

# Highway MM: *Corridor of Opportunity*



**HIGHWAY MM**  
CORRIDOR OF OPPORTUNITY

US DEPARTMENT OF TRANSPORTATION  
REBUILDING AMERICAN INFRASTRUCTURE WITH  
SUSTAINABILITY AND EQUITY (RAISE) 2022



April 14, 2022



**REPUBLIC**  
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## Cover Page

### Basic Project Information:

What is the Project Name?	Highway MM: <i>Corridor of Opportunity</i>
Who is the Project Sponsor?	Ozarks Transportation Organization (Metropolitan Planning Organization) – <i>Lead Applicant</i> City of Republic – <i>Co-Applicant</i> Missouri Department of Transportation (MoDOT) – <i>Co-Applicant</i> <i>Project administration will be turned over to MoDOT upon award.</i>
Is the Project Urban or Rural?	Rural – 100%
Census Tract?	48.05
Project Location?	City of Republic, Greene County
Prior RAISE Application	Yes
Is the Project Capital or Planning?	Capital
What type of Capital Project?	Roadway, Railroad, and Pedestrian Facilities

### Project Costs:

RAISE Request Amount	\$25,000,000
Estimated federal funding (excluding RAISE)	\$23,587,263
Estimated non-federal funding	\$ 9,984,952
Future Eligible Project Cost (sum of previous three rows)	\$58,572,215
Previously incurred project costs (If applicable)	\$0
Total Project Cost (sum of ‘previous incurred’ and ‘future eligible’)	\$58,572,215
Are matching funds restricted to a specific project component? If so, which one?	Yes, local cost share agreement for Interstate 44 to MO 360 segment.

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# HIGHWAY MM: *CORRIDOR OF OPPORTUNITY*

## PROJECT NARRATIVE



### PROJECT DESCRIPTION

The Highway MM: *Corridor of Opportunity* project aims to enhance **safety**, provide for **alternative modes of transportation**, and add **capacity** to a rural route that is rapidly becoming a regional economic hub. Missouri Highway MM connects Interstate 44 with MO 360 and US 60. Highway MM is a developing corridor with companies that provide above average wages with manufacturing, construction, and warehouse employers.

The proposed project will provide for **safe community connectivity** by **closing two at-grade railroad crossings**, building a **new road alignment** with an **overpass over the BNSF railroad**, **trail for bicycles and pedestrians**, and turning a two-lane planned arterial into a **five-lane facility**. The improvement will deliver the ability to manage the truck and commuter traffic along the corridor.

Highway MM is a 3.95-mile north/south minor arterial with two 12' wide lanes that connects to US 60 at its south end to I-44 at its north end. The 2019 AADT was approximately 9,015 vehicles per day based on data provided on MoDOT's Datazone website and was originally built in 1921. The project location between I-44 and US 60, as well as the access it provides to existing and future traffic generators, make it subject to **elevated levels of future freight congestion**. Construction has accelerated along the corridor with new residential properties and commercial facilities such as Cox Health Center (medical center), Amazon STL3 Fulfillment Center (major warehouse employer), and Convoy of Hope World Headquarters (humanitarian aid distribution center). Additional commercial, retail, and housing developments are currently planned along the corridor.

The City of Republic is one of the fastest growing regions in the state of Missouri and projects population growth from 18,750 in 2020 to approximately 33,000 people by the year 2040 (City of Republic). State Highway MM serves as a primary route to the Springfield-Branson National Airport as well as the Wilson's Creek National Battlefield. It is a major north/south connection

#### Project Description At A Glance

- Widening of Route MM to 5-lanes from 2-lanes.
- Widening of bridge over MO 360 to accommodate 5-lanes and pedestrian facilities.
- Close through access to Highway MM at current US 60 Intersection and creates a new US 60 Intersection at Farm Road 103.
- Two-lane roundabout on Route MM at Farm Road 160.
- Build overpass over BNSF railroad track.
- Close 2 BNSF railroad at-grade crossings.
- Pedestrian trail between Farm Road 160 and Route 60.
- ADA sidewalks along corridor.



for the region connecting Christian County and the west side of the City of Springfield to I-44. The Republic area serves several of the regional outlying communities as both a commercial and employment center. Because of its unique logistical advantages, the project corridor has experienced rapid and sustained economic development that continues to generate traffic, especially freight traffic along the corridor.

The project has two planned phases. Phase I consists of Highway MM from I-44 through the US 60 Intersection. Phase II is for Highway M from the US 60 Intersection through Highway ZZ. This RAISE application is only for Phase I of the Highway MM Corridor project. A continuous five-lane corridor of opportunity and multimodal safe connectivity cannot be completed without **RAISE Grant Discretionary funding**.

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## TRANSPORTATION CHALLENGES

Highway MM connects two major corridors. Interstate 44 has been identified as a critical Tier I high priority freight corridor in the State of Missouri. See *Draft 2022 Missouri State Freight and Rail Plan* here: <https://tinyurl.com/RAISE2022>. Highway MM also connects to US 60, a 2,655-mile (in total) east/west route which runs the entire length of Missouri connecting Oklahoma to Kentucky. It is also a major east-west route connecting Southwestern Arizona to the Atlantic Ocean in Virginia. These key corridors transport vital products to the whole nation. Missouri is a national crossroads of highway, rail, and pipeline networks. With the logistic challenges faced by the nation during the COVID pandemic, a strong freight infrastructure has become even more important for transporting necessary supplies.

The project boundaries of Highway MM contain two at-grade railroad crossings. This segment is a busy rail corridor and is maintained by BNSF Railroad. Trains that move to, from, and through Missouri carry 43% of all freight, when compared to other travel modes. Highway MM is also a primary route to the Springfield-Branson National Airport.

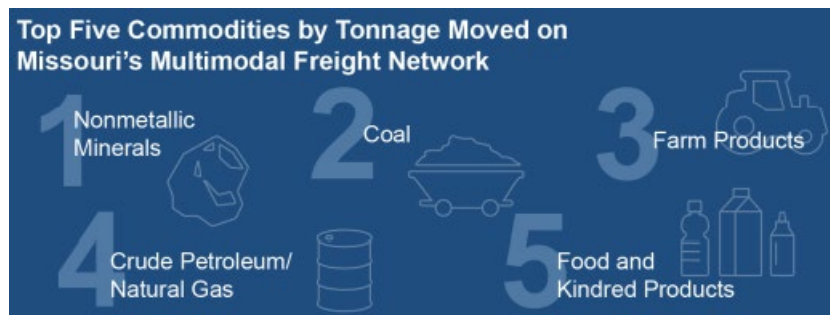


Figure 1 2022 MoDOT State Freight and Rail Plan

Due to the proximity of the rail crossing at Highway MM to US 60, traffic frequently backs onto US 60, when a train is occupying the crossing. This causes reliability issues along the US 60 corridor. Delays of up to 20 minutes are experienced at the MM/US 60 intersection (US 60 Study). There are also safety concerns from having an at-grade railroad crossing located so closely to the US 60 intersection.

Highway MM is already experiencing low levels of service and when current and future development is modeled, the route will quickly be unable to manage the growing demand. Sections of the corridor are already performing at a level of service (LOS) D or F (*Greene*



*County Route MM/ZZ Study*). Most of the corridor is a two-lane facility. There is one three-lane section on Highway MM that is expected to exceed capacity after 2027.

The intersection of US 60 and Highway MM is currently performing at a LOS D during the AM peak hour and a LOS F during the PM peak hour. This existing intersection will be closed to through Highway MM traffic past the local access, and a new intersection will be constructed as part of the road relocation. The relocation is necessary to provide adequate spacing and grades to provide for the needed rail grade separation.



Figure 2 Highway MM & US 60 Intersection

Most of the corridor lacks adequate shoulders, turn lanes, and pedestrian connections. There are frequent conflicts with large trucks and passenger vehicles resulting in serious crashes as shown by the documented crash history.

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## HOW THE PROJECT ADDRESSES THE CHALLENGES

This project will address the following challenges that will be explained further in the Merit Criteria sections:

- Adding capacity to the roadway to manage the freight transports and commuters.
- Removing two at-grade rail crossings and creating a new railroad overpass.
- Adding ADA sidewalk and pedestrian trail to allow pedestrian access to the corridor that previously did not exist.
- Removing at-grade crossing of MM six hundred feet from US 60 resulting in reduced backups on US 60.
- Reducing truck-passenger car conflicts by adding center turn lanes.
- The planned project addresses both existing and future concerns due to growing traffic volumes within the corridor. The project has been designed to accommodate freight and commuter traffic through 2045.

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## PROJECT HISTORY

In 2005, the City of Republic, Missouri made an innovative decision to consolidate the Village of Brookline into Republic, approximately 2,560 acres, to facilitate the development of the



Brookline Business Park. The City of Republic made historic infrastructure investments in water, sewer, and fire protection totaling over \$7 million at that time. The City also invested \$7 million in a fire station near MO 360 and Highway MM. An additional \$5.5 million has been added in the past few years for water and wastewater infrastructure.

The Springfield, MO utility, City Utilities, also believed in the vision to bring quality jobs to the region and invested in electric and natural gas infrastructure. The investment paid off when the development started. In 2010, McLane became the first to build a new grocery distribution center. This was

followed by Watson Metalmasters and Heart of America Beverage who relocated to the corridor. Carnahan White Fence Company expanded operations in the area and Ashley Furniture added a warehouse facility. These are only a few of the successful businesses on the corridor. What once was open land with great connections to essential road freight corridors, rail, and the airport has become a booming freight corridor with businesses moving in rapidly.

The City of Republic previously applied for a TIGER Discretionary Grant in 2019 (Republic Regional Business Corridor TIGER Discretionary Grant) for this corridor in anticipation of this growth.

The project became a high priority in 2020 when the Convoy of Hope World Headquarters and Amazon STL3 Fulfillment Center were built. In 2021, Amazon constructed over \$4 million in transportation improvements to the Highway MM corridor by upgrading a three-lane roadway from MO 360 to Farm Road 160. Two public roadway intersections were improved including Farm Road 156, which serves commercial development, and Haile Street, which serves residences. Finally, traffic signals were added to the northern interchange ramp of MO 360, Farm Road 156, and Haile Street. While Amazon made the improvements needed to facilitate the demands of traffic they caused, the remainder of the corridor is still experiencing congestion.

MoDOT completed a location and corridor study in February 2022. The studies provide for the necessary information to identify the needed improvements and ensure that those improvements are adequate in the future. MoDOT has started the NEPA process.

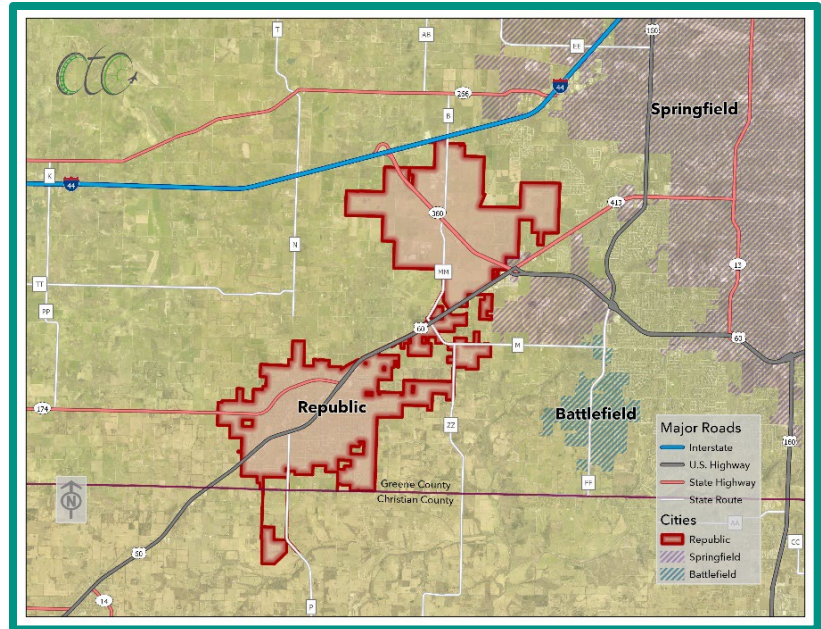


Figure 3 City of Republic Boundary Map as shown in red. City of Springfield and City of Battlefield are shown to the west.



## CONNECTIONS TO OTHER PROJECTS

The Ozarks Transportation Organization (OTO), through the Metropolitan Planning Organization's prioritization process, has identified other high priority projects that connect directly to this project. Improvements to the interchange at Highway MM and Interstate 44 are currently included in the Statewide Transportation Improvement Program (STIP) for FY 2025. US 60 is slated to become a six-lane highway from the relocated MM intersection to MO 360. This project is in the Draft Statewide Transportation Improvement Program for FY 2026.

Interstate 44 has been identified as one of the highest freight corridor priorities in the state. The section of I-44 that connects to Highway MM through US 65 has been identified as a high priority safety and capacity project. Widening sections of I-44 have been programmed in the STIP. An Infrastructure for Rebuilding American (INFRA) Discretionary Grant application is planned for 2022 for additional sections of I-44. Two additional BNSF Railroad at-grade crossing closures are being considered at Farm Road 170, just north of US 60 and west of Highway MM and Farm Road 172 & Farm Road 93, just north of US 60 and west of Farm Road 170. Overall, this project in conjunction with other improvements helps complete a regional freight connectivity piece that will benefit the whole southwest region of Missouri.

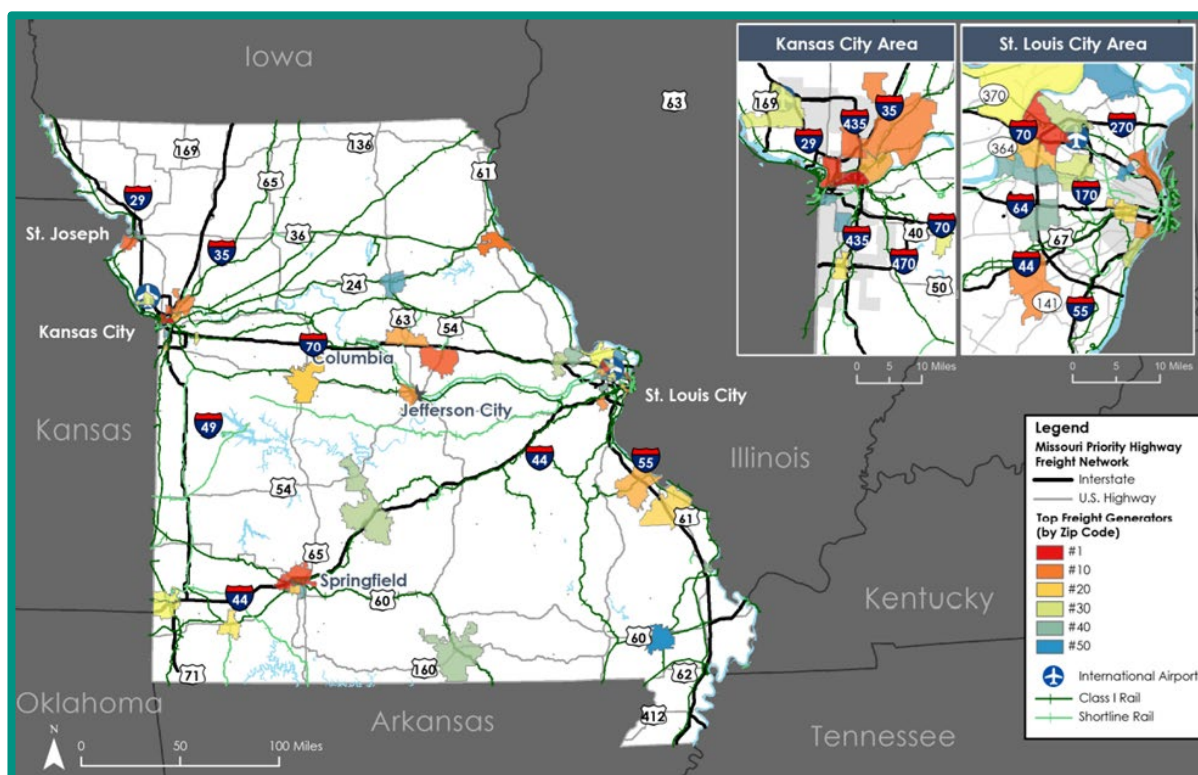


Figure 4 Missouri Priority Highway Freight Network



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## STATEMENT OF WORK

### Project Construction Details

The proposed facility has a functional classification of Primary Arterial with a design volume of 31,600. The design criteria that will be used for the corridor:

- Design AADT 31,600
- Operational (Posted) Speed – 45 miles per hour (reduced from current 55 miles per hour)
- Number of lanes – 5-lanes
- Roadbed Width – 82'
- Right-of-Way – 130' width
- Includes curb and gutter
- Includes storm sewer facilities
- Includes ADA 5' wide sidewalk facilities
- Includes 10' wide pedestrian trail from US 60 to Farm Road 160
- Existing access is provided on both sides of the corridor to the corridor businesses

#### **I-44 to MO 360 (Grading, Drainage, and Paving) 1.40 miles**

- Project adds lane capacity (two-lanes to five-lanes)
- Project adds ADA sidewalk accommodation along the corridor
- EV Charging Station construction and installation

#### **MO 360 to Farm Road 160 (Grading, Drainage, Bridge, and Paving) 1.47 miles**

- Project adds lane capacity (three-lanes to five-lanes, currently three-lanes due to Amazon's safety investment)
- Project adds ADA sidewalk accommodation along the corridor
- There is currently a diamond interchange with US 60. This bridge will be widened to accommodate four-lanes and pedestrian accommodations
- It includes a two-lane roundabout intersection at Farm Road 160 to accommodate the anticipated growth

#### **Farm Road 160 to US 60 (Grading, Drainage, Bridge, and Paving-New Construction) 0.89 miles**

- Part of the project will realign Highway MM from the current US 60/MM Intersection.
- It constructs a five-lane cross-section between US 60 and Farm Road 160.
- It constructs a new signalized intersection at US 60 and Highway MM.
- It also permanently closes and removes two at-grade railroad crossings.
- Project adds ADA sidewalk accommodation along the corridor.
- A new overpass over the BNSF railroad is included with bicycle and pedestrian access.
- A 10-foot trail is proposed along the new alignment to give community connectivity and multimodal travel options.

Preliminary Engineering Bid Sheets are included in <https://tinyurl.com/RAISE2022>.





## PROJECT LOCATION

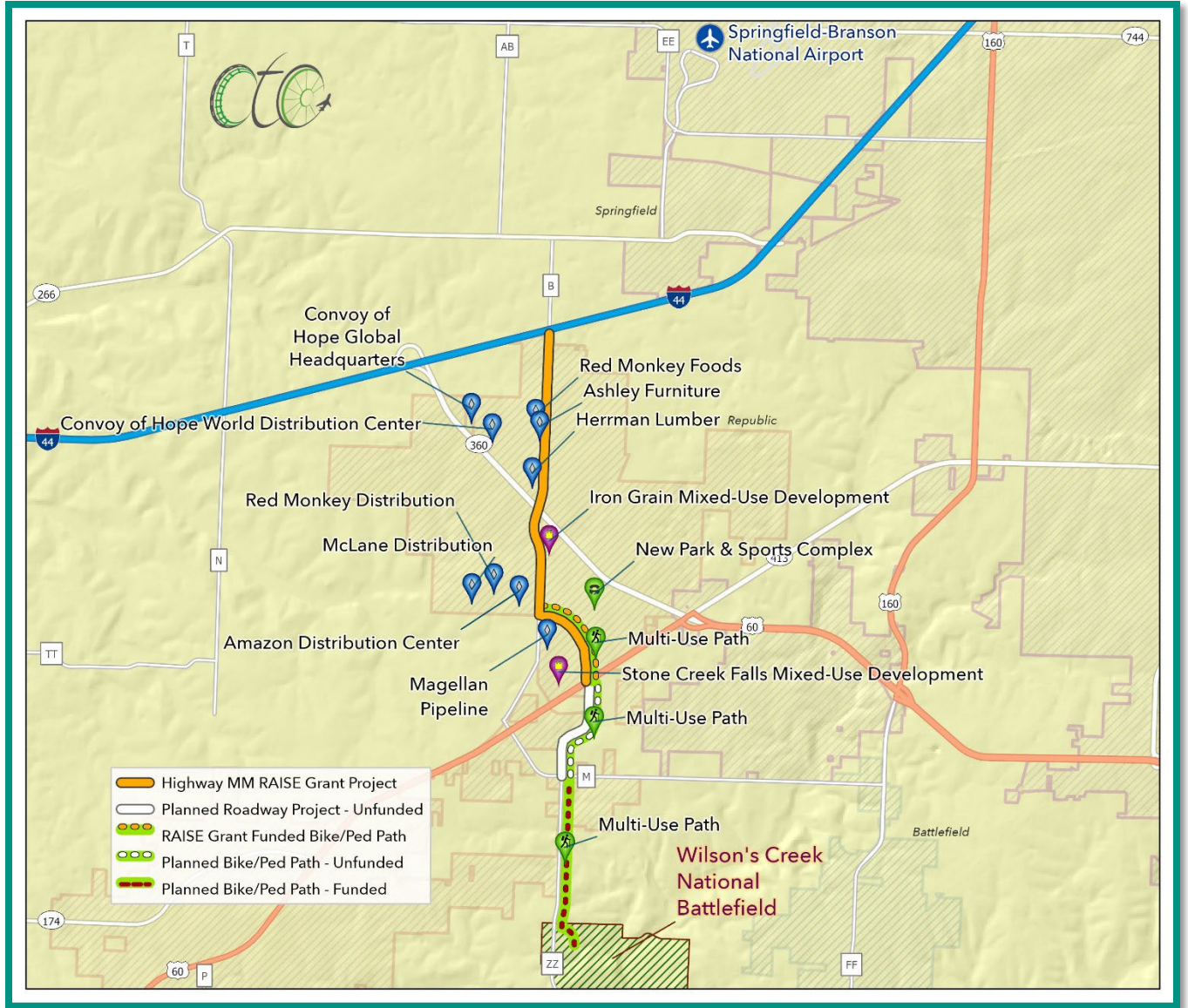


Figure 5 Project Map

The proposed project is located on the **rural** segment (per the 2010 census) of Highway MM between Interstate 44 and US 60. The project is located three miles from a major population center of Springfield, MO and connects the City of Willard commuters to the City of Republic community. The project is in the Missouri Department of Transportation (MoDOT) Southwest District, the Ozarks Transportation Organization (OTO) Metropolitan Planning Organization planning area, and in the city limits of the City of Republic.



Project Segment	Rural/Urban	Latitude	Longitude	Project Length
Section 1	Rural	37° 11' 20"	93° 25' 24"	1.40 Miles
Section 2	Rural	37° 10' 53.66" N @ Northern limit (Carnahan St.)	93° 25' 25.49" W @ Northern limit	1.47 Miles (FR 160 to Carnahan St.)
Section 3	Rural	37° 09' 41.88" N @ Northern limit (FR 160)	93° 25' 27.47" W @ Northern limit	0.89 Miles (US 60 to FR 160)

**Table 1 Project Location Specifics**

A signalized at-grade railroad crossing with BNSF rail and Highway MM is located approximately 600' from the intersection of US 60. The existing intersection between Highway MM and Farm Road 160 is 1.2 miles north of US 60.

### Area of Persistent Poverty

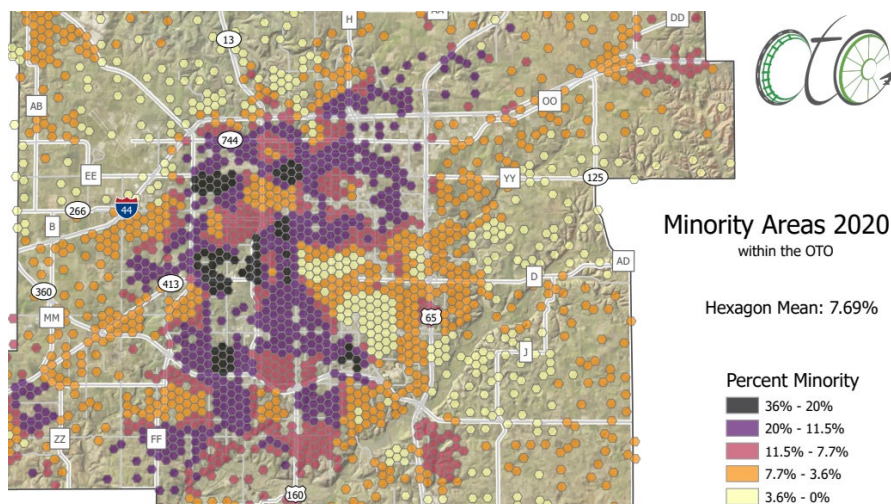
The project is in the 48.05 Census Tract of Greene County, Missouri. Greene County is identified as an Area of Persistent Poverty. See Appendix G – 2020 Low Income Areas.

### Historically Disadvantaged Area

The project is not in a historically disadvantaged community. Jobs created in this corridor provide opportunities for the disadvantaged communities in Census Tracts 17, 31, 32, and 33. The project is located outside the Springfield Missouri Urbanized area and is designated as rural per the 2010 Census. The project is not in a federally designated community development zone.



**Figure 6 Highway MM Railroad Crossing & US 60 Intersection**



**Figure 7 2020 Minority Area Map within the OTO**



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

**Table 2 Detailed Project Budget**

### Scope of Work and Detailed Project Budget

Project	Budgetary Task	RAISE \$25 Million	Other Federal	Non-Federal	Total Cost
<b>Route MM</b>	Bridge	\$7,693,604		\$1,923,401	\$9,617,005
I-44 to US 60	Grading and Drainage	\$5,514,668	\$7,505,351	\$2,357,188	\$15,377,207
	Base and Surface	\$2,192,086	\$3,768,857	\$1,250,000	\$7,210,943
	Trail/Bike/Pedestrian Improvements	\$1,271,000			\$1,271,000
	Miscellaneous	\$3,297,642	\$3,465,778	\$1,370,876	\$8,134,296
	Estimated Contract Total	\$19,969,000	\$14,739,986	\$6,901,465	\$41,610,451
	Contingency/Inflation	\$254,000	\$1,165,732	\$457,000	\$1,876,732
	<b>Total Contract</b>	<b>\$20,223,000</b>	<b>\$15,905,718</b>	<b>\$7,358,465</b>	<b>\$43,487,183</b>
	PE	\$1,611,000	\$1,517,105	\$1,262,376	\$4,390,481
	CE	\$1,014,000	\$1,829,046	\$457,262	\$3,300,308
	ROW	\$919,000	\$2,454,782	\$613,696	\$3,987,478
	Utilities	\$994,000	\$1,672,612	\$293,153	\$2,959,765
	EV Charging Station	\$239,000			\$239,000
	R/W Incidentals		\$208,000		\$208,000
	<b>Rounded Totals</b>	<b>\$25,000,000</b>	<b>\$23,587,263</b>	<b>\$9,984,952</b>	<b>\$58,572,215</b>
	<b>Percentage By Funding Source</b>	<b>43%</b>	<b>40%</b>	<b>17%</b>	<b>100%</b>

RAISE funding is critical to successfully deliver the Highway MM Corridor project. There is currently no identified funding for the segment between MO 360 and Farm Road 160. This will result in a bottleneck of freight traffic. In the case a RAISE Grant of less than \$25 million was awarded, the project scope would need to be reduced or changed in order to complete the project. The match contributions represent the maximum match that MoDOT is able to contribute. There is local match and private investment on a state system that demonstrates the need for this project.

The total estimated cost of the project is **\$58,572,215**. The USDOT RAISE Grant Administration will contribute an estimated **\$25,000,000** or **43%** of the overall project cost. Any additional overrun costs would be provided by the Missouri Department of Transportation, City of Republic, and other federal sources to be outlined upon project award. These are estimates only and cover work that will be required regardless of other designs that MoDOT, the City of Republic, and USDOT implement. All funds in the project will be spent in a rural area. The Project Funding Table below shows the expected contributions towards the project.

Evidence of these pledged contributions are provided in the Appendix A. All non-federal funds are immediately available and are not subject to a fixed time period.

Non-Federal Project Funding Table	
Greene County	\$ 1.500 Million
City of Republic	\$ 1.393 Million
State of Missouri	\$ 7.091 Million
<b>Total Non-Federal</b>	<b>\$ 9.984 Million</b>



MoDOT's portion of the funding for the project is \$7,091,817 of state funds, generated from a non-federal funding source. The state funds are derived from Missouri user fees and include fuel taxes, registration and licensing fees, and motor vehicle sales taxes. The City of Republic's portion of the project funding is \$1,393,135 generated from a non-federal funding source from the city's transportation tax revenue (Innovative Financing). Greene County's \$1.5 million contribution is from local revenue sources through a Cost Share agreement.

### Other Federal Funds

Federal Project Funding Table	
Surface Transportation Block Grant (STBG)	\$ 21.730 Million
Federal Safety Funds	\$ 0.919 Million
Open Container Penalty	\$ 0.564 Million
Transportation Alternative Program (TAP)	\$ 0.374 Million
<b>RAISE</b>	<b>\$25.000 Million</b>
<b>Total Federal</b>	<b>\$48.587 Million</b>

The project is utilizing \$564,000 in Open Container Funding, \$374,000 in Transportation Alternatives Program (TAP), and \$919,000 in Safety Funds. Approximately \$21,730,000 of the funds will be Federal Surface Transportation Block Grant Funds.

### Dependency of Other Funding Sources

Part of the project is programmed in the FY 2024 & FY 2025 Statewide Transportation Improvement Program (STIP) to utilize TAP, Open Container, and Advanced Construction (Surface Transportation Block Grant) funds. These funds are part of Missouri's allocated funding and has been prioritized for the project in the STIP as available funding sources for the project.

There has been no funding committed to the expanded project as proposed in this RAISE Grant. Once a successful award of the RAISE grant is awarded the USDOT, MoDOT, OTO, and the City of Republic will work together to ensure the grant timelines are met.

### Prior Project Costs

The project has budgeted \$1,100,481 for engineering in FY 2022. These costs have not been included in the grant budget or grant scope of work.

## MERIT CRITERIA

The Highway MM Corridor project and partner applicants meet all eligible criteria as defined in the Notice of Funding Opportunity (NOFO). Specific project merits and benefits are further detailed on the following pages. The overall purpose of this project is to increase safety measures, meet capacity demands from economic growth, provide connectivity to the City of Republic and surrounding rural areas, and provide for alternative transportation modes to the economic growth areas.





## SAFETY

The Highway MM Corridor has several key safety factors that need to be mitigated to protect motorized and non-motorized travelers and the overall community from health and safety risks.

### Railroad Safety

The project includes closing two at-grade railroad crossings. Increased safety of railway-highway crossings is both a *top priority* and one *major benefit* that this project will provide. The corridor currently has two railroad at-grade crossings that must be maneuvered.



The at-grade closures are scheduled at the following locations:

- Highway MM and Farm Road 168, about 600' north of US 60
- E Haile Street and E Orr Street, near Brookline Fire Station No. 1

The realignment of Highway MM will include a railroad overpass over the Burlington Northern-Satna Fe (BNSF) Cherokee Subdivision railroad track to eliminate all referenced crossings north of US 60.

The removal of at-grade railroad crossings will provide safety for school buses and prevent any future potential school bus and train collision catastrophes. There are 87 bus trips along the Highway MM Corridor each weekday. Republic High School, with an enrollment of 1,500, is just over one mile from the Highway MM at-grade railroad crossing.

The closures will produce a reduction in the annual predicted incidents of .0383 incidents per year between trains and vehicles at the two (2) at-grade crossings. This will reduce the predicted incidents to **zero** incidents per year between the trains and vehicles.

The OTO analyzed data obtained from the GradeDec.net Federal Railroad Administration (FRA) tool. The GradeDec.net corridor generated reports are contained in the BCA Appendix.



Figure 8 Railroad Crossing on Highway MM just north of US 60 and local business access

### Pedestrian Safety

The current “No Build” corridor has no sidewalks, creating an inhospitable walking environment. Most of the road is a rural two-lane open shoulder design. Adding ADA compliant 5-foot sidewalks to the corridor will provide for pedestrian safety. There was a pedestrian death in 2020 on MM before the MO 360 on-ramp.



There are also no bicycle accommodations along the roadway. Bicyclists must share one lane with semi-trucks and commuter vehicles with no dedicated bicycle lane or passing lane.

The project calls for a continuous sidewalk from US 60 to I-44. In addition, there is a trail planned along the new road alignment from Farm Road 160 to US 60. The trail is 10-foot wide and will accommodate bicycles and pedestrians. The trail segment will safely remove travelers from the vicinity of the roadway altogether. There was feedback received at the recent public meeting about concern for pedestrian safety. The BNSF overpass will be built to accommodate the trail and sidewalks. BNSF will be an active partner and contribute funds to the closure of the two at-grade railroad crossings. This will give safe pedestrian and bicycle passage over the railroad track.

### **Emergency Response**

One of the safety benefits is reduced response time for emergency responders by eliminating the delay resulting from stopped trains. The railroad crossings have functioned as barriers that divide emergency response personnel from the City of Republic and surrounding areas. The Brookline Fire District, Republic Fire Station Number Two, and the Cox Ambulance District are all located to the north of US 60 with Highway MM being the primary route. Delays along the corridor by emergency response personnel can create life threatening situations. Reduced response time on Highway MM will also assist emergency responders assisting with Interstate 44 and US 60 incidents.

Replacing the at-grade crossing with an overpass will help residents who live north of US 60 receive quicker police response time. The project provides a dependable 24-hour route for emergency response vehicles serving the City of Republic and the surrounding area.

### **Vehicular Safety**

The “No Build” original segment of Highway MM is a two-lane undivided roadway that curves southwest and crosses the railroad tracks at-grade at a sharp, near 90-degree turn near the signalized intersection with US 60. The posted speed limit is currently fifty-five mph. Located along the corridor are the Magellan Midstream Partners L.P. fuel tanks. Multiple access points are provided in the vicinity of the Magellan Pipeline with sparse driveway density further south.



Figure 9 Highway MM along Magellan Midstream Partners

This regional fuel company has fuel tankers pulling in and out of traffic throughout the day. The realignment of Highway MM will divert a vast majority of the traffic away from the Magellan



Midstream fueling site and significantly reduce the future risk of collisions between fuel trucks, trains, and commuter traffic.

The area is rapidly becoming an economic development zone. Amazon STL3 Fulfillment Center, Convoy of Hope Worldwide Headquarters, and McLane Ozark are a few of the major employers who have built along the corridor in the past ten years. The semi-truck traffic generated from the businesses have placed an increased safety risk on the road. Amazon has previously invested in the roadway safety in front of its facility by widening the area to three-lanes and adding in a signalized intersection.

The planned widening from two-lanes to five will allow the predicted “No Build” vehicle AADT of 23,857 in 2045 to safely maneuver the corridor. The current AADT before adding in the economic development that was built in 2021 and currently underway is 10,064 AADT. The state has approved the reduction of speed along the corridor to forty-five miles per hour. This should help provide a safer drive and crash reductions along the corridor. Between 2016 and 2020 there were 253 total crashes. Along the corridor fourteen accidents were ranked as serious. In February of 2022 there was an additional fatality. The 2022 fatality is in the same location as a 2014 fatality. The 2022 and 2014 fatalities are not reflected in the six-year perimeter of the benefit cost analysis.

There are sharp curves and narrow two-foot shoulders and rumble stripes throughout much of the corridor. This contributes to deficient space for errant vehicle recovery. A minimum of 22-feet of clear zone would be included in the project.

The rebuilt intersection of US 60 and Highway MM will have turn lanes to allow greater space for deceleration and vehicle storage. This will reduce the high proportion of rear end crashes related to congestion at the intersection.

Figure 10 Crash Heat Map 2015-2019



### **Roundabout at Farm Road 160 and Highway MM Intersection**

The new road alignment will connect at the Farm Road 160 intersection. MoDOT conducted a corridor study and concluded that a two-lane roundabout would be the best solution for the future corridor. The roundabout intersection capacity was performed using Sidra Version 9.0 applying HCM methodologies (*Greene County Route MM/ZZ Corridor Study*). The roundabout will reduce frequency and severity of crashes versus a traditional intersection. The circulating movement of the roundabout nearly eliminates the potential for high-speed, right angle and left turn/head-on collisions. Rear-end collisions are also often reduced in roundabouts [Roundabouts |](#)



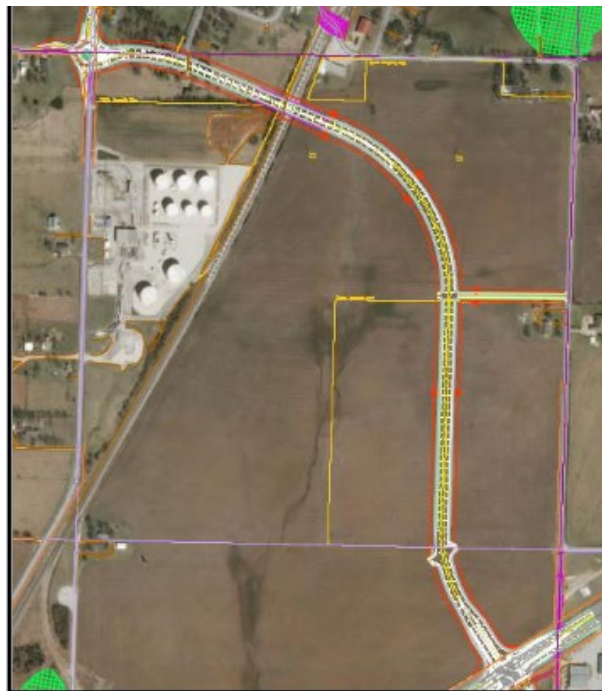
### **Lighting**

LED lighting will be installed at the intersections and medians. The LED lighting contributes to the preservation of the night sky and is a step forward towards the Dark Sky initiative.

### **Overall, the project will improve safety by:**

- Replacing two at-grade railroad crossings and adding a grade separated crossing:
  - Reduces queued vehicles on the US 60 connection and Highway MM, which currently are a safety concern.
  - Removes the potential for rail and vehicle/truck/bus conflicts.
  - Provides a reliable 24-hour route for emergency response vehicles serving the City of Republic and surrounding area.
- Adding pedestrian sidewalks and trail:
  - Provides access to the corridor that did not previously exist.
  - Provides alternative means of commuting.
  - Provide a way for pedestrians and bicyclists to travel safely.
  - Eliminates the possibility of future fatalities from people traveling along a two-lane two-foot shoulder corridor.

Figure 11 Rendering of Possible Road Alignment



Realignment of Rte. MM and roundabout at MM/FR 160.



Overall there is a positive safety benefit Return on Investment of **\$28,456,899** illustrating the high safety benefits of improvements to the corridor.



## ENVIRONMENTAL SUSTAINABILITY

The natural beauty of the Ozarks is a cherished forethought in the development of the region and its supporting infrastructure. This is demonstrated in the alternatives analysis for the project location, as the preferred alternative disturbs less land than considered options (Location Study Report, page 20). No wetlands exist within the area, either. Specific environmental impacts are



included within Project Readiness and Environmental Risk discussions of this application, but it should be noted that minimal impact is expected.

### **Best Practices**

As a construction partner in this project, it is important to note the excellent record of MoDOT in managing and mitigating environmental concerns during the construction process. MoDOT uses stormwater BMPs to minimize runoff during construction and the project is designed to further manage stormwater post-construction. When performing winter storm activities, MoDOT uses advanced technology to reduce the amount of salt and sand applied to slick roadways. MoDOT utilizes e-construction methods, reducing paper and other landfill waste in the process. Contractors typically recycle milled asphalt back into the project and use shingles to supplement their mixes. Trackless tack minimizes any material leaving the work site. Fueling operations are prohibited near ditches and blue line streams when an impact to endangered species is possible.

### **Emissions and Reliability**

The improvements included in this application support an area that is already growing. Due to existing and known planned developments, traffic is expected to increase significantly along the corridor. Congestion along the roadway and at existing at-grade railway crossings will mean increased idling and contributions to ozone-forming emissions. Considerable progress has been made in the region over the past twenty years regarding ozone values. From nearing non-attainment for ozone in 2007 with a design value of 77 ppb, the current 2018-2020 quality assured design value is 59 ppb. The Ozarks Transportation Organization maintains a Congestion Management Process and an Operations Subcommittee to collaborate with members such as the City of Republic and partners like MoDOT, in order to identify causes of congestion and to recommend projects that reduce idling and other emissions-inducing traffic concerns. Additionally, the region has consistently remained below the standards for PM<sub>2.5</sub> for both 24-hour and annual measures.

The proposed project along this corridor includes roundabouts to keep traffic moving, as well as eliminating two at-grade railroad crossings. The new alignment of MM is also shorter than the “No Build Baseline” Highway MM. This results in fewer vehicular miles. The project, when compared to a no-build scenario, improves level of service and travel times, from an F to an E/D for the segment from I-44 to MO 360 and a D/C for the segment from MO 360 to US 60. Delay is nearly half with the project-build scenario (11.75 vs. 22.88 in minutes). Given projected traffic through this corridor, these improvements will contribute to the reduction of ozone-causing emissions, as well as PM<sub>2.5</sub> and greenhouse gas emissions from CO<sub>2</sub>.

Annual Emissions Savings (metric tons)	
NOx	33.49
PM2.5	0.77
CO2	12,636
<b>Total</b>	<b>12,670.35</b>



### **Coordination of Transportation and Land Use**

When developing their comprehensive plan, the City of Republic made careful consideration of the unique environmental constraints of working in an area of karst topography and historical significance. This corridor connects I-44 to the Wilson's Creek National Battlefield, which preserves the site of the first major battle of the Civil War in the west and is considered to be one of the three best preserved and most pristine Civil War battlefields in the National Park System (<https://wilsonscreek.com/battlefield>). Another project is currently underway to enhance the entrance to the Battlefield and provide trail access, also a partnership between the City of Republic and MoDOT. Through this multi-year planning process, the City of Republic Comprehensive and Master Plans provide a thought-out growth and development strategy that coordinates the land use along this corridor.

Aspects of this project will also go toward minimizing traffic impacts of current development. Several multi-family housing complexes are planned for this area. With the great employment centers already in place, this will contribute to a live-work dynamic that will reduce dependence upon single-occupancy vehicle use. The location of these housing and employment centers in Republic and near Springfield continues a pattern of compact and contiguous development seen around the region.

### **Environmental Screening**

The OTO assesses projects through its EnviroSmart program (an environment- and hazard-based geodatabase against which projects can be compared, noting those that could require additional attention during the environmental review process). This database includes both natural and environmental justice related elements, developed in consultation with Missouri Department of Natural Resources, Missouri Department of Conservation, Missouri State Parks, the State Historic Preservation Office, and MoDOT, with additional resources from EPA, US Census, and US Department of Transportation.

### **Resiliency**

Resiliency is important to the region, as well. Missouri weather can be quite varied, and the area is no stranger to natural disasters and the impacts of flooding or tornadoes on infrastructure. Man-made disasters are also a notable consideration. The MM corridor spans the connection of several key highways throughout the region, namely I-44 and MO 360. Should a failure happen along these corridors, an improved MM becomes a critical detour or evacuation route. Increasing the capacity of this roadway from 9,000 vehicles per day to 31,600 allows this route to remove the stress from these other corridors. Removing at-grade rail crossings reduces the potential of a vehicle/rail conflict and any resulting hazardous material releases that could accompany such a collision.



## **QUALITY OF LIFE**

The area that runs along the Highway MM Corridor is a previously rural area that had sparse development. In the past ten years the area has taken off and is quickly developing into an economic hub to provide jobs and opportunities to the Southwest region. The City of Republic and MoDOT are working to provide for planned growth as this area transitions from rural to



urban. The City of Republic is an advocate for providing sidewalks and trail systems to allow for a healthy lifestyle and provide an alternative mode of transportation.

### **Increasing Affordable and Accessible Transportation Choices**

The City of Republic has “Caring” as one of its primary City values. This “Caring” value has helped contribute to the City’s rapid growth. Based on the City’s values, the City of Republic and MoDOT would like to provide greater accessibility for residents in the area. Planned improvements to the corridor can greatly impact the ability of current residents and future residents moving to the area to be able to travel.

There are 714 residential units within two miles and **5,678** residential units planned. The wide sidewalk and trail will provide additional transportation opportunities beyond the traditional automobile for job opportunities as well as recreation and education. There are currently no sidewalks, open ditches, and high speeds, which make walking the corridor safely impossible.

### **Reduce Transportation and Housing Cost Burdens**

The corridor has two planned mixed-use developments located along the new road alignment and Highway MM. The planned communities will include a combination of commercial retail and residential lots in the form of both apartments and single-family homes, providing opportunities for employees along the economic corridor to relocate closer to jobs.

A major developer has started a \$65 million investment in the area, bringing a mixed-use housing development and retail area directly across from the Amazon Fulfillment Center. The investment in the area will provide apartments for individuals who would like to work at Amazon and other surrounding businesses and provide for them to do so without major transportation expenses or environmental impact.



Figure 12 Iron Grain Mixed Use Development

Located nearby, the McLane Warehouse is next to Highway MM and close to MO 360. Convoy of Hope World Headquarters, Heart of America Beverage Company, Equipment Share, and Ashley Furniture Warehouse are on the other side of MO 360. The addition of sidewalk and pedestrian accommodations to the MO 360 overpass will provide for a walkable route to more job opportunities. Located further south along Highway MM and next to the new road alignment will be another mixed-use housing and retail development. This 92-acre development will have sidewalks and a trail connection to the new Highway MM alignment.



Overall vehicular travelers along the corridor will see significant Travel Time Savings of **\$18,966,001**. These savings help supply chain companies and commuters alike reduce their transportation costs.

Removing the congestion on the two- and three-lane segments and providing a safe corridor will enhance the quality of life for commuters. This quality enhancement found in the Travel Time Benefits from the BCA will enhance commuters going to jobs along the corridor, trucks hauling regional goods from I-44 or US 60, and commuters that live in the outlying communities that work and shop in the City of Republic.



### Removing Barriers to Opportunity

The corridor contains and continues to add high quality job centers. Rural areas located in Southwest Missouri, Northwest Arkansas, Northeast Oklahoma, and Southeast Kansas will enjoy enhanced access to jobs as well as the products distributed from and through the businesses located along the project corridor. Cox Health added a “super clinic” on US 60 near the new alignment that will provide for medical care in Republic and the surrounding areas.



Figure 13 Iron Grain Mixed District Rendering and Amazon Facility

The Amazon STL 3 Fulfillment Center constructed a bus terminal for a future route for the City Utilities Bus Transit System. Though currently unfunded, once in service, this would be the first transit service outside the City of Springfield metropolitan area. It would provide access via transit to a major employer to individuals located in economically distressed areas of Springfield. This project is one step closer to getting the bus route activated.



### IMPROVES MOBILITY AND COMMUNITY CONNECTIVITY

The City of Republic has a vast rural network. This project is providing an opportunity to bring in a planned multi-modal system of travel to the region, which will benefit the area for many years to come as it transitions to an urban area.

### Providing Travel Choices

People can now move to the area and have options of travel. This gives opportunity to lower income individuals and families to move into the area. Individuals can also utilize bicycles to connect into the overall trail system. It will ensure access to healthy alternatives other than vehicles. The Ozarks Transportation Organization has worked on trail investments for the MPO area. There are planned trail connections from Highway M to the rest of the MPO trail system.



The planned trail along MM will eventually connect into this trail system creating a travel network down to the Wilson's Creek National Battlefield and into the City of Springfield. The OTO Trail Dashboard is here: <https://www.ozarkstransportation.org/what-we-do/bikeped>.

### Accessible Infrastructure

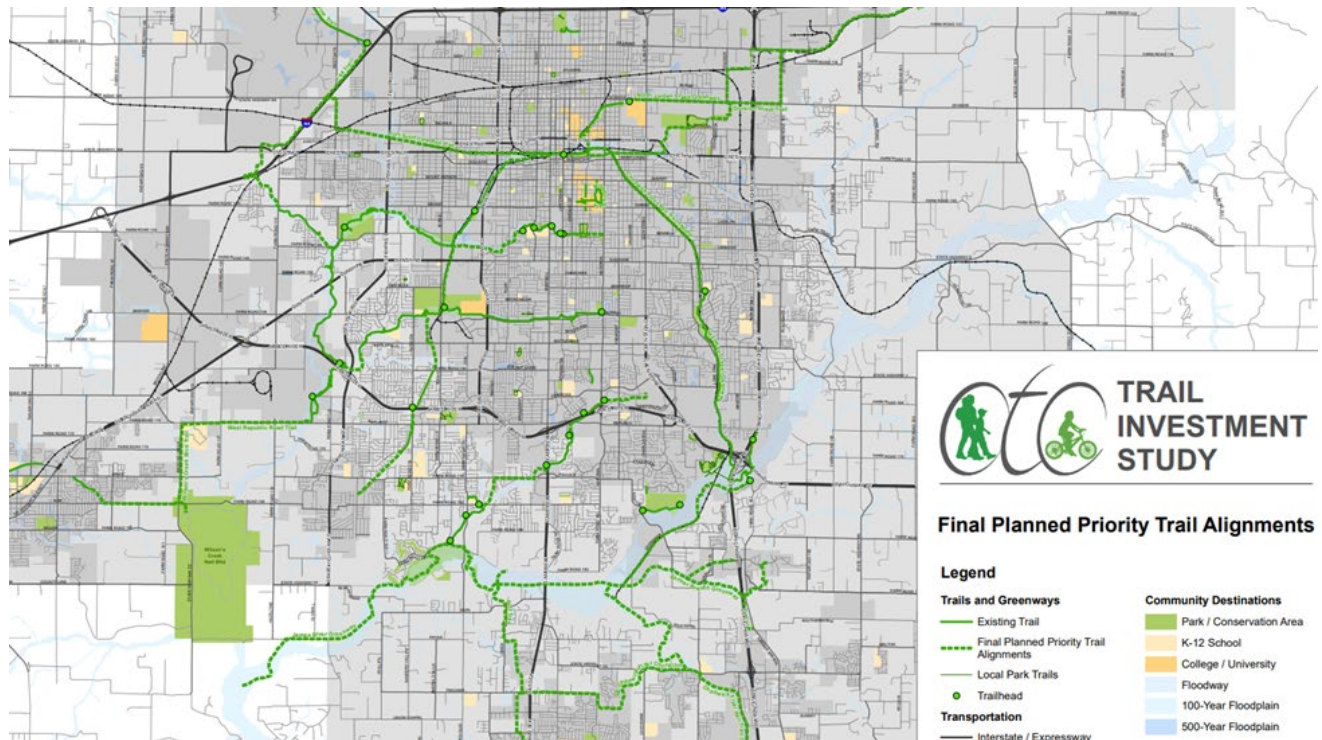


Figure 14 OTO Proposed Trail Map

The project will bring ADA compliant 5' sidewalks to an area that currently has no accessibility. It will provide connections to regional job centers that previously had no sidewalk connections. The value of the added infrastructure for additional pedestrian facilities is **\$726,701** with a 7% discounted net present value.

### Creating a Community

The City of Republic purchased land for \$3.5 million in 2021 to continue the investment in that area. The City of Republic is building a 136-acre Park/Sports Complex with up to 12 baseball-softball fields and 16 soccer fields. The future park is located between the Highway MM and US 60 exit, just off MO 360. This will contribute to the rapid increase in AADT to the Highway MM Corridor. The trail is planned to connect to the new City Park to create a walkable community.



The trail would provide connections to Brookline Park, another existing City park, located off Highway MM at Farm Road 156. The City regularly hosts major regional and community events at the Brookline Park such as the “Got Mud? Run”. This is an annual event that draws in participants from twenty-seven cities and three states.

The health benefit seen from the increased mobility is **\$9,256+** based on a very conservative projection of 100 trail walkers and 50 sidewalk walkers a day. The numbers of walkers and bicyclists that would utilize the trail to go to the new sports complex and mixed used housing developments are likely to be much higher.



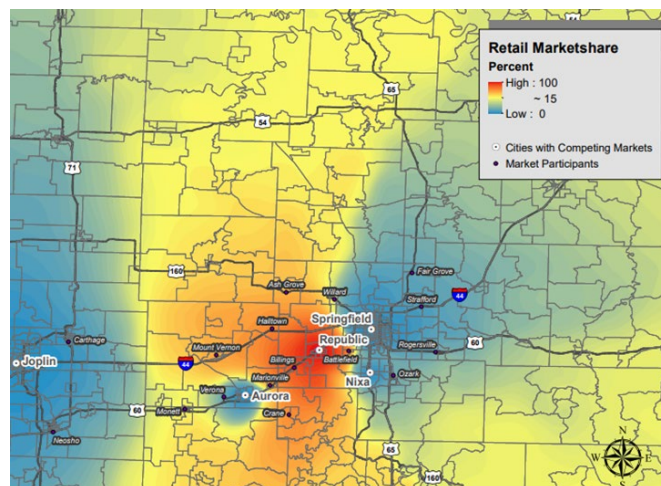
Figure 15 "Got Mud? Run" Participants

### Increase Mobility for Freight and Supply Chain

The improvements to MM will give a great alternative for the flow of freight and goods necessary to the regional supply chain. Freight can use Highway MM to go directly from US 60 to Interstate 44 or to the Springfield-Branson National Airport. Currently, 630 million tons of freight valued at over \$1.7 billion dollars travel down US 60 and 1.3 billion tons of freight valued at \$3.7 billion travel through Interstate 44 Draft 2022 MoDOT State Freight and Rail Plan <https://tinyurl.com/RAISE2022>.



Figure 16 City of Republic Retail Trade Area Zones



The City of Republic also serves as an urban hub to small urban communities that surround the City of Republic, including the cities of Willard, Clever, Billings, and Aurora. The City of Republic serves as a retail center for individuals living in rural county areas as illustrated in the orange zones in the retail trade area map above.



## ECONOMIC COMPETITIVENESS AND OPPORTUNITY

### Moving People and Goods Efficiently Through the Corridor

Without the project intervention in the “No Build” scenario, the congestion would continue to increase. By 2045, the expected “No Build” AADT is 23,857. These congestion delays affect personal drivers and businesses who rely on freight and delivery trucks.

The intersection of US 60 and Highway MM is currently performing at a LOS D during the AM peak hour and a LOS F during the PM peak hour. This intersection will be improved with new facilities capable of sustaining projected design volumes.



### Continued Economic Development

Economic Development will continue with the planned investments to infrastructure along the corridor. The corridor provides immediate access to Interstate 44, MO 360, and US 60 and provides business enterprises with quick, easy, and safe access to most of the Midwest’s major cities and metropolitan areas. The only hindrance is the rural roadway. The road is being designed as an urban corridor to accommodate the rapid growth and opportunities.

The COVID-19 pandemic created an unprecedented jump in e-commerce demand. Rising e-commerce volumes have resulted in “mega-warehouse” developments of one million square feet or more. Amazon located a 1.3 million-square-foot warehouse and distribution facility along the Highway MM Corridor. This freight-intensive facility is critical to meeting Missouri’s demand for goods and depends on a safe and efficient roadway per the Draft 2022 MoDOT State Freight and Rail Plan <https://tinyurl.com/RAISE2022>.



The City of Republic's land use map adjacent to the Highway MM Corridor includes hundreds of acres of developable land that is suitable for industrial and commercial uses with the potential to employ thousands of workers across numerous rural counties in Southwest Missouri, most of which are designated as "economically distressed."

Development Project Figures				
Year	Single-family Homes	Multifamily Dwellings	Commercial GFA (SF)	Industrial GFA (SF)
2019	163	-	128,977	108,425
2020	164	-	19,097	1,652,384
2021	277	110	23,306	490,000
2022	1,307	681	141,100	208,000
2023	471	3,219	342,328	400,000

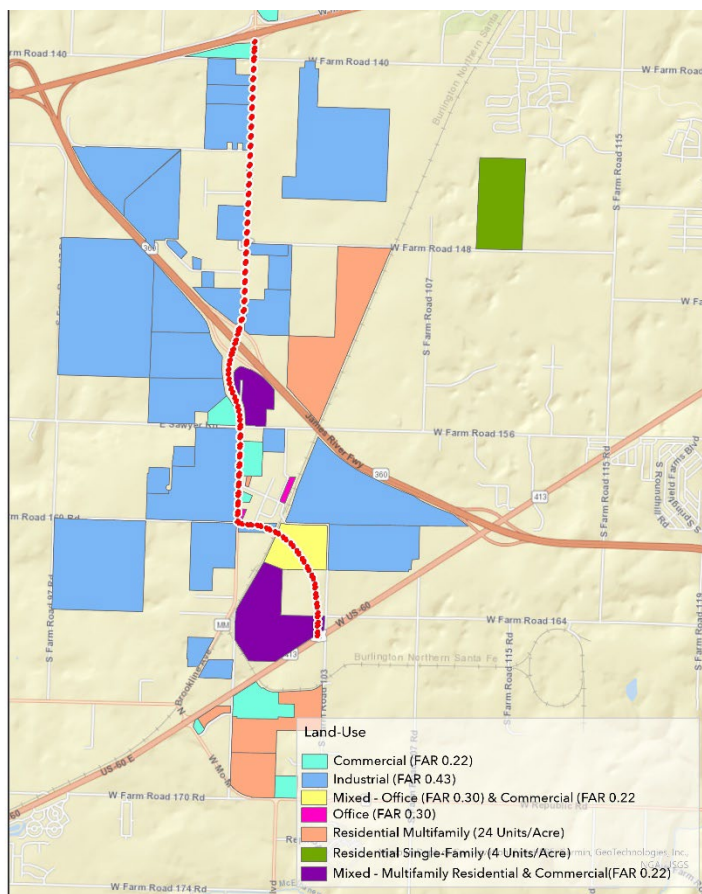
**Table 2 Projected Development. Based on permitting and development approvals.**

The City of Republic is investing \$11 million in water and wastewater infrastructure in the next 5-years to help the area develop. The City's proposed development map is shown with planned and future developments along the corridor.

### Creating Good-Paying Jobs

Greene County currently has a high percentage of low wage earners. It is classified as a county of persistent poverty. The businesses locating along the corridor are bringing jobs that are higher than the average wage, classified as non-professional, and provide good benefits. Though the area is not in an historically disadvantaged Census Tract, the jobs that are created are jobs those residents that live in the City of Springfield in Census Tracts 32, 33, 31 and 17 can easily reach. The City of Springfield continues to expand westward closer to the area of Highway MM. Housing is filling in between this area and the City of Springfield, giving people an opportunity to improve their financial situations by locating close to quality jobs. The average wage in Greene County was \$22.76 in 2020 <https://meric.mo.gov/data/county-average-wages>.

**Figure 17 City of Republic Land Use Map Adjacent to Highway MM**



VALUE OF CORRIDOR JOBS CREATED

**\$164,151,728+**

Past 10 Years



Highway MM Employers Past 10-Years	Industry	Local or Regional	Number of Employees
Amazon	Distribution	Regional	1,750
McLane Company	Grocery Distribution	Regional	500
	Food and Beverage		
Red Monkey	Manufacturing	Regional	350
Herman Lumber Company	Retail/Distribution	Regional	50
Convoy of Hope World Headquarters and Distribution Center	Humanitarian Aid and Distribution Center	Worldwide	250
Ashley Furniture Warehouse	Warehouse/Distribution	Regional	20
Mercy /ROI	Health Care	Regional	90
Magellan Midstream Partners LP	Fuel	Regional	12
Schwan's Home Services	Food Distribution	Regional	10
Heart of America Beverage Co.	Beverage Distribution	Regional	190
Watson Metal Masters	Industrial/Distribution	Regional	99
Everything Kitchens Headquarters	Industrial/Distribution	Regional	50
<b>Total Employment</b>			<b>3,371</b>

Table 3 Employment by the Numbers Past 10 Years Highway MM



## STATE OF GOOD REPAIR

The Highway MM corridor improvements will significantly upgrade the highway and rail transit system that runs through the City of Republic. The bridge overpass over the BNSF is expected to have a service life of 75 years. The rest of the corridor will have a service life of 20 years per the Benefit Cost Analysis purposes. In addition to the long service life of the overpass, there are several other factors that improve the state of repair of the transportation system:

- Reduction in operating and maintenance costs of \$4,937 per lane miles in 20 years (7% Present Value). The "No-Build" scenario is 4.38 miles at an O & M cost of \$921,607 per mile compared to the 7.536 "Project-Build" scenario with an O & M cost of \$916,670 per mile.
- The new segment will offer long-term maintenance cost savings with the installation of LED bulbs in the street lighting along the corridor.



- The “Project Build” scenario will have capacity through 2045. The “No Build” scenario will become over capacity by 2027.

MoDOT design standards will serve as the basis for design and the corridor will remain on the MoDOT transportation system for normal and routine maintenance.

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## PARTNERSHIP AND COLLABORATION

This project has a real collaborative partnership element.

- There have been private investments and partnerships leading up to the current project. Amazon invested approximately \$4 million with the three-lane segment and signals in front of the facility.
- The project has received funding through the State of Missouri Cost Share, utilizing federal MoDOT allocated STBG funding matched by local partners.
- Greene County, Missouri will contribute \$1.5 million to the project section from I-44 to MO 360.
- The City of Republic is contributing local funds to the project in the amount of \$1.527 million.
- Burlington Northern-Santa Fe Rail will also contribute towards the railroad crossing closures. Those amounts have not been finalized, so have not been counted in the overall grant budget.
- The Ozarks Transportation Organization has recognized the project as a high priority project for the region. The OTO is assisting with the grant application and public input.

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## INNOVATION

### Innovative Technologies

- **Crowdsourced Data for Traffic Operations** – MoDOT is using crowdsourcing to inform operations using third-party data gathered from apps such as Waze™ to alert travelers about delays, active field crews, assist with traffic incident management, and to identify issues such as potholes to help set road maintenance priorities.
- **LED Streetlights** – The use of LED Streetlights will significantly reduce the long-term maintenance costs due to high efficiency and long-life expectancy when compared to high pressure sodium or mercury vapor streetlights. Additional benefits include a reduction in carbon emissions and the ability to direct light on specific areas. They can be dimmed allowing for more flexibility in controlling light levels.
- **Direct Current Charging Station** – An EV charging station will be located within mile of I-44. This is along the I-44 alternative fuel corridor (pending status). Currently there are 87 miles between the two established stations. The goal is to expand access to



Figure 18 Alternative Fuel Charging Stations



charging or fueling within rural areas. It also gives vehicles a charging option for tourism connections down to the Wilson Creek National Battlefield. The exact location to be determined. The station will include four Combined Charging Systems (CCS) connectors – Type 1 ports (simultaneously charging four electric vehicles).

<https://afdc.energy.gov/stations#/corridors>

### **Innovative Project Delivery**

#### **Innovative Project Delivery components include:**

- **Post Award Value Engineering** – A post-award value engineering (PAVE) workshop will be conducted during the construction phase of the project. The PAVE workshop will increase the number of approved value engineering change proposals (VECP) and practical design value engineering change proposals (PDVECP), improve contractor partnering, streamline VECP/PDVECP approval process, and improve core team constructability knowledge.
- **Best Value Procurement** – MoDOT will follow a Best Value Procurement Process. Seeking quality and expertise will ensure successful and timely completion of the project.
- **Staged Construction** – The new roadway will be constructed in a manner that will provide only minimal periods of disruption to motorists utilizing the existing roadway network. To the extent possible, the portion of the new roadway located outside of the existing roadway will be constructed first while traffic continues to utilize the existing roadway. Once the portion of the new roadway located off the existing alignment is complete, traffic will be shifted to the new roadway. The existing roadway will be used and widened to both sides from I-44 to MO 360.

### **Innovative Financing Components**

- **Revenue resulting from recent increase to the fuel tax** – The Missouri Legislature approved Senate Bill 262 a Fuel Tax increase, which went into effect in FY 2021. The fuel tax increase is staggered an additional 2.5 cents per gallon each July 1<sup>st</sup> through 2025. The approximately \$500 million in additional state revenue will result in a dedicated transportation revenue increase for the State Highway Fund.
- **Revenue resulting from a dedicated Transportation Sales Tax** – The City of Republic has a dedicated 1/2-cent sales tax for transportation. The City of Republic will be utilizing this transportation sales tax for the local share.
- **Missouri Cost Share Program** – The project, through the rapid development of the corridor has received MoDOT's attention as a high priority. The project section from Interstate 44 to MO 360 was awarded funding through the Cost Share Program with federal surface transportation block grant funds as well as City of Republic local match. This segment is programmed in the FY 2024 STIP for construction.
- **State Infrastructure Bank** – The City of Republic worked with the State of Missouri Highway Commission to secure funding through the State Infrastructure Bank. The amount of \$4.2 million was approved on February 28, 2022. This will allow the City of Republic to begin work on the section from I-44 to MO 360 of the project in advance of funding availability.



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## PROJECT READINESS

MoDOT conducted studies on the MM/I-44 Interchange and US 60 to analyze how the project will affect the system. Environmental work is underway, and a CE2 is anticipated. MoDOT has already begun the consultation process with other agencies and has identified only a few areas to be addressed.

The project upon award will be transferred to MoDOT for project administration. MoDOT has considerable experience in the development and implementation of large and complex transportation capital projects. In addition, MoDOT plans, designs, constructs, and maintains 33,859 miles of highways and 10,385 state highway bridges (24,385 bridges statewide) – the nation’s seventh largest state highway system, with more miles than Iowa, Nebraska, and Kansas’ systems combined. MoDOT stands ready to deliver the proposed RAISE project upon award. MoDOT continues to be recognized with awards as shown in the appendix.

### 2021 MoDOT Report Card



#### Administrative Costs

**Current Performance** = \$2,340 cost per mile

**National Ranking** = Missouri has the 4th lowest administrative cost per mile.



#### Project Management

**Current Performance** = Missouri road and bridge projects were delivered within 2.3 percent of the award amount and 89 percent were delivered on-time.

**National Ranking** = Not available.

### Federal Transportation Requirements Affecting State and Local Planning

The Highway MM Corridor project is listed as a Priority Project of Regional Significance with the Ozarks Transportation Organization (area’s MPO). Parts of Phase I of the project are also included in the Statewide Transportation Program (STIP) and the MPO’s current Transportation Improvement Program (TIP). Upon the award of the RAISE Discretionary Grant, the current TIP and STIP would need to be amended to add in the portion financed by the RAISE Discretionary Grant. The MPO, MoDOT, and the region support the project so it would be easy to accommodate the project additions. See appendix for Transportation Improvement Program Certification.

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## ENVIRONMENTAL RISK

MoDOT has begun the NEPA process with comments already received from many agencies. Environmental work is underway, and a CE2 is anticipated. MoDOT has already begun the consultation process with other agencies and has identified only a few areas to be addressed.



### NEPA Approval

The NEPA clearance process for the Highway MM Project is ongoing. CE2 Clearance is expected.

Included is the required approval checklist of items complete.

### Assessment of Risks and Mitigation Strategies

Many risks, and the strategies to mitigate or avoid any crises, were evaluated as follows:

- **Right-of-way:** 30.5 acres in total with 3.5 acres of tree clearing are required. Acquisition will require a farmland impact rating from NCRS.
- **Floodplain:** A floodplain development permit from SEMA will not be required.
- **Archaeological Survey:** An archaeological survey will be performed on all properties that may be affected to determine the extent of potential impacts to cultural resources.
- **Environmental:** Approvals are currently under review.
- **Weather** (rain, snow, severe weather delays): The project schedule will factor in severe weather days.
- **Higher costs than originally estimated:** Value Engineering is a part of the design process and will reduce budget risk. MoDOT has a proven history of estimating extremely accurately and typically delivers under budget.

The process of right-of-way acquisition will be completed within the RAISE project schedule.

The environmental assessment process has begun on the project. Conceptual Requests for Environmental Services (RES) were reviewed and returned on the project. A CE2 is underway to achieve Section 106 clearance.

MoDOT will work with BNSF to coordinate an effective mitigation strategy during the multiple railroad crossing closures.

There are no properties that qualify as land or hazardous waste sites. There are no wetlands that exist within the project boundaries. Property based on projected development will be primarily residential, commercial, and industrial activity.

Environmental Services Checklist		
	Highway MM I-44 to Farm Road 160	Highway MM Farm Road 160 to US 60
Request for Environmental Services	2/23/2022	10/18/2021
Flood Zone	No	No
Within 4 miles of Airport	Yes	No
Farmland Impact	Pending	Pending
Floodplain/Regulatory Floodway	Not Applicable	Not Applicable
Land Disturbance/Stormwater	Not Applicable	Pending
FEMA/SEMA Buyout	Not Applicable	Not Applicable
Socioeconomic Impact	Pending	Pending
Threatened & Endangered Species	Pending	Pending
Migratory Birds	Not Applicable	Cleared
Hazardous Waste Impact	Cleared	Cleared
Wetland Impact (Section 404/401)	Not Applicable	Not Applicable
Noise Impact	Pending	Pending
Cultural Resources Impact	Pending	Pending
Public Land Impact (Section 4F/6F)	Not Applicable	Pending
Other	Cleared	Not Applicable
NEPA	Pending	Pending

Table 4 Environmental Services Clearance Status Checklist



## PROJECT SCHEDULE

### Public Engagement

The Ozarks Transportation Organization and MoDOT have conducted public engagement with the community on how to improve Highway MM. Feedback has been incorporated into the design and priority process. The OTO throughout the Metropolitan Planning Organization planning process has a data-driven system of ranking the area's priorities. This project has been scored as a high priority for the region.

### PUBLIC LISTENING SESSION

# 200

### APPROXIMATE ATTENDEES



OTO and MoDOT conducted a public listening session on February 28, 2022, to solicit feedback regarding the project at the Republic Community Center. There were approximately two hundred attendees at the public meeting. The feedback was primarily positive on the project. Concerns have been noted by MoDOT and attempts to mitigate concerns are being considered in the project design. The OTO has maintained a public input log of issues along the corridor for the last ten years. The table below provides links to the project websites, which provides documentation on the outreach efforts to-date.

#### Highway MM Public Engagement Links

OTO <https://www.ozarkstransportation.org/highway-mm-corridor-raise-grant>

MoDOT <https://www.modot.org/greene-county-route-mmzz-corridor>



## Project Schedule

Assuming that the grant awards are announced by July 1, 2022, construction will begin by Fall 2024, (section from I-44 to US 360) and Spring 2025, (Section from MO 360 to US 60). The project will be fully constructed by Fall 2026. The anticipated environmental document will be a Categorical Exclusion 2. The section from MO 360 to US 60 will be designed by MoDOT.

[illegible]

## REQUIRED APPROVALS

Parts of Phase I are included in the Missouri Statewide Transportation Improvement Program. The section from Interstate 44 to MO 360 is currently in the OTO's Transportation Improvement Program. It is also in the OTO's Long Range Transportation Plan *Destination 2045*.

### Studies

MoDOT commissioned two studies along the corridor to arrive at a long-term solution for the transportation issues along the corridor.

*Greene County Route MM/ZZ Corridor Study* was commissioned to address existing and future concerns due to growing traffic volumes within the Route MM and Route ZZ corridors. Multiple alternatives were considered to address crash history and eliminate at-grade railroad crossings in the area. The study specifically addressed Phase I ("New Alignment") and Phase II.

*Route MM/ZZ Corridor Study (James River Freeway to Route M)* was commissioned to provide traffic analysis, modeling, and forecasting for staged project implementation of the conceptual Route MM corridor realignment to meet projected forecasts.

## BENEFIT COST ANALYSIS

Overall, the project's net present value is estimated to be **\$150,581,552** over 20 years, when discounted by 7 percent, with a benefit-cost ratio of **3.4**. The largest benefits are due to travel time savings (\$36.8 million), agglomeration economics (\$58.1 million) and safety benefits (\$28.4 million). Emissions reduction (Non-CO2) of \$12.7 million and (CO2) of \$12.7 million (3% NPV) are expected. The full benefit-cost analysis is provided in Appendix E.

Benefit-Cost Analysis Summary		
Benefits	NPV 7% Discount Rate	Undiscounted
Travel Time Savings	\$ 36,891,298	\$ 81,957,749
Safety	\$ 28,456,899	\$ 60,560,603
Emissions Reduction		
Air Pollutants	\$ 12,761,524	\$ 27,489,850
Green House Gases*	\$ 12,798,558	\$ 18,562,428
Railroad Crossing Operations & Maintenance Costs	\$ 497,009	\$ 940,000
Agglomeration Economics	\$ 58,166,456	\$ 103,350,153
Other Benefits - At-Grade Rail Separation	\$ 107,205	\$ 207,684
Other Benefits - Mortality Reduction Benefit	\$ 9,256	\$ 17,473
Other Benefits - Pedestrian & Cycling Facilities	\$ 893,347	\$ 1,686,513
Total Benefits	\$ 150,581,552	\$ 294,772,454
Total Project Costs	\$ 44,538,036	\$ 58,572,215
BCA Ratio	3.4	5.0
*NPV 3% Discount Rate		

The Ozarks Transportation Organization's Travel Demand Model was updated for the project. The *Route MM/ZZ Corridor Study (James River Freeway to Route M)* produced the preferred alignment for the new roadway.



## APPENDICES

Appendix A. Funding Commitments

Appendix B. Letters of Support

Appendix C. Cost Estimate Backup

Appendix D. Benefit-Cost Analysis

- BCA Memo
- BCA Workbook
- BCA GradeDec.net Reports

Appendix E. Maps

- Project Map
- OTO Low Income Area Map
- OTO Minority Area Map

Appendix F. Supplemental Information

- Draft 2022 MoDOT State Freight and Rail Plan
- Greene County Route MM/ZZ Corridor Study
- Route MM/ZZ Corridor Study James River Freeway to Route M
- 2021 MoDOT Performance Awards

All appendices and support materials found at <https://www.ozarkstransportation.org/highway-mm-corridor-raise-grant-1> or <https://tinyurl.com/RAISE2022>

