

Future64 Purpose and Need Statement

Purpose

The purpose of the reasonable transportation improvements on I-64 between Kingshighway Blvd and Jefferson Ave is to renew and modify the transportation system to have safe and reliable facilities for all users that improve access to destinations and support community vitality for the long term.

Needs

The needs are the key problems and the causes of those problems that MoDOT is seeking to address with transportation improvements on I-64 between Kingshighway Blvd and Jefferson Ave.

1. Increase safety for all users
2. Improve transportation system with intuitive navigation to, from, and across I-64.
3. Reduce the barrier effect of I-64 for bicycle, pedestrian, and transit users.
4. Optimize bridge maintenance by improving structural conditions to maintain a good state of repair
5. Maintain Interstate function, operations, and capacity for the future.

The following sections further describe the needs listed above.

1.0 Increase safety for all users

1.1. Provide safe regional vehicular through movements

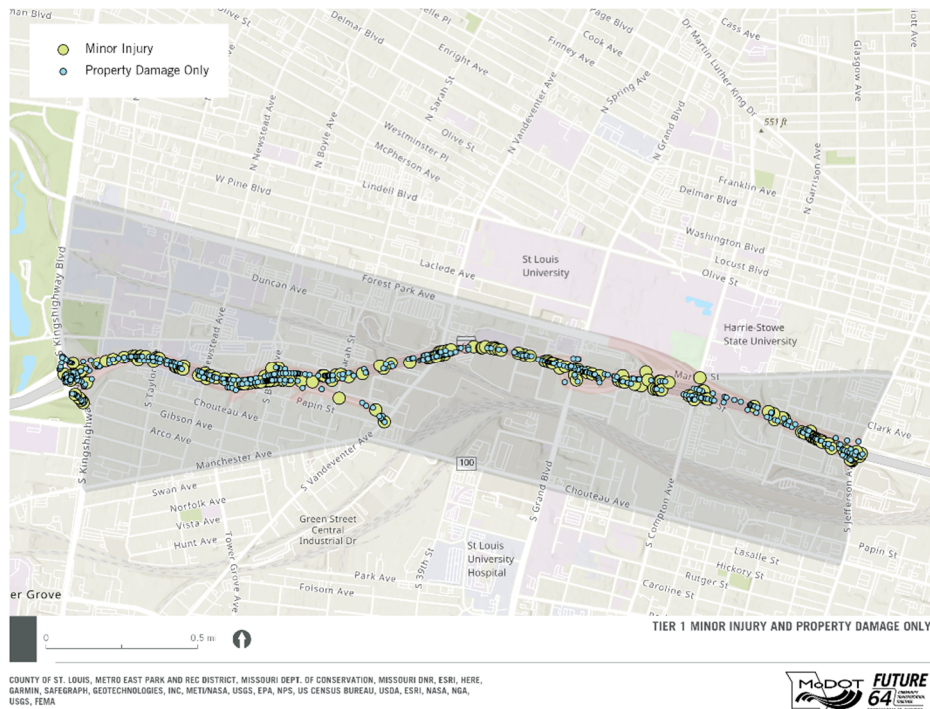
1.1.1. Improve mainline safety

Between 2016 and 2020, 1,300 crashes occurred in Tier 1, with the most common crash type being rear-end (39%) or out-of-control (25%), which is likely a result of high speeds. Property damage only (75%) were the most common crash severity, followed by minor injury (23%), suspected serious/disability injury (2%), and fatal (0.2%). Figure 1 and Figure 2 show the location of crashes by crash severity.

Figure 1. Tier 1 Fatal and Serious Crashes – 2016 to 2020



Figure 2. Tier 1 Minor Injury and Property Damage Crashes – 2016 to 2020



The Missouri Department of Transportation anticipates incorporating recommendations made as part of the PEL study into future NEPA studies, per Title 23 of the Us Code, Part 168

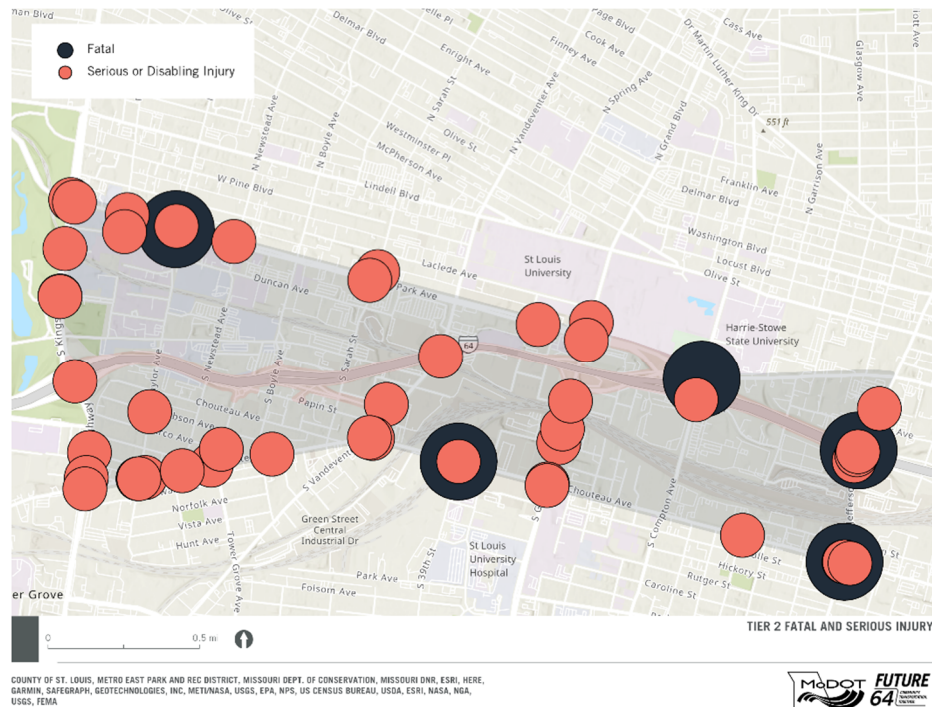
1.1.2. Provide adequate spacing between interchanges

Four sections of I-64 between interchanges within the project limits have substandard spacing of less than 1 mile between them which increases the risk of crashes due to short distances for merging and exiting vehicles. Locations include Kingshighway Blvd to Boyle Ave/Papin St/Tower Grove Ave, Grand Blvd to Market St/Compton Ave, Bernard St/Compton Ave/Market St to Jefferson Ave, Forest Park Ave to Jefferson Ave.

1.1.3. Reduce vehicular conflict points and improve access in MoDOT's ROW

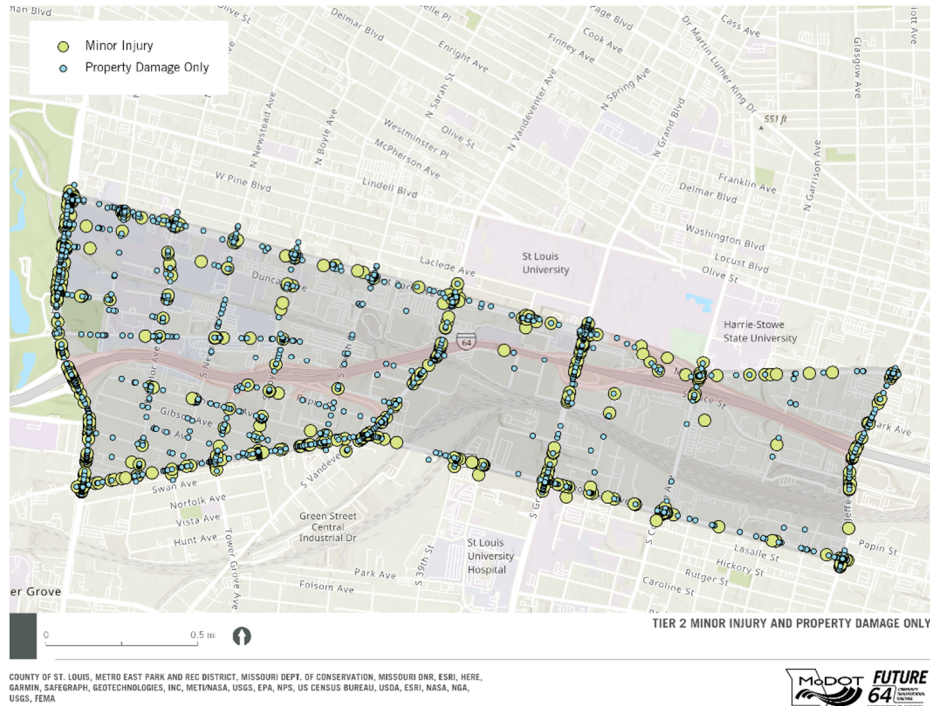
Between 2016 and 2020, 2,966 crashes occurred in Tier 2, with the most common crash type being rear-end (33%) and passing crashes (15%). Property damage only (74%) were most common crash severity, followed by minor injury (24%), suspected serious/ disabling injury (1%), and fatal (0.1%). **Error! Reference source not found.** Figure 3 and Figure 4 show the location of crashes by crash severity.

Figure 3. Tier 2 Fatal and Serious Crashes – 2016 to 2020



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Figure 4. Tier 2 Minor Injury and Property Damage Crashes – 2016 to 2020



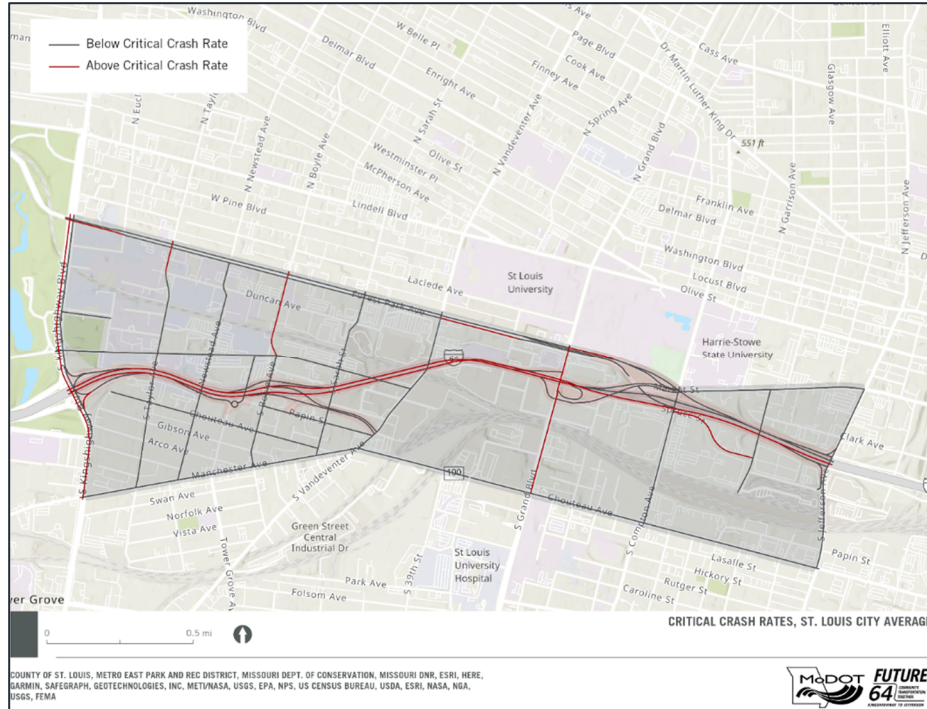
Severe crash hot spots, locations of high crash frequency and severity, include I-64 between Grand Blvd and Vandeventer Ave, Grand Blvd near Chouteau Ave, Chouteau Ave at Theresa Ave, Chouteau Ave at Compton Ave, and Jefferson Ave near I-64.

Property damage only crash hot spots include Grand Blvd near I-64 and Vandeventer Ave near Papin St and the I-64 ramps.

Higher than expected crash frequency is experienced along Jefferson Ave, Grand Blvd, Vandeventer Ave, Kingshighway Blvd and at I-64 ramp intersections. Figure 5 shows the roadways with higher-than-expected crash frequency. Comparatively high crash frequency locations include:

- I-64 & Jefferson Ave
- I-64 & Grand Blvd
- I-64 & Vandeventer Ave
- I-64 & Kingshighway Blvd
- Chouteau Ave & Jefferson Ave
- Forest Park Ave & Grand Blvd
- Grand Blvd & Chouteau Ave
- Chouteau Ave & Vandeventer Ave
- Kingshighway Blvd & Forest Park Ave
- Kingshighway Blvd & Hospital Drive
- Chouteau Ave & Kingshighway Blvd

Figure 5. Critical Crash Rates Compared to Statewide Average Critical Crash Rate



1.1.4. Address substandard roadway geometry

Address substandard roadway geometry which contributes to increased crash likelihood, including the following:

- Westbound I-64 has 2.7 miles of inside shoulder less than standard of 10'.
- Eastbound I-64 has 2.4 miles of inside shoulder less than standard 10'.
- 6 curves located on I-64 and 10 curves located on ramps with substandard stopping sight distance.
- 5 Ramps with acceleration or deceleration lengths below the AASHTO Green Book (7th Edition, 2018) Recommendation.
- 7 curves located on I-64 and 17 curves located on ramps with superelevation's that do not meet the posted speed.
- 7 vertical curves located on I-64 and 11 curves located on ramps are substandard for the posted speed.

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1.2. Accommodate safe and comfortable trips for pedestrians and bikes and other road users across the I-64 corridor

1.2.1. Reduce bicycle and pedestrian conflict points and increase safety for non-automobile users

Within the study area, there were 4 crashes in the Tier 1 area and 119 crashes in Tier 2 between 2016 and 2020 involving a pedestrian or bicyclist, with 90% of those crashes resulting in injury (108 crashes) or fatality (2 crashes). Crashes involving bicyclists and pedestrians are observed at high frequencies at the following locations:

- Kingshighway Blvd adjacent to the BJC campus and Forest Park
- Kingshighway Blvd and I-64 interchange
- Forest Park Ave at intersections with Grand Blvd, Sarah St and Taylor Ave
- Grand Blvd between I-64 and Chouteau Ave, near the Metro transit station

1.2.2. Improve all sidewalks, driveways, and ramps to meet ADA standards

Sidewalks and driveways on the crossroad facilities do not meet current ADA standards as described in MoDOT's ADA Transition Plan. The most common elements that are not ADA compliant are the cross slopes of the sidewalks at the driveway entrances and exits and the locations of the push buttons at intersection crossings.

1.2.3. Improve bicycle and pedestrian safety through improvements to connectivity and comfort.

There is high demand for pedestrian infrastructure as evidenced by the fact that walking trips made up 53% of all trips that begin and end in the Tier 2 study area.

Existing dedicated bikeways like bike lanes, buffered bike lanes, and shared-use paths lack connectivity and coverage across the study area. The lack of dedicated bikeways at I-64 interchanges and crossings, limited street connectivity, and high-stress arterial roadways like Compton Ave, Forest Park Ave, Kingshighway Blvd, Market St, and Vandeventer Ave create barriers to bicycle travel.

Some corridors like Forest Park Ave from Grand Ave to Compton Ave lack pedestrian facilities and other arterial corridors like Kingshighway Blvd, Vandeventer Ave, and Market St are characterized by higher levels of stress for pedestrian travel despite the presence of sidewalks due to higher motor vehicle travel speeds and minimal separation from motor vehicle traffic.

2.0 Improve transportation system with intuitive navigation to, from, and across I-64

2.1. Accommodate access to current and future regional employment and entertainment destinations

The study area is centrally located within the city's resurgent Central Corridor that stretches from the Gateway Arch in Downtown St. Louis to Forest Park, two of the region's most iconic civic spaces. The Central Corridor contains approximately 150,000 jobs, or around 60 percent of the jobs in St. Louis, and is home to or provides access to many of the region's sports, retail, dining, arts, and recreational destinations.

2.2. Improve connections from interstate to local network to provide easier navigation

The study area includes 6 interchanges within a distance of 2.7 miles. Of the existing 6 interchanges, 4 are full interchange and 2 are partial interchanges which do not offer full access to or from I-64, all of which connect to 12 different roadways creating a confusing situation for users attempting to enter or exit I-64.

Partial access interchanges do not provide intuitive access to and from the highway at the same location and occur at the following cross streets: Tower Grove Ave, Boyle Ave, Papin St, Vandeventer Ave, Grand Blvd, Bernard St/Compton Ave/Market St, and Forest Park Ave.

3.0 Reduce the barrier effect of I-64 for bicycle, pedestrian, and transit users

3.1. Support by stakeholders

The majority of the interviewed stakeholders and the majority of the attendees at the first public meeting indicated this was their top priority for this project to address.

3.2. Support implementation of bicycle and pedestrian network improvements including Great Rivers Greenway's Brickline Greenway, St. Louis City network, and other system linkages.

Opportunities exist for this project to connect three segments of the Brickline Greenway which are currently in various stages of development: (1) Mill Creek Valley segment along Market St from 20th St to Compton Ave, (2) the Fairground Park to Grand Metro segment along Grand Blvd and Spring Ave, and (3) Central West End to Grand Metro segment that will parallel the MetroLink light rail line. All three of these are at least partially located within the study area and, when complete, would serve as significant low-stress corridors for active transportation.

Opportunities exist for this project to support the Gateway Bike Plan Update as well as the St. Louis City network improvements including Tower Grove Connector (TG at Magnolia to Vandeventer/Sarah and expansion from Vandeventer/Sarah to Sarah/Forest Park Ave., and Compton bridge cycle track.

3.3. Support convenient access to transit and other community destinations

3.3.1. Accommodate the planned north side / south side high capacity transit expansion line.

The potential Northside-Southside high-capacity transit route has been studied for being located along the eastern boundary of the study area which is Jefferson Ave . Interchange access and MODOT facilities should not inhibit operations or station access.

3.3.2. Accommodate transit dependent population

A substantial transit dependent population live in or near the eastern portion of the Tier 2 study area. There are coverage area gaps that limit access to employment, retail/services, residential and other destinations. In some circumstances, the lack of efficient and/or safe access to transit discourages people from utilizing transit as a means of transportation. While the study area is served by two MetroLink lines, three transit stations, eleven MetroBus routes and 64 stops, there are coverage area gaps that limit access to employment, retail/services, residential and other destinations. In some circumstances, the lack of efficient and/or safe access to transit discourages people from utilizing transit as a means of transportation.

The pedestrian transit connectivity analysis revealed low pedestrian connectivity areas are generally confined to the eastern portion of the study area bound by Vandeventer Ave, Chouteau Ave, Jefferson Ave, and I-64. Poor street connectivity, limited pedestrian accessways, and linear barriers like the railroad tracks restrict pedestrian movement and routing choices.

The bicycle transit connectivity analysis revealed the largest cluster of low bicycle connectivity scores is located in the industrial area between I-64 and Chouteau Ave from Vandeventer Ave east to Compton Ave. Bicycle connectivity is severely limited in this area by large industrial parcels, a fractured street grid, and linear barriers like I-64 and the rail yard.

4.0 Optimize bridge maintenance by improving structural conditions to maintain a good state of repair

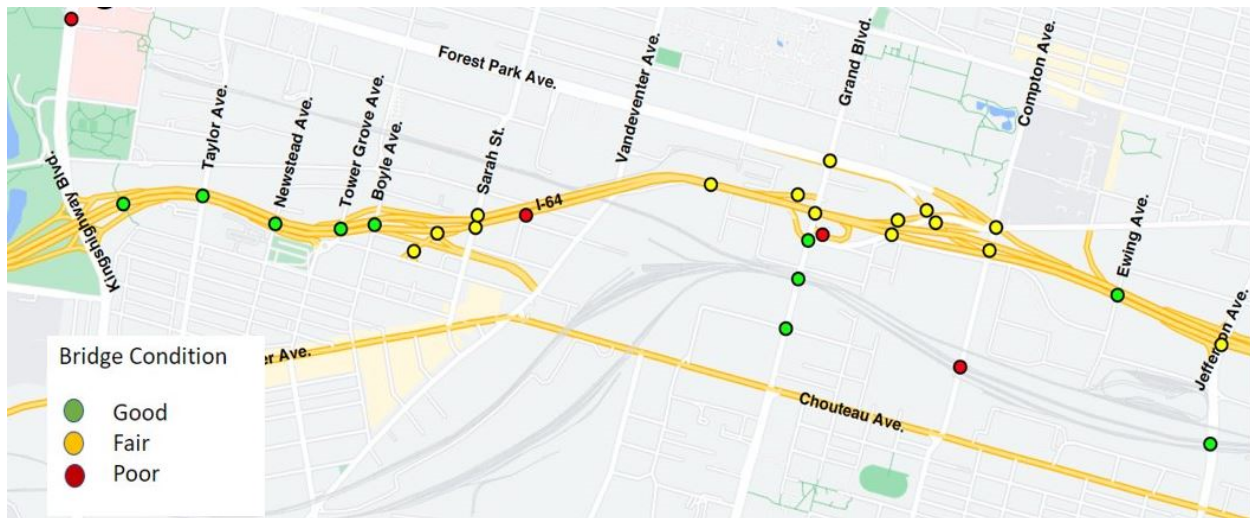
4.1. Structure repair and maintenance

There are 22 bridges, including overpasses, I-64 mainline structures, ramp structures, and one pedestrian overpass. Two bridges rate as poor and an additional six bridges are structurally considered fair, but due to the standard of the year they were constructed have various components that do not meet current design standards such as clearance, barrier height, etc. Figure 6 depicts the structural ratings for existing bridges in the project area.

4.2. Best use of public investment

Make the best use of public investment in the corridor by minimizing MoDOT's long-term maintenance needs by reducing the number of structures or amount of square footage of bridge deck to be maintained by MoDOT.

Figure 6. Structural Ratings for Existing Bridges



5.0 Maintain Interstate function, operations, and capacity for the future

5.1. Maintain capacity

Recent highway reconstruction and expansion west of Kingshighway has more clearly defined the capacity of I-64 for years to come. The urban redevelopment happening east of Kingshighway and existing development located in close proximity to I-64 constrains the potential for capacity changes. Transportation systems management and operations (TSMO) and Transportation demand management (TDM) are currently lacking and would provide additional tools for maximizing existing roadway capacity to manage changes in traffic pressure. Given the physical constraints, cost of highway expansion, and limited level of traffic pressure, options for accommodating increased traffic growth are limited. Thus, the I-64 mainline will need to maintain function, operations, and capacity for the foreseeable future and other options for mitigating traffic will need to be explored.

Areas for monitoring operations and exploring improvement options which currently experience traffic pressure for motorists of level of service E or worse include:

- I-64 and Kingshighway Blvd (AM Peak Hour)
- I-64 and Boyle Ave (AM Peak Hour)
- I-64 and Grand Blvd (AM Peak Hour)
- I-64 westbound between the Kingshighway Blvd off- and on-ramps (PM Peak Hour)

- Kingshighway Blvd westbound on-ramp acceleration lane (PM Peak Hour)
- Along I-64 westbound, west of Kingshighway Blvd (PM Peak Hour)

5.2. Support freight movements

Freight movements are an important feature of the I-64 corridor in order to support the large retailers in the study area like Ikea, intermodal freight facilities such as transferring cargo between trucks and railroads, major delivery truck operators like FedEx or UPS, and maintaining through movements that support the larger region.

Goals

Project outcomes beyond the transportation issues identified in the project purpose are included in the purpose and need statement as goals. The goals help balance environmental, transportation and other community values.

1. Right-size I-64, to reduce the highway footprint and reuse the space to benefit the community.
2. Support opportunities to repurpose excess highway right-of-way.
3. Support improved land use near transit stations and trails.
4. Improve equitable outcomes for disadvantaged communities by transportation improvements, including:
 - a. Protect community assets.
 - b. Ensure equitable outcomes that improve quality of life for disadvantaged communities.
 - c. Improve access for underserved neighborhoods to employment, services, and educational opportunities.
5. Coordinate with regional partners to enhance the connectivity, safety, and comfort of the local transportation network with focus on multimodal.
6. Integrate bicycle and pedestrian facility design best practices in design of projects.
7. Consolidate access points from interstate to local system.
8. Invest in projects that provide good cost benefit improvements.
9. Allow for opportunities to integrate best practices for green infrastructure, native plants and storm water best management into design of transportation projects and use of right-of-way.
10. Allow for opportunities to improve beautification, placemaking, and making infrastructure inviting into design of transportation projects.