

The [scope of this project](#) is to improve the infrastructure of 5.3 miles of roadway that begins in the city limits of Marks, Mississippi, at the intersection of East Main Street and Riverside Drive. (Riverside Drive turns into Riverside Road when entering the county line). The engineer's plan and scope of work for the improvement infrastructure to this road is detailed under [Riverside Road Plan Set 20210702](#). The plan shows that the road progresses southward along the Coldwater River to MS Highway 322. The first 900 linear feet from East Main is a two 12-foot-wide lane, curb and gutter street with 5-foot sidewalk until the road gets to the intersection of Hood Road and Walnut Street. Riverside Drive then turns to three 12-foot wide lanes of curb and gutter with two travel lanes with a center turn lane for turning traffic with a 5-foot sidewalk until it gets out of the city limits of Marks for almost a mile (4950 linear feet). When the roadway gets outside of the City of Marks, it turns into two 12-foot lanes with open 10-foot shoulders for the next 4.044 miles (21,350 linear feet). The sub-base will be treated with 12 inches of cement to six percent by weight, then add four inches of base hot mix with an additional two inches of surface hot mix. Riverside Road will be raised from its present elevation to a grade equal to the high-water mark along the Coldwater River. In the city limits, Riverside Drive will be raised on the Coldwater River side of the existing roadway for approximately three feet, south of town, and will be filled in to approximately five to seven feet to reach that grade in the low areas. These drainage improvements to Riverside Road will not allow it to function as a levee.

There are some wetlands that will be impacted by this project, however, they are in the ditches in which pipes will be laid and box culverts installed for drainage. There will need to be right-of-way acquired for Riverside Road to be constructed to Federal Standard widths. Additionally, existing water and sanitary sewer lines, and some power lines, will be relocated; which are in conflict with the improvements to the Riverside Road infrastructure.





Conditions of portions of Riverside Road near Delta Academy during heavy rain and flooding



Sandbagging during Riverside Road flooding



Sandbagging Riverside Road with ATVs



Pumping the flood waters from Riverside Road

The proposed schedule of completion for this project will be within the established timeline as specified within the RAISE guidelines. A detailed attachment outlines tasks and completion date of each. ([Click link to review project proposed schedule](#))



Proposed site plan to complete the Riverside Road Landing portion at the Coldwater River ([click to enlarge](#)).

Quitman County has been in the middle of the great floods of 1927, 1937, 1950, 1973, 1979 and 1991. After 1991, the county, with help from the federal government, built a ring levee and installed pumps to help prevent future flood damage. The pumps helped to mitigate excess water somewhat, but not enough to prevent flooding on key sections of Riverside Road.

The U.S. Army Corps of Engineers assisted Quitman County and the town of Marks with the construction of levees on the east side of Riverside Road during the floods in 2000, 2007, 2016, and 2018. These efforts were warranted given the fact that Riverside Road is flanked by the largest residential subdivision in Quitman County, and the flood waters threatened and affected a great many homes and lives in this area. In addition, a private school is located to the west of this road and is often subject to flooding.

There are several historic sites along the route, as well as the Coldwater River; therefore a pedestrian bicycle lane is proposed for this project. There are also two historic churches, the National Shady Grove Indian Mound, and many acres of farmland. Riverside is the only road with access to the National Wildlife Refuge for the Morning Star Cutoff. ([Click for more photos throughout Quitman County](#))



Quitman County is also part of the [1976 Upper Yazoo Project \(UYP\)](#), which includes channel and levee features along the main channel of the Yazoo, Tallahatchie, and Coldwater Rivers from the vicinity of Yazoo City, Mississippi, to the vicinity of the confluence of Arkabutla Creek with the Coldwater River. This project focuses on cleaning out and restoring channel capacity to the Yazoo River and its tributaries, thus providing much needed flood risk reduction for this region by decreasing flood stages up to 3 feet in most areas. This project has been met with opposition in Congress, and the absence of funding will delay remaining flood control and economic benefits to the area by not allowing the construction to proceed. The construction stage has made it to item #6 B along the bank of the Tallahatchie River.

The 2020 Upper Yazoo Program's (UYP) fact sheet indicates this project was geared to address Item 6B, which was construction along the bank of the Tallahatchie River near Phillip, Mississippi. However, there were no funds in the FY20 President's budget for this project to proceed with this phase of construction. ([Refer to 2020 Yazoo Basin, Upper Yazoo Project, MS](#))

The 2021 updated (UYP) indicated for 2021 no budget has been allocated for this project. However, the project total capability for FY21 is \$14,811,00. If these funds are allocated they could be used to acquire land of Item 8B, complete design, construction and engineering for Item 7D Phase II, and to fund S&A during the construction of Item 7D. ([Refer to the 2021 Yazoo Basin, Upper Yazoo Project, MS](#)) The Coldwater River is item #9; therefore, with the funding issues it will take a number of years before the Coldwater River is dredged. ([Click on map](#))



Due to climate change causing increase rain fall and other environmental factors, flooding within Quitman County has been an increasing concern. The basin of the river continues to collect silk and debris that hinders the channel capacity to the Yazoo River and its tributaries. Additionally, over the past five years this project has been met with significant bank caving in these channels which greatly diminishes the conveyance and increases the flooding in Quitman County.

Historical evidence indicates that Quitman County is susceptible to flood events. A total of (5) five flood events have been reported by the National Climatic Data Center resulting in \$2.1 million in property damage and two injuries. On an annualized level, these damages amounted to \$2,005,796 for Quitman County. ([Click here for MEMA's Total Loss for Quitman County](#))

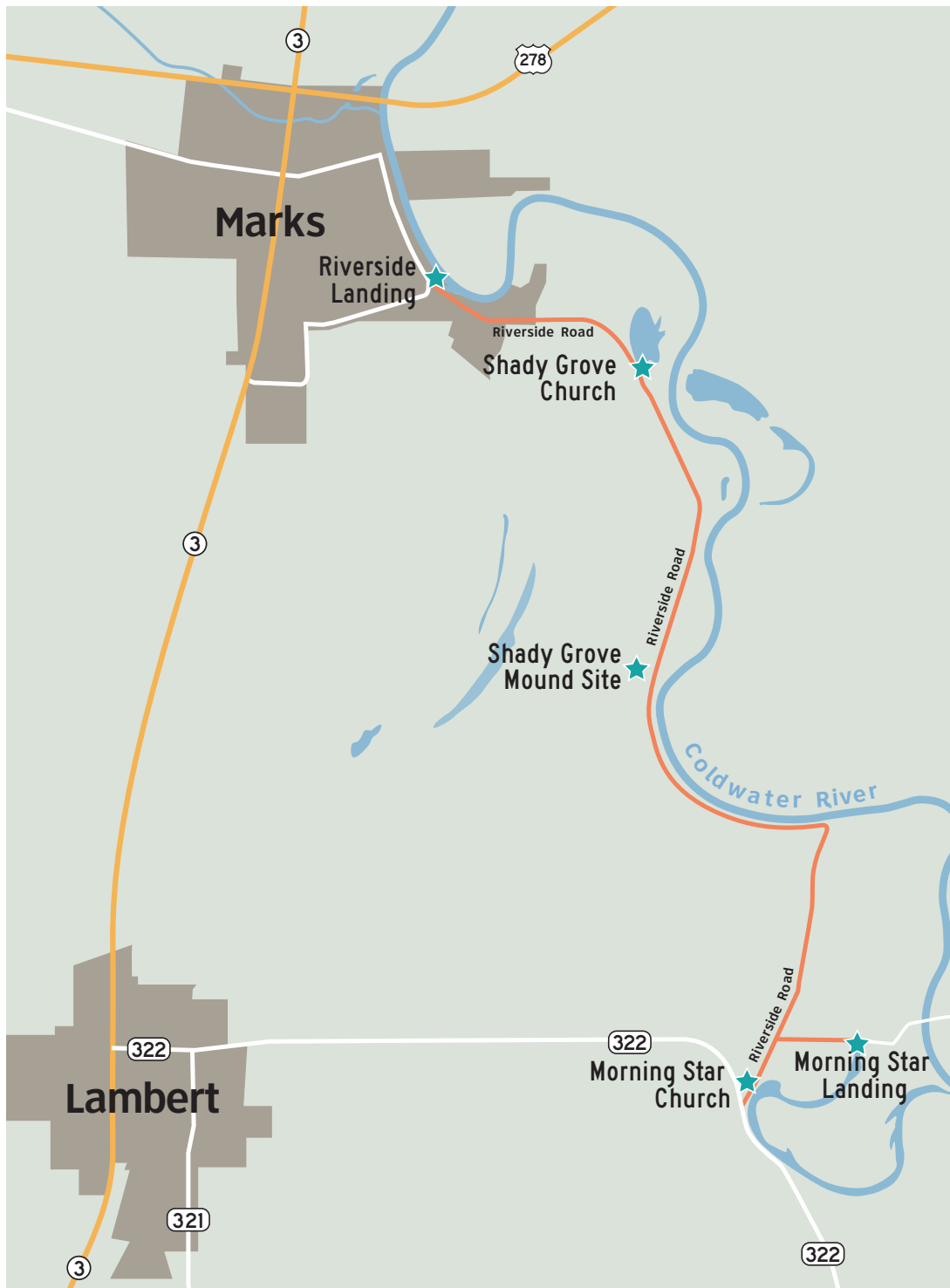


Quitman County is a rural community, and we value partnerships and collaboration with entities that have the resources to assist with the county's decaying infrastructure. The community opened the newest [Amtrak Northwest Regional Station](#) on May 4, 2018, in Marks. This project was largely funded through the support of the Federal Highway Administration (FHWA), and these funds were appropriated through the Mississippi Department of Transportation (MDOT). ([Click for more photos](#))

Construction is ongoing for the replacement of eleven bridges by MDOT on Highway 6. The funding for bridge replacements project was made available through funds from the passage of House Bill 1630, known as the "Gaming Bill," during the 2015 Mississippi Legislative Session. ([Click here to read an article about State 6 Bridge Replacements in Coahoma and Quitman Counties](#))

Highway 6 runs through Quitman County, and one of the major bridges slated for replacement is the [Coldwater River bridge](#), originally built in 1905. This bridge is the gateway into Marks, Quitman's County seat. This bridge construction is scheduled to start in August 2021. This new bridge will be an enhancement to Marks's entrance, and pending future funding will have a direct impact on traffic flow and control to Riverside Road.

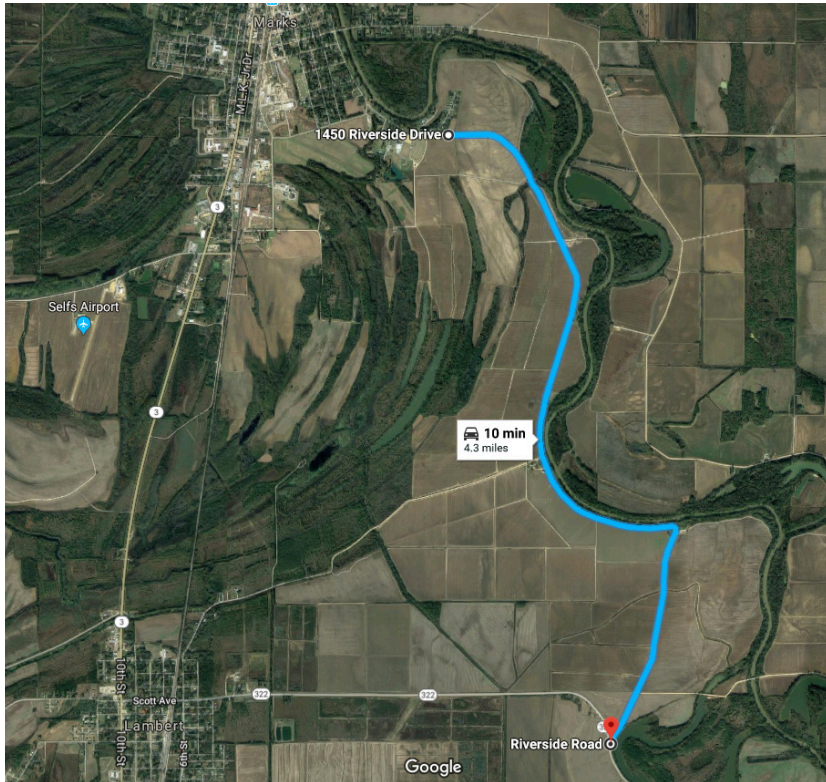




II. Project Location

The Riverside Road Improvement Project connects Marks, Mississippi, to Highway 322, a route that leads to Lambert, Mississippi. This is the only component of this rural project. ([Click to view in Google Maps](#)).

Quitman County is approximately 400 square miles of rich alluvial agricultural resources lying within the Mississippi and Yazoo Delta region in the northwestern portion of the state. Three rivers run through the county: the Coldwater, the Tallahatchie and the Little Tallahatchie. Mississippi State Highways 6 and 3 intersect in the center of the county in Marks. Quitman County is located within the boundaries of the Mississippi Delta National Heritage area.



According to the 2010 Census, Quitman County's population is 8,200. The racial makeup is 27.3% white, 70.9% African American and 1.8% other. The median age is 39, higher than surrounding counties and the Mississippi median age of 37. Quitman County's per capita income is \$14,305, lower than the overall Mississippi per capita income of \$23,299, making it one of the poorest counties with a poverty rate of 40.9%. The unemployment rate is 8.7%, and the jobless rate has increased due to the pandemic. The county's tax base is primarily centered around agriculture, forestry, fishing, and hunting. The rich soil is highly productive, and most of the farmland is considered high yield. The main crops are cotton, corn, soybeans, and rice. The larger row crop farmers generate approximately 2/3 of the taxable income for the county. However, the majority of these farmers live outside of the county, and most live-in neighboring states. With farming now mechanized, few jobs are available in this industry to help support the local population. The biggest downfall of the county's economy came when the three (3) manufacturers closed in the late 1990s. These closures caused a further declined within the county's population and severely corroded the economic base. The last manufacturing company, *Bunge North America* closed in



2013. During the time of closure, it employed fewer than 20 people. Currently, employment in the county is for the most part service-based. Most jobs are in healthcare, social assistance, or education. Other service-sector jobs include arts, entertainment, and recreation. According to the latest Mississippi Department of Employment Security (MDES) figures, over 60 percent of Quitman County's workforce commutes outside the county for employment, and a big portion of those dollars never make it back to the community. The decline of the economy has resulted in lack of funding for education, housing, and healthcare. The rural hospital was the county's largest employer, closed in 2016. The nearest hospitals are located in the neighboring counties of Coahoma and Panola, which is a 30-minute drive to either location. Most recent data from the National Rural Accountable Care Consortium for the 82 counties in Mississippi, has Quitman County ranked 79th for health outcomes, 79th for health behavior, and 77th for health factors. Significantly, the county has an obesity rate of 42 percent. The 2017 closing of the only full-service grocery store resulted in repercussions to the county's health and economy, the loss of 25-30+ jobs, and a reduction in sales tax revenue, thus Quitman County became a food desert. The nearest grocery stores were located in the neighboring counties of Coahoma and Panola, and it took a one-hour round trip to reach either place. The closures affect the elderly and disabled particularly hard. Many elderly residents had to pay someone to drive them for hospital visits and to purchase food. On April 5, 2021, the full-service grocery store located in Marks, reopened after being closed for four years. The [reopening](#) was coordinated by a partnership of the Quitman County Board of Supervisors, the city of Marks Aldermen and local leaders.

The [annual flooding](#) is one of the contributors to the systemic poverty in Quitman County. There are hundreds of blighted-abandoned properties throughout this small rural county. Over 80% of the blighted homes is impacted by flood water. Many of residents can't afford flood insurance, and have to abandon their properties; or without any recourse, residents continue to occupy these homes. Currently 1/3 of the homes occupied by Quitman County residents are not in good repair. In addition to flood damages, related severe storms have caused roof and structure damage to many of these homes. The county's elderly population, which make up 24% of the population, lives on fixed incomes and with a per capitol income of \$14,305 most resident can't afford the necessary home repairs. Many residents are subjected to hazardous health concerns, such as respiratory infections, which can trigger allergies, especially from mold caused by flood-contaminated water.

After witnessing heartbreaking poverty on a trip to the Mississippi Delta, Dr. Martin Luther King, Jr. chose Quitman County/ Marks, Mississippi, as the starting point for his 1968 Poor People's Campaign to Washington, D.C. At that time, Quitman County was ranked the poorest county in America. Dr. King's three visits to Marks and Quitman County in the 1960s took place during the peak of the Civil Rights Movement, which highlighted social and political discontent and led to cataclysmic changes in our nation. Based on recent data, Quitman County is still ranked 10th with the lowest medium household income.



In 2009, the U.S. Congress created the [Mississippi Delta National Heritage Area](#) to foster preservation, perpetuation and celebration of the Delta's heritage through a climate of collaboration and sustainable economic development. Quitman County was given this distinction along with seven other Delta counties. The National Park Service defines heritage areas as being places "where natural, cultural, historic and scenic resources combine to form cohesive, nationally distinctive landscapes arising from patterns of human activity shaped by geography."

The Delta is a major source of America's popular culture and a major player in the nation's history. Both blues and gospel music were born in the Delta, but spread along with the migrating population to Chicago, New York, Detroit, Los Angeles, and over the airways to London and Tokyo. Jazz, soul, bluegrass, rock 'n roll, rap, and hip hop all incorporate the sounds of the Delta. The Delta is also a land of scenic beauty. The Mississippi River is one of the greatest geological forces in the world. It demarcates the most important migratory flyway in North America.



Quitman County has a highly significant Native American history with archaeological sites representing many pre-historic cultures. Quitman County has four Native American Mounds listed on the National Historic Register. The Denton Site is highly significant as it dates to the Middle Archaic period, approximately 4000 B.C., and appears to have been a "node of interaction" for cultural activity throughout the region. The northwest region is home to cultural artifacts left behind by the Choctaw and Chickasaw Native Americans in their migration

westward. It has been estimated that over 200,000 members of these tribes were living in what is now the Mississippi region. These ancient cultures left behind several groups of mounds that are designated as national landmarks. The Shady Grove Mound is located on rural Riverside Road and is considered a tourist destination. [\(Click the picture for a video of the mound\)](#)

Quitman County is also designated as part of the [Mississippi Freedom Trail](#). In 2011, Marks was selected from over 200 sites viewed as one of the thirty locations in Mississippi to receive a historical marker by the Mississippi Freedom Trail Task Force. [The marker was erected in Marks on October 2, 2015,](#) to honor the Mule Train's legacy, or the beginning of MLK's 1968 Poor People's Campaign. In May 2018, Quitman County commemorated the [50th Anniversary](#) of its history, and most recently, the 53rd Anniversary which [honored Local 24 News anchor Katrina Rankin for her work in a Mule Train documentary.](#)



Even though Quitman County has faced economic and climatic challenges, it has the rich Delta soil that is a staple for agricultural in producing and providing products and food for America. One of the most important facts is that the people and the local/regional leaders in Quitman County are resilient in not allowing poverty to define their path to economic development or hindering the opportunity for prosperity. Based on this, Quitman County's natural assets, Native American, Civil War and Civil Rights histories, it has a foundation to rise above the negative circumstances and move toward an improved quality of life. And, the Riverside Road improvement project fits into this equation of helping to spur economic possibilities.

Based on the cultural significance of Quitman County, its rich farmland, terrestrial habitat and wildlife, and the opportunities to increase tourism and recreational activities, all these benefits will show increase in the overall economics to this county as well as to the region with the improved infrastructure of Riverside Road.



Riverside Road Improvement Project

Quitman County
Marks, MS

III. Proposed Budget

The total estimated budget is \$11,074,625.00 ([Click the image to view larger](#))

WILLIAMS, CLARK & MORRISON, INC. CONSULTING ENGINEERS

J. B. Williams (1897-1988)

J. B. Williams, Jr., P.E., PLS (1924-2011)

Frederick R. Clark, P.E., PLS (1926-2006)

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YAZOO CITY, MISSISSIPPI 39194

DRAINAGE
FLOOD PREVENTION
HIGHWAYS and STREETS
LAND SURVEYS
MUNICIPAL WORKS

Riverside Road
Quitman County, MS
Preliminary Opinion of Estimated Project Cost
6/4/2021

Pay Item	Quantity	Unit	Unit Price	Cost
Mobilization	1	LS	\$ 250,000.00	\$ 250,000.00
Clearing and Grubbing	1	LS	\$ 20,000.00	\$ 20,000.00
Removal of Concrete Curb and Gutter	7500	LF	\$ 12.00	\$ 90,000.00
Removal of Sidewalk	100	SY	\$ 12.00	\$ 1,200.00
Removal of Asphalt	60500	SY	\$ 6.00	\$ 363,000.00
Removal of Pipe	8000	LF	\$ 10.00	\$ 80,000.00
Unclassified Excavation	100000	CY	\$ 6.00	\$ 600,000.00
Borrow Excavation	164000	CY	\$ 12.00	\$ 1,968,000.00
Granular Material	8000	CY	\$ 28.00	\$ 224,000.00
Portland Cement	55000	CWT	\$ 8.00	\$ 440,000.00
12" Soil Cement Mixing	80000	SY	\$ 3.00	\$ 240,000.00
HMA 12.5mm	27000	TON	\$ 110.00	\$ 2,970,000.00
Storm Drainage Pipe	7500	LF	\$ 40.00	\$ 300,000.00
Storm Drainage Inlets	60	EA	\$ 1,500.00	\$ 90,000.00
Concrete Sidewalk	3100	SY	\$ 50.00	\$ 155,000.00
Concrete Driveway	500	SY	\$ 50.00	\$ 25,000.00
Combination Curb and Gutter	12000	LF	\$ 30.00	\$ 360,000.00
Right of Way Markers	40	EA	\$ 200.00	\$ 8,000.00
Maintenance of Traffic	1	LS	\$ 40,000.00	\$ 40,000.00
Pavement Striping	5.3	MILE	\$ 10,000.00	\$ 53,000.00
Signs	40	EA	\$ 250.00	\$ 10,000.00
Erosion Control	5.3	MILE	\$ 25,000.00	\$ 132,500.00



Construction Cost	\$ 8,419,700.00
Engineering	\$ 1,010,364.00
Material Testing	\$ 252,591.00
Contingency	\$ 841,970.00
ROW Acquisition	\$ 250,000.00
Wetlands & Cultural	\$ 50,000.00
Utility Relocation	\$ 250,000.00

Total Project Cost	\$ 11,074,625.00
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Quitman County Board of Supervisors
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Quitman County Board of Supervisors is submitting this project under what can be termed as category “emergency,” based on the predicted flooding patterns of the Coldwater River forecast for the region. Without action to improve Riverside Road, additional federal and county funds will be expended to address post-flooding crisis.

Based on Quitman County’s demographics as one of the poorest counties in the nation, the county has a [40.9% poverty rate](#). The county’s millage rate is 69.9; an increase in taxation on mills to generate 20% matching funds would equate to an increase of 12 mills to the taxpayers. Any deemed increase would bring hardship to county taxpayers given that 24% of the population (2,191) is between the ages of 55 to 85. Most in the category are retired or on fixed incomes or disabled. Farmers generate approximately 2/3 of the taxable income within Quitman County. They account for the largest tax base since the loss of three manufacturers in 1990. The last company, Bunge, closed in 2013. Therefore, the Board of Supervisors is requesting 100% funding for this project.

Quitman County annual revenues for the past three years are as follows:

2018	\$9,014,863.00
2019	\$13,223,122.00
2020	\$11,320,850.00

[View more details](#)

A possible scenario would be an in-kind contribution of \$800,000.00 from the Quitman County Road Department, which would assist in road preparation and construction costs based on the engineer’s estimate. One paid item would be clay gravel as a sub-base and base to the asphalt, which would total approximately 37,500 cubic yards. The average State Aid Program unit price for clay gravel installation is \$25.35 per CY or nearly \$950,000. The county can furnish and haul gravel to the contractor. The gravel is \$3 per cubic yard, and the freight to haul is \$8 per cubic yard, for a total county in-kind contribution of \$800,000.00.

IV. Merit Criteria

PRIMARY SELECTION CRITERIA

A. SAFETY

The biggest safety impact would prevent future flooding on Riverside Road that would mitigate the potential loss of life, property damages and additional federal dollars and county dollars spent on cleanup and displacement of families.

It is alarming that only 19% of all of the nation’s population lives in rural areas, yet 49% of all traffic fatalities occur on rural roads similar to Riverside Road. This road is traveled frequently and is the only road that provides access to local housing developments, two churches, and a local K-12



Riverside Road Improvement Project

Quitman County
Marks, MS

private school. It is also used by farmers, recreational enthusiasts and tourists. Over 75% of the roads in Quitman County are gravel. One of the biggest complaints is the hazardous impact these roads have on the travelers' vehicles: broken windshields, the need for frequent alignments due to potholes and unbalanced surfaces, damage to paint from flying rocks, and accidents. Repairs due are costly to residents. With Riverside Road as one of the most frequently-traveled routes, many complaints are addressed due to the condition of this road. Therefore, the Quitman County Road Department uses a large percentage of its maintenance budget attempting to keep Riverside Road in good repair, but having to neglect some of the less-traveled gravel roads in Quitman County.

DISTRICT 1

ROAD		GRAVEL MILES	PAVED MILES
ARMSTEAD-JONES RD	Paved		5.1
BALLENTINE ROAD		3.2	
BLAINE ROAD		4.2	
BOWLES ROAD		0.25	
BOYD ROAD		0.25	
BUDDY JONES LANE	Private		0
BURNSIDE ROAD		1	
CLEVELAND ROAD		0.1	
CRENSHAW ROAD	Paved		6
DEAN ROAD		1.7	
DOVER ROAD		1.9	
FAIRHAVEN LOOP		4.5	
FALCON ROAD		2	
GOLDEN ROAD		0.2	
HALE-HODO ROAD		2.3	
HANDY ROAD		2.4	
HIBBLER ROAD		0.1	
HOLT ROAD		2.3	
HOWZE LANE	Private		0
HUGHES ROAD		1	0.3
JENKINS ROAD		1.9	
K T ROAD		0.9	
LEISURE ROAD SLEDGE		0.4	
MEUCCI ROAD		0.3	
PECAN ROAD		0.1	
PHIPPS ROAD		0.2	
PILGRIMS REST ROAD		0.1	
PRESLEY ROAD		3.2	
RAYNOR ROAD		0.1	
ROBERT HOLDER RD		1	
SHAW ROAD		0.7	
SIMPSON ROAD		4.4	
SORRELS ROAD		0.2	
SQUIRREL LAKE ROAD		3.3	
STONE ROAD		2	1.8
TYLER LANE	Private		0
TOTAL		46.2	13.2

[Click to view all districts in a larger format](#)



Currently Highway 3 is the main thoroughfare between Marks and Lambert, which connects to Highway 6 and is located west of the Canadian National Railway (CN). These tracks run the length of the county, and CN trains travel through the heart of the residential and business districts of these communities 18 times daily carrying hazardous materials. The improvements to Riverside Road would provide a secondary evacuation route to the east side of the Canadian National Railway in the event of a derailment disaster. It will also provide a direct secondary route that would allow residents to travel from Marks to Lambert without having to experience delays due to rail guard crossings allowing trains to pass through.

The addition of a bike and walking trail will only add to the improvement to Riverside Road, giving cyclists and pedestrians a safe space to ride and walk. Recent statistics from MDOT state that unintentional pedestrian injuries are the fifth leading cause of injury-related deaths in the United States for children ages 5 to 19. And most alarming, there were a total of 4,743 pedestrian fatalities in 2012; the 14-and-younger age group accounted for 5% of those fatalities. More than one fifth (22%) of the 14-and-younger age group were pedestrians.

B. ENVIRONMENTAL SUSTAINABILITY

The Coldwater River is a valuable asset to Quitman County and this region. It flows for 220 miles through northwestern Mississippi. It is a tributary of the Tallahatchie River, and part of the watershed of the Mississippi River, via the Yazoo River. The Coldwater National Wildlife Refuge is located in northwest Mississippi, 4.5 miles (7.2 km) south of the town of Crowder. Established in 2000, this small refuge consists of 2,069 acres (837 ha) within an acquisition boundary of 16,000 acres (6,500 ha). The centerpiece of the refuge is 25 former catfish ponds ranging in size from 9 to 21 acres (3.6 to 8.5 ha) and totaling 495 acres (200 ha). These ponds are intensively managed for migrating waterfowl, shorebirds and wading birds. A majority of the refuge has been reforested in native bottomland hardwood species. Almost the entire refuge is flooded annually during the winter/spring by the Coldwater and Tallahatchie Rivers. Up to 50,000 migratory waterfowl winter on the refuge, and 34 species of shorebirds have been recorded during spring and fall migration. Peregrine falcon, least tern, black tern, bald and golden eagles, and wood stork have been observed. Due to intensive management, the refuge is critically important as a sanctuary for waterfowl and other neotropical migratory birds. Riverside Road is in proximity to the Coldwater National Wildlife Refuge and oxbow lakes in the backwaters of the Coldwater River and Little Tallahatchie River.

Two historic African Americans Churches are landmarks within the black community. They once served as schools during the 1860s-1950s to help educated freed slaves and blacks. The churches' cemeteries are the burial grounds for slaves and noted blues legends. In retrospect, given the significance of Riverside, it is an environmental injustice that over a century-year-old road has not been paved, that would help ensure safe travel to these national and iconic sites. The improvements to this road would produce a sustainable redevelopment along the route. Rural homes, as well as

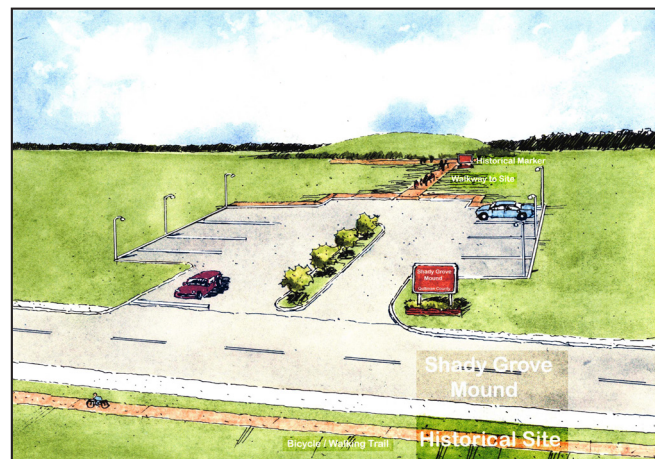


the natural beauty of the ecosystem of the Coldwater River can be seen and enjoyed without having to travel down miles of a dusty, gravel road. The environmental sustainability can be measured in recreational factors, such as easy management of the riparian area along the river, enjoyment of the vegetation along the route, and new construction of a fitness trail to promote health and wellness. Redeveloping Riverside to be more environmentally conducive and safer to travel will help this community have a rural scenic route that represents the best on the iconic Delta landscape.

C. QUALITY OF LIFE

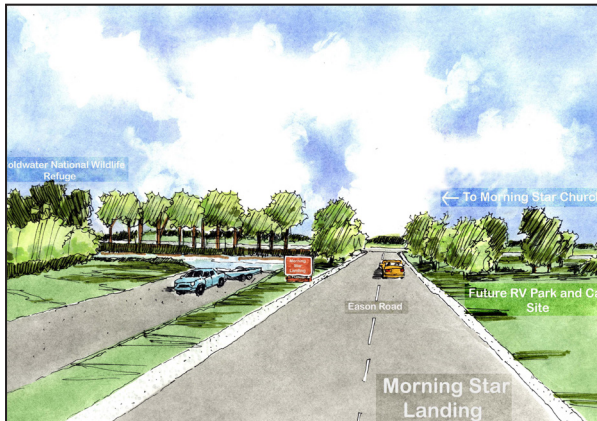
Funding the Riverside Road Improvements Project will open up new opportunities that will improve the quality of life within these communities. If funded, this project will open up a new quadrant that will capitalize on some of Quitman County's greatest assets, which include: the Coldwater River, open land which is ripe for development, future housing development, cultural and historic tourism, and recreational opportunities.

The residents living along Riverside Road would see an increase in their property values, and with a decent, safer road that is surrounded by many of areas of farmland that is situated on the east and west side of Riverside Road and free from the flood zone, a potential housing development could be in the future. During the heyday of cotton farming in the 1930s through 1970s, rows of houses lined Riverside Road, providing housing for day workers who lived on the plantations. With the improvements in the infrastructure on this road, it would be the ideal location for a much-needed future housing subdivision to deal with the [blight and inadequate housing within these communities](#).



*Shady Grove Mound Site with parking and easy viewing access
(click to enlarge)*

Besides the potential of an affordable housing development, other opportunities include opening an RV park that would offer recreational activities such as camping and canoeing to help bring economic stimulus to this region. The optimal location for this park and campsite would be west on the acres of land adjacent to the Coldwater National Wildlife Refuge. The Mississippi Department of Wildlife, Fisheries and Parks reported that 1.38 million total visits in fiscal year 2016 were at Arkabutla, Enid, Grenada and Sardis lakes. These are lakes located in close proximity to Quitman County. The report stated that hunting, fishing and other wildlife-related activities entice visitors to Mississippi. Traveling parties spend money on food, lodging, transportation, fuel, fishing and hunting equipment, auxiliary expenses and special equipment. Camping and recreational vehicles



Morning Star Landing + Entrance to the Coldwater National Wildlife Refuge (click to enlarge)



Riverside Road near Shady Grove Historic Church for potential housing development (click to enlarge)

play significant roles in Mississippi's travel and tourism economy. Mississippi houses 13,910 RV spaces with electricity and water and 1,932 campsites. The RV park could be a transformative factor, creating new economic opportunities for Quitman County.



Riverside Road near Morning Star Church with bicycle path (click to enlarge)

A bicycle lane is a part of the proposed Riverside Road Improvement Project, and with the health disparities within Quitman County, this addition to Riverside Road would be a safe route for walking or riding and produce great health benefits to the community. According to the [National Rural Accountable Care Organization](#), Quitman County has a rate of 58% of the adult population dealing with high blood pressure, 45% high cholesterol, 31% heart disease, and 16% diabetes.

Mississippi has the second highest adult obesity rate in the nation, according to [“The State of Obesity: Better Policies for a Healthier America.”](#) released August 2017. Mississippi's adult obesity rate is currently 37.3%, up from 23.7% in 2000, and from 15% in 1990.

Many communities have trails that become sources of community identity and pride. These effects are magnified when communities use bike lanes and greenways to highlight and provide access to historic and cultural resources. Riverside Road is the ideal location for the bike lane. Trees will be planted in strategic places along the bike route to provide a breezeway for the cyclists and walkers.

Not only will the community benefit from the public health factors of the bike lane, also it will have an economic impact and help bring revitalization to Quitman County.

The planting of trees for the improvement along Riverside Road will be at a later date, if this project is funded. The Quitman County Board of Supervisors will seek grants through the National Park Service and other entities to help create the greenway for the bicycle lane.

The creation of jobs would have the most impact on the quality of life for the communities in Quitman County. If funded, the construction of this project could bring an infusion to help stimulate this economy. During the construction phase, the engineer and contractors could employ local laborers; the local restaurants, gas stations, and suppliers would benefit from the traffic; and the county and towns would benefit from the increase in sales tax. Also, if funded, the construction and improvements to Riverside Road would produce an opportunity to increase tourism to Quitman County, and to create permanent jobs in the private sector. Tourism is a vital component of Mississippi's economy. More than 87,000 Mississippians work directly in the travel and tourism trade, with nearly 98% employed in the private sector. According to the FY 2017 [Mississippi Development Authority](#) findings, those numbers only tell part of the story. The attractions making up Mississippi's vast tourism assets also create more vibrant communities where people not only want to visit, but also to live. Quality of life is directly related to the abundance of opportunities.

D. ECONOMIC COMPETITIVENESS

The replacement of eleven bridges on Highway 6 will have a great impact and will increase traffic on this route. Quitman County is positioned between Coahoma and Panola counties off Highway 6, which is located 19 miles west of Panola County and 21 miles east of Coahoma County. There are two major highways influencing traffic patterns in this region. Highway 6 intersects with Interstate 55 in Panola County and Highway 61 entering Coahoma County. To the north of Coahoma County is Tunica County, which is known for its gaming tourism.

Quitman County is in an advantageous location to influence traffic into its communities. ([Click the map to see detailed traffic counts](#)). Currently Highway 3 is the most viable route off of Highway 6 into the towns of Marks and Lambert; however, the improvements to Riverside Road would serve as a secondary scenic route, because it is parallel to the Coldwater River and offer travelers easy access to two boat landings and optional views of historic, cultural, and natural sites. Riverside Road is an alternate road south from Highway 6 to 322, connecting with Tallahatchie County, Highway 35, and other pathways south.

This year Quitman County and the City of Marks have received a [letter of intent](#) from the National Rhythm and Blues Hall of Fame to construct a building complex within the City of Marks as



Riverside Road Improvement Project

Quitman County
Marks, MS

the location to honor the county's civil rights history, national history of rhythm and blues and the iconic county music legend, Charley Pride. This proposed project consists of constructing a 30,000-50,000-building complex. This project is estimated to bring in 30,000 visitors and generate additional tax revenue for county. The entrance into [Hall of Fame](#) will be off of Riverside Road.

Based on the [2017 Economic Impact Report](#) from Visit Mississippi, travel and tourism is one of Mississippi's largest export industries, generating economic benefits directly affecting the state. Out-of-state visitors to Mississippi spent more on travel and tourism than in other states and abroad. Out-of-state visitors spent an estimated \$4.9 billion in Mississippi, accounting for 77.3 percent of the \$6.343 billion in statewide FY 2017 visitor spending. Mississippians traveling within the state 50 miles or more (one-way), spent an estimated \$1.44 billion on in-state trips, or 22.7 percent of \$6.343 billion. An in-state visitor, on average, spent \$195 on their entire Mississippi trip, versus \$304 for an out-of-state domestic visitor. Quitman County averaged \$1.1 million spent by travelers, which helped to support 15 direct jobs. Thus, it took \$73,646 in travel spending to support one direct job in Quitman County. The improved infrastructure project for Riverside Road would help generate additional tourism dollars into the Quitman County economy.

County	Travel and Tourism Expenditures by Visitors (1)	Direct Travel and Tourism Employment	Travel and Tourism Employment Percentage (2)	State/Local Taxes/Fees Attributed to Tourism (3)	Tourism Capital Investment
Quitman	\$1,048,208	15	1.4	\$111,224	\$72,779

County	Travel and Tourism Expenditures by Visitors (1)	Direct Travel and Tourism Employment	Travel and Tourism Employment Percentage (2)	State/Local Taxes/Fees Attributed to Tourism (3)	Tourism Capital Investment
Quitman	\$901,515	13	1.3	\$103,500	\$1,410,053

With the absence of manufacturing jobs in Quitman County, the Board of Supervisors is looking toward tourism to become a vital component of the county's economy. The opportunity to increase tourism in the region is the main reason the local and regional stakeholders lobbied, pushed and supported the newest [Northwest Regional Amtrak Station, which opened May of 2018](#), and is located in Marks. [Amtrak's "City of New Orleans"](#) will stop daily on routes running between Chicago and New Orleans and will connect travelers to other routes across the country. The station will provide affordable passenger rail transportation to over 200,000 citizens in this region, and can serve as a catalyst for downtown revitalization and economic growth for Quitman County and this region. For the first year Amtrak's estimated ridership for the station opening 12,100; and rising after 5 years to 13,400, and reaching 18,000 after twenty years.



The county has invested in the [Mules & Blues Festival](#) that is in its fifth year and had an estimated attendance of over 3,000 in 2019. Over 70% of the attendees come from out of state. Due to the pandemic the festival was canceled in 2020, but will resume pending the state fully clearance to reopen festival venues. Regional blues and music festivals, civil rights history, and museums are the economic engines that are driving tourists to visit Mississippi, especially in the Delta.



This is an opportunity for private development that will help promote economic growth.

E. STATE OF REPAIR

With the Riverside Road Improvement Project, it is imperative to stabilize the base and elevate certain areas to prevent flooding and road closures. If Riverside Road remains unpaved when waters overflow from the Coldwater River, the base of the road will continue to erode and flooding will be certain. The estimate and scope of work for ongoing maintenance and repair of the existing gravel road and drain issues is demonstrated in the cost estimate below. Based on this information, the life expectancy for a paved road would be cost effective with less maintenance required.

According to the engineer's estimate, the O&M cost for gravel would be about \$1,600 per week, and the road would have to be graded every week. It would take 8 hours for a motor grader at \$200 per hour. About every 3 years, some gravel would have to be added due to attrition. We estimate that 100 CY per mile times 4.25 miles is 425 CY, at \$25 per CY or \$8,500 every 3 years in addition to the weekly amount.

Benefits of paving include very minimal maintenance for the first ten years on pavement versus the above associated costs for gravel. Pavement offers cleaner air from dust control, smoother rides, and less vehicle maintenance by the road users.



SECONDARY SELECTION CRITERIA

A. PARTNERSHIP

Approximately 1 mile of Riverside Road is within the city limits of Marks, Mississippi. Pending funding, the Board of Supervisors will be entered into a memorandum of understanding to improve this section of the road. ([See City of Marks letter of support](#))

[Williams, Clark & Morrison, Inc.](#) is currently the Quitman County Board of Supervisors' engineer firm. They will be providing the technical engineering service and overseeing the construction phase. This firm have been in business for 19 years and they provide services related to transportation engineering, civil engineering and land survey, environmental and sanitary engineering, municipal engineering, community development and materials testing.

[North Delta Planning and Development District \(NDPDD\)](#) is an agency established to serve as a liaison between local government and the various state, regional, and federal agencies involved in development of economic, community, and human resources. If funded, this agency with assist the Quitman County Board of Supervisors will the administration of funds and help oversee the engineer's budget component and reporting compliance. The NDPDD is governed by a twenty-eight (28) member Board of Directors. It is managed by Executive Director, James Curcio, and is staffed with administrative personnel, and specialists in areas such as planning, economic development, community development, job training, social services, transportation, geographic information systems, data processing, gerontology, and community-based Medicaid programs.

[Mississippi Department of Transportation \(MDOT\)](#) staff from this department will be working with Williams, Clark & Morrison Engineering firm on compliance with state regulations with easements and right-of-way impacted state highway 6 and 322. ([See letter of support](#))

[U.S. Army Corps of Engineers \(USACE\)](#) Vicksburg District encompass a 68,000-square-mile area across portions of Mississippi, Arkansas and Louisiana that holds seven major river basins and incorporates approximately 460 miles of mainline Mississippi River levees. They are engaged in hundreds of projects, and the project that directly impact Quitman County is the Upper Yazoo Basin Project. This project began in 1976 near Yazoo City. It focuses on cleaning out and restoring channel capacity to the Yazoo River and its tributaries, which include channels of the Yazoo, Tallahatchie and the Coldwater River. Quitman County and the City of Marks have worked with USACE staff from the Vicksburg District on past floods impact the communities. Thus, the engineer firm will be consulting with USACE staff on the Riverside Road Improvement project to be compliance with require regulations related to flood control mitigation and wetlands.

B. INNOVATION

The secondary criteria of innovation, innovation technologies and innovative financing are not relevant components of this project.



IV. Project Readiness & Project Schedule

The engineer's set of plans have been prepared and this project is in a development stage that will meet the required statutory deadline of June 30, 2024, that identifies major project milestones. The county engineer will work with the County Board of Supervisors and have all design considerations, permits, environmental clearance, and ROW acquisition under contract within 24 months from award date. A project of this magnitude will require a construction time of 240 working days or 336 calendar days from the notice to proceed to the contractor. Another 90 calendar days will be required to close out the project. A realistic timeline from award to closeout is 40 months.

As with all projects, some delays along the way should be expected, and this project is no exception. The Board of Supervisors is committed to seeing the project completed on time. The Board has committed to seeing that there are no delays in utility relocation, right of way acquisition, permitting requirements, and mitigation. The procurement time will take approximately 3 months, and this is built into the time allotted for the design in the Project Readiness and Project Schedule Section.

Riverside Road -- Project Proposed Schedule

Notice of Award – October 2021	Notice to proceed – February 2023
Engineering Contracts Signed – December 2021	Estimated start date of construction – March 2023
Notice to Proceed by Quitman County for Engineering Work – December 2021	Begin construction staking – March 2023
Program project in STIP- January 2022	Install traffic control devices – March 2023
Review locations for utility conflicts – January 2022	Clearing and grubbing site – April 2023
Geotechnical Work – February 2022	Over excavation of unsuitable soils – April 2023
Complete field work – March 2022	Begin demolition of pavements – May 2023
Hydraulic Analysis drainage structures – April 2022	Begin laying pipe/drainage structures – June 2023
Regulatory permit 404 application – April 2022	Begin demolition of pavements – June 2023
Right-of-way plans finalized – May 2022	Concrete box culvert construction begin – June 2023
Conceptual plan review – May 2022	Begin hauling dirt – July 2023
Plans-in-hand Field inspection – June 2022	Begin soil cement operations – September 2023
Submittal of regulatory permits – June 2022	Curb and gutter work – October 2023
Office review plan review – July 2022	Hot mix paving- October 2023 – December 2023
Final contract plans and documents – August 2022	Striping – March 2024
Rights-of-way obtained – September 2022	Landscape – March 2024
Utilities adjusted – October 2022	Clean up – April 2024
Environmental work complete – November 2022	Permanent erosion control – May 2024
Advertise for construction – December 2022	Final inspection – June 2024
Preconstruction conference – January 2023	

[View larger](#)



Riverside Road Improvement Project

Quitman County
Marks, MS

Cost Benefit Analysis: Discounted Benefits & Costs

[Click to view larger.](#)

Year		Total Restore and O & M Costs: Gravel Road	Discounted Total Restore and O & M Costs: Gravel Road	Total of Development and O & M Costs: Paved Road	Discounted Total Development and O & M Costs Paved Road	Discounted Net Costs/Savings from Gravel to Paved Road	Economic, Environmental, and Safety Benefits/a	Discounted Economic and Environmental Benefits/a	Discounted Benefits from Good State of Repair: Riverside Road/b
0									\$ 2,149,302
1	2019	\$ 1,375,568	\$ 1,375,568	\$ -	\$ -	\$ (1,375,568)	\$ 6,069,005	\$ 6,069,005	
2	2020	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,148,124	\$ 5,745,911	
3	2021	\$ 3,630,860	\$ 3,171,334	\$ 11,074,625	\$ 9,673,006	\$ 6,501,672	\$ 5,724,508	\$ 5,000,007	
4	2022	\$ 17,508	\$ 14,292	\$ -	\$ -	\$ (14,292)	\$ 5,777,491	\$ 4,716,154	
5	2023	\$ 18,064	\$ 13,781	\$ -	\$ -	\$ (13,781)	\$ 5,912,445	\$ 4,510,576	
6	2024	\$ 18,638	\$ 13,288	\$ -	\$ -	\$ (13,288)	\$ 5,550,695	\$ 3,957,569	
7	2025	\$ 19,230	\$ 12,814	\$ -	\$ -	\$ (12,814)	\$ 5,547,774	\$ 3,696,716	
8	2026	\$ 19,840	\$ 12,356	\$ -	\$ -	\$ (12,356)	\$ 5,549,068	\$ 3,455,680	
9	2027	\$ 33,703	\$ 19,616	\$ -	\$ -	\$ (19,616)	\$ 5,536,145	\$ 3,222,087	
10	2028	\$ 21,121	\$ 11,488	\$ -	\$ -	\$ (11,488)	\$ 5,535,456	\$ 3,010,921	
11	2029	\$ 21,792	\$ 11,078	\$ 6,698	\$ 3,405	\$ (7,673)	\$ 5,535,945	\$ 2,814,194	
12	2030	\$ 22,484	\$ 10,682	\$ 2,603	\$ 1,237	\$ (9,445)	\$ 5,466,073	\$ 2,596,892	
13	2031	\$ 23,198	\$ 10,300	\$ 2,686	\$ 1,193	\$ (9,107)	\$ 5,540,429	\$ 2,460,017	
14	2032	\$ 2,105,327	\$ 873,636	\$ 2,771	\$ 1,150	\$ (872,486)	\$ 5,544,408	\$ 2,300,732	
15	2033	\$ 24,695	\$ 9,577	\$ 2,859	\$ 1,109	\$ (8,468)	\$ 5,547,495	\$ 2,151,414	
16	2034	\$ 25,479	\$ 9,235	\$ 9,563	\$ 3,466	\$ (5,769)	\$ 5,555,808	\$ 2,013,680	
17	2035	\$ 26,288	\$ 8,905	\$ 3,044	\$ 1,031	\$ (7,874)	\$ 5,563,216	\$ 1,884,454	
18	2036	\$ 27,123	\$ 8,587	\$ 3,140	\$ 994	\$ (7,592)	\$ 5,571,754	\$ 1,763,875	
19	2037	\$ 47,242	\$ 13,977	\$ 3,240	\$ 959	\$ (13,019)	\$ 5,581,417	\$ 1,651,340	
20	2038	\$ 28,873	\$ 7,984	\$ 3,343	\$ 924	\$ (7,059)	\$ 5,592,200	\$ 1,546,290	
21	2039	\$ 29,791	\$ 7,698	\$ 9,525	\$ 2,461	\$ (5,237)	\$ 5,604,098	\$ 1,448,205	
22	2040	\$ 30,737	\$ 7,423	\$ 3,559	\$ 859	\$ (6,564)	\$ 5,617,106	\$ 1,356,605	
23	2041	\$ 31,713	\$ 7,158	\$ 3,672	\$ 829	\$ (6,329)	\$ 5,631,219	\$ 1,271,040	
24	2042	\$ 55,951	\$ 11,803	\$ 3,788	\$ 799	\$ (11,004)	\$ 5,646,434	\$ 1,191,098	
25	2043	\$ 33,759	\$ 6,656	\$ 3,909	\$ 771	\$ (5,885)	\$ 5,662,747	\$ 1,116,391	
26	2044	\$ 34,832	\$ 6,418	\$ 394,053	\$ 72,604	\$ 66,186	\$ 5,680,155	\$ 1,046,564	
27	2045	\$ 3,137,201	\$ 540,212	\$ 4,161	\$ 717	\$ (539,495)	\$ 5,698,653	\$ 981,282	
28	2046	\$ 37,079	\$ 5,967	\$ 4,293	\$ 691	\$ (5,276)	\$ 5,718,239	\$ 920,238	
29	2047	\$ 66,282	\$ 9,969	\$ 4,430	\$ 666	\$ (9,303)	\$ 5,738,912	\$ 863,145	
30	2048	\$ 39,472	\$ 5,548	\$ 4,570	\$ 642	\$ (4,906)	\$ 5,760,667	\$ 809,736	
31	2049	\$ 40,726	\$ 5,350	\$ 4,715	\$ 619	\$ (4,731)	\$ 5,783,503	\$ 759,762	
32	2050	\$ 42,019	\$ 5,159	\$ 4,865	\$ 597	\$ (4,562)	\$ 5,807,418	\$ 712,994	
33	2051	\$ 43,354	\$ 4,974	\$ 5,020	\$ 576	\$ (4,399)	\$ 5,832,410	\$ 669,217	
34	2052	\$ 78,539	\$ 8,422	\$ 5,179	\$ 555	\$ (7,867)	\$ 5,858,479	\$ 628,232	
35	2053	\$ 46,151	\$ 4,625	\$ 5,344	\$ 536	\$ (4,090)	\$ 5,885,623	\$ 589,853	
36	2054	\$ 47,617	\$ 4,460	\$ 17,492	\$ 1,638	\$ (2,822)	\$ 5,913,841	\$ 553,908	
37	2055	\$ 49,130	\$ 4,301	\$ 5,688	\$ 498	\$ (3,803)	\$ 4,571,808	\$ 400,195	
38	2056	\$ 91,475	\$ 7,483	\$ 5,869	\$ 480	\$ (7,003)	\$ 4,625,271	\$ 378,388	
39	2057	\$ 4,708,877	\$ 360,026	\$ 6,055	\$ 463	\$ (359,563)	\$ 4,679,417	\$ 357,774	
	Total Cost	\$ 16,151,737	\$ 6,622,148	\$ 11,610,760	\$ 9,775,476	\$ 3,153,328	\$ 218,565,455	\$ 80,622,142	\$ -

/a These represent the sum of benefits from net savings in reduced in-vehicle time, net savings in reduced delays and waiting in vehicle, net gains in less emissions level due to a better road , net savings from reduced loss of life, injury, and personal property, and net savings from lower vehicle operating costs on Riverside road.

/b Note these benefits were discounted at the level of 3 percent as required in the "Benefit Cost Guidance " document.

Table 1. Discounted Costs Analysis from Riverside Road Project: Gravel to Paved

Summary of: Cost Analysis	
Item	Cost
New Construction / Asphalt Pavement	\$ 8,827,020
Crack Seal	\$ 25,072
	\$ 5,530
Patching	\$ 93,472
Mill & Overlay (1.5")	\$ 303,251
Total Direct Costs	\$ 9,254,345
Indirect/inkind Costs	\$ 2,570,000

Note: An additional \$2.57 million in indirect inkind O & M and labor contributions during the 39-year life of the road were subtracted against the net benefits in the study. While some may argue to add them to the benefits tally, these are real costs to county officials and were treated as such.

Table 1. Discounted Net Savings from Costs Analysis from Riverside Road Project: Gravel to Paved

Summary of: Net Cost Analysis	
a) Cost increases	\$ (7,802,986)
b) Costs savings	\$ 12,343,964
c) Net costs savings form gravel to paved road	\$ 4,540,978

Benefit Cost Criterion	Value
BCR	7.38
NPV (@.09% interest) over the 39-year horizon	\$ 58,975,801

Table 3. State of Good Repair Benefits from Riverside Road Project Cost

State of Good Repair Benefits				
Total project Investment	Time Horizon for Evaluation Period	Life Expectancy	Residual Value	Discounted Residual Value
\$ 11,610,760	36	50	\$ 3,251,013	\$ 2,149,302

Table 2. Summary of Discounted Economic, Environmental, and Safety Benefits from Riverside Road Project Cost Analysis

Benefit Type	Value
Economic benefits	\$ 3,153,328
Economic, Environmental, and Safety Benefits	\$ 80,622,142

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V. Environmental Risk

Both air and water quality will be improved in the area with this proposed project, and storm water run-off will be better controlled. Many negative environmental impacts will be avoided and/or mitigated. The standard FHWA Environmental Clearance Form will be used to assure all environmental clearances are followed and completed. This will include clearance from all stakeholders, including, but not limited to USACE (wetlands), USF&W Service (endangered species), Mississippi Department of Wildlife, Fisheries, and Parks (state wildlife concerns), Indian Tribes, Mississippi Department of Environmental Quality (water quality), United States EPA (noise and air quality), Mississippi Department of History and Archives (historical and archaeological preservation), and United States Natural Resource Conservation Service (farmland impacts).

The [project proposed schedule](#) outlined the specific timeline that addresses the issues of approvals and permits, NEPA, risk and mitigation strategies.

VI. Benefit Cost Analysis

This section of the grant uses a methodology known as “Benefit-Cost Analysis” (BCA) to evaluate of the economic advantages (benefits) and disadvantages (costs) of two transportation development options in Quitman County, MS. The analysis compares option 1, defined as “Gravel Surface” and option 2 defined as “Asphalt/paved”. The analysis evaluates incremental differences between the two options in an effort to answer the question: What additional benefits will result and for how long if option 2 is undertaken, and what additional costs are needed to bring it about?

Benefit-Cost Analysis (BCA) is a technique used to determine whether the benefits of a proposed project or plan outweigh its costs during the period of analysis or study period. The objective of the benefit-cost analysis is to translate the effects of these options into monetary terms and to account for the fact that benefits generally accrue over a long period of time while capital costs are incurred primarily in the initial years. The basic economic terms and principles in this analysis are grouped into three categories: benefits, costs, and discounting. In this analysis, the primary transportation costs- were capital and operations and maintenance (O & M), with the net difference between these costs being cost savings or benefits to the county.

Benefit-cost analysis has been used as a tool by project managers and policy makers to help evaluate preliminary concepts during early planning studies, to evaluate alternatives, and select a Preferred Alternative as part of project environmental documentation, and to evaluate potential design and construction staging options as part of detailed design and/or construction. While benefit-cost analysis provides monetary measure of the relative economic desirability of project alternatives, decision-makers must often consider the results against other non-monetized effects and impacts of the project.



Purpose: The purpose of this analysis was to establish a framework for studying the feasibility of two types of road surfaces projects in Quitman County, MS. This, should allow results from the analysis to be used to choose between different infrastructure alternatives?

Two factors helped to define the appropriate level of detail: available data and analysis budget. Available data varies by project and influences the level of detail appropriate for the benefit-cost analysis. In this report, the primary data source was provided by Quitman County's Engineer who provided the baseline costs from which future estimates were extrapolated over a 50-year time horizon. It is worth pointing out that the availability of these data varies with each project as was the case here. The analyst determined the data were sufficient, verified that the available data met the analysis purpose, and provided the appropriate level of detail for the benefit-cost analysis.

Costs: In economic terms, the cost of a transportation investment is the value of the resources that must be consumed to bring the project to fruition. The total value of construction and any additional maintenance costs were estimated. It is important to note that the analysis does not emphasize who incurs the cost but rather aims to include any and all costs that are involved in bringing about the project.

Capital Costs

Capital costs make up the total investment required to prepare the highway improvement for service, whether gravel or asphalt surface. These include: engineering, right of way, major structures, grading and drainage, sub-base and base, surfacing, and miscellaneous items. These groupings make it easier to calculate remaining capital value. Estimates of capital cost, ranging from detailed engineer's estimates to planning-level cost estimates were refined for this project and development process.

Cost-Related Engineering Analysis

Construction costs and maintenance costs were provided by Greenwood Engineering for analysis in the benefit-cost analysis. These estimates were appropriate for the stage in the project development process. Maintenance costs include routine maintenance (e.g., plowing, debris removal, etc.) and periodic rehabilitation (e.g., mill and overlay).

Table 1 shows the spreadsheet used to estimate and tally the total costs. This was the final step in calculating the capital costs and O& M costs of the two road projects.

Total present cost for the "Gravel" and "Asphalt/pavement" Cases are shown inside the grant application document and also itemized in the integrated Benefit Cost Model (**BCM**) developed for this project. The table shows the total present cost as the sum of the undiscounted annual costs found



for each year in the analysis timeframe. Annual costs are calculated by adding the construction and ongoing maintenance costs, and subtracting the discounted remaining capital value for each year in the analysis.

Net cost is the difference between the “Gravel” case and the Asphalt/pavement”. Remaining capital value is considered a reduction of cost in this analysis and was subtracted from construction and maintenance costs to obtain net cost.

BCA Model: To determine which road project was feasible or justified, an electronic Spreadsheet model was developed using Microsoft Excel to evaluate these projects with a reasonable level of accuracy. The BCA model provided an easy-to-use analysis tool to support and accommodate various changes in benefits, costs, and discount rate in the analysis.

The model allows these inputs to be entered after which, the analyst can select projects based on such criteria as profitability index, internal rate of return, net present value, and modified Internal rate of return. The BCM model computed the two primary and most considered criteria using Excel’s financial functions which include:

Net Present Value (NPV)

Benefit Cost Ratio (BCR)

Exhibit 1 provides a summary of the output from the BCAM Model developed for this analysis. A “go or no-go” decision criterion was established to evaluate each of the two road projects.

Exhibit 1. Benefit Cost Analysis Summary of Riverside Road Project		
Investment Criteria	Project Life	Location
		Quitman
	50	
NPV (cumulative)		\$58,975,801
B/C ratio		7.38
PBP (years)		
IRR		
Excel regular IRR		
Excel MIRR		
AR		

Net Present Value (or the net benefits) is the difference between the present value of the benefits less the present value of the costs. If the discounted present value of the benefits (NPV) exceeded the discounted present value of the costs, then the asphalt/pavement road is feasible or worthwhile during the life of the project.



Simply stated, if the project has a $NPV > 0$, then it is worth considering on its economic merits its

- > If the project has a $NPV < 0$, then it fails to return benefits greater than the value of the resources used (not feasible or worthy of implementing).
- > The benefit cost ratio is displayed as either as the ratio of benefits to costs (commonly known as the B/C ratio) or the difference between benefits and costs (net benefits).

It's decision criteria is:

- > If the B-C ratio > 1 , then it is worth considering on its economic merits its
- > If the B-C ratio < 1 , then it fails to return benefits greater than the value of the resources used (not feasible or worthy of implementing).

Although the Payback Period (PBP) is not a criterion, analysts use to judge financial feasibility or worthiness, an investment action or project that takes too long to create positive net benefits will fail. The PBP in this analysis is 7.05 years, meaning that if all 5.25 miles of Riverside Road was paved asphalt, it would take about 7 years for the project to return all of the capital and O&M costs invested in the project.

The Payback period is often calculated for capital and investment projects, but should not be used by itself to make accept/reject type decisions. In financial and investment projects, investors often like to see the PBP to gauge how long it will take for a particular activity or project to return their investment.

Summary: The result of benefit-cost analysis is reflected in the benefit-cost ratio (BCR) and Net Present Value (NPV), and internal rate of return (IRR), and the payback period (PBP). Individually or collectively, these results show the Asphalt/pavement case is economically justified compared to the "Gravel" Case.

In this analysis, the options are ordered from least capital and O&M expensive to most capital and O&M expensive required long term. The change in net benefits between these two alternatives is divided by the difference in net costs. If the result is greater than or equal to 1.0, the increase in benefit of the "Asphalt/pavement" is equal to or greater than its increase in costs of "Gravel" and is a viable option for paving the Riverside road in Quitman County, Mississippi.

If the result is less than 1.0, then the current "Gravel road" is retained as the preferred choice of road surface in the county.

If the sum of the discounted benefits (NPV) is greater than the sum of the discounted costs, the net present value is positive and the infrastructure improvement is deemed to be economically justified. A positive result from either of the BCR or NPV criterion will support the implementation of a given project. The PBP is a necessary but not sufficient condition for evaluating capital and other investment projects.



It is difficult to assign an accurate value to each benefit outlined in the narrative. The attached spreadsheets will demonstrate that the cost to improvement to Riverside Road benefits outweigh the investment.

Letters of Support

(Click for attachments)

1. [U.S. Senator Roger Wicker](#)
2. [U.S. Congressman Bennie J. Thompson](#)
3. [Commissioner John Caldwell, Mississippi Department of Transportation](#)
4. [Mayor Joe Shegog, City of Marks](#)

