

MoDOT's I-70 Evaluation

Public Works Recommendations
September 6, 2022



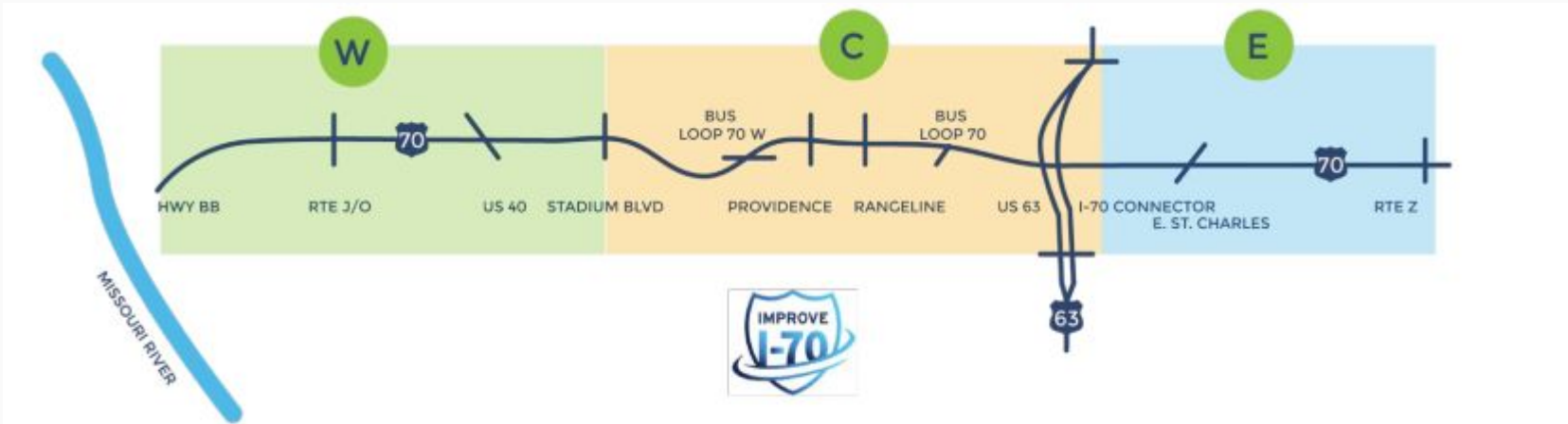
Staff's Goals

- Inform Council about MoDOT's planned evaluation of Interstate 70 and the "reasonable alternatives" lined out by MoDOT within Columbia's City limits.
- Attempt to answer questions regarding MoDOT's project, process, and alternatives. However, it is important to note that there has only been 30 minutes allotted to this discussion tonight. Therefore this presentation is intended mainly as a reference so we can jump from intersection to intersection for specific discussion and questions.
- Obtain feedback from Council in an effort to draft a letter to MoDOT which conveys the City's support and recommendations regarding the project. This will come forward as a Resolution to a future Council meeting.

Note: The majority of this information was derived from MoDOT's presentation to their Community Advisory Group (CAG) on July 11, 2022. A PDF of their presentation is included in your packet.

Study Corridor

- Interstate 70 through the entirety of Boone County



17 miles long with 10 interchanges

What is funded?

- Currently only the I-70 & US 63 Interchange and it is only partially funded. Planned to be a design-build project. The design-build team has to provide at least as good of an upgrade as the eastbound to southbound and northbound to westbound fly overs would produce.
- All other possible projects are not currently funded.
- The City may have limited influence on what is actually constructed. However, we might be able to help guide the process for a complete street approach since FHWA has adopted a Complete Streets design model (“Moving to a Complete Streets Design Model” <https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-03/Complete%20Streets%20Report%20to%20Congress.pdf>) and MoDOT has published a Safer Assessment for Every Roadway (SAFER) document https://epg.modot.org/files/e/ef/SAFER_Document.pdf. However, it is not currently known how much either of these policies will influence the design.

MoDOT's Stated Purpose/Need

- Accommodate existing and future I-70 traffic volumes
- Improve outdated I-70 design elements
- Accommodate all uses of I-70
- Improve user safety

The Loop CID's General Comments

- “Easy access to and from the Business Loop should be maintained, especially for Rangeline which serves as a gateway into Columbia and a connector for The Loop, Columbia College, and downtown.”
- “A holistic approach to managing traffic should be taken, including strengthening existing routes so that drivers have multiple options to reaching their destination.”
- “Long-term solutions should be prioritized over short-term fixes.”
- “We recognize the need for outer roads on the periphery of the project area for emergency access and other needs. Specifically, the outer roads proposed for the west section. We question the need for outer roads in the Providence/Rangeline area for this use given that Vandiver and Business Loop provide adequate overflow options.”
- “Pedestrian safety and access should be integral to any solution.”

Interstate 70 Mainline

- One additional lane in each direction (3 lanes each direction total).
- Staff comments: This is a common solution through metropolitan areas to address traffic congestion.

Continuous outer road on the north side of I-70 (US 40 to Stadium Boulevard)



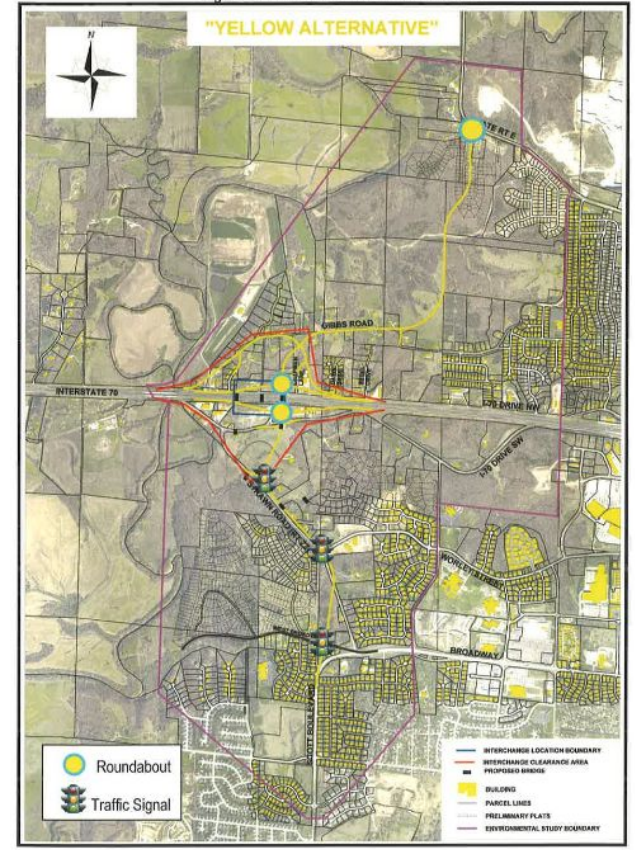
Continuous outer road on the north side of I-70 (US 40 to Stadium Boulevard)

- Provides an outer road connection across Perche Creek and improves the existing outer road north of I-70
- 3 miles, 1 bridge
- Staff recommendation:
 - All proposals to date from MoDOT have appeared to specifically avoid any possibility of construction of any aspect of the Scott Boulevard interchange. The City has an FHWA approved Access Justification Report (AJR) for the interchange. Providing another connection across Perche Creek is critical for long term emergency response for both the County and City. During periods of significant delay along I-70 due to construction or significant incidents, travelers often utilize UU (MoDOT) to Gillespie Bridge Road (County and City) to Scott Boulevard (City) to access other routes around the incident backup. While relatively rare, the additional vehicle loads on City streets accelerates deterioration as well as impacting travel during those times. Another connection across Perche at this location should be a critical component of an improvement project in order for travelers on the Federal system to be able to stay on the federal system during periodic construction or incidents. The improvement should align with the findings of the AJR (see next slide, recommended AJR alternative). Another crossing of Perche is in MoDOT's Tier 3 Unfunded Needs list (page 35):
<https://www.modot.org/sites/default/files/documents/2022-01%20FINAL%20High-Priority%20Unfunded%20Needs.pdf>.

Scott Boulevard and I-70 AJR (2011)

- Recommended alternative from the AJR

Figure 4: Recommended Yellow Alternative



Continuous outer road on the south side of I-70 (US 40 to Stadium Boulevard)



Continuous outer road on the south side of I-70 (US 40 to Stadium Boulevard)

- Provides an outer road connection across Perche Creek and improves the existing outer road south of I-70
- 3.25 miles, 2 bridges
- Staff recommendation:
 - Crashes along outer roadways due to lane departure are significant and should be specifically examined to determine systematic improvements to reduce lane departures. An improved width shoulder or other proven countermeasures appear appropriate. Any improvement should take into account the Scott Boulevard AJR.

Stadium Boulevard

- Outer road at existing location



Stadium Boulevard

- Outer road at existing location
- Provides capacity improvements to the westbound off ramp and lengthens merging distances on the eastbound on ramp
- Staff recommendation:
 - Crashes along outer roadways due to lane departure are significant and should be specifically examined to determine systematic improvements to reduce lane departures. An improved width shoulder or other proven countermeasures should be explored.

Stadium Boulevard

- Outer road at Bernadette Drive



Stadium Boulevard

- Outer road at Bernadette Drive
 - Provides capacity improvements to the westbound off ramp and lengthens merging distances on the eastbound on ramp
 - South outer road realigned to the south to connect to Bernadette Drive
 - Staff recommendation:
 - Crashes along the outer roadways due to lane departure are significant and should be specifically examined to determine systematic improvements to reduce lane departures. An improved width shoulder or other proven countermeasures should be explored.

Business Loop 70 West



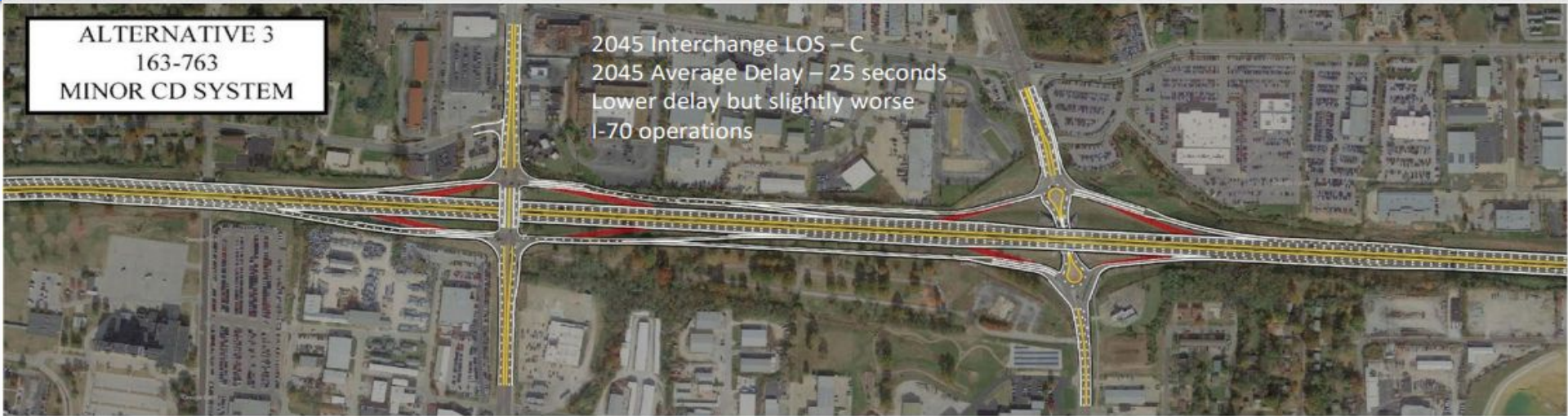
Business Loop 70 West

- Provides a slip ramp for westbound Business Loop to eastbound I-70 on ramp
 - The Loop CID's recommendation: "Slip ramp at the traffic circle at West and Business Loop would present an increased danger to pedestrians at an intersection flagged by the Community Advisory Group as dangerous to pedestrians and those with disabilities. Until the surrounding area has safe and accessible options for pedestrians, we oppose these changes."
 - Staff recommendations:
 - Pedestrian and bicycle improvements to and through all intersections and improvement locations should be a piece of analysis for any design-build scoring. FHWA's "Moving to a Complete Streets Design Model" goal and MoDOT's published SAFER document should be used as references.
 - For this specific location it has not been made clear that a right turn slip lane is needed or preferable. Extreme caution should be used prior to pursuing this added lane. If it is demonstrated that the extra lane is needed, then controlling the speed of vehicles at pedestrian crossing movements should be viewed as critical as well as providing additional protection for the crossing pedestrians to have the clear and visible right of way when crossing. Entry angles and radii into and out of roundabouts should encourage slow speeds and right turn lanes should have small radii (no more than 50 foot radii) near conflict points.

Providence Road/Rangeline Road

ALTERNATIVE 3
163-763
MINOR CD SYSTEM

2045 Interchange LOS – C
2045 Average Delay – 25 seconds
Lower delay but slightly worse
I-70 operations



Providence Road/Rangeline Road

- Provides collector/distributor roads between Providence and Rangeline. The westbound off ramps and eastbound on ramps are combined, therefore Rangeline traffic to/from the west must go through the signals at Providence.
- The Loop CID's recommendation: "We do not support the addition of the north and south outer roads between Providence and Rangeline, nor the proposal to limit immediate access from I-70 to Rangeline (or vice versa). We don't believe the drivers should be redirected to the signal at Providence."
- Staff recommendation: What is proposed is consistent with access management best practices used throughout the federal highway system provided it also addresses non-motorized transportation needs.

Providence/Rangeline/Parker (Part 1)

ALTERNATIVE 2
163-763
MAJOR CD SYSTEM

2045 Interchange LOS – C
2045 Average Delay – 33 seconds
Longer average delay but
improved I-70 operations



Providence/Rangeline/Parker (Part 2)

2045 Interchange LOS – C
2045 Average Delay – 33 seconds
Longer average delay but
improved I-70 operations

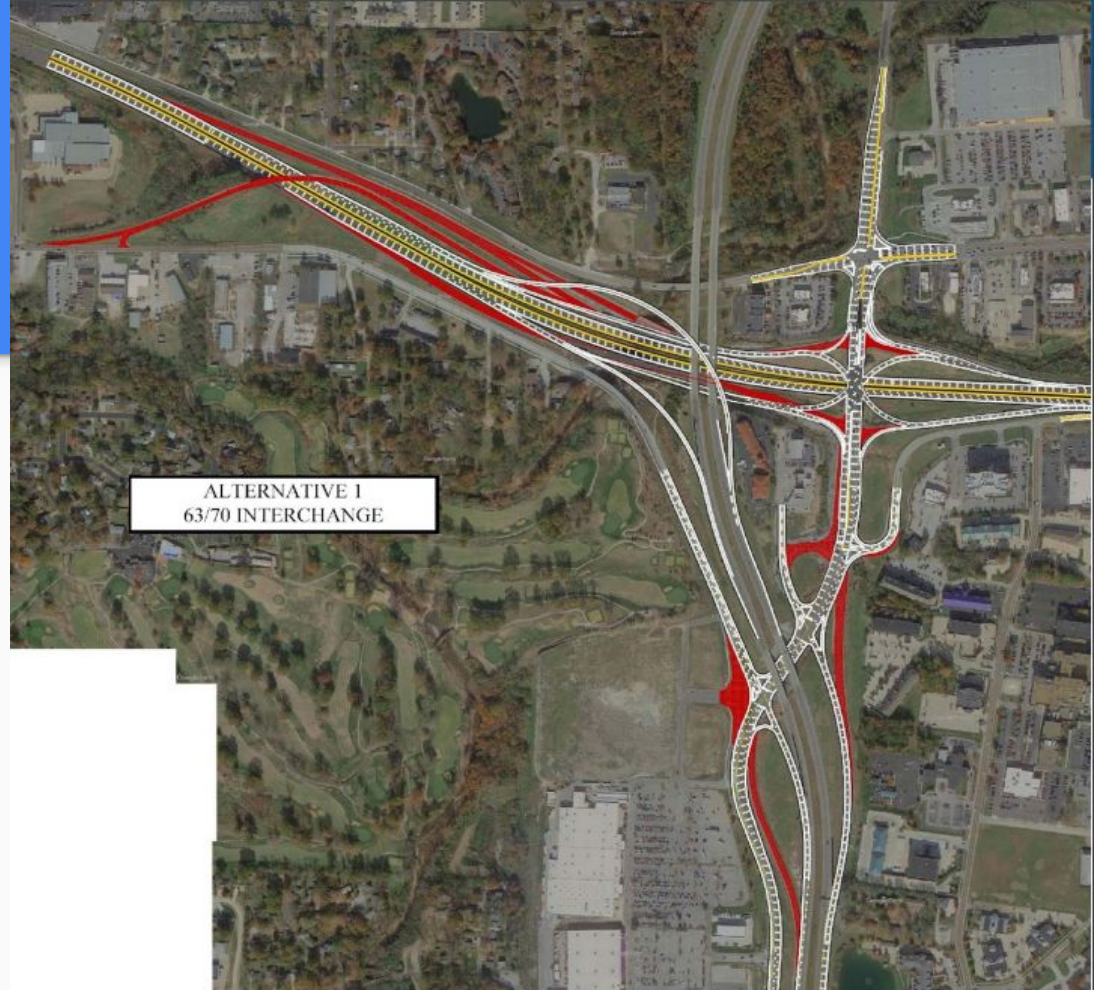
ALTERNATIVE 4
NEW INTERCHANGE
PARKER WITH CD MAJOR

Providence Road/Rangeline Road/Parker Street

- Provides collector/distributor roads between Providence, Rangeline, and a new interchange at Parker. Grade separations are provided so that any combined ramps are not required to go through additional signals.
- The Loop CID's recommendation: "We would support the addition of the Parker extension and off/on ramp for I-70 (via the outer road), provided it is decoupled from the dual outer road proposals between Providence and Rangeline."
- Staff recommendations:
 - City leadership should carefully consider a firm position regarding the interchange at Parker. This interchange would be of potential significant long term benefit to the City as a whole. MoDOT is unlikely to desire promoting the construction of this interchange and is actually more likely to desire not to construct it due to costs. Without clear, strong support of the interchange from the City, it is highly likely the interchange will not be pursued.
 - All proposed iterations at the Rangeline location do not adequately address poor non-motorized travel accommodations along Rangeline under I-70. Previous vehicular improvements made at the location decreased non-motorized accessibility. While the use of roundabouts was a better choice than signalization, specific re-evaluation of conflict points for entries to the roundabouts is needed. Entry and exit angles, especially for both bypass lanes south of I-70 are too oblique and appear to contribute to crashes at the location, especially for the eastbound ramp. Sight distance for the eastbound movement to the north is limited. Significant weight should be given as to how to improve the level of service of non-motorized travel to better than existing and at least as good as prior to the roundabout improvements.
 - Public Works has a project identified, with funds available, to improve non-motorized transportation through this intersection. However, until the full scope of this project is known, that project is on hold.

I-70/US 63 Connector (Alternative 1)

- Provides northbound US 63 to westbound I-70 and eastbound I-70 to southbound US 63 flyover ramps
- Single point urban interchange (SPUI)
- Additional intersection at Conley & US 63
- Improvements at Clark Lane & US 63
- Improvements at Business Loop 70 & Conley



I-70/US 63 Connector (Alternative 2)

Provides:

- Diverging diamond interchange (DDI)
- Northbound US 63 to westbound I-70 loop ramp
- Eastbound I-70 to southbound US 63 flyover ramp
- Additional intersection at Conley & US 63
- Improvements at Clark Lane & US 63, makes Clark Lane primary movement
- Improvements at Business Loop 70 & Conley



I-70/US 63 Connector (Alternative 3)

Provides:

- Lane reconfiguration through Connector
- Additional intersection at Conley & US 63
- Improvements at Clark Lane & US 63



I-70/US 63 Connector

- The Loop CID's recommendation: "We will continue to review the proposals for the I-70/63 connector but again, we support long-term solutions here as well as strengthening other existing alternatives in order to relieve traffic along I-70. We would support an option that required removal of the left off ramp from I-70, especially if the Parker addition was an option.
- Staff recommendations:
 - The most recent iteration of preferred alternatives removes a signal from the City's maintenance, but creates several potential issues for City properties and roadways. It eliminates an organized entry/exit (the signal) to the Broadway Marketplace location without sufficiently addressing the volumes entering and exiting the retail location. There is no shown improvement as part of the project either north or south of the location that provides for protected left turns into or out of the shopping center. This must be addressed as part of the project.

I-70/US 63 Connector

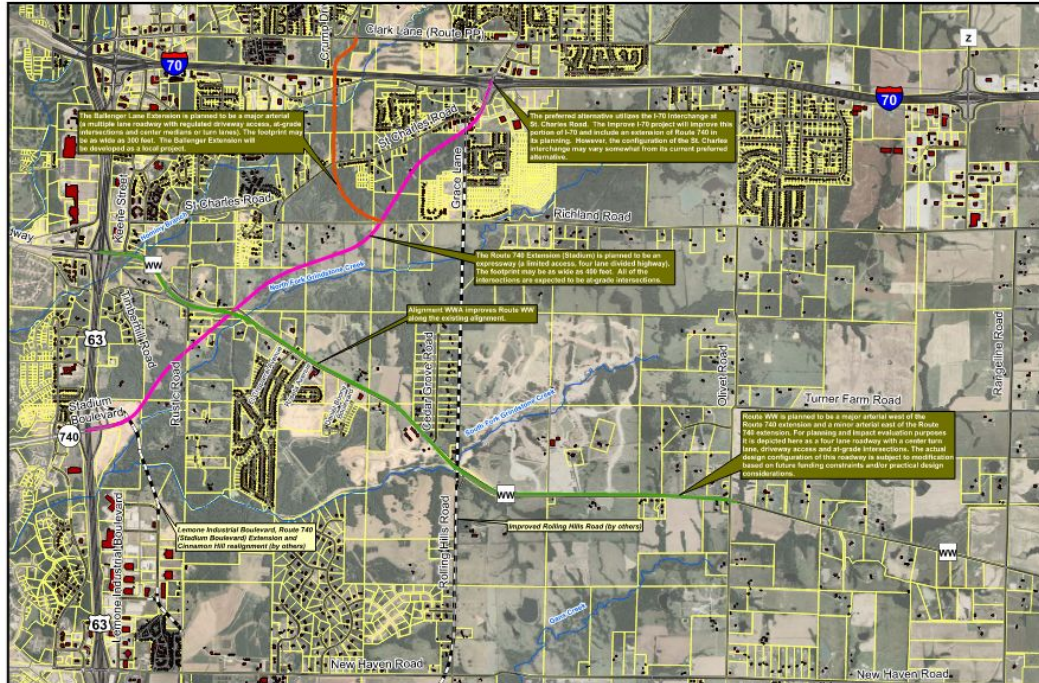
- Staff Recommendations (continued):

- Staff would request that any design and eventual construction improvements to the I-70/US 63 connector include the Hinkson Creek Trail extension as it is a critical piece of non-motorized transportation to connect Columbia citizens on the north and south side of I-70. The planned route for the trail may no longer be viable depending on the selected plan for roadway improvements so Parks & Recreation staff would request to be involved with planning discussions once the roadway option is selected for the interchange. The extension of the trail is a key piece of the 30-mile trail loop through Columbia and is considered a critical connection for cyclists and pedestrians to navigate the I-70/US 63 interchange. Any improvement should directly accommodate pedestrian and cycling traffic to and through intersections per FHWA's Complete Streets Model.
- The East Columbia Environmental Impact Statement (EIS), completed in 2009, should be updated. This will help determine long term transportation improvement needs east of US 63 including major interchange and overpass improvements for I-70. Funding for a portion of Stadium (US 63 to Route WW) is listed in Tier 3 for MoDOT's Unfunded Needs list (page 35):
<https://www.modot.org/sites/default/files/documents/2022-01%20FINAL%20High-Priority%20Unfunded%20Needs.pdf>.

East Columbia EIS (2009)



Exhibit S-1 Preferred Alternative



Legend

- Future Road Improvements
 - Roads
 - Rivers and Streams
 - Parcel Boundary
 - Buildings
- Alternative Components**
- Route 740 Extension
 - Route WW Improvement
 - Ballenger Extension

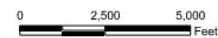


Exhibit S-1: Preferred Alternative

St. Charles/Lake of the Woods

ALTERNATIVE 2
ST. CHARLES ROAD
TIGHT DIAMOND

2045 Interchange LOS – C
2045 Average Delay – 23 seconds

ALTERNATIVE 3
ST. CHARLES ROAD
DIAMOND OUTER ROADS

2045 Interchange LOS – C
2045 Average Delay – 23 seconds

St. Charles/Lake of the Woods

- The Loop CID's recommendation: "St. Charles/Lake of the Woods interchange should be improved and coupled with a plan to complete the extension of Stadium Boulevard from its existing terminus at Highway 63 to the improved St. Charles/Lake of the Woods interchange. This alternative provides the most effective way to relieve traffic at the I-70/Highway 63 intersection."
- Alternative 2 replaces and widens the overpass for additional lanes.
 - Staff recommendation: Staff recommends that the East Columbia EIS be updated. This will provide the best information about how Stadium and other roadways and interchanges should be improved.
- Alternative 3 replaces and widens the overpass for additional lanes and relocates the eastbound ramps and south outer road.
 - Staff recommendation: Staff recommends that the East Columbia EIS be updated. This will provide the best information about how Stadium and other roadways and interchanges should be improved.

Any Questions?