

FIX I-44

FREIGHT, INNOVATION AND SAFETY FOR THE OZARKS

FY2022 MPDG Grant Application



IN PARTNERSHIP WITH:



BASIC PROJECT INFORMATION	
What is the project name?	FIX I-44: Freight, Innovation and Safety for the Ozarks
Who is the project sponsor?	Missouri Department of Transportation
Was an application for USDOT discretionary grant funding for this project submitted previously?	Yes: FIX I-44: Freight, Innovation and Safety for the Ozarks (INFRA 2020)
A project will be evaluated for eligibility for consideration for all three programs, unless the applicant wishes to opt-out of being evaluated for one or more of the grant programs.	<input type="checkbox"/> Opt out of Mega? <input type="checkbox"/> Opt out of INFRA? <input checked="" type="checkbox"/> Opt out of Rural?
PROJECT COSTS	
MPDG Request Amount	\$65,654,158.20
Estimated other Federal funding (excl. MPDG)	\$21,884,719.40
Estimated other Federal funding further detail (excl. MPDG)	MoDOT STIP Federal Funds: \$20,284,800 Springfield, MO STBG Suballocated: \$1,600,000
Estimated non-Federal funding	\$21,884,719.40
Future Eligible Project Costs	\$109,423,597.00
Previously incurred project costs	\$0.00
Total Project Cost	\$109,423,597.00
INFRA: Amount of Future Eligible Costs by Project Type	Project Type No 1: \$109,423,597.00
Mega: Amount of Future Eligible Costs by Project Type	Project Type No 2: \$109,423,597.00
PROJECT LOCATION	
State in which the project is located	Missouri
INFRA: Small or Large project	Large
Urbanized Area in which project is located, if applicable	Springfield, Missouri
Population of Urbanized Area (according to 2010 Census)	273,724
Is the project located (entirely or partially) in an Area of Persistent Poverty or Historically Disadvantaged Community)?	Yes. Historically Disadvantaged Communities: 29077003600 and 29077002200. Areas of Persistent Poverty: Greene County; 29077002200, 29077003600, 290077004400, 29077004500, and 29077005600
Is the project located (entirely or partially) in Federal or USDOT designated areas?	Yes. Opportunity Zones: 29077004302, 29077005600, 29077003600, 29077004400, and 29077002200
Is the project currently programmed in the TIP, STIP, MPO Long Range Transportation Plan, State Long Range Transportation Plan, and/or State Freight Plan?	Yes. MPO Long Range Transportation Plan, State Long Range Transportation Plan, MoDOT STIP, OTO FY2022-2025 TIP

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I. PROJECT SUMMARY

The Missouri Department of Transportation (MoDOT) requests **\$65.7 million in MPDG funds** for the Freight, Innovation and Safety for the Ozarks, or FIX I-44, project. FIX I-44 will improve safety, connectivity, and the movement of goods while addressing major pavement condition concerns on the I-44 corridor through Springfield, Missouri.

The project area runs the length of I-44 between MO 13 (Mile Marker 77) and US 65 (Mile Marker 82) and will be completed in partnership with the Ozarks Transportation Organization (OTO), Greene County, and the City of Springfield, Missouri. **The project includes reconstruction of 4.75 centerline-miles of interstate highway, added lanes to improve capacity, upgraded active transportation connections, and a complete overhaul of the I-44/MO 13 interchange, a major cause of freight and passenger backups.** The overall project cost is \$109.42 million.

FIX I-44 is a top priority for both MoDOT and the Ozarks Transportation Organization due to the critical need for pavement and design improvements on this corridor to address existing issues and manage future increases in freight traffic.¹

Transportation Challenges

Capacity, safety, and condition issues on I-44 impact not only Springfield and Greene County but Missouri and the nation. The Mid-America Freight Coalition classifies I-44 in Missouri as a Tier 1, high priority corridor because of its high truck volumes and linkage to the southwest United States and the broader freight network. According to MoDOT data, I-44 through Missouri carries more than 1.3 billion tons of freight annually. This annual total of freight is estimated at a value of \$3.7 billion, which represents the largest total for any corridor in the state. Because of the continued economic and population growth in this area, traffic and demand on this corridor is expected to continue to increase, **nearly tripling to 3.8 billion tons by 2045.** However, the existing condition of I-44 is insufficient for these needs and the demands of other travelers.

I-44 through Missouri carries more than **1.3 billion tons of freight annually** estimated at a value of \$3.7 billion, the **largest total for any corridor in the state.**

Capacity

Roadway capacity on I-44 and at its interchange with MO 13 is inadequate during peak hours, creating congestion and traffic delays. In Missouri, the Springfield area has the highest vehicle count on I-44 outside of St. Louis, and weekday volume has increased by up to 55% in some locations over the last decade, with approximately 64,600 vehicles now traveling I-44 daily through Springfield. This added traffic has increased crash potential as travelers weave in and out of lanes to attempt to navigate the corridor during peak hours. Currently, the four-lane divided highway is also prone to significant delays and shut-downs following weather-related incidents. Traffic incidents and crashes tend to reduce lanes or even shut down all directional

¹ [2022 Missouri State Freight & Rail Plan](#)

lanes in certain cases, creating delays for emergency responders, freight carriers, interstate travelers, and commuters. Public input consistently includes complaints about congestion and travel delays on this section of I-44.

These issues are particularly prevalent at the I-44/MO 13 interchange, where the regional connection of Missouri's top three largest cities converge – Springfield with St. Louis and Springfield with Kansas City. Frequently, the traffic queue exiting westbound I-44 extends into mainline I-44 traffic. **Southbound MO 13 drivers report traffic delays of up to 20 minutes during afternoon peak hour bottlenecks.**

Safety

MoDOT has determined that the conditions that lead to crashes on the project corridor have worsened as traffic has increased. This increase is associated with the urbanization of areas adjacent to I-44 in this growing metropolitan area.² Meanwhile, tourists share this four-lane roadway with growing freight volumes that significantly contribute to congestion and potential vehicle conflicts. According to a MoDOT analysis, the rate of crashes per mile in the project limits is 31% higher than other urbanized areas of I-44. The rate for severe injury crashes is also 12% higher. Along the I-44 corridor, the most common crash type is out-of-control crashes followed closely by rear-end crashes. The rear-end crashes are likely attributable to traffic slowdowns, and several out-of-control crashes are believed to be due to efforts to avoid queued or stopped traffic.

The rate of crashes per mile in the project limits is **31% higher** than other urbanized areas of I-44.

Connectivity

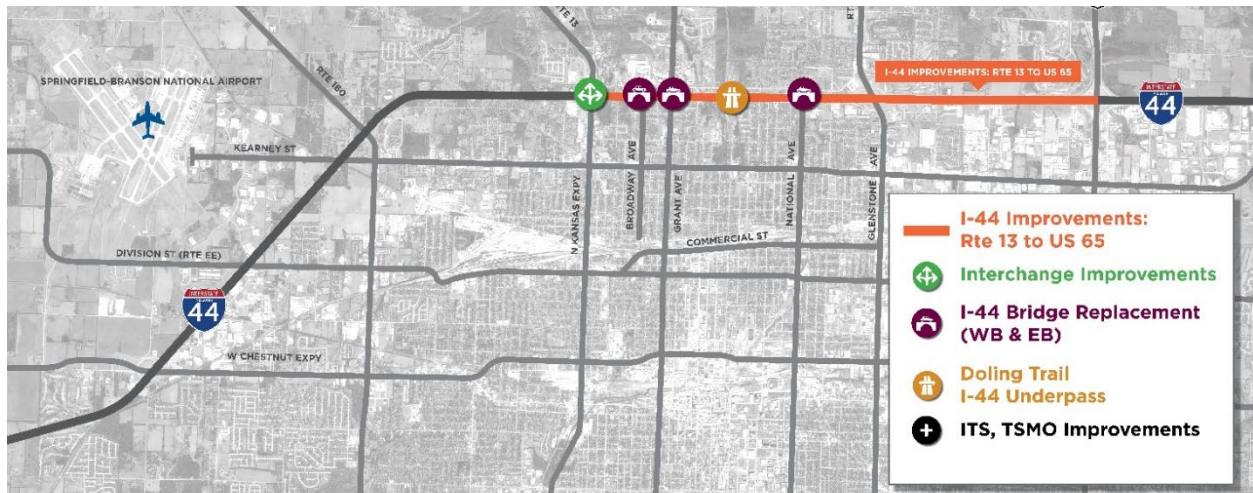
Designed to improve connectivity for automobile users, I-44 divides the community and acts as a barrier for active transportation. Residents living north of I-44 in Springfield have challenges safely accessing nearby grocery stores without a car. Similarly, limited bicycle and pedestrian infrastructure prevents students in the historically disadvantaged communities south of I-44 from easily accessing their schools to the north without busing. Access to different transit routes and trail connections is more challenging due to the location of the interstate.

Infrastructure Condition

The mainline I-44 corridor was constructed in the 1950s and 1960s. The current pavement requires considerable maintenance due to age and condition, which not only requires significant fiscal resources but also contributes to traffic disruptions, crashes, and delays. These poor infrastructure conditions require significant maintenance that considerably strain traffic flow during repairs and frequently place workers in harm's way.

Most of the bridges through this corridor were also built in 1960, with an expected design life of 50 years, and were last rehabilitated in 2010. Bridges over Broadway Avenue, Grant Avenue, and National Avenue are all currently on the "weight-restricted" state listing. The type of bridge structure – reinforced concrete voided slab style – tends to form deck potholes quickly and requires annual repairs.

² Study: [Springfield metropolitan area among fastest-growing in Missouri](#). KY3, 6 June 2021.

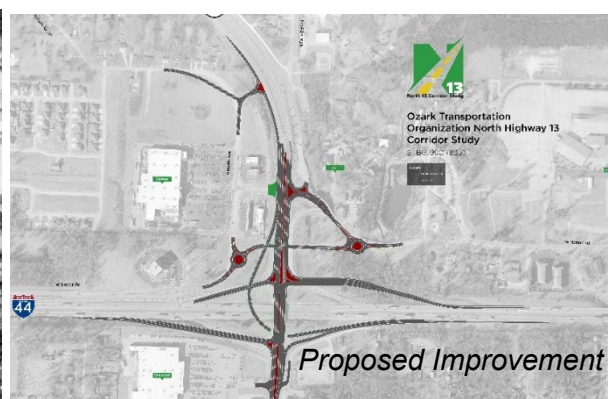


Solution

To address these issues, the FIX I-44: Freight, Innovation and Safety for the Ozarks project includes:

Widening and Improving the Roadway. The project will widen I-44 between MO 13 and US 65 towards the inside median to improve mobility on the corridor for both freight and standard automobile traffic. This segment is currently two lanes in each direction. The FIX I-44 project will widen I-44 to three lanes in each direction and fully reconstruct the existing four lanes, resulting in reduced long-term maintenance.

MO 13 Interchange. The project will replace the existing I-44/MO 13 interchange with an alternative recommended by the North Highway 13 Corridor Study. The proposed interchange will include a flyover ramp for southbound traffic on MO 13 to access eastbound I-44, which will considerably reduce delays and improve safety for both MO 13 and I-44. The MO 13 bridge will also be replaced, resulting in enhanced capacity and an improved structure, requiring less annual maintenance.



Safety Enhancements. The existing I-44 median guard cables will be replaced with concrete barriers throughout the project corridor, resulting in improved safety given the significant truck traffic. The concrete barriers will prevent crossover accidents, significantly reducing fatalities

due to median crossover crashes. Additional safety improvements will be completed at the I-44/MO 13 interchange to improve intersection and ramp terminal safety, while reducing the overall conflict points.

Bridge Replacements. The project will replace six two-lane bridges on I-44: one in each direction over Broadway Avenue, Grant Avenue, and National Avenue. The proposed bridges will improve vertical clearances under I-44 and reduce maintenance burden.

Pedestrian/Bicycle Improvements. The project includes ADA sidewalk improvements to Broadway Avenue, Grant Avenue, and National Avenue in the sections from Norton Road to Kearney Street. Safety lighting will be added to the bridge underpasses to make these active transportation connections more attractive to users.

Trail Connections and Neighborhood Connectivity. A new pedestrian underpass will be added under I-44 between Grant Avenue and National Avenue, and a new multi-use trail will link Doling Park with Norton Road.

Project History

Given the significance of I-44 to Missouri’s freight network, this project is part of a suite of investments made by MoDOT in the corridor across the state. Major improvements on the corridor kicked off with a [Purpose and Need Study](#) for I-44, completed in 2008.

The Ozarks Transportation Organization (OTO) – the region’s Metropolitan Planning Organization – identified I-44 capacity expansion as a high-priority project in the fiscally-constrained project list in *Destination 2045*, its current long-range transportation plan. I-44 expansion has been an identified need since the original long-range plan, *Vision 2020*, was adopted in 2001. OTO and MoDOT worked together on a previous INFRA grant application for Fiscal Year 2020 and have continued planning efforts to advance the project in the meantime. Planning efforts include a noise study to identify potential sound wall needs, and the North Highway 13 Corridor Study. After soliciting public input on congestion and safety issues in November 2021, the North Highway 13 Corridor Study identified five design alternatives for the I-44/MO 13 interchange. These alternatives were presented for public comment in March 2022. The Southbound-Eastbound Flyover alternative included in the FIX I-44 project, described above, was recommended based on analysis and public involvement.

The proposed project will complement MoDOT’s other significant corridor investments that are planned, underway, or recently completed, including: I-44 Project Bridge Rebuild and I-44 Corridor Bridge Bundle (rural bridges west of Springfield), I-44 Meramec River Bridges Replacement (St. Louis area), and I-44 Resurfacing and Bridge Repair (central Missouri). Along with the proposed project, these improvements significantly improve safety, reduce congestion, and enable more efficient movement of people and goods across Missouri. Together, these projects illustrate MoDOT’s commitment to the long-term sustainability of I-44.

II. PROJECT LOCATION

I-44 forms the north leg of a freeway belt that circles the City of Springfield and provides access for through traffic to St. Louis 215 miles to the east, Kansas City 166 miles to the north, Joplin 71 miles to the west, and Branson 44 miles to the south. Nationally, I-44 is a 633-mile major east-west corridor beginning in Wichita Falls, Texas, traverses Texas and Oklahoma, and

terminates at St. Louis. The project is located within 600 miles of major cities, including St. Louis, Chicago, Dallas, and Baton Rouge. I-44 in Springfield provides critical connectivity between these areas.



Springfield and I-44's strategic location make them critically important to both the urban and rural environments in southwest Missouri. Springfield is home to numerous high-value industrial and transport industry facilities, including the Amazon STL 3 Fulfillment Center, Partnership Industrial Center (West and East), Strafford Business and Rail Park, and Bass Pro Shops Headquarters. All of these facilities are located within one mile of the I-44 corridor. **As a result, Springfield is a major regional hub for intermodal national transport.** Springfield-Branson National Airport, located just over one mile from I-44 and five miles from the FIX I-44 project, also provides a critical freight and cargo connection and handled more than 126 million pounds of landed weight in 2020.

I-44 is on the Strategic Highway Network (STRAHNET) which is critical to the Department of Defense's domestic operations and is deemed necessary for emergency mobilization and peacetime movement of heavy armor, fuel, ammunition, repair parts, food, and other commodities to support U.S. military operations. The U.S. Army's Fort Leonard Wood is located 90 miles northeast on I-44, and I-44 serves as the primary route to and from the post to assist across the nation.

Project Limits

The proposed project limits on I-44 begin at MO 13 to the west (Mile Marker 77) and continue east to US 65 (Mile Marker 82). On MO 13, the project spans from I-44 at the south to Norton Road in the north.

Urbanized Area

The project is located in the Springfield, Missouri Urbanized Area (latitude 37°12'47.52" N, Longitude 93°17'12.48"W) with a total population of 291,607 in 2020. This represents an increase from 273,724 people at the time of the 2010 US Census. The regional economic hub is estimated to have a population of one million.

Opportunity Zones, Historically Disadvantaged Communities, and Areas of Persistent Poverty

The project is within or borders five contiguous **Opportunity Zones** (U.S. Census Tracts: 29077004302, 29077005600, 29077003600, 29077004400, and 29077002200) and forms the northern border of two Census tracts designated as **Historically Disadvantaged Communities** (29077003600 and 29077002200).

The project is in Greene County, which is designated as an **Area of Persistent Poverty**. Five Census tracts bordering the project (29077002200, 29077003600, 29077004400, 29077004500, and 29077005600) are also individually designated as Areas of Persistent Poverty.

III. PROJECT PARTIES

As owner of all facilities on I-44, MoDOT is the project sponsor and lead agency on all improvements. Due to the regional significance of the project, MoDOT has partnered with the following in support of the FIX I-44 program:

Ozarks Transportation Organization (OTO) is the regional Metropolitan Planning Organization for the Springfield region. The MPO includes local elected and appointed officials from Christian and Greene counties and the cities of Battlefield, Nixa, Ozark, Republic, Springfield, Strafford, and Willard. **The OTO has identified the FIX I-44 project as the number one priority in its planning process.** OTO conducted public meetings to gather input on the chosen improvements and facilitated the grant application for this FY2022 MPDG opportunity.

The **City of Springfield** has prioritized local investments in connectivity as part of the FIX I-44 project. City streets, including Broadway Avenue, Grant Avenue, and National Avenue run under I-44. **The City of Springfield is utilizing Surface Transportation Block Grant Funds, along with the city's local match, to facilitate improved pedestrian connectivity under I-44 on these streets and at the new underpass at Doling Park.** The city will be a partner on the widening of these sidewalks as part of the project.

Greene County is home to the City of Springfield and the FIX I-44 project. Greene County is the fourth most populous county in Missouri and the eighth highest freight-generating county in Missouri by weight. **Due to the local economic development and safety significance of the project, Greene County has committed \$1 million in local funds to the project.**

IV. GRANT FUNDS, SOURCES, AND USES OF ALL PROJECT FUNDING

MPDG funding is critical to successfully deliver each project element; absent MPDG assistance, it will take decades to complete the work, which will be fragmented. The availability of other revenue sources is extremely constrained in Missouri. The match contributions represent maximums MoDOT can contribute while ensuring fiscal health. The local match contributions from the City of Springfield and Greene County described below are a testament to the critical need for this project and are pledged on the condition of receiving MPDG funds, with documentation available in [Appendix A](#).

Previously Incurred Expenses and Future Eligible Costs

Previously incurred expenses related to the project include public input and alternatives studies. **All requested grant funds are for future eligible costs, as shown in the project budget.**

Sources and Amounts of Funds for Future Eligible Costs

MoDOT plans to allocate \$20.28 million in state allocated federal highway funds for the project. MoDOT will also provide \$20.48 million in state funds, matching both the MPDG request and other non-MPDG federal funds at 20%. As discussed in the Project Parties section, the City of Springfield will use \$1.6 million in federal Surface Transportation Block Grant funds and \$400,000 in city matching dollars to fund pedestrian improvements under I-44. Greene County will contribute \$1 million in local funds to the overall project. **MoDOT is requesting the remaining funds – \$65.65 million – through this FY22 MPDG application.**

PROJECT CONTRIBUTIONS			
Funding Source	Project Contribution Chart	Percentage of Total Cost	Federal/Non-Federal Share
USDOT MPDG Federal Funding	\$65,654,158.20	60.0%	80.0%
Applicant Federal Funds (MoDOT STIP Federal Funds)	\$20,284,719.40	18.5%	
Project Partner Federal Funds (City of Springfield STBG)	\$1,600,000.00	1.5%	
Applicant Non-Federal Match (MoDOT State Funds)	\$20,484,719.40	18.7%	20.0%
Project Partner Non-Federal Match (City of Springfield)	\$400,000.00	0.4%	
Project Partner Non-Federal Match (Greene County)	\$1,000,000.00	0.9%	
Total Project Funding	\$109,423,597.00		100.0%

Project Budget

Project budgets include adequate contingency and have been recently updated to account for current market conditions based on recent construction bidding information available to MoDOT. Further documentation of contingencies is available in [Appendix D](#).

PROJECT ESTIMATE BY COMPONENT		
Project Component	Program Estimate	Percentage of Total Cost
I-44 Mainline: US 65 to Glenstone Ave	\$19,177,000	17.5%
I-44 Mainline: Glenstone Ave to MO 13	\$39,743,000	36.3%
Pedestrian Trail Underpass	\$3,302,428	3.0%
Pedestrian Sidewalk Improvements	\$650,164	0.6%
ITS/TSMO Deployment	\$625,000	0.6%
MO 13 Interchange Improvements	\$45,926,005	42.0%
Total Project Estimate	\$109,423,597	100.0%

PROJECT FUNDING TABLE					
Task Name/Project Component	Total Cost (\$)	Applicant/ Partner Share	Federal Share	Local Percentage of Total Cost	Federal Percentage of Total Cost
Program Management	\$10,896,379	\$2,179,280	\$8,717,099	1.99%	7.97%
Environmental Review	\$93,116	\$18,620	\$74,496	0.02%	0.07%
Design Development	\$8,287,306	\$1,657,460	\$6,629,846	1.51%	6.06%
Right-of-Way Acquisition	\$5,696,500	\$1,139,300	\$4,557,200	1.04%	4.16%
Utility Relocation	\$3,144,000	\$628,800	\$2,515,200	0.58%	2.30%
Project Construction	\$81,306,296	\$16,261,260	\$65,045,036	14.86%	59.44%
TOTAL	\$109,423,597.00	\$21,884,720.00	\$87,538,887.00	20.00%	80.00%
Other Federal Funding	\$21,884,719.40			20.00%	
State/Local Non-Federal Funding/Match	\$21,884,719.40			20.00%	
Pending Federal MPDG Funding Requests	\$65,654,158.20			60.00%	

V. COMMON PROJECT OUTCOME CRITERIA

1. Safety



Congestion on the corridor creates a significant number of back-of-queue crashes.

Currently, traffic speeds along the I-44 corridor through Springfield are unpredictable, varying considerably based on time of day and day of week. Added tourist traffic to Branson and Northwest Arkansas are major factors, as discussed further in the [Economic Impacts, Freight Movement, and Job Creation](#) section of this application. This unpredictability contributes to erratic driving behaviors, including weaving and close following that can lead to sideswipe and rear-end crashes.

In total, from 2018-2021, 432 total crashes occurred on the corridor, including 3 fatal and 134 injury crashes.

The combination of high volumes of tractor trailers and changing speeds of traffic are thought to contribute to increased crash severity in the project corridor compared to similar roadways in Missouri. This was the case in a 2020 fatal crash on I-44 east of Glenstone, within the project area. A driver, headed westbound,

In total, from 2018-2021, 432 total crashes occurred on the corridor, including 3 fatal and 134 injury crashes.

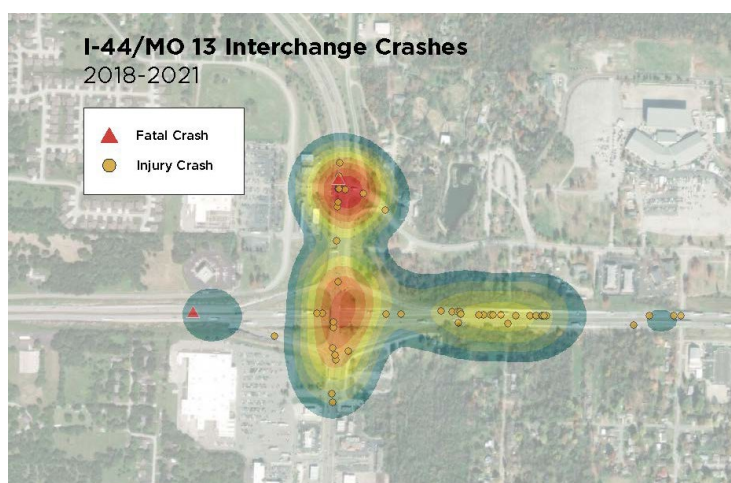
failed to slow for traffic and became lodged under the trailer of a semi-truck.³

On an adjacent section of I-44, three children – ages 6, 7, and 8 – were killed in 2019 when the van they were riding in collided with a semi-trailer entering the interstate, going westbound.⁴ The tragedy was compounded when additional secondary crashes in the same time period left westbound and eastbound lanes closed simultaneously. While this crash took place outside the project limits, the roadway there has similar characteristics. Without additional capacity, closures can delay arrivals for first responders and make the results of these crashes more serious.

Any crash in the corridor can compound safety issues locally. The City of Springfield’s two Level I Trauma Centers are five and seven miles south of the corridor. Crashes on the corridor that block access to either MO 13 or US 65 can significantly increase the drive time by forcing emergency responders onto other local and residential roads.

The project will add capacity through a third lane in each direction. Added capacity will help reduce crashes on the corridor by allowing more through traffic to shift out of the outside lane, minimizing weaving movements. **These capacity improvements made to eliminate backups will also provide a reduction in back-of-queue crashes, which often are severe or fatal in nature.**

Additionally, southbound traffic on MO 13 currently can experience particularly inconsistent travel times and congestion, contributing to back of queue and stop-and-start traffic crashes, as shown in the heat map above. The proposed reconfiguration for the I-44/MO 13 interchange will include a new flyover bridge at MO 13, identified in the North Highway 13 Corridor Study. **The flyover would address the major source of backups at this interchange by simplifying the connection between MO southbound and I-44 eastbound and separating this traffic from MO 13 through traffic.** This will also allow MoDOT to realign Norton Road, which runs parallel to I-44 to the north, and replace the existing deficiently-spaced signalized intersection with a new Right In, Right Out intersection that will improve safety and traffic flow. The result will facilitate a new underpass under MO 13 and the conversion of a stop-controlled intersection to a roundabout, effectively eliminating 10 conflict points by grade-separating conflicting traffic movements. I-44 users will also benefit from the new interchange, as the proposed reconfiguration will eliminate backups on the westbound off ramp. These backups frequently spill onto westbound I-44 in the current



Project improvements would help address significant safety issues at the I-44/MO 13 interchange, shown with a heat map of recent crashes within the project limits.

³ [Fatal crash in Springfield leaves one dead](#). OzarksFirst.com, 20 June 2020.

⁴ [3 children killed, 6 injured in truck-van crash in Missouri](#). KSDK, 20 July 2019.

condition. **All of these modifications are expected to result in reduced crashes by improving the consistent flow of traffic.**

Finally, the project will replace the median guard cable with a permanent concrete barrier, which will reduce the risk of catastrophic crashes due to vehicles veering into oncoming traffic and colliding head-on. The widening will also increase the inside shoulder width, providing additional clear space and reaction time prior to contacting a roadside barrier.

A safety analysis of the existing corridor and proposed improvements was developed based on the AASHTO Highway Safety Manual methodology and adjusted based on state-specific conditions, as discussed in the [Benefit-Cost Analysis](#). Based on this analysis, **a reduction of approximately 320 total crashes** over 30 years is anticipated based on the proposed improvements. This includes eliminating eight fatal and 27 serious injury crashes during that time period. **The reduction in crashes is anticipated to save more than \$38.1 million** over the 30-year analysis, with a 7% discount rate.

2. State of Good Repair

The mainline I-44 corridor was constructed in the 1950s and 1960s. While MoDOT has invested in routine maintenance repairs, the pavement condition requires additional investment due to weather conditions and considerable use, including by a high volume of trucks and heavy vehicles. The FIX I-44 project will return it to a state of good repair that can withstand the future travel demands on this corridor.

The FIX I-44 project will replace more than 18 lane-miles of existing pavement on I-44.

Project plans anticipate using concrete pavement to limit future traffic disruptions, delays, and worker safety exposure for future maintenance on MoDOT's 8-year asset management cycle.

The six mainline bridges on I-44 in the project corridor, which date to 1960, will also be replaced, resulting in considerably reduced maintenance costs over the life of the project.

The same will be true for the replacement of the MO 13 bridge over I-44. These improvements will be constructed with the future demands on the corridor in mind and are expected to improve and extend the life of the infrastructure.

Once these assets are replaced or rebuilt, they will be maintained in accordance with MoDOT's Asset Management Plan. MoDOT uses an asset management approach to prioritize investments to extend the usable life of roads and bridges, understanding the resources available for maintenance, repair, or replacement of assets across the state's system. Using this approach, MoDOT is committed to ensuring that the benefits from the FIX I-44 program are sustainable and long-lasting.

3. Economic Impacts, Freight Movement, and Job Creation

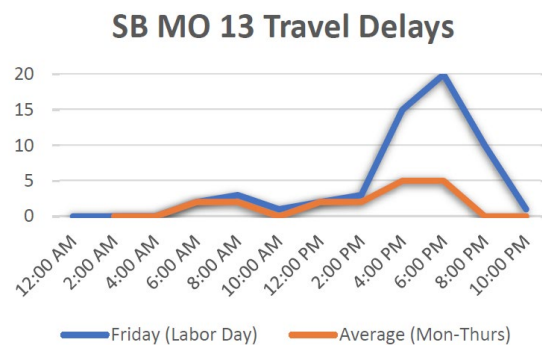
The efficient movement of people and goods on I-44 is critical to the economic well-being and growth of Springfield, Missouri, and the region. The project will tackle critical issues that cause immediate issues for users and the movement of goods.

Reducing Travel Delays

Given the current configuration and inadequate roadway capacity, there is considerable congestion and traffic delays along I-44 through Springfield. The corridor is currently a 4-lane

divided highway and serves approximately 64,600 vehicles daily. Frequent vehicular and weather incidents occur along the corridor, creating significant congestion and resulting in traffic rerouting. The segment of mainline I-44 in the project area has an existing Level of Service (LOS) of E for both eastbound and westbound traffic and **is strained at 99% capacity during normal weekday peak hour movements**. Peak hour volumes – particularly during times of heavy traffic to Branson and the Ozarks – often result in traffic backups and bottlenecks, as described above. The MO 13 interchange currently operates at an LOS E, and the MO 13/Norton intersection currently operates at 110% capacity during special event peak volumes. These LOS conditions do not account for the impact that queue spillback from the MO 13 interchange has on the operations of I-44, which greatly hinders the operational capacity. The I-44 and MO 13 project corridor is expected to operate over 110% capacity by 2025, resulting in significant traffic congestion and freight bottlenecks.

Backups and freight bottlenecks are particularly problematic on MO 13 at the I-44/MO 13 interchange. Within the project area, MO 13 transitions from a 4-lane divided highway to a 5-lane undivided urban expressway, serving over 21,000 vehicles daily. This area has seen significant population and industrial growth in recent years, as well as considerable increases in through-traffic, rendering the current interchange configuration inadequate for current traffic volumes. **As a result, travelers on Southbound**



MO 13 experience delays of up to 20 minutes during the PM peak hours and during special events. In its current configuration, additional traffic will only lead to more delays, which create issues for residents and freight-haulers. As noted in the [Safety](#) section above, the FIX I-44 proposes significant improvements to address these capacity issues.

With the FIX I-44 project’s proposed capacity and interchange improvements, 12.6 million hours of travel time savings are anticipated over the 30-year analysis period. The capacity improvements on the corridor are also projected to reduce incident delays. Currently, the I-44 corridor averages more than 22 annual incident occurrences, **resulting in an average of over 300,000 vehicle-delay hours annually.** The additional lane in each direction to be constructed as part of this project is planned to significantly reduce these delays.

In 2018, more than **400 million tons of freight** moved on Missouri’s highways on **32.5 million trucks.**

Strengthening Freight Movement through Missouri

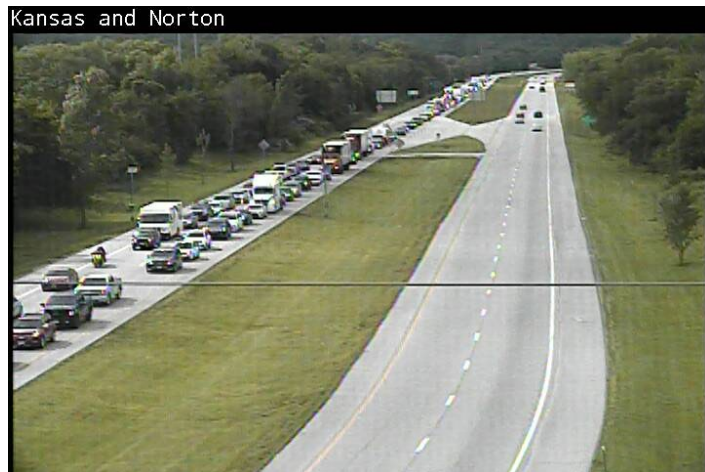
The condition and efficiency of Missouri’s interstates is critical to the health of the national freight network. In 2018, more than 400 million tons of freight moved on Missouri’s highways on 32.5 million trucks. This freight was estimated at a value of \$495 billion. Through traffic accounted for 37% of that freight by weight. The [2022 Missouri State Freight and Rail Plan](#) found that in 2019, freight transportation activity in Missouri resulted in a \$42 billion in Gross State Product, creating a total of 482,600 jobs. As shown in the same plan, Springfield itself is where Missouri’s two top freight corridors – I-44 (#1) and US 60

(#2) – converge. **Because I-44 is the top freight mover in Missouri, strengthening the reliable movement of goods on this strategic section through Springfield is critical to the state’s economy and the overall supply chain network.** Backups like those described above can have much larger impacts on the overall freight network.

Improving Freight Reliability

Adding capacity and additional lanes will improve the overall corridor resiliency and reliability of the transportation network. **The 2022 Missouri State Freight and Rail Plan projects that freight traffic on I-44 through the state will increase by 2.5 billion in tonnage by 2045, representing a \$10.3 billion increase in value. On the project corridor specifically, approximately 30% of vehicles on I-44 haul freight.** Incidents that occur along this corridor result in significant delays and interrupt the local, regional, and national movement of goods.

The project will construct an additional lane in each direction, allowing greater reliability even when incidents occur. Frequently, all lanes in the direction of travel where the crash occurred must be closed to allow emergency personnel room to clear the incident. With added capacity, one lane can remain open while still providing ample room for responders.



Capacity issues cause peak hour delays at the I-44/MO 13 interchange, stretching north of Norton Road.

In total, **FIX I-44 is projected to result in more than \$15 million in freight reliability benefits over 30 years**, as shown in the [Benefit-Cost Analysis](#).

Strengthening Critical Industries

According to U.S. Census data, 6,552 jobs are located within one mile of the I-44/MO 13 interchange. Improving travel reliability for people and goods will strengthen several key industries in the region and help create jobs.

Manufacturing

The manufacturing sector in Springfield includes more than 50 million square feet of industrial real estate market space and 800 acres of master-planned industrial parks. The manufacturing industry employs 23,000 people in Springfield; one in five of those jobs is in stainless-steel. Springfield is known as the “[Stainless-Steel Capital of the U.S.](#)” because of its more than 30 stainless-steel production and manufacturing companies. In 2018, Springfield was ranked as the top producer of stainless-steel. These stainless-steel companies transport their goods across the globe on a trip that starts on I-44. Strengthening this supply network and the infrastructure that supports it is critical, as other stainless-steel manufacturers are facing supply chain issues and have been forced to shift or reduce their production.

Paul Mueller Company, the first stainless-steel company established in Springfield, is located along MO 13, south of the project area. The efficient movement of goods on this corridor and at the I-44/MO 13 interchange is critical to its success and its supply chain. The company employs

approximately 515 people in Springfield and is the nation’s largest manufacturer of milk cooling and storage equipment for dairy farms. The company operates its own trucking group to move goods to market, often shipping oversized loads. Paul Mueller Company and other industrial users of the project area were consulted extensively as part of the project development and the evaluation of design alternatives for the I-44/MO 13 interchange. The company has expressed difficulties with its trucks navigating the existing interchange design. The proposed I-44/MO 13 interchange will specifically consider oversize loads with high vertical clearances to prevent this traffic from needing to divert on to alternative routes through Springfield.

Freight, Cargo and Logistics

Improvements to I-44 are also critical to freight, cargo, and logistics operations in the area. Springfield-Branson National Airport is one of three airports in Missouri that combine to handle 99.9% of total air cargo tonnage in Missouri. Located along I-44 immediately to the west of the project area, **the airport depends on reliable multimodal connections to facilitate the local and regional delivery of goods.** According to airport data, Springfield-Branson National Airport experienced a 14.1% increase in total air freight handled by weight from 2020 to 2021, demonstrating the need for investments in the freight capacity of this corridor.

Springfield-Branson National Airport experienced a **14.1% increase** in total air freight handled from 2020 to 2021.

Many trucking and transport terminals are located near the project corridor including FedEx, UPS, Prime Trucking, IWX Freight, YRC freight, Saia Freight, Christensen Transportation, RBX, and TransLand. A 1.3 million square foot Amazon fulfillment center also opened in the nearby City of Republic in August 2021. These businesses rely on I-44 to move goods to market and deliver to customers. Improving freight reliability on I-44 and at the I-44/MO 13 interchange will strengthen these industries and support additional job growth.

Agriculture

Nearly 25% of freight leaving Missouri on I-44 is made up of agricultural products grown or produced in rural counties. Springfield is the hub for 27 farm-to-market rural counties, and more than 50% of land in Greene County itself is in agricultural use. The county is home to 68,000 head of cattle and 1,800 farms that need to transport goods to market. Elsewhere, two of the top 50 cattle-producing counties in the United States are located in southwest Missouri. For these counties – Lawrence and Polk – Springfield is best accessed via eastbound I-44 or southbound MO 13, making improvements to these corridors and their interchange essential.

Tourism

Much of the passenger through-traffic on I-44 and at the I-44/MO 13 interchange is destined for Branson and the other tourist destinations to the south. Located just 50 miles south of the project area, Branson offers live performance theaters and country music shows, the Silver Dollar City amusement park, golf courses, and other vacation attractions. I-44 is considered the gateway to this area for visitors traveling from the north, east, or west. In particular, the main route from Kansas City requires connecting to I-44 at the I-44/MO 13 interchange, to be improved as part of the project. **In 2021, nearly 10 million visitors traveled to Branson, representing a 10%**

increase over the previous record year of 2019.⁵ The area is within a days' drive of 50% of the US population, and 87% of Branson's visitors arrive in cars, RVs, and buses.⁶ This includes an estimated 4,000 motor coaches annually, many of which travel through Springfield on I-44. Tourists traveling to Branson often tow trailers or boats that can make maintaining speed in changing traffic conditions difficult. Keeping the I-44 corridor through Springfield safe and reliable is significant will help Southwest Missouri's \$1 billion tourism industry continue to grow.

4. Climate Change, Resiliency, and the Environment

The FIX I-44 project will reduce emissions, improve lower-carbon transportation options, and deliberately consider and address impacts on areas designated as Historically Disadvantaged Communities.

Reducing Emissions

Under current conditions, backups on I-44 and at the I-44/MO 13 interchange cause idling and slowdowns that contribute to increased emissions. The number of heavy-duty trucks moving on the corridor results in higher levels of greenhouse gas emissions in total and exacerbates the impact of these delays on air quality. Through added lane capacity, consolidation of at-grade intersections, and improvements to the I-44/MO 13 interchange, the project will reduce travel delays and thereby reduce vehicle emissions. Using fuel consumption rates from Argonne National Laboratory and US EPA emissions data, an analysis concluded that **FIX I-44 will reduce CO₂ emissions by nearly 65,000 metric tons over 30 years.**

Making lower-carbon transportation options available and accessible to more users is expected to reduce greenhouse gas emissions and improve quality of life.

Improving Active Transportation Options

Currently, the I-44 corridor through Springfield acts as a barrier between communities, limiting residents' ability to use non-motorized, non-carbon emitting modes of transportation in their everyday commutes and for recreation. The FIX I-44 project will considerably improve these options, as detailed in the [Equity, Multimodal Options, and Quality of Life](#) section below. Making lower-carbon transportation options available and accessible to more users, particularly in historically disadvantaged communities along the project corridor, is expected to reduce greenhouse gas emissions and improve quality of life for area residents.

Considering Environmental Justice

The OTO area participates in the Ozone and PM Advance Programs. Analysis of impacts on environmental justice communities is a part of the regular planning process, including considerations around this project. The OTO assesses projects through its EnviroSmart program, a database which includes both natural and environmental justice-related elements and was developed in consultation with Missouri Department of Natural Resources, Missouri Department of Conservation, Missouri State Parks, the State Historic Preservation Office, and MoDOT, with

⁵ [Explore Branson destination ascends with nearly 10 million visitors in 2021](#). KRON, 14 April 2022.

⁶ [Branson, Missouri 2021 Visitor Profile Research](#)

additional resources from US EPA, US DOT, and the US Census. **The OTO mapped minority, low-income, disabled, and elderly populations against the location of projects in its *Destination 2045* long-range planning process to ensure that environmental justice was factored into the planning process.**

Under current conditions, air pollution from existing congestion issues may disproportionately impact residents around the I-44 corridor, including residents of US DOT-designated Historically Disadvantaged Communities to the south of I-44. As noted above, added capacity is expected to reduce congestion and emissions related to idling. Adding improved accessibility and trail options may help address previous connectivity issues faced by environmental justice communities. The OTO and MoDOT will continue to work to engage and deliberately consider impacts on these areas as the project proceeds.

Responsibly Delivering the Project

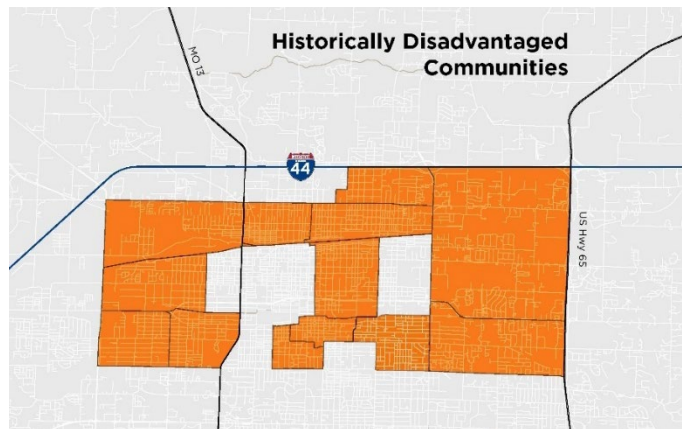
MoDOT has an excellent record in managing and mitigating environmental concerns during the construction process. MoDOT utilizes e-construction methods, reducing paper and other landfill waste in the process. Contractors typically recycle milled asphalt back into the project and use shingles to supplement their mixes. Trackless tack minimizes any material leaving the work site.

5. Equity, Multimodal Options, and Quality of Life

While I-44 plays a critical role in connecting motorized users between Springfield, the region, and the rest of the country, it can serve as a dividing line in the northern section of the city. Poor pedestrian connections throughout this corridor can make accessing opportunities and resources through active transportation or via transit unnecessarily difficult. The FIX I-44 project is deliberate in not only tackling the challenges within the I-44 right-of-way but also finding ways to use this major program as an opportunity to improve connectivity and multimodal options for all residents and users.

Addressing Historically Disadvantaged Communities

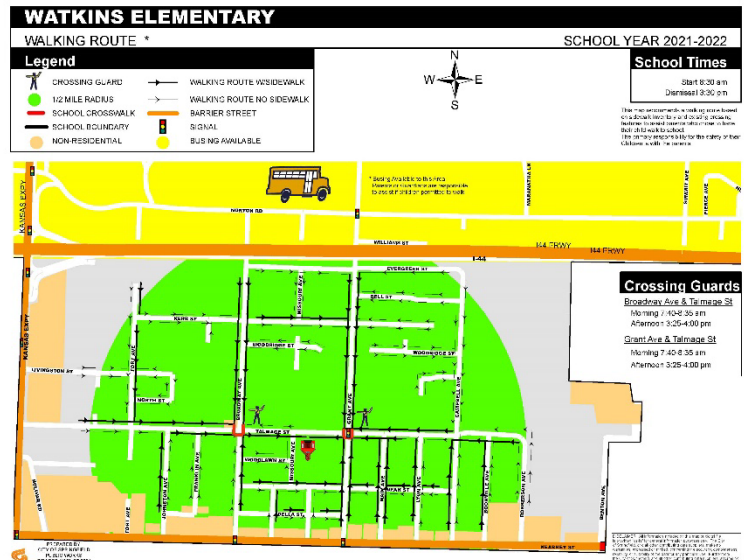
As noted in the [Project Location](#), the FIX I-44 project runs along two Census tracts designated as Historically Disadvantaged Communities (29077003600 and 29077002200). These Census tracts are in the southeast portion of the project area, south of I-44 between Summit Avenue and US 65. Springfield has a total of 14 Census tracts with this USDOT designation, 13 of which are contiguous and near the project area. This project – including its commitment to motorized and non-motorized accessibility and quality of life improvements like noise abatement – represents a deliberate investment in these communities by MoDOT and its local project partners.



A number of Historically Disadvantaged Communities would benefit from the project.

Removing Barriers to Education and Opportunities

I-44 is a particular barrier for pedestrian access to several of the area’s public schools. Currently, Watkins Elementary students are not encouraged to use Grant Avenue or Broadway Avenue to go north of I-44 on foot or by bicycle and are encouraged to use the bus instead. However, Springfield Public Schools limits busing to elementary students living at least 1.5 miles from their schools. Hillcrest High School, located on Grant Avenue, serves the historically disadvantaged neighborhoods in Springfield south of I-44. However, because the high school is on the north side of I-44, these students also face challenges with pedestrian and bicycle access to their school.



The City of Springfield encourages students living north of I-44 (shown in orange) to take the bus or drive to Watkins Elementary due to connectivity issues.

Students in these neighborhoods are among those who will benefit from the project’s investments in improved pedestrian connectivity under I-44. Three existing pedestrian connections between the north and south sides of I-44 – National Avenue, Grant Avenue, and Broadway Avenue – will all be improved by replacing and widening the sidewalks to six feet between Norton Road (north of I-44) and Kearney Street (south of I-44). In addition to Watkins and Hillcrest students who attend schools across I-44, students who attend Fremont Elementary School rely on sidewalks along National Avenue that will be widened and improved as part of the project. New sidewalks will be ADA compliant and lit with improved safety lighting to improve the experience of crossing under the interstate. Additionally, a new 6-foot sidewalk will be added along the Norton Road realignment and MO 13 underpass as part of the proposed I-44/MO 13 interchange improvements. Finally, an additional pedestrian and non-motorized underpass will be added at Doling Park between Campbell Avenue and Summit Avenue on the south side of I-44. This new trail will be further discussed under [Enhancing Recreation Options](#) below.

These improved connections will facilitate safe passage between neighborhoods to access educational opportunities, as well as essential services like grocery stores and jobs.

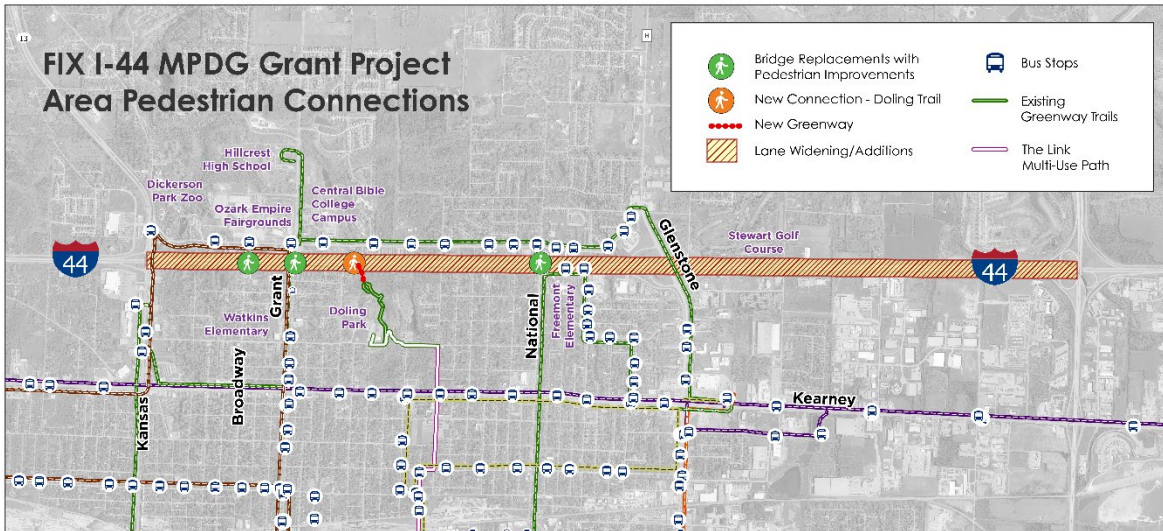


Narrow sidewalks under I-44 like those shown at National Avenue impede connectivity and create safety concerns.

Accessing Essential Services

Access issues may be especially severe for low-income residents and those without reliable access to a car. Low-income housing is located north of I-44, along with Darr House, a transitional housing facility for young men leaving

the foster care system. The neighborhoods north of I-44 are cut off from safe pedestrian access to grocery stores in the area, including two Walmart locations south of I-44 near the project area. Because pedestrians must walk across or under I-44 to access the grocery stores, a food desert exists for practical purposes. Pedestrian improvements as part of the project will significantly improve this connectivity, as well.



Improving Access to Transit

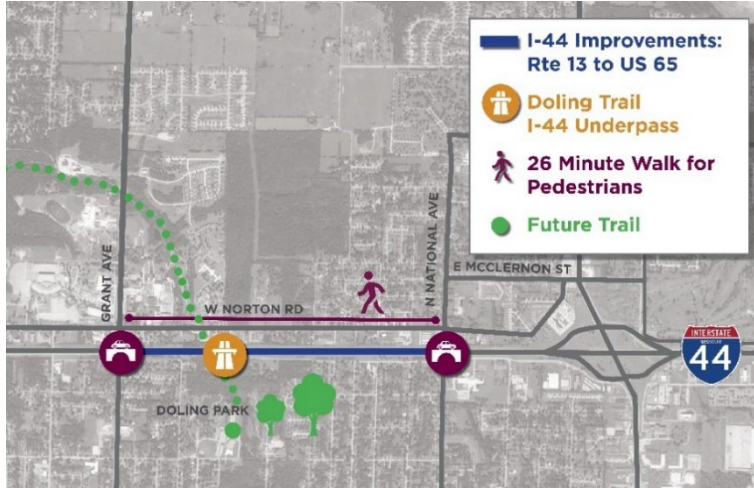
Without safe and accessible connections between neighborhoods north and south of I-44, accessing transit options through the City Utilities of Springfield’s The Bus public transit system is more difficult for residents with mobility issues that require ADA-accessible sidewalks. The Bus’s North Loop line (shown in green) runs frequently daily along Norton Road between Grant Avenue and Glenstone Avenue. However, difficulty crossing to these stops on the north side of I-44 may make it more challenging for residents south of I-44 to access bus stops north of the interstate. Similarly, the Industrial Express Bus line (purple) connects neighborhoods south of I-44 in the project area to good-paying jobs at Springfield’s Partnership Industrial Center. Improving the linkages between these areas for pedestrians and wheelchair users will considerably improve transportation options and multimodal connectivity for residents.

Improving the linkages for pedestrian and wheelchair users will considerably improve transportation options and multimodal connectivity.

Enhancing Recreation Options

In addition to accessing essential services and transit, the project will improve access to parks and a broader planned trail network. **Currently, there is no place to cross over or under I-44 between National Avenue and Grant Avenue – a distance of more than a mile.** The new pedestrian underpass at Doling Park (mentioned above) will split this gap and link the park with Norton Road to the north. The underpass will include a new 10-foot-wide wide multi-use trail to accommodate different modes of users. The future Pea Ridge Trail is planned to ultimately connect the Hillcrest neighborhood and destinations including the Dickerson Park Zoo, Ozark Empire Fairgrounds, and the Fulbright Springs Greenway to the north of I-44. It will also

provide connectivity to The Link, the only north-south bicycle/pedestrian connection in the City of Springfield. The Link is an 8-mile low stress, low volume, on-street bicycle network with sidewalks to stretching from Doling Park to downtown Springfield, with several parks and Class I and II trails along the way.



The new Doling Trail underpass will connect to trails and reduce the distance between safe crossings under I-44.

In total, the new underpass will add approximately 1,200 feet of new multi-use trail as part of FIX I-44 before any future additions.

Enhancing multimodal transportation options for area residents will help correct a long-standing divide created by I-44 and improve quality of life through access, opportunities, and health benefits from walking and bicycling. The proposed improvements are anticipated to result in **approximately \$55,000 in benefits** from improved pedestrian and cyclist safety and access over the 30-year analysis period.

Mitigating Highway Noise

The project proposes mitigating highway sound pollution to the nearby community through the implementation of noise walls along the corridor. MoDOT recently conducted a noise study on I-44, which identifies areas where potential noise walls are recommended, most specifically near residential areas. The report found that adding a noise wall at a location on the south side of the I-44 corridor between MO 13 and Route H was reasonable and feasible. This noise wall is included in the FIX I-44 project and are expected to improve quality of life for residents in the area.

Public Involvement

The FIX I-44 project has been developed with extensive stakeholder input. Most recently, input was solicited through a March 2022 public meeting to take public comment on this project and accompanying federal grant request. The meeting was held at the Greene County Library Station, near the project corridor, to allow Springfield residents who might be impacted by the project to review the proposed improvements and provide feedback. **More than 100 people engaged with this process through in-person discussion or online comments.** The comments centered around the need to reduce delays, improve connectivity, and incorporate the overhaul of the I-44/MO 13 interchange. These themes are reflected in this application.

North Highway 13 Corridor Study also gathered extensive public input, and stakeholder perspectives were used to identify possible alternatives for the I-44/MO 13 interchange that would best address traveler concerns while avoiding negative impacts to local businesses and residents. Additional public input is anticipated as part of the environmental review process (see [Project Schedule](#)). Input from adjacent neighborhoods, residents, and businesses will be sought out and factored into further project decisions.

A summary of stakeholder input from the March 2022 FIX I-44 public meeting and the North Highway 13 Corridor Study is available in [Appendix E](#). Considerable additional community support for the project is also demonstrated through letters of support, available in [Appendix C](#).

6. Innovation Areas: Technology, Project Delivery, and Financing

Innovative Technology

The project will use Transportation Systems Management and Operations Strategies (TSMO) to improve safety and reliability on the corridor. The proposed TSMO strategies will address safety and capacity deficiencies that currently disrupt the flow of traffic by providing valuable real-time traffic information to MoDOT and drivers. Technological innovations include:

- **Applications to Automatically Capture and Report Safety-Related Issues.** CCTV deployment will fill a 5-mile visual gap on the road widening section, with new cameras between MO 13 and Glenstone Avenue. The CCTV component includes pull boxes, conduit, fiber, foundation, poles, and CCTV. The cameras will allow MoDOT to identify and quickly respond to issues that delay or shut down the roadway such as traffic incidents or inclement weather. Visual information will also help emergency responders assess the best route to and from incidents and help MoDOT assess daily traffic patterns. CCTV feeds are accessible to the public via the [Ozarks Traffic](#) website.
- **Wrong-Way Driver Detection.** Wrong-way driver detection and notification will be installed at the on- and off-ramps to Glenstone Avenue.
- **Predictive Analytics.** MoDOT uses Waycare’s platform to harness in-vehicle (see V2X below) and city data and analyze these to provide traffic management and safety information in real-time. Predictive analytics will support robust information-sharing to freight carriers, interstate travelers, commuters, and emergency responders via DMSs and on the Ozarks Traffic website.
- **V2X Technologies.** MoDOT has a memorandum of understanding with Traffic Technology Services (TTS), allowing for the exchange of V2X information statewide, including traveler information mapping. Vehicles that have Dedicated Short-Range Communications (DSRC) for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) technology can use open API data-capturing in partnership with MoDOT’s technology along the corridor. MoDOT seeks to align these capabilities with the proposed MPDG TSMO improvements.
- **Work Zone Data Exchanges.** MoDOT participates in local and statewide data exchanges and coordinates monthly calls with other states in the southwest region.
- **Crowdsourced Data for Traffic Operations.** MoDOT is using crowdsourcing to inform operations using third-party data gathered from apps such as Waze™. This information helps alert travelers about delays, assist with traffic incident management, and identify issues such as potholes to help set road maintenance priorities.
- **Other Innovation.** MoDOT ITS Fiber and Statewide telecommunication fiber that is currently in the median will be moved and upgraded as part of the 4.75-mile road widening element. Fiber at this location will support the new and upgraded ITS elements, and support additional future ITS improvements, such as V2X technologies.

Innovative Permitting, Contracting, and Other Project Delivery Practices

MoDOT will evaluate project delivery options and strongly consider using innovative project delivery practices, including a progressive design-build project delivery method, for the FIX I-44 project. Since 2005, MoDOT has completed more than 15 projects using traditional design-build project delivery, with three others under construction. Recent experience has shown, design-build opens the door for innovation and promotes accelerated construction and added value on projects.

Additional innovative project delivery practices that will be considered include:

- **Every Day Counts (EDC) Initiative.** EDC is FHWA’s state-based model to improve and enhance the project delivery process. Since 2011, MoDOT has enthusiastically researched and adopted all but one of the proposed innovations. MoDOT will strive to incorporate applicable EDC initiatives into every MPDG component.
- **Practical Design.** MoDOT is the birthplace of Practical Design, a concept aimed at focusing on core traveler needs and controlling costs during project development. Tracker is a public document that not only measures and drives organizational performance, but also provides transparency and accountability to the citizens of Missouri. These processes have produced measurable results and will be used to ensure the proposed MPDG project remains on-schedule and on-budget and meets the intended purpose and need.
- **Data-driven Safety Analysis.** MoDOT makes a regular practice of incorporating data-driven safety analysis into its design-build procurements. Leveraging industry ideas on how to save lives is a fundamental driver in the design-build process at MoDOT and will be incorporated into the MPDG projects, as applicable.
- **MoDOT Management System.** FHWA has recognized MoDOT for streamlining the scheduling of its maintenance work through a web-based enterprise system. Maintenance staff can enter activities, equipment, and materials used into the system, which facilitates informed and efficient decisions statewide.

Innovative Financing

The project will be funded through traditional financing methods but is made possible by Missouri’s renewed investment in transportation funding. In 2021, the Missouri General Assembly passed legislation to increase the state’s motor fuel tax by 2.5 cents per year for five years, resulting in a total increase of 12.5 cents. This additional revenue – anticipated to total more than \$500 million annually once the five years of increases are complete – will help leverage federal funds for the highest priority projects.

VI. BENEFIT-COST ANALYSIS

The project’s total benefits are estimated at \$130.4M over 30 years, with a project Benefit-Cost Ratio of 1.74 when discounted at 7% (excluding reduced CO₂ emissions, which are discounted at 3%).

The project’s most significant benefits are due to travel time savings (\$65.7 million), safety (\$38.1 million), and freight reliability improvements (\$14.3 million). Additional benefits and project costs (including capital investments as well as operations and maintenance) are summarized in the table below.

BENEFIT-COST ANALYSIS SUMMARY		
Benefits	7% Discount Rate	Undiscounted
Time Travel Savings	\$65,742,141	\$270,865,904
Safety	\$38,061,503	\$129,777,370
Emissions Reduction (Non-CO2 @ 7% Discount + CO2 & 3% Discount)	\$3,096,600	\$12,367,729
Operations & Maintenance	\$5,332,917	\$44,824,519
State of Good Repair	\$440,468	\$(9,359,825)
Other Benefits – Freight Reliability	\$14,273,075	\$53,246,407
Other Benefits – Noise Reduction	\$3,319,506	\$11,150,888
Other Benefits – Pedestrian & Cycling Facilities	\$54,309	\$187,084
Total Benefits	\$130,320,519	\$513,063,075
Total Project Costs (Undiscounted)	\$109,423,597	
Total Project Costs (Discounted)	\$74,975,071	
BCA Ratio (By Discount Rate)	1.74	4.69
Project BCA Ratio (Non-CO2 @ 7% Discount + CO2 @ 3% Discount)	1.74	

Full documentation of the [Benefit-Cost Analysis](#) and [accompanying methodology](#) is available in Appendix B.

VII. PROJECT READINESS AND ENVIRONMENTAL RISK

MoDOT has significant 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, 10,385 state highway bridges, and a total of 24,385 bridges statewide – the nation’s seventh largest state highway system. In 2021, MoDOT delivered 89% of projects on time.

The FIX I-44 project is a result of significant planning work that contributes to project readiness. A conceptual study with a selected alternative has been completed for the improvements at the I-44/MO 13 interchange, as discussed in the [Project History](#) section. A noise study and other environmental preparation has already occurred, as discussed below.

Technical Feasibility

MoDOT has an excellent track record of quickly delivering projects with federal discretionary grants. When a TIGER grant was awarded for the US 54 Champ Clark Bridge over the Mississippi River, MoDOT moved quickly to procure delivery of the project through the design-build process. Similarly, MoDOT stands ready to deliver this project upon award.

The proposed project was developed, scoped, and costed using MoDOT’s policies, which are articulated in a comprehensive Engineering Policy Guide (EPG). All cost estimates are based on MoDOT’s engineering estimating procedures and utilized cost base analysis, including historic-based estimates using quantities calculated from similar sized and scoped projects as well as historical data from previous bid openings. The costing also utilized the EPG’s Engineering Factors Report (EFR) to calculate future engineering costs, construction engineering and right-of-way incidentals. Detailed project costs are shown in the below table and also available in [Appendix D](#).

DETAILED PROJECT COSTS SUMMARY							
Item	I-44 Widening & Pavement Replacement (Rte H to US 65)	I-44 Widening & Pavement Replacement (MO 13 to Rte H)	I-44/MO 13 (Kansas Expwy) Interchange Improvements	I-44 Pedestrian Trail Underpass (Doling Park)	Pedestrian Sidewalk Improvements (Broadway, Grant & National)	I-44 ITS & TSMO Improvements (Rte 160 to US 65)	Total Project Cost
STRUCTURAL							
Bridge	\$ -	\$ 7,610,893	\$ 12,533,360	\$ 465,000	\$ -	\$ -	\$ 20,609,253
MSE & Retaining Walls	\$ -		\$ 2,240,000	\$ 302,500	\$ -	\$ -	\$ 2,542,500
Noise Walls	\$ 968,000	\$ 1,232,000	\$ -	\$ -	\$ -	\$ -	\$ 2,200,000
ROADWAY							
Grading & Drainage	\$ 1,823,784	\$ 3,363,041	\$ 1,693,000	\$ 372,500	\$ 97,760	\$ -	\$ 7,350,085
Pavement & Base	\$ 9,476,476	\$ 11,731,848	\$ 5,442,241	\$ 115,600	\$ 164,241	\$ -	\$ 26,930,406
Signing	\$ 263,918	\$ 141,470	\$ 226,186	\$ -	\$ -	\$ -	\$ 631,574
Signals	\$ -	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ 500,000
Traffic Control	\$ 1,533,226	\$ 2,237,961	\$ 339,279	\$ 500,000	\$ 28,000	\$ -	\$ 4,638,466
Misc. (Erosion Control, Guardrail, Markings, Mobilization, Survey, etc)	\$ 212,296	\$ 1,853,911	\$ 3,376,604	\$ 269,257	\$ 40,525	\$ 625,000	\$ 6,377,593
SUBTOTAL	\$ 14,277,700	\$ 28,171,124	\$ 26,350,670	\$ 2,024,857	\$ 330,526	\$ 625,000	\$ 71,779,877
Contingency/Inflation	\$ 1,156,300	\$ 2,635,876	\$ 5,270,134	\$ 404,971	\$ 59,138	\$ -	\$ 9,526,419
CONSTRUCTION TOTAL	\$ 15,434,000	\$ 30,807,000	\$ 31,620,804	\$ 2,429,828	\$ 389,664	\$ 625,000	\$ 81,306,296
Preliminary Engineering	\$ 1,272,000	\$ 4,539,000	\$ 3,162,080	\$ 291,500	\$ 47,000	\$ -	\$ 9,311,580
Construction Engineering/Administration	\$ 1,376,000	\$ 3,422,000	\$ 4,743,121	\$ 365,100	\$ 59,000	\$ -	\$ 9,965,221
Right of Way	\$ 10,000	\$ 12,000	\$ 5,500,000	\$ 56,000	\$ 49,000	\$ -	\$ 5,627,000
Right of Way Incidentals	\$ -	\$ -	\$ 50,000	\$ 10,000	\$ 9,500	\$ -	\$ 69,500
Utilities	\$ 1,085,000	\$ 963,000	\$ 850,000	\$ 150,000	\$ 96,000	\$ -	\$ 3,144,000
PROJECT TOTAL	\$ 19,177,000	\$ 39,743,000	\$ 45,926,005	\$ 3,302,428	\$ 650,164	\$ 625,000	\$ 109,423,597
PROJECT TOTAL (ROUNDED)	\$ 19,177,000	\$ 39,743,000	\$ 45,926,000	\$ 3,302,000	\$ 650,000	\$ 625,000	\$ 109,424,000

The new I-44 eastbound and westbound lanes will be constructed within the median, in MoDOT’s existing right-of-way. The bridge reconstruction work will occur within existing MoDOT right-of-way and within each existing bridge’s footprint. The proposed MO-13/I-44 interchange reconfiguration will occur mostly in MoDOT and the City of Springfield’s right-of-way, with some new additional right-of-way to be acquired, as noted in the [Project Schedule](#).

The project is based on studies to identify and prepare the best improvements for the corridor and the community. MoDOT and OTO undertook an extensive study to determine the most appropriate designs for the I-44/MO 13 interchange, including review of five interchange design alternatives. The interchange design proposed as part of this project is a result of public input and careful consideration of those alternatives. A regional I-44 corridor improvement study is also currently underway.

MoDOT is committed to ensuring that projects, programs, and services are performed without discrimination, under Title VI, and will incorporate Title VI/Nondiscrimination assurances into any federally funded contracts with consulting firms. More information is available [here](#).

Project Schedule

The project has a planned period of service of October 2022 – December 2027. The schedule assumes that grant funding awards are announced by October 1, 2022. The project schedule has been planned for flexibility in mind – allowing adequate time for either a traditional design-bid-build delivery or progressive design-build delivery, depending on MoDOT’s Statewide project schedules and USDOT required funding milestones.

MoDOT program management, preliminary and final design development, right-of-way acquisition, and environmental reviews are anticipated to begin shortly after grant award notice

until the project is let for construction in January 2025. The construction period is anticipated for April 2025-December 2027, as shown in the schedule below.

TASK DESCRIPTION	2022		2023				2024				2025				2026				2027			
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PROGRAM MANAGEMENT & ADMINISTRATION																						
Project Management, Quality Assurance, & Risk Management Plan																						
Project Coordination & Communication Plan																						
Construction Agreements with BNSF, MoDOT, County & Local Agencies																						
USDOT Project Coordination Meetings																						
ENVIRONMENTAL REVIEW																						
Environmental Scoping																						
Public Involvement Coordination																						
Review of Environmental, Social, Economic & Community Impacts																						
NEPA Preparation, Review & Approval																						
Permits- 404/401, Floodplain, Stormwater																						
DESIGN DEVELOPMENT																						
Design Procurement																						
Field Survey Activities																						
Preliminary Design Development & Estimate (30%)																						
Right of Way Design Development & Estimate (60%)																						
Final Design Development & Estimate (100%)																						
RIGHT-OF-WAY ACQUISITION																						
Survey for Partial Takings																						
Title Work																						
Perform Appraisals																						
Perform Negotiations																						
UTILITY RELOCATION																						
Notify Utility Companies of Potential Conflicts																						
Relocation Design Development																						
Easement & Utility Relocation Agreements																						
PROJECT CONSTRUCTION																						
Bid Advertisement & Bid Award																						
Pre-Construction Meeting																						
Project Construction																						
PROJECT CLOSE-OUT																						
Project Final Walk-Thru & Punchlist																						
USDOT Final Field Visit & Project Close-out																						

★ indicates deliverable/milestone

Required Approvals

Environmental Permits and Reviews

NEPA status. For the improvements to I-44 and the existing pedestrian underpasses, work will be conducted in the roadway, the median, and on the shoulder on previously disturbed ground within MoDOT Right-of-Way. For the proposed I-44/MO 13 interchange improvements, the new flyover, new bridge, and Norton Road underpass mostly will be constructed in the roadway, shoulder, and on previously disturbed ground within MoDOT and city Right-of-Way. Additional right-of-way impacts are anticipated for the flyover. Categorical Exclusions are anticipated.

Information on reviews, approvals, and permits by other agencies. Permits and coordination that will be required include: EPA 401 and 402 Permits; No-rise Certification Permit from the Missouri State Emergency Management Agency; coordination with U.S. Fish and Wildlife; Missouri Department of Natural Resources; Missouri State Highway Patrol; and Missouri State Historical Preservation Office. MoDOT is confident in its ability to advance these reviews on the timeline given in the [Project Schedule](#).

Environmental studies or other documents.

MoDOT has completed or will conduct a Request for Environmental Services (RES) for each segment of work. A noise analysis has been completed for the improvements to mainline I-44, and necessary sound walls have been incorporated into the FIX I-44 project plan.

Public Engagement.

MoDOT has conducted extensive public engagement on how to improve I-44 dating back to 2007, when MoDOT initiated its [I-44 Purpose and Need Study](#). The study included eight public meetings throughout the corridor to identify deficiencies and prioritize areas into short- and long-term needs. The analysis focused on crashes in the corridor, capacity, traffic flow, pavement conditions, and environmental characteristics and demographic history to prepare for subsequent NEPA requirements. As a part of this process, comments supported improvements to widen I-44 to six lanes and include sound walls.

To ensure that current needs were considered, a public meeting and listening session was held on March 1, 2022, to update residents and hear additional ideas and concerns. An additional public meeting and listening session was held on March 8, 2022, to hear additional ideas and concerns on the overall redesign of the I-44/MO 13 interchange. While support for the project was significant, one major issue raised was noise concerns. MoDOT completed a sound wall study to address this issue and the recommendations are incorporated into the project.

State and Local Approvals/Federal Transportation Requirements Affecting State and Local Planning

Because all facilities are owned by MoDOT, the permitting process and need to obtain reviews and approvals from other agencies is minimal. The majority of the project is programmed in the STIP and in the local long-range plan.

The State of Missouri owns and operates all affected facilities that comprise the project network along mainline I-44 and MO 13. Some project elements are programmed in the current Statewide

ENVIRONMENTAL SERVICES CHECKLIST			
Category	I-44 Improvements	MO 13 Interchange	I-44 Ped Trail Underpass
Request for Environmental Services	Completed	Submitted	TBD
Within 4 Miles of Airport	Yes	Yes	Yes
Farmland Impact	N/A	N/A	N/A
Floodplain/Regulatory Floodway	Pending	Pending	Pending
Land Disturbance/Stormwater	Pending	Pending	Pending
FEMA/SEMA Buyout	N/A	Pending	Pending
Socioeconomic Impact	N/A	Pending	Pending
Threatened & Endangered Species	No Effect	Pending	Pending
Migratory Birds	N/A	Pending	N/A
Hazardous Waste Impact	Cleared	Pending	Pending
Wetland Impact (Section 404/401)	N/A	Pending	Pending
Noise Impact	Pending	Pending	N/A
Cultural Resources Impact	Pending	Pending	Pending
Public Land Impact	N/A	N/A	Yes
NEPA Classification	Pending – CE2 expected	Pending – CE2 expected	Pending – PCE expected

Transportation Improvement Program (STIP). MoDOT is committed to adding the additional project elements to the STIP upon notification of grant award. MoDOT is the administering agency for the STIP and no hierarchy of approvals is necessary to process amendments. Costing has been completed according to stringent MoDOT costing standards; all project elements are ready or near-ready to let.

Project Risk

Project risks, and the strategies to mitigate or avoid any issues, were evaluated as follows:

- **Weather (rain, snow, severe wind delays).** The project schedule includes adequate time to anticipate bad weather days and maintain project timelines.
- **Higher costs than originally anticipated.** Value Engineering is a part of the design process and will reduce budget risk. In 2021, Missouri road and bridge projects were delivered within 2.3% of the award amount.
- **Bid protests.** Mitigation will include using procurement best practices and assigning qualified staff to the project during the bidding process.
- **Contractor default/bankruptcy.** Mitigation will be achieved by selecting contractors with extensive experience and track records. Both construction and performance bonding will be required.

VIII. PROJECT REQUIREMENTS

The project will generate national or regional economic, mobility, or safety benefits	Yes – Please see Section V.1. Safety Section V.3. Economic Impacts, Freight Movement, and Job Creation
The project will be cost effective	Yes – Please see Section VI. Benefit-Cost Analysis
The project will contribute to the accomplishment of one or more of the goals described in 23 U.S.C. § 150	Yes – Please see Section V.1. Safety Section V.2. State of Good Repair Section V.3. Economic Impacts, Freight Movement, and Job Creation Section V.4. Climate Change, Resiliency, and the Environment
The project is based on the results of preliminary engineering	Conceptual engineering has been completed. Full preliminary engineering will be completed in November 2023.
With respect to related non-Federal financial commitments, one or more stable and dependable funding or financing sources are available to construct, maintain, and operate the project, and contingency amounts are available to cover unanticipated cost increases	Yes – Please see Section IV. Grant Funds, Sources, And Uses Of All Project Funding
The project cannot easily and efficiently be completed without other Federal funding or financial assistance available to the project sponsor	Yes – Please see Section IV. Grant Funds, Sources, And Uses Of All Project Funding
The project is reasonably expected to begin construction no later than 18 months after the date of obligation of funds for the project	Yes - Please see Section VII.2. Project Schedule