

THE NEW BUCK O'NEIL (U.S. 169) CROSSING

A crossroads connecting the nation.



Was a TIGER/BUILD application for this project submitted previously?	Yes
Previously Incurred Project Cost	\$0.00
Future Eligible Project Cost	\$216,100,000
Total Project Cost (This should be the sum of the previous two rows)	\$216,100,000
BUILD Request	\$25,000,000
Total Federal Funding	\$134,140,000
Are matching funds restricted to a specific project component?	No
Is the project or a portion of the project currently located on National Highway Freight Network?	Yes
Is the project or a portion of the project located on the NHS?	Yes
Does the project add capacity to the Interstate system?	Yes
Is the project in a national scenic area?	No
Do the project components include a railway-highway grade crossing or grade separation project?	Yes
Grade crossing ID	0631183U
Do the project components include an intermodal or freight rail project, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?	No
If answered yes to either of the two component questions above, how much of the BUILD grant will be spent on each of these project components?	\$25,000,000
States(s) in which project is located	Missouri
Urbanized Area in which project is located	Kansas City
Population of Urbanized Area	2,104,115
Is the project currently programmed in the	
TIP	Yes*
STIP	No**
MPO Long Range Transportation Plan	Yes
State Long Range Transportation Plan	N/A***
State Freight Plan	N/A****
If selected, would you be interested in participating in a new environmental review and permitting approach?	Yes

* "Beyond the Loop" PEL included in TIP which addresses the Buck O'Neil Bridge.

** MoDOT STIP includes funding for rehabilitation of the existing Buck O'Neil Bridge

*** MoDOT Long Range Transportation Plan and Freight Plan are goal-based and no individual project solutions are included.

**** State Freight Plan includes congestion relief in downtown Kansas City area routes as a priority to remove freight bottlenecks.



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The New Buck O'Neil Crossing

ORGANIZATION:

Missouri Department of Transportation

AGENCY:

Department of Transportation

DUNS #:

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Project Information



Project Description

The Kansas City region has long been an important economic crossroads for our nation, dating back to its history as the last trading outpost at the convergence of the Oregon, California, and Santa Fe Trails before they separately headed west. Kansas City's infrastructure has always supported this prominence as a crossroads for trade and freight, and the Buck O'Neil Bridge – formerly the Broadway Bridge – is a critical piece of that infrastructure. Now, however, the existing Buck O'Neil Bridge faces a convergence of challenges that will require its replacement, presenting a multi-generational opportunity for the city and region.

The region's status as the country's largest rail center by tonnage is one reason Kansas City is a vital economic engine for the nation. Kansas City's central location, highway system size, and connectivity between all transportation modes are also a strength for moving freight. More than 88 million tons of freight were shipped from or to Kansas City in 2015, with the number expected to top 125 million tons by 2045. These figures also don't include the significant amount of freight traveling on rail, roads, and waterways passing through the region – again highlighting Kansas City's status as an economic crossroads.

The existing Buck O'Neil Bridge has served the Kansas City region well. Much as Kansas City operates as an economic crossroads for the nation, the Buck O'Neil Bridge facilitates local, regional, and national connectivity. Built in 1956, it stands immediately west of the site of the original Hannibal Bridge, which in 1869 was the first bridge to cross the Missouri River and was a driving force behind Kansas City's status as a rail center. The Hannibal Bridge's replacement still carries rail traffic, and the Buck O'Neil Bridge was erected to divert the replacement's vehicle traffic.

Today, 45,000 vehicles a day cross the Buck O'Neil bridge between downtown Kansas City and the many rapidly-growing communities north of the Missouri River. In addition, the bridge also serves as a connection point to the north-south Interstate 35 corridor and the east-west Interstate 70 corridor through downtown Kansas City. Both rail and water freight traffic also travel underneath the bridge.

Unfortunately, the Buck O'Neil Bridge was designed and constructed before the interstate system was developed. Now, its current design, with associated interchanges, no longer has capacity to adequately serve the needs of the Kansas City region, nor the needs



More than 950 crashes have occurred in the project area over the past five years and crash rates at the south project limits are three times higher than the average rates experienced in the Kansas City region.



Construction of the Buck O'Neil Bridge 1955

of interstate travelers. Outdated interchange design, coupled with large volumes of traffic, has resulted in significant congestion and travel delays for commuters and freight. Additionally, more than 950 crashes have occurred in the project area over the past five years, and crash rates at the south project limits are three times higher than the average rates experienced in the Kansas City region.

Freight across the bridge has been limited as its allowable weight has been reduced due to the increasingly poor condition of the bridge deck, fatigue of steel members, and deterioration of the bridge's structural steel – particularly near the bridge expansion joints. The bridge's condition has required the Missouri Department of Transportation (MoDOT) to increase the frequency of repairs.

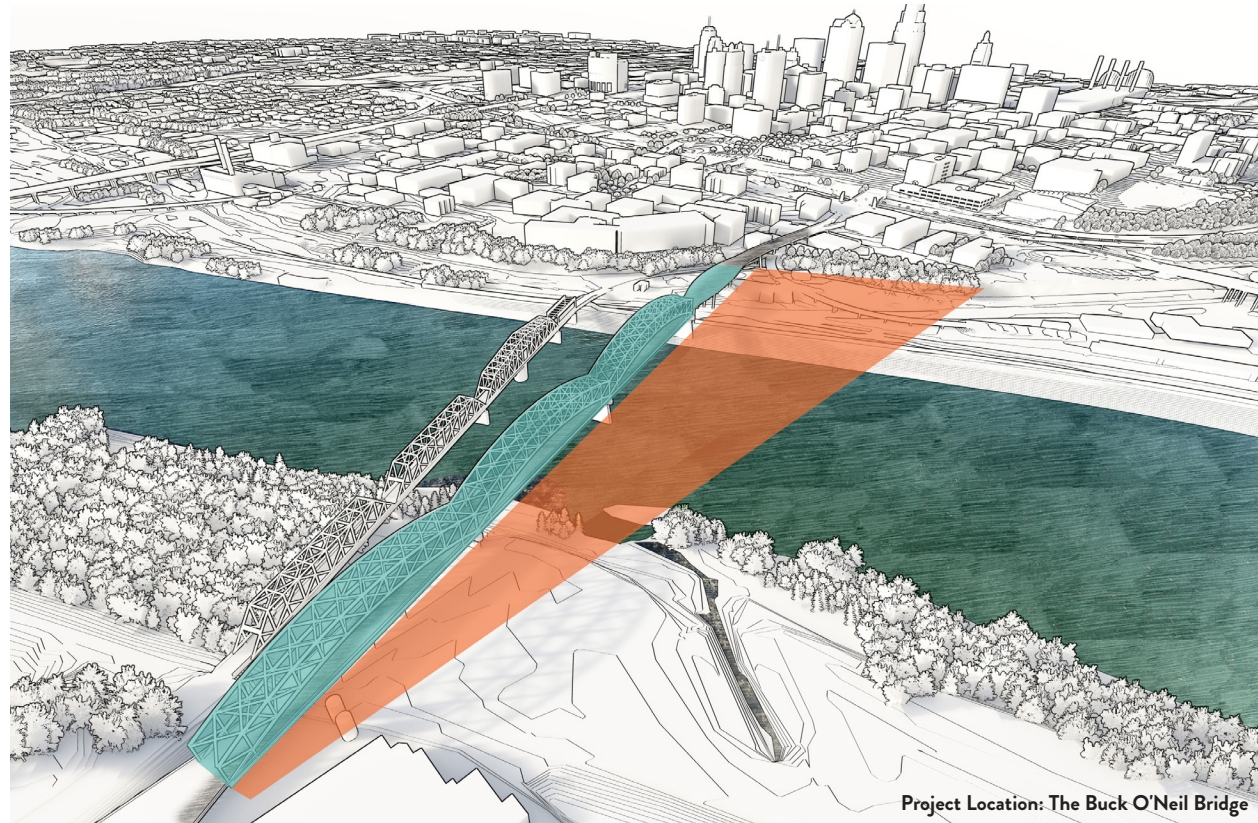
Initially, MoDOT had identified a \$52 million rehabilitation investment for the bridge and planned to begin implementation in 2018. However, the rehabilitation project would have required bridge closure for 24 months. Given the disruption to traffic, and given estimates that complete in-kind replacement would still

be required at the end of the rehabilitation's lifecycle, MoDOT and the City of Kansas City agreed to forego the larger rehabilitation investment, opting instead to pursue a short-term repair strategy at a cost of \$7 million. This strategy allows for the advancement of planning for a replacement bridge.

The upcoming decisions regarding the future of the Buck O'Neil Bridge will continue to require an innovative, long-term vision for the region, one that serve as an added catalyst for the continuing economic surge of downtown Kansas City. This vision must look beyond immediate needs, address quality of life, sustain economic competitiveness, and prepare Kansas City for the next 100 years of growth as the nation's economic crossroads. Replacement of the Buck O'Neil Bridge presents an opportunity to leverage benefits far beyond improvement of a deteriorating asset. Planning a replacement will improve system performance by promoting national, regional, and local connectivity and freight movement. It will also improve quality of life through expanded transportation choices, neighborhood livability, and economic development.

Benefits of the New Buck O'Neil Bridge will include:

- Keeping the current structure open for traffic while a new bridge is being built, rather than closing the current structure for significant amounts of time during repair
- Supporting national and regional economic vitality with improved connections to Interstates 29 and 35, and enhancing connections into downtown Kansas City and Interstate 70
- Rerouting traffic to create a direct connection between U. S. 169 and Interstate 35
- Improving interchange operations at downtown Kansas City and the Charles B. Wheeler Downtown Airport, modernizing the U.S. 169 / Harlem interchange to reduce recurring congestion and significantly enhance operational safety
- Implementing a new bicycle and pedestrian crossing of the Missouri River
- Innovation opportunities encompassing key federal priorities, including acceleration of environmental documentation and permitting
- Promoting alternative project finance solutions from private entities by including optional financing opportunities as part of the project delivery process
- Adopting principles from the SEP-14 and SEP-15 programs to integrate the design/build delivery method with NEPA and evaluating the use of Progressive Design/Build as a contracting mechanism
- Replacing a weight-restricted bridge with an unrestricted bridge to enhance truck freight movement
- Enhancing the regional freight network through:
 - o Consideration of a new river crossing for the BNSF
 - o Improved truck and rail access and rail capacity for Port KC to further develop the multi-modal port
 - o Truck freight improvements, particularly freight moving north on Interstate 35 and accessing Interstate 29, avoiding bottlenecks on the northeast corner of the downtown Kansas City loop
 - o Increased opportunities to enhance freight facilities and commercial development in the downtown Harlem neighborhood
 - o Better airport freight and accommodation for businesses using the Charles B. Wheeler downtown Airport, the fourth busiest airport in Missouri

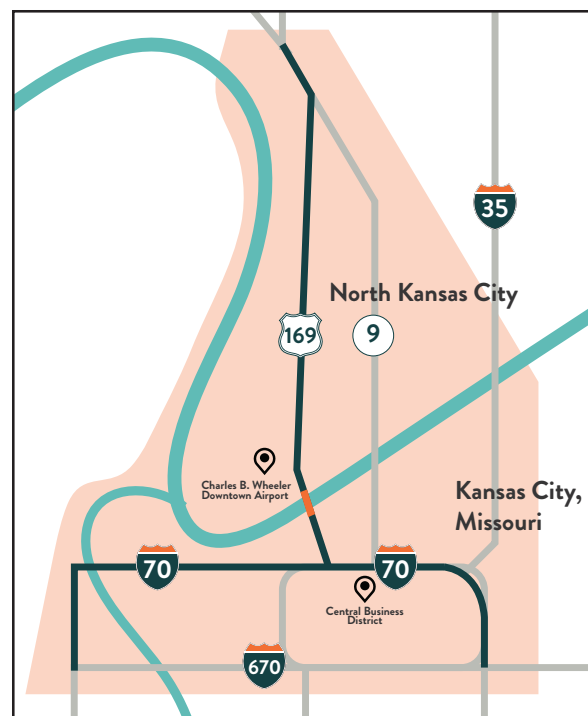


Project Location: The Buck O'Neil Bridge

Project Location

- US-169 Missouri River crossing (north/south) in Kansas City, Missouri
- Provides access to Central Business District (south end)
- Provides access to Charles B. Wheeler Airport and northland areas (north end)
- Facilitates connection to I-35 and Interstate 70 (south end)

- Project Location
- Area of Influence



Grant Funds, Sources and Uses of All Project Funds

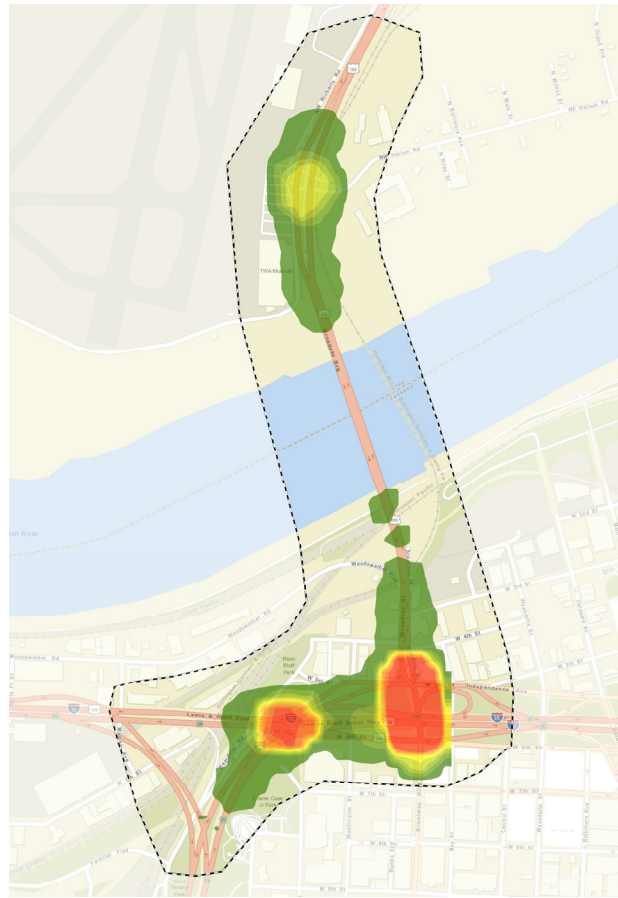
Preliminary Engineering, Permitting & Environmental Documentation	\$5.1 million	Non-Federal (20%) Other Federal (80%)
Land Acquisition and Utility	\$15 million	Non-Federal (20%) Other Federal (80%)
Construction	\$193.1 million	Non-Federal (39%) Other Federal (48%) BUILD (13%)
Construction Engineering	\$1.5 million	Non-Federal (100%)
Stipends for Non-Selected D/B Teams	\$1.4 million	Non-Federal (100%)
Total	\$216.1 million	\$25 million BUILD (12%) \$69.14 million Other Federal (32%) \$20.41 million State of Missouri (9%) \$61.55 million City of Kansas City (28%) \$40 million Mid America Regional Council STP (19%)

MoDOT, in partnership with the City of Kansas City, Missouri, is requesting \$25 million in BUILD FY 2018 Discretionary Grant funds to construct the new Buck O'Neil Bridge, connector ramps, and approaching roadway. The BUILD Grant would fund 11.57 percent of the total project cost. Total federal funding for the project would be approximately \$134 million, or 62 percent of the project construction cost. MoDOT will utilize approximately \$20 million in state transportation funds to match available federal funding allocated to the state for a total project share of approximately \$90 million. Kansas City will provide approximately \$60 million in funding by utilizing local tax revenues and

other funding sources. The remaining project funds will come from other regional sources including sub-allocated federal funds and other available local revenue to complete the funding package.

MoDOT plans to begin NEPA documentation and permitting in 2018. MoDOT, Kansas City, and MARC are committed to work together to address other project costs not related to construction. The use of MoDOT's State Infrastructure Bank to address immediate project expenditures and leverage local funds is one innovative financial solution that may be pursued.

Merit Criteria

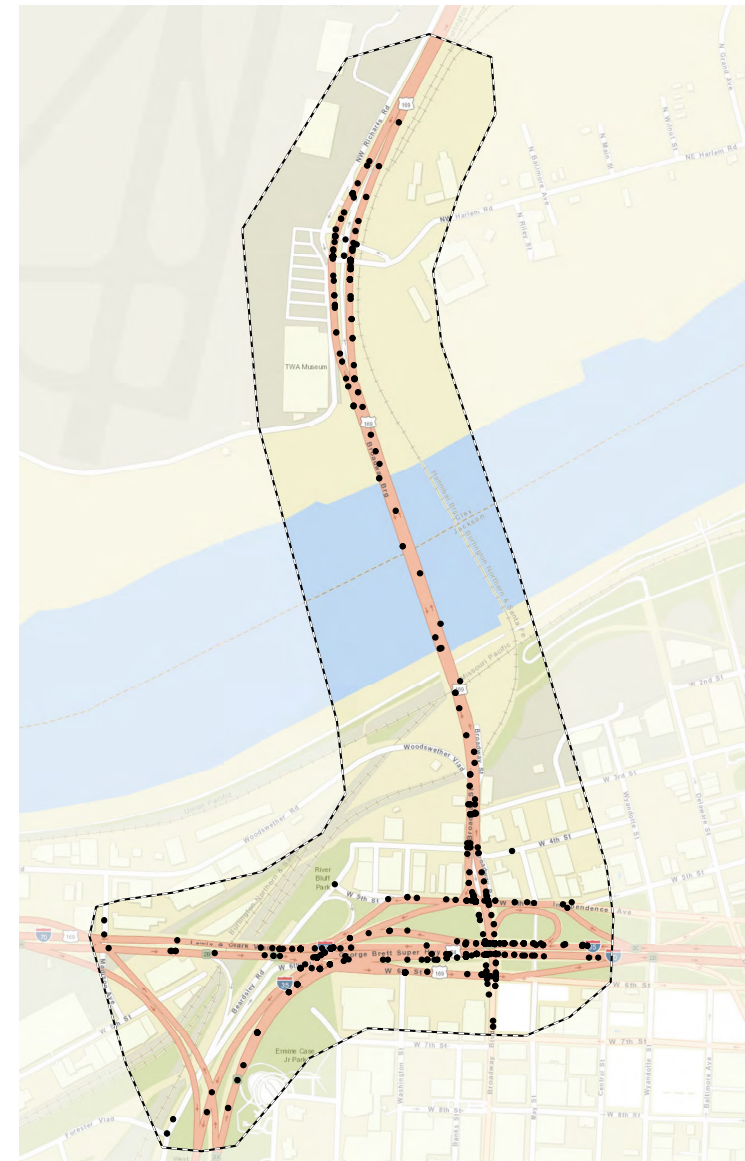


CRASH SEVERITY	(2010-2014) NUMBER OF CRASHES	PERCENT
Fatal	0	0%
Disabling Injury	12	1.2%
Minor Injury	161	16.6%
PDO	794	82.1%
Total	967	

Safety

Safety is always at the forefront in both evaluating transportation investment decisions and determining what project strategies will be implemented when planning a new project. Nearly 59,000 vehicles a day are anticipated to cross the Buck O'Neil Bridge and maneuver through its associated interchanges by 2040, an increase of 31 percent over existing traffic volumes. Motorists experience higher-than-average crash rates, usually resulting from significant congestion, and U.S. 169 was initially developed to serve as a city street, not as the major, economic arterial it currently serves as for the region.

Crash types, severity and location trends available from Missouri State Highway Patrol records (2010 -2014) have been analyzed to identify any geospatial or causal trends to be potentially addressed by the project. Both approaches to the existing Buck O'Neil Bridge were identified as having very heavy concentrations of crashes. North of the bridge, crashes are very dense around the interchange with Harlem Road and the Charles B. Wheeler Downtown Airport. This interchange is configured with on- and off-ramps that access U.S. 169 on the left, which run counter to driver expectations. Additionally, the ramps are very



CRASH TYPE	(2010-2014) NUMBER OF CRASHES	PERCENT
Backing	6	0.6%
Intersection	70	7.2%
Parking or Parked Car	8	0.8%
Pedestrian/Bike	3	0.3%
Fixed Object/ Out of Control	168	17.4%
Head On	14	1.4%
Rear End	322	33.3%
Right Angle	53	5.5%
Sideswipe/ Changing Lanes/ Passing	303	31.3%
Other	20	2.1%
Total	967	

steep and have very short areas before merging with mainline traffic. The southern connection, formed with the intersection of U.S. 169 with 5th and 6th streets, presents a safety challenge by overstressing the capacity of the signalized intersections, creating long queues resulting in a high frequency of rear end crashes.

Many different improvements and countermeasures included with the Buck O'Neil Bridge replacement plan propose to reduce the number and severity of crashes within the project limits. These treatments include

a combination of operational and geometric strategies focused on improving both the critical crash locations and the types identified in the existing crash data analysis. Proposed treatments focus on elements that have a proven track record of providing quantifiable crash reductions. A summary of the proposed treatments with crash modification factors (CMFs) derived from traffic projects, as well as published safety performance functions (SPFs) – as identified and adopted by AASHTO's "Highway Safety Manual" (HSM) – are provided on the following page:

Rerouting U.S. 169 traffic to/from Interstate 35

Currently, northbound drivers need to exit Interstate 35, then drive through at-grade signalized intersections at Broadway and 5th and Broadway and 6th to access northbound U.S. 169. Similar traffic patterns are needed for southbound drivers. The proposed project includes a direct connection between U.S. 169 and Interstate 35 that will dramatically reduce the traffic demand and improve safety performance at these two intersections. A CMF of 0.67 was used at the 5th Street Intersection and 0.54 at 6th Street.

Modernizing the U.S. 169 / Harlem Interchange

The existing U.S. 169 and Harlem interchange is one of the primary concentrations of crashes in the study corridor. The current interchange configuration has substandard features, including left-hand entrance and exit ramps as well as short merge distances and acceleration distances. The proposed interchange configuration addresses all the existing deficiencies and reroutes south-bound on-ramp traffic to adjacent access points further from the bridge. The existing and proposed improved interchanges were modeled using HSM crash prediction models with a CMF of 0.57.

Buck O'Neil Bridge Width

The existing Buck O'Neil Bridge has a substandard width and does not provide any shoulders for through traffic. The proposed bridge replacement will provide the opportunity for a wider corridor, including shoulders meeting current design standards. A CMF (0.77), was created using HSM values for the existing and proposed shoulder width. This was applied to the existing crashes across the bridge to calculate the proposed crash reduction associated with providing wider shoulders.

50 percent fewer crashes are projected after evaluating the proposed improvements using published CMFs.

The proposed project will also provide other safety improvements for which the crash reduction could not be quantified. Traffic operations are projected to improve dramatically with the proposed project, reducing delay and queue length for daily commuters. This is likely to reduce the high number of rear end crashes often associated with poor operations and delay. The current practice of pedestrians and bicyclists crossing the bridge on the median grate system will be replaced with a barrier-separated, multi-use trail, eliminating conflict points with vehicular traffic.



Extensive corrosion at the approach piers



Typical deterioration at steel elements

State of Good Repair

MoDOT recently completed an extensive inspection of the Buck O'Neil Bridge, which identified numerous structural deficiencies in need of rehabilitation. Significant deterioration of structural elements, such as steel stringers and bearings, has occurred due to roadway drainage exposure. These elements need to be repaired or replaced, and deck replacement will be required to minimize this type of damage in the future. In addition, hanger cable retainers are missing, gusset plates and structural members are exhibiting extensive rust, expansion joints need to be replaced, and some cracking due to repetitive stress is evident. Also, approach spans have repetitive stress cracking and similar extensive rust and corrosion issues. The center river pier has a large scour hole on all sides and, at this point, is only embedded in one foot of shale. Repainting the entire bridge, repairs to the tie beams, lower laterals, floor beams and bridge railings have been proposed. Scour countermeasures have been suggested at the center river pier to protect against further undermining.

MoDOT completed a conceptual study of the repair and rehabilitation requirements of the Buck O'Neil Bridge in March 2017 as part of the inspection process. Four improvement scenarios were evaluated: a short-term repair option, a long-term repair option, a "hybrid" of short and long-term, and a second "hybrid" that included some span replacements. An evaluation of replacement in-kind was also evaluated to serve as a baseline.

Based on the result of this conceptual study, MoDOT has adopted, in coordination with discussions with the City of Kansas City, a short-term repair that will extend the service by up to 10 years. The additional in-service life will allow for the completion of planning and construction of the new Buck O'Neil Bridge with minimal traffic disruptions. The recommended longer-term, 35-year rehabilitation option is included in the benefit-cost analysis as a required maintenance outlay during the 40-year analysis cycle. The conceptual study had further added that



Deterioration at expansion joint support



Pack rust at stringer bearing plates



Concrete spalling along the shoulders

complete in-kind replacement will be required at the end of the 35-year period, with an estimated uninflated cost of \$98 million. The rehabilitation originally proposed by MoDOT would require a minimum 24-month closure of the Buck O'Neil Bridge to accommodate the proposed work.

This project would construct a new Missouri River crossing and the new Buck O'Neil Bridge would be designed and constructed to provide a minimum of a planned 100-year service life. Estimates are that the new bridge will require no planned contracted maintenance expenditures for a 35-year period.

Even while addressing the identified structural deficiencies of the Buck O'Neil Bridge, the planned larger rehabilitation efforts would not address the recurring congestion faced

by motorists, high crash rates at specified locations, or the poor operations at the interchange of U.S. 169 with Interstates 35 and 70. A combination of short weave areas, poor lane balance, and signalized movements creates daily bottlenecks and hampers efficient movement. Congestion on the existing bridge and approaching interchanges occurs daily, and service levels for U.S. 169, Interstate 35 and Interstate 70 are graded as an E or F during peak travel periods.



Economic Competitiveness

Thanks to an innovative bridge replacement design, traffic will not be impacted during construction of the new bridge, which is significant given the economic importance of this corridor locally, regionally, and nationally. A well-planned new Buck O'Neil Bridge will result not only in improved rail and truck freight movement, but also better and more efficient access for commuters and visitors to, from, and through Kansas City's Central Business District.

Freight and Commuter Traffic Impact

Currently, the U.S. 169 interchange with Interstate 70 at the south end of the Buck O'Neil Bridge accommodates two differing purposes: getting U.S. 169 traffic to the interstate system via either Interstate 35 or Interstate 70 and providing travelers with access to and from downtown. Traffic is evenly split between those two purposes, but the overall volumes are large



and are competing for the same space. The competition results in daily congestion in several different directions, impacting daily commutes, freight traffic, and access to the Central Business District. Based on regional travel demand modeling, there is significant "pent-up demand" for use of the interchange. If additional capacity



and improved design function are added to the interchange, traffic will divert from other major roadways. If the current delays at the interchange are reduced, significant volumes of traffic will divert from Interstates 635, 35, 29, Route 9, and the east side of Interstate 435.

In addition to roadway traffic, the existing bridge and roadway configuration negatively impact the region's rail freight. BNSF Railway operates a major rail yard north of the Missouri River and east of U.S. 169. Access to the rail yard from the south requires crossing the Missouri River at the second Hannibal Bridge immediately east and downstream of the Buck O'Neil Bridge. Coming off the second Hannibal Bridge, the railroad tracks make a sharp turn commonly referred to as the "Gooseneck", which results in greatly reduced speeds underneath the south end of the Buck O'Neil

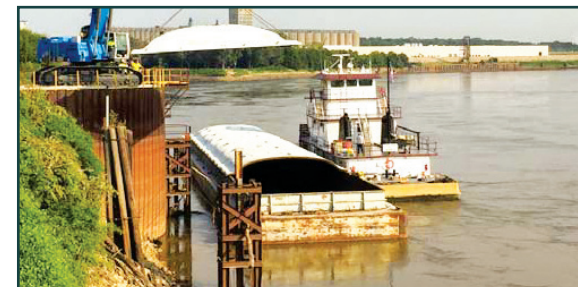
Bridge, adding to delays and operating expenses for rail operations. Additionally, because of the narrow clearance created by the design of the bridge on the south end, long freight cannot travel along the rail tracks underneath the bridge. This forces long freight to find another, slower path through the region and impedes rail freight traffic.

Creative, strategic redesign of the bridge will alleviate the congestion impeding commuter and freight traffic at both ends of the bridge, as well as rail traffic traveling underneath the bridge.

The project will ultimately allow better commuter access in, from, and through Kansas City's Central Business District, and will allow Kansas City to build upon its significance as a freight mover, removing national and regional bottlenecks and adding greater opportunity for the region.



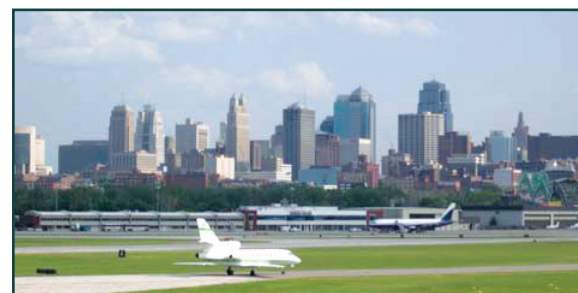
• **Rail** – The BNSF rail crossing of the Missouri River, nearly adjacent to the existing Buck O'Neil Bridge, provides level of service F (severely congested) and restricts train speeds to 5 MPH for the four class 1 rail lines that utilize the bridge daily. The project will consider the future needs of the BNSF to realign the rail crossing of the Missouri River, increasing allowable travel speeds and promoting added opportunity for more trains to pass daily.



• **Water** – Port KC is revitalizing shipping on the Missouri River. However, current access limitations for rail and truck traffic are restricting factors for growth potential. The new Buck O'Neil Bridge will consider future rail and truck access needs to Port KC, providing opportunity for growth.



• **Roadway** – The existing bridge and location of U.S. 169 would serve as an ideal connection for north-bound Interstate 35 truck traffic to access north-bound Interstate 29 and avoid the congested system-to-system interchange at the northeast corner of the downtown Kansas City loop that serves both Interstates 35 and 70. The existing roadway geometry, interchange operations, and poor condition of the existing bridge severely limit commercial vehicles making this movement. The proposed addition of directly connecting the new Buck O'Neil Bridge with both west-bound Interstate 70 and Interstate 35 will enhance commercial vehicle connectivity to Interstate 29 via U.S. 169.



• **Air** –The Charles Wheeler B. Downtown Airport is a 24-hour, 7-days-a-week full service general aviation facility. Improved access will provide for airport freight and business accommodation.



Leveraging Downtown Revitalization Efforts

Innovative and creative replacement of the bridge will allow the economic development momentum ongoing in downtown Kansas City to continue by maintaining access while a new bridge is built. Maintaining that access is critical for regional and local connectivity, allowing the economic progress made through investments both north and south of the bridge to continue forward uninterrupted. Modeling from MARC anticipates that the daily impact to the region due to closure of U.S. 169 at the Buck O'Neil Bridge would include an added 46,413 miles of travel and 1,450 hours of travel. Additionally, a new, added direct connection between U.S. 169 and Interstate 35 will allow for more efficient access to downtown Kansas City and the Central Business District.

The economic development climate in downtown Kansas City, immediately to the south and east of the Buck O'Neil Bridge, has changed considerably since the 2007-2009 recession. Prior to the recession, Kansas City invested in the creation of the Sprint Center and the adjacent Power + Light Entertainment District downtown. These investments corresponded with the City of Kansas City's expansion of the Bartle Hall convention facility's new ballroom, and each project contributed to expanding tourism and increasing awareness of events being held in the area.

As the housing market began to rebound, interest in building new or converting older buildings into residential uses throughout the urban core also expanded. Additionally, Kansas City recently completed the KC Streetcar



line, connecting the River Market District south to Union Station — offering free rides to residents and visitors alike. KC Streetcar has spurred approximately \$2 billion in new economic development activity throughout the downtown area and has drawn outside investors into the Kansas City development market.

Kansas City's Northland has also experienced significant growth over the last several decades, including numerous large-scale residential developments. The growth has resulted in an increase in daily traffic entering the Kansas City Central Business District. Access to the Northland from the Central Business District occurs either across the Buck O'Neil Bridge and U.S. 169, across the Heart of America Bridge through North Kansas City, or across the Bond Bridge and Interstates 29 and 35. The majority of the Northland traffic, about half, uses the Bond Bridge while the Buck O'Neil Bridge and Heart of America Bridge comprise about 25 percent each.

Maintaining, and ultimately improving, connectivity between these two areas of economic growth on either side of the Missouri River is vitally important to the region's economic competitiveness. Moving forward with a replacement of the Buck O'Neil Bridge will ensure that Kansas City can continue to leverage the significant public and private investments made on both sides of the river, without the interruption of bridge closure. Additionally, the creative and innovative design associated with bridge replacement will ultimately improve interchanges on both sides of the bridge, facilitating both visitor and commuter movement between the two areas.

Environmental Protection

www.beyondtheloopkc.com

In June 2018, MoDOT, Kansas City, MARC and the Federal Highway Administration (FHWA) completed a planning, environment, and linkage study (PEL) to assess a range of feasible projects to transform the north side of the downtown Kansas City loop, including U.S. 169 and the Buck O'Neil Bridge. The study, called Beyond the Loop, identified several ways in which construction of a new bridge would improve storm water collection, control, and management. Currently, Kansas City is under a 2010 Consent Decree

from the U.S. Environmental Protection Agency to address its combined sewer overflow system. The Consent Decree did not anticipate any sizeable opportunities for addressing the existing storm water and sewershed conditions in the downtown area, but construction of a new bridge and associated potential improvements identified in Beyond the Loop create new opportunities to address the conditions in a manner that benefits both the natural and build environment.



Quality of Life

A thoughtful, creative plan to replace the Buck O'Neil Bridge will integrate multiple opportunities to improve economic development and quality of life through neighborhood connectivity and accessibility, as well as through expanded transportation options. The current bridge and associated interchange designs directly impact two specific neighborhoods at each end of the bridge, the Harlem area to the north and the River



Market neighborhood to the south, suggesting that successful replacement can truly create a stronger local connection and improve quality of life for Kansas Citians.

The Harlem area is located on the north side of the Missouri River between the Buck O'Neil Bridge and the ASB Bridge. In the 1800s and into early 1900s, it was a town of 50 acres with nearly 600 residents, and in 1950 the area was annexed by Kansas City. Currently there are only three homes left in the area and one apartment complex. When the ASB Bridge opened in 1911 people began bypassing Harlem and, with the opening of the Buck O'Neil Bridge, the two river bridges combined to create barriers to access the neighborhood. When coupled with neighborhood flooding, these factors contributed to residents moving out of the area. Over the years several plans for development and redevelopment have been proposed, but none have come to fruition.



The River Market is a riverfront neighborhood that comprises one of the first and oldest incorporated districts in Kansas City. The River Market has also been known as Westport Landing, the City Market, and River Quay. The River Market is situated between

Interstate 70 and the Missouri River, and is bordered by the Buck O'Neil and Heart of America Bridges. The neighborhood has seen a resurgence with former warehouses increasingly being developed into residential developments, restaurants, and markets. The River Market has similar barriers to other neighborhoods in the area, with interstate and highway barriers to the Central Business District and Columbus Park. The addition of the streetcar line has helped to re-connect this neighborhood to the Central Business District. Currently, however, a significant amount of truck freight traffic still travels underneath the Buck O'Neil Bridge to and from the West Bottoms – an industrial area immediately west of Kansas City's downtown – through the increasingly populated and vibrant River Market Neighborhood. This traffic negatively impacts the pedestrian-friendliness and walkability of the neighborhood.

Redesign and replacement of the bridge will help both neighborhoods more fully achieve their potential. For Harlem, increased access will open opportunities for investment and economic development. A more efficient interchange on the north end of the bridge will allow for better vehicle access to the neighborhood, as well as new bicycle and pedestrian access. This access can be transformative for the Harlem area, reconnecting it with the Central Business District through multiple transit options and opening economic opportunities that the area has not seen in decades. In the River Market, the potential for redesigned interchanges associated with replacement of the Buck O'Neil Bridge can provide for more direct truck freight access between the West Bottoms and Interstate 70, potentially alleviating traffic through the neighborhood. This solution would provide a safer environment for pedestrians, adding to the walkability and livability of the neighborhood.

Innovation

Both MoDOT and Kansas City have long histories as being leaders in innovation. The use of innovation is already evident in this project through the partnership formed by the MoDOT, Kansas City, MARC, and FHWA in producing the Beyond the Loop PEL. The Beyond the Loop PEL, a first of its kind study in Missouri, has allowed MoDOT and Kansas City to conduct valuable dialogue about long-range transportation system needs, document critical issues, and engage other interested stakeholders and members of the public.

The spirit of both innovation and partnership between MoDOT and Kansas City will continue after the project is selected for funding. MoDOT has already embarked upon the preparation of an Environmental Assessment (EA) for the project and will use MoDOT's recently-approved EA for Interstate 270 improvements as a model. MoDOT's adoption of performance measures, instead of designating a specific preferred solution as part of the Interstate 270 EA, promotes flexibility for future build scenarios. The identified performance measures from the EA can be seamlessly transitioned into Request for Qualification and Proposal documents used to select a design/build team.

Innovative Technologies

In addition to being an innovative partnership amongst agencies, the Beyond the Loop PEL study was also innovative in its approach to assessing the potential future impact of technological advancements.

Autonomous and Connected Vehicles (AV/CV) have the potential to significantly improve driver mobility, improve safety, and enhance the operational performance of roadway systems. Recognizing this potential, Beyond the Loop modeled what impact AV/CV would have on travel times when considering design options for the new bridge. In fact, the final recommendations for a new bridge design contemplate the efficiencies that AV/CV will bring. Those



recommendations anticipate increased safety benefits and congestion mitigation without the need for added capacity. Additionally, while many AV/CV benefits may be possible with no additional infrastructure, some benefits may only be possible when onboard equipment is combined with roadside equipment (RSE).

Ultimately, the impacts and needs of AV and CV will continue to be included in the planning and design of the future Buck O'Neil Bridge. Considerations for the infrastructure needs of passenger vehicles, commercial and freight vehicles, and transit vehicles will be considered and included.

Innovative Project Delivery

MoDOT and Kansas City are continuing to explore the benefits of pursuing innovative contracting options available as part of FHWA's SEP-14 designation. The use of Progressive Design/Build, as an optional procurement approach, would shorten the timeline for selection of a design/build team and allow critical preliminary design efforts (specifically Identification of needed property rights) to occur rapidly. Additionally, MoDOT and Kansas City will pursue opportunities under SEP-15 to streamline environmental documentation and permitting as part of the design/build selection process. MoDOT and Kansas City will also analyze phasing the environmental document process to accelerate the acquisition of needed property and maintain projects commitments.

Partnership

PROJECT PARTNERS	PROJECT SUPPORTERS
MoDOT	Clay County, Missouri
City of Kansas City, Missouri	Jackson County, Missouri
Mid-America Regional Council	Platte County, Missouri
	City of Gladstone, Missouri
	City of Liberty, Missouri
	City of North Kansas City, Missouri
	City of Parkville, Missouri
	City of Riverside, Missouri
	Area Businesses and Business Associations

As evidenced by their work on Beyond the Loop, MoDOT, Kansas City, and MARC have already established a strong collaborative partnership around the Buck O’Neil Bridge project. All three organizations were included in leadership functions as part of Beyond the Loop’s Technical Advisory Group and Study Management Team. Additionally, Beyond the Loop’s public outreach from the joint leadership team included:

- **578 participants at five public meetings**
- **700+ participants at 53 small group meetings**
- **1,957 participants for two online surveys**

The regional importance of the project, combined with this collaborative and engaged approach, not only resulted in financial commitments from MoDOT and Kansas City, but also regional financial support. Guided by MARC’s leadership, the municipalities in Clay, Jackson, and Platte counties have agreed to redirect two years of STP funding toward financial support of the project.

In addition to financial commitments for a new Buck O’Neil Bridge, Beyond the Loop also resulted in partnership strategies for highway, local road, and interchange modifications along the I-70 North Loop within the project area. Accomplishment of any of these strategies is not possible without design and construction of a new bridge.

Currently the North Loop contains five interchanges – including two system-to-system interchanges – in the 1.2-mile segment between the two Interstate 35 splits (east and west). The distance between interchanges is well below the minimum distance required today for urban interstates, and the configuration of the interchanges has created poor sight distances, limited merge distances, and numerous conflict points.

The strategies contemplated by Beyond the Loop to address the North Loop issues generally focus on repurposing the highway infrastructure. Ultimately, the Beyond the Loop recommendations for the North Loop



include access consolidation strategies, compressed footprint strategies, and removal and reclassification strategies (as well as a no-build strategy).

All options (with the exception of no-build) would free up existing right-of-way for potential private development. In addition, these strategies would also free up infrastructure to assist with the City of Kansas City’s Overflow Control Program, developed to address the

City’s combined sewer/storm water system in response to a 2010 Consent Decree from the U.S. Environmental Protection Agency.

Again, pursuit of any one of these strategies requires the design and construction of a new bridge. It also requires continued collaboration and partnership not only between MoDOT, Kansas City, and MARC, but also with the FHWA, the state of Kansas, and other local governments on both sides of the state line.

Non-Federal Revenue for Transportation Infrastructure Investment

Further indicating the strong regional collaboration and partnership surrounding this project, on April 3, 2018, Kansas City voters overwhelmingly supported the replacement of the Buck O’Neil Bridge. By a margin of 81 to 19 percent, Kansas Citians voted to reauthorize a one percent sales tax dedicated to capital improvement funding. Unique to the reauthorization, however, was ballot language that specifically included the replacement of the Buck O’Neil Bridge as an identified project. Kansas City has now dedicated approximately \$60 million from that reauthorized sales tax toward the costs for replacement of the Buck O’Neil Bridge. This represents a new funding stream for bridge replacement that was unavailable until April of 2018, and further demonstrates that Kansas Citians recognize the importance of the project.

Demonstrated Project Readiness



The Beyond the Loop PEL, concluded in June 2018, has identified the replacement of the Buck O'Neil Bridge, including new connections and interchange modifications, as a segment of independent utility, allowing it to complete a separate NEPA evaluation. Consultation with FHWA occurred throughout the PEL development, and the determination was made that an EA will serve as the required NEPA document.

Many of the early building blocks required to initiate an EA were addressed through the PEL process. PEL activities, including public outreach, project coordination, and resource agency consultation, have promoted rapid transition for an EA. Within the PEL process, a NEPA transition plan was included as part of the study recommendation and is anticipated to begin in 2018. Additionally, a solid foundation has been established to generate the project purpose and need identification for the EA, and many long lead time analysis components covering condition of the existing bridge, along with traffic generation, have been conducted.

Project Schedule

ANTICIPATED DESIGN/ BUILD CONTRACTING METHODS	PERIOD
Project Specific Environmental Assessment (FONSI) including Conceptual Access Modification Report	August 2018 through October 2019 (15 months)
Preparation of Project D/B Bidding Documents	August 2018 through October 2019 (15 months)
Right of Way Acquisition and Utility Planning	August 2018 through October 2019 (15 months)
Permitting	August 2018 through October 2019 (15 months)
Request For Qualifications from D/B Teams	August 2018 through October 2019 (15 months)
Request For Proposal from shortlisted D/B Teams	October 2019 to February 2020 (5 months)
Proposal Review and Recommendation of Best Value Proposer	March 2020
Contract Execution with Best Value Proposer	April 2020
Obligation of BUILD Funds	April 2020
Construction	April 2020 to July 2023

Risk

RISK MITIGATION

PROJECT RISK	MITIGATION STRATEGY
FHWA approval of the EA could delay preparation of bid documents.	Mitigation efforts include advancing PEL study efforts continuing with long lead time efforts needed such as traffic modeling and communication with partnering agencies to avoid costly delay in early study requirements.
Acquisition of needed property could delay the ability to select a design/build team.	Mitigation efforts include advancing the development of right of way plans as a priority initiative in conjunction with environmental documentation, which will maximize time available for property acquisition.
EA processes could reveal commitments or permitting requirements requiring long processing time, delaying the project bidding timeline.	The ongoing PEL process for the North Loop, which encompasses the project area, has completed an exhaustive review of potential cultural and environmental resources that could be impacted, minimizing the risk of added commitments or permitting issues being found during the EA process.

Appendices

A. The New Buck O'Neil (U.S. 169) Crossing Benefit-Cost Analysis

B. Supporting Letters

C. Supplemental information

The supporting documentations listed above can be obtained here:

<http://www.marc2.org/Assets/Transportation/BUILD/2018BUILDDocs.htm>