

Emergency Repairs to GSP Bridge #75.3, Lacey Road

Township of Lacey | Ocean County, NJ



Van Cleef was requested by the New Jersey Turnpike Authority (NJTA) to perform a hands-on inspection of the steel superstructure at Structure No. 75.3 (Lacey Road over Parkway N/S in Lacey Township) due to numerous over height vehicular impacts to the girders in both spans over the past several years. During our inspections in early November 2018, several locations of impact damage not previously noted were discovered, as well as more significant damage (cracks) in the north fascia girder bottom flange cover plate in Span 2.

During the process of recommending interim and priority repairs, the bridge was again struck by an over height truck carrying a backhoe along Parkway N (GSP NB) on December 19, 2018, and the Van Cleef inspection crews responded immediately and remained onsite into the early morning hours. Another hands-on inspection found the new impact caused additional and irreparable damage (i.e. additional cracks in the web, and prior cracks in cover plates which had propagated) to the north fascia girder. This resulted in on-site emergency repairs directed by Van Cleef inspectors (drilled arrest holes and interior diaphragm replacement) and the emergency closure of the Lacey Road westbound lane on the bridge to all traffic.

Van Cleef was asked to provide emergency engineering services to assist the NJTA in the assessment of damage, installation of temporary repairs, specialized inspections, maintenance and protection of traffic (MPT), and the development of final design documents to replace the girder and restore the load carrying capacity of the bridge. Van Cleef coordinated directly with the NJTA Construction, Engineering and NJTA's on-call emergency Contractor, George Harms Construction, to implement a "design-build" construction scheme, including the immediate installation of a long-term traffic shift on Lacey Road.

In addition to the structural and MPT design and plan preparation, work also included performing weekly nighttime monitoring inspections of the damaged girder to ensure that cracks were not propagating further, developing temporary supplemental steel repairs using Contractor's stock yard steel, monitoring the girder during nighttime demolition and removal operations, providing construction support services, and extensive coordination with Ocean County and Lacey Township to assist in traffic relief options.

CLIENT CONTACT

New Jersey Turnpike Authority
Woodbridge, NJ

PROJECT HIGHLIGHTS

- ◀ Emergency Inspections
- ◀ Load Rating Calculations
- ◀ Structural Design
- ◀ Detailed Reports for Findings & Recommendations
- ◀ Inspecting Bridges with the Understanding of Necessary Repairs
- ◀ Monitoring During Construction
- ◀ Extensive MPT Design
- ◀ Extensive Coordination with Locals