

Client:

Massachusetts Bay
Transportation Authority's
(MBTA)

Location:

Andover, MA

Services Provided:

- Installation
- Monitoring
- Data analysis and input to structural health monitoring

Value Provided:

- Reduce train delays
- Improve on-time train performance
- Enabled MBTA to increased restricted train speeds on bridge
- Ongoing health monitoring allowed for structural life extension of the bridge

Background & Project Challenges

The century-old granite, stone arch, Ballardvale Bridge, which crosses the Shawsheen River near Andover, Massachusetts, serves the Massachusetts Bay Transportation Authority's (MBTA) Boston - Haverhill Line and also carries Amtrak's Northeast Corridor trains and freight rail. In mid-October 2008, the Massachusetts Bay Commuter Railroad Company, the regional rail arm of the MBTA, placed an emergency request to Geocomp concerning an observed crack in the masonry arch bridge.

The challenge was to respond rapidly to avoid bridge closure of a key rail corridor through instrumentation of an aging bridge.



Geocomp Role & Accomplishments

Geocomp responded within just one day and began conducting in-service load testing and monitoring using its *iSiteCentral*™ system. Displacement data was automatically collected from five locations on the bridge to show the influence of trains traveling over the bridge after it developed a large crack in one pier. Geocomp's monitoring provided real-time accurate data enabling decision makers to overturn an initial decision to restrict train speeds on the bridge. The increased speeds subsequently reduced delays and improved the MBTA's on-time performance.