

CASE STUDY

Trail Design Supports Historic Preservation and Sustainable Reuse

In 2016, Jackson County, Missouri, purchased 17.7 miles of the abandoned Rock Island Rail Corridor. The county wanted to develop a shared-use path system that would connect to regional trail systems and preserve right-of-way for future transit use. Our team provided environmental and engineering services to help reduce the project's carbon footprint, lower costs and develop a popular amenity.



Challenge

In 2016, Jackson County, Missouri, purchased the 17.7-mile Rock Island Rail Corridor in Greater Kansas City. Jackson County's long-term goal was to establish a 13.5-mile trail on a portion of the Rock Island Rail Corridor. This project was set up in two phases. Jackson County turned to Burns & McDonnell to provide design and engineering services for the first phase, which included construction of 8 miles of trail beginning at Brickyard Road in Kansas City, Missouri, and ending at Jefferson Street in Lee's Summit, Missouri. Jackson County initiated the second phase of this project in 2019. The second phase includes a 5.5-mile extension of the trail that begins at the Truman Sports Complex and will complete the 13.5-mile trail.

Project Stats

Client

Jackson County, Missouri

Location

Jackson County, Missouri

Completion

June 2019 (Phase One)

8

MILES OF TRAIL COMPLETED

7

BRIDGES INTEGRATED INTO DESIGN



Solution

Our team worked on two major components of this project — the environmental clearance and the engineering design. After we established the best path for the trail, our team advanced the environmental work for a categorical exclusion, indicating that the project would not have a significant effect on the human environment and would not require an Environmental Assessment or an Environmental Impact Statement.

As the team examined the best environmental and design standards for the trail, key considerations included the possible reuse of seven aging rail bridges along the corridor and the 441-foot-long Vale Tunnel built in 1904, as well as utility coordination and the safety of 12 at-grade crossings. Our team worked closely with the U.S. Fish and Wildlife Service and the State Historic Preservation Office in the Missouri Department of Natural Resources to mitigate impacts and attain the appropriate permits in a timely fashion.

The first phase of the trail was designed using the existing railroad grade. The majority of the first phase was constructed using aggregate surfacing, with concrete pavement placed at areas more susceptible to overland drainage flow. We collaborated with Jackson County to evaluate the costs and benefits of various options for the bridges, including rehabilitating existing bridges, replacing existing bridges with new pedestrian bridges, or sliding existing bridges

over to serve as pedestrian bridges and constructing new bridges later for rail loads. These options were developed to accommodate the needs and character of each neighborhood along the corridor. Public engagement services were essential and helped the team better understand community expectations, make the trail a popular amenity and preserve the vision for regional transit.

Results

Phases one and two of this project are complete and open to traffic. The team used locally sourced materials for construction and matched existing grades to reduce earthwork, which reduced the carbon footprint for the project. We also reused bridges and rehabilitated the Vale Tunnel, which reduced the environmental impact of building new infrastructure and lowered the cost for taxpayers.

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