

Purpose

The overall purpose of this project is to address structural, geometric, and operational deficiencies of the Sixth Avenue Bridge (Structure 1600-012) over the Passaic River and to provide safe, efficient, and reliable passage for all modes of transportation.

Identified Needs

Bridge and Roadway Deficiencies

The Sixth Avenue Bridge is fracture and scour critical, and functionally obsolete due to inadequate deck geometry. Originally built in 1900 and partially replaced with a temporary steel truss superstructure in 1987, the bridge requires extensive rehabilitation or replacement to remain functional. The overall condition of the bridge is fair, the temporary superstructure is fair, the deck is good, and the substructure is fair based on the latest bridge inspection report. The bridge roadway does not comply with current design standards. Numerous elements such as shoulder width and stopping sight distance are substandard and result in inefficient traffic operation and insufficient turning radii at the western intersection.

The structure is classified as fracture critical due to the non-redundant continuous steel ACROW panel trusses at the north and south sides of the bridge. Based on the 2005 Stage II Scour Evaluation Report, the bridge is also scour critical. The underwater inspection identified underwater bridge components as being in fair condition due to wide cracks, missing mortar, areas of broken stones in all the masonry piers, exposed footings with heavy scaling and missing aggregate of all piers.

The temporary superstructure is in fair condition due to the light rust throughout the upper and lower chords of the truss. The substructure is in fair condition due to the areas of deteriorated pointing throughout the substructure with areas of missing masonry stones noted at the west abutment, Pier 1 (western most pier), and the southwest wingwall. The footings are exposed at all three piers, which can compromise the stability of the substructure.

Several Controlling Substandard Design Elements (CSDE) exist within the study limits. The roadway has substandard geometry, including Stopping Sight Distance (vertical curves), Stopping Sight Distance (horizontal curves), Minimum and Maximum Grades, Cross Slope, Shoulder Width, and Stopping Sight Distance at Non-Signalized Intersections.

System Linkage

The Sixth Avenue Bridge provides an important multimodal link within the regional transportation network. The bridge is utilized by cars, pedestrians, and bicyclists; its connectivity is vital to the local economy and region.

The Sixth Avenue Bridge is a critical piece of Passaic County's infrastructure. Sixth Avenue (CR 652) is an important east-west arterial roadway and truck route, due to its proximity to heavy industry and I-80. The bridge spans the Passaic River, which separates the City of Paterson to the east, and Borough of Prospect Park and Borough of Hawthorne to the west.

The Sixth Avenue Bridge is utilized by many of the industrial businesses in the area. Due to its local and regional importance as a truck route, bridge closures become highly burdensome to the community from the lack of convenient detour routes. Although there are multiple crossings over the Passaic River, the shortest available detour is 1.4 miles to the south through congested residential and commercial areas over the Straight Street Bridge.

In addition to vehicles, the Sixth Avenue Bridge is utilized by bicyclists and pedestrians. One sidewalk is provided along the north side of the bridge, and there are no bicycle facilities. The existing shoulders are not wide enough to accommodate bicycles.

Goals & Objectives

- Avoid delays or disruptions caused by aging infrastructure.
- Avoid or minimize impacts to social, economic and environmental resources.
- Provide bicycle compatibility and connectivity within the project limits.
- Provide ADA compliant pedestrian facilities and crossings within the project limits.
- Accommodate public access where feasible.
- Improve corner radii to facilitate truck turning movements at the western intersection.
- Avoid or minimize complete or long-term roadway closures during construction.
- Implement context sensitive design solutions.