

Purpose

The overall purpose of this project is to address structural, geometric, carrying capacity, and operational deficiencies of the Oceanic Bridge (S-31) over the Navesink River and to provide safe, efficient, and reliable passage for all modes of transportation.

Identified Needs

Bridge and Roadway Deficiencies

The Oceanic Bridge is structurally deficient, functionally obsolete, and is at the end of its service life. Built in 1939, the bridge requires extensive ongoing repairs in order to remain functional. The overall condition of the bridge is “critical”, the superstructure is “serious”, the deck is “fair”, and the substructure is “poor”. The bridge roadway does not comply with current design standards. Numerous elements such as lane widths and shoulder width are substandard and result in inefficient traffic operation.

The overall condition of the Oceanic Bridge is deemed “critical”, due to a sufficiency rating of 23, on a scale of 0 to 100. The bridge’s weight limit has been downposted to 15 tons in response to its structural condition. Prior to the maintenance work, the bridge’s weight limit had been downposted to as low as 3 tons.

The superstructure is in “serious” condition due to heavy rust throughout steel members with section losses in the girder and floor beam flanges and webs. Several concrete approach spans exhibit large spalls with exposed rusted rebar and cracking in the T-Beams.

The concrete deck is in “fair” condition, exhibiting medium to wide longitudinal cracks, and spalling throughout. There are also large areas of old and new concrete patching throughout the deck, and the entire deck surface has chloride contamination exceeding 80%. The underside of deck, top flanges of the concrete T-beams and sidewalk overhangs exhibit small to large spalls with exposed rusted reinforcement.

The substructure is in “poor” condition and does not meet current design standards due to wide cracking and deep spalls with exposed and severely rusted reinforcing steel in the concrete columns, towers, and pier caps; severe spalling, missing or severely deteriorated steel pile jackets; heavy spalling of concrete encasements exposing steel H-piles; severe decay in timber piles and deteriorated fender systems at the bascule piers.

Several Controlling Substandard Design Elements (CSDE) exist within the study limits, including Lane Width, Shoulder Width, and Structural Capacity. The roadway has substandard geometry, including Minimum Radius of Curves, Cross Slope, Superelevation, and Stopping Sight Distance (horizontal curves).

System Linkage

The Oceanic Bridge provides an important multimodal link within the regional transportation network. Heavily utilized by cars, maritime vessels, pedestrians, and bicyclists, its connectivity is vital to the local economies.

The Oceanic Bridge is a major north-south arterial roadway for regional and local travel and serves as a vital Navesink River crossing for residents, commuters, tourists, school buses, emergency services vehicles, and commercial vehicles. The bridge is used by emergency services to access to Riverview Medical Hospital and by local communities as a coastal evacuation route. The Oceanic Bridge also provides access to Shore points

in Sea Bright, Monmouth Beach, Long Branch, and Sandy Hook National Park, particularly in the peak tourist season.

The connection provided by the Oceanic Bridge is economically important, linking customers with local businesses. Local residents and business owners rely on the Oceanic Bridge for their daily needs. Due to its local and regional importance, bridge closures become highly burdensome to the community from the lack of convenient detour routes. The Oceanic Bridge is the only crossing over the Navesink River in the immediate area, and requires a detour in excess of 8 miles when closed.

The bridge spans a navigable channel within USCG jurisdiction, which cannot be impeded.

Bicyclists and pedestrians frequently utilize the bridge for travel and recreation. One sidewalk is provided along the east side of the bridge, and there are no bicycle facilities. Shoulders are not wide enough to accommodate bicycles, and riders are instructed by signage to dismount while crossing the bridge.

Goals and Objectives

- Avoid delays or disruptions caused by aging infrastructure.
- Avoid or minimize impacts to social, economic and environmental resources.
- Accommodate recreation on the bridge where safe and appropriate.
- Accommodate ADA compliant bicycle and pedestrian access.
- Accommodate public access and parking where feasible.
- Avoid or minimize complete or long-term bridge openings or roadway closures.
- Minimize traffic impacts related to bridge openings.
- Implement context sensitive design solutions.
- Accommodate reasonable needs of navigation.
- Address slope stability at the northern limits of the project.