PROJECT PROFILE

Pencoyd Bridge

In-Depth Inspection | Philadelphia, PA

CLIENT

Righters Ferry Associates, LP

BACKGROUND

Constructed in 1900, the privately owned Pencoyd Bridge was built to carry an industrial spur of the Pennsylvania Railroad. In 2016, the bridge was rehabilitated to a one-lane, reversible private roadway providing vehicular access between the Royal Athena apartment complex in Lower Merion Township and Main Street in Manayunk, a neighborhood of Philadelphia. The bridge, carrying a segment of the Cynwyd Heritage Trail, crosses the Schuylkill River on an east-west alignment and consists of three spans that vary between 124 feet and 183 feet in length. It features riveted built-up steel through girders and pin-connected steel Parker through trusses.

As part of a due diligence survey associated with its purchase, WJE was engaged to perform an in-depth inspection of the Pencoyd Bridge. The purpose of the inspection was to quantify the observed deterioration at the bridge and its supporting substructures and to determine a cost estimate and timeline for their repair. A schedule was developed for future inspections, repairs, and maintenance that would be necessary over the coming decade.

SOLUTION

WJE battled inclement weather and difficult inspection access to make visual condition observations of the bridge structure and its appurtenances.

With access provided by a barge lift on the river and a bucket truck on the roadway, the WJE team conducted an arms-length survey and observations of fracture-critical members of the bridge structure both above and below the roadway surface and nondestructive evaluation using ultrasonic techniques on sixty-four fracture critical transfer pins. The team also oversaw an underwater survey of the bridge piers and their foundations to assess their condition below the water line and to evaluate evidence of scour.

Based on the results of the inspection, WJE was able to support the purchasing process by providing a cost estimate and timeline for repair and other future inspections.

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