

HIGHWAY MM: CORRIDOR OF OPPORTUNITY

MERIT CRITERIA

The Highway MM Corridor project and applicants meet all eligible criteria as defined in the Notice of Funding Opportunity (NOFO). 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.



Figure 1 Safety and At-Grade Crossings

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

- Highway MM and Farm Road 168, about 600 ft. 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 presently 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 .1214 incidents per year between trains and vehicles at the two (2) at-grade crossings. The Republic School District is currently in the process of building an 800-student intermediate school along the new alignment. This school will be within a mile of the at-grade crossing and will benefit from the new alignment and railroad overpass.

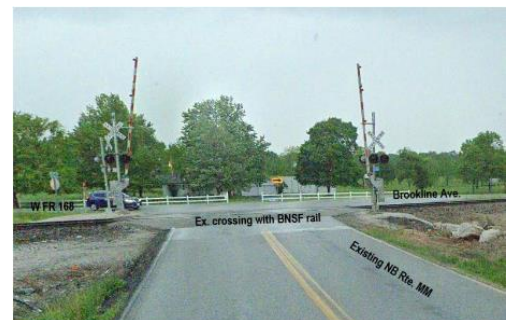


Figure 2 Railroad Crossing of Route MM just N of US 60



This will reduce the predicted incidents to **zero** per year between the trains and vehicles. In 2022, there was a collision on Highway MM and Farm Road 168 between the train and a livestock trailer. There was no fatality because of this collision, but it demonstrates the need to remove the crossings.

The OTO analyzed data obtained from the GradeDec.net Federal Railroad Administration (FRA) tool. The GradeDec.net corridor generated reports are contained in the Supporting Documents Appendix and at <https://tinyurl.com/2023RAISE>.

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 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 the railroad overpass to US 60. The trail is 10-foot wide and will accommodate bicyclist and pedestrians. The trail segment will safely remove travelers from the vicinity of the roadway altogether. There was feedback received at the 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 bicyclist 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 55 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.

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 10,768 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 2022 there were 369 total crashes. Seventeen accidents were ranked as serious and there were three fatalities. A fatality in 2022 was in the same location as a 2014 fatality that is not reflected in the seven-year parameter of the benefit cost analysis.

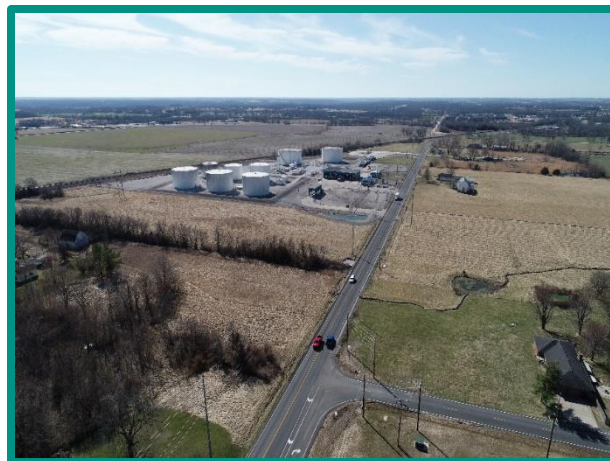


Figure 3 Highway MM along Magellan Midstream Partners

Figure 4 Crash Heat Map 2015-2019



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.

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.



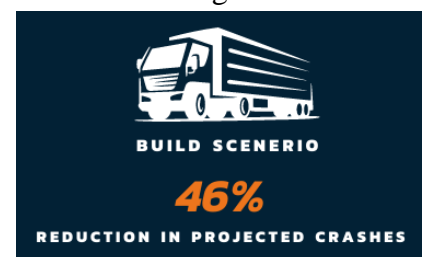
Figure 5 Rendering of Possible Road Alignment

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.
 - Provides 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.



Overall there is a positive safety benefit Return on Investment of **\$35,632,375** 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.

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 2019-2021 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_{2.5} 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_{2.5} and greenhouse gas emissions from CO₂.

The no-build scenario is projected to have 986,538 annual hours of delay in 2027 and as much as 1,541,466 annual hours of delay in 2045. The build scenario is consistently half this amount, with 491,696 at first year completed (2027) and 814,066 in 2045.

Minimizing the emissions from growth in this corridor is critical for staying in NAAQS attainment for Ozone and PM_{2.5}, especially as standards continue to become stricter. The calculation for emissions reductions is based on the reduced annual hours of delay. These calculations also take into account continued electrification of the fleet through 2045. Reducing emissions improves health outcomes.

Emissions Savings (short tons) 2025-2045	
NOx	96.84
PM2.5	1.92
CO2	38,281.38
Total	38,380.14

Table 1 Emissions Savings



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.

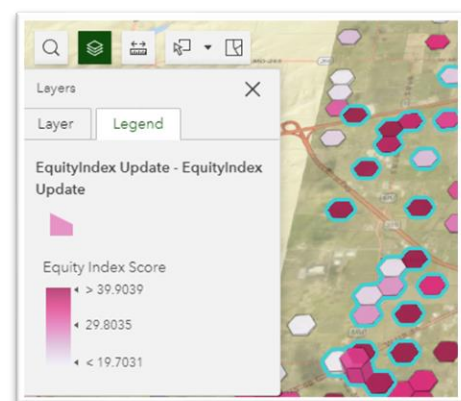
Environmental Justice

The OTO has developed an Equity Index application to inform planning and public involvement. Underserved populations captured by the index include: racial minority; below poverty; disabled; limited English proficient; no car/transit dependent; no high school diploma or GED; single parents; SNAP recipients; no internet at home; rent burdened; aged 65 or older; aged 65 or older and living alone; and aged 17 or under. The equity index application has identified multiple households as transit dependent near the Route MM project. This area, however, is not served by fixed-route transit. The inclusion of ADA sidewalk accommodations along the corridor is crucial to providing this population with access to the employment spurred by the improved corridor. Nearly 30 percent of the residents within a half-mile of the corridor are below the poverty level, as defined by the 2021-2025 Census ACS data. Just over 40 percent do not have access to internet at home.

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 or incident happen along these corridors, an improved MM becomes a critical detour or evacuation route. The MM corridor serves as a detour route for I-44 and is able to deflect traffic both to Route 360 and back to I-44 or to the US 60 corridor,

Figure 6 Equity Index Near Route MM



depending upon the required detour route. Similarly, the corridor serves as an alternate for Routes 360 and 60, as well. The no-build scenario is projected to have 924,879 annual hours of delay in 2025 and as much as 1,541,466 annual hours of delay in 2045. The no-build scenario level of congestion greatly diminishes the effectiveness of Route MM for detours, compared to the opportunity this improvement provides. 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.

Removal of two at-grade rail crossings improves resiliency, safety, and security along the rail corridor connecting east in St. Louis, west through Tulsa, and between Kansas and Jonesburg, AR, with transfers in Springfield, MO. Work is already underway to the larger rail corridor to minimize at-grade rail crossings through a previously funded CRISI grant. Further improvements are identified in the State Rail Plan for the Cherokee line. The BNSF rail near and through Springfield is identified as having a Level of Service F, characterized by unstable flows and service breakdown conditions. These grade-separations make strides toward improving freight flows in the area and allowing the region to remain agile in the event of a disaster or incident.

Alternate Transportation

The addition of sidewalk and trail along this corridor will benefit area residents, employers, and 800-plus students who will be attending a newly announced intermediate school along the new alignment, the full impact of which is still to be determined. Between this new school location and a new mixed-use development with nearly 2,000 units, there are estimated to be a minimum of 100 daily trail walkers and 150 sidewalk walkers.

Electrification

There are very few electric vehicle chargers on this side of the County. The two closest include one at KOA campground and the other at local Ford dealership out of 49 locations throughout the urbanized area. This information is derived from plugshare.com.



Figure 7 Area Charging Stations vis PlugShare



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 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.



Figure 8 Iron Grain Mixed Use Development

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 9 Stone Creek Falls Rendering

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. Stone Creek Falls, a 92-acre



development, will have sidewalks and a trail connection to the new Highway MM alignment. This is located near the newly announced Republic School District Intermediate School.

Overall vehicular travelers along the corridor will see significant Travel Time Savings of **\$32,161,553**. 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.

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 City limits. 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.



VALUE OF TRAVEL TIME SAVINGS

\$32,161,553

NPV 7% - BCA



Figure 10 Iron Grain Mixed District Rendering and Amazon Facility



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 (Republic Rd.) 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

The project will bring ADA compliant 5 ft. wide sidewalks and 10 ft. wide trail 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 **\$1,222,866** with a 7% discounted net present value.

Creating a Community

The City of Republic purchased land for \$3.5 million in 2021 to build 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 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 Republic School District purchased a 78-acre tract adjacent to the new road alignment and across from the planned Stone Creek Housing Development. This land will house the new 5th and 6th grade intermediate school, up to 800 children.

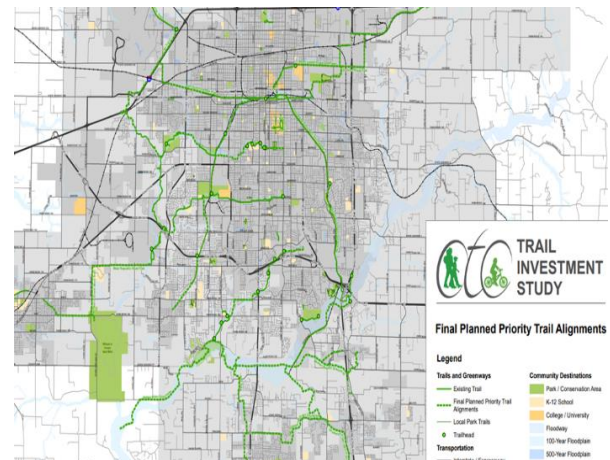


Figure 11 OTO Proposed Trail Map



Figure 12 "Got Mud? Run" Participants



The health benefit seen from the increased mobility is **\$6,844,728** based on a projection of 100 trail walkers and 150 sidewalk walkers a day. The numbers of walkers and bicyclists that would utilize the trail to go to the new sports complex, school, and mixed used housing developments are likely to be much higher.

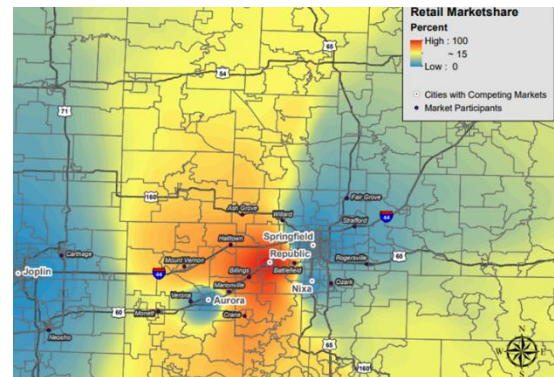
Increase Mobility for Freight and Supply Chain

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 (2022 MoDOT State Freight and Rail Plan) <https://tinyurl.com/2023RAISE>.



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 to the right.

Figure 13 City of Republic Retail Trade Area Zones



ECONOMIC COMPETITIVENESS AND OPPORTUNITY

Moving People and Goods Efficiently Through the Corridor

Without the project intervention in the “No Build” scenario, the congestion continues to increase. By 2045, the expected “No Build” AADT is 23,857. Without the roadway improvements there will be congestion delays that 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 and Land-Use Productivity

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 2022 MoDOT State Freight and Rail Plan <https://tinyurl.com/2023RAISE>.

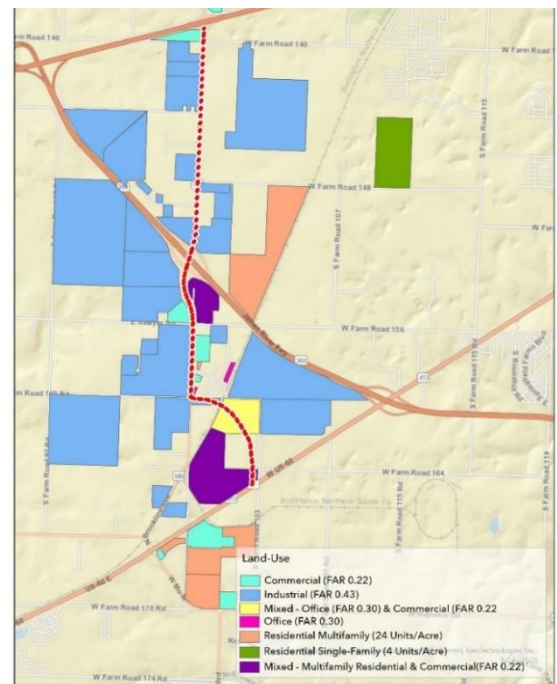
The City of Republic’s land use map adjacent to the Highway MM Corridor includes hundreds of acres of developable land that is suitable for industrial and commercial uses with the potential to employ thousands of workers across numerous rural counties in Southwest Missouri, most of which are designated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

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. 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

Figure 14 City of Republic Land Use Map Adjacent to Highway MM



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.



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 \$24.43 in 2021 <https://meric.mo.gov/data/county-average-wages>.



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



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 railroad is expected to have a service life of 75 years. The rest of the corridor will have a Benefit Cost Analysis service life of 20 years. 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 \$4,646.95 per lane mile in 20 years (7% Present Value). The “No-Build” scenario is **Table 3 Employment by the Numbers Past 10 Years Highway MM** 4.38 miles at an O & M cost of \$713,632 per mile compared to the 7.536 “Project-Build” scenario with an O & M cost of \$763,264 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.



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. Amazon is actively working to train and retain workers from underserved areas in Springfield, MO.
- 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 \$1.393 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. A letter of support has been provided.
- 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.



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, supporting the Dark Sky Initiative. They can be dimmed allowing for more flexibility in controlling light levels.
- **Direct Current Charging Station** – An EV charging station will be located within two miles 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 charging or fueling within rural areas. It also gives



Figure 18 Alternative Fuel Charging Stations



vehicles a charging option for tourism connections down to the Wilson Creek National Battlefield. The exact location is still to be determined. The City of Republic will maintain the EV charging station. 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 at an additional 2.5 cents per gallon each July 1st 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 in advance of funding availability.

