

L.R. Kimball Converts Rail Bridge to Pedestrian Trail, Providing Missing Link in Great Allegheny Passage

THE SITUATION

For many years, communities have been building an interconnected system of pedestrian and cycling trails stretching from Pittsburgh to Washington, D.C. A critical segment of this 320-mile route through highlands and river valleys is the Great Allegheny Passage, extending 150 miles from Duquesne, Pa., to Cumberland, Md. As the city of Pittsburgh neared the celebration of its 250th anniversary in 2008, leaders in Allegheny County set a goal of helping celebrate the event by completing the passage, building a connection between McKeesport, on the south side of the Monongahela River, and Duquesne on the opposite shore.

The Riverton Bridge became the focal point for reaching this objective. Owned by U.S. Steel Corporation, the 118-year-old bridge was carrying heavy Union Railroad train traffic on a regular schedule across the river. Officials had looked at other options in evaluating where to make the connection; but, for example, a proposal to use the sidewalks adjacent to the McKeesport-Duquesne Bridge was determined to be undesirable because the sidewalks were too narrow.

The Riverton Bridge clearly was the most appropriate structure for the trail link; and U.S. Steel generously donated it to Allegheny County for conversion by the Regional Trail Corporation,

a partnership that works to acquire, develop, and manage trail corridors in southwestern Pennsylvania. The Regional Trail Corporation contracted L.R. Kimball to furnish the crucial engineering, geotechnical and permitting services required to execute the project. The effort attracted an alliance of other supporters, including:

- Pennsylvania Department of Environmental Protection, which provided funding
- Allegheny Conference on Community Development, which furnished both funding and oversight
- Trumbull Corporation, providing construction services
- American Bridge, which assisted in construction
- Senate Engineering, providing survey and right-of-way activities

Project Overview

CLIENT

Regional Trails Corporation

GOAL

To provide a much needed missing link on the Great Allegheny Passage Pittsburgh to Washington D.C. Trail

PROJECT INFO

- 1200' Bridge Conversion
- \$2 Million Plus construction cost
- Completed August 2008 for Pittsburgh 250 Celebration

L.R. KIMBALL SERVICES

- Structural engineering
- Geotechnical engineering
- Permitting

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THE CHALLENGES

Converting a busy railroad bridge to a walking and biking trail took imagination and creativity by L.R. Kimball.

- A total of 1,200 feet of truss and girder bridge needed to be transformed into a pedestrian trail.
- A 400-foot, ADA-compliant ramp would need to be constructed on the McKeesport side giving hikers and bikers access to the elevated trail.
- Decisions regarding materials and construction methods that would furnish a natural setting for the trail were impacted by the need to keep costs under \$2 million, the amount of funding raised.
- Because construction would had carried out over a major river, L.R. Kimball also had to acquire waterway obstruction/encroachment permits from the Pennsylvania Department of Environmental Protection and the U.S. Coast Guard.
- Existing navigation lighting on the bridge needed to be maintained.
- Construction had to be complete by the City of Pittsburgh's anniversary celebration in early October, 2008. The event would be highlighted by the PNC Legacy Trail Ride, a community bike ride that would be routed over a reconfigured Riverton Bridge.

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THE SOLUTION

L.R. Kimball designed the trail as a 12-foot-wide path running the length of the bridge. The team determined that it would maximize use of the existing structure, but at the same time use timber, instead of steel, wherever possible for the new path.

Implementation of the L.R. Kimball engineering designed involved removing the metal rails from the track on the bridge but leaving the wooden ties in place. Steel beams were laid along the sides of the path with additional beams set in place between them, among the ties. Then a wooden floor system was constructed and topped with Trex decking planks.

Steel framing tied the ramp to a pier of the bridge; and the long, gently sloping ramp led seamlessly to the wooden trail bed.

On the day of the trail ride, bikers eased their way along the ramp, protected by fencing on both sides, and across the bridge.



THE RESULTS

L.R. Kimball successfully completed the Riverton Bridge project on time and within budget. In many parts of the nation, communities have converted abandoned rail lines to bike and walking paths. The Riverton Bridge, however, was a rare project that required the unusual step of taking a major, active railroad bridge out of service and transforming it into a public pedestrian way.

The Great Allegheny Passage segment over the Riverton Bridge was officially opened for public use on October 4, 2008, as part of the Pittsburgh 250 celebration. Now used by walkers and bikers daily, the Riverton Bridge stands as one of the Pittsburgh region's most visible and vital recreational assets.

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