



PROJECT DESCRIPTION

Metro-North Railroad has retained HNTB as a design consultant for the emergency replacement of the existing culvert supporting four tracks of the Harlem Line over Wickers Creek in Dobbs Ferry, NY. Hurricane Ida caused flash flooding of the railway in September 2021, which resulted in the partial collapse of the 100-year-old Wicker's Creek culvert at milepost 21.1 and knocked all four tracks out of service.

In support of this work, HNTB has retained the services of Metropolitan Land Surveying, P.C./Sixense, Inc. to furnish, monitor, and maintain vibration, displacement, and water level monitoring during the demolition of the existing culvert and construction of the proposed culvert.

PROVISION & INSTALLATION

- 1) One AMTS (Cyclops) was installed along with rail clip monitoring prisms to supervise track geometry during piling activities, and ground monitoring points were installed in the ballast to detect any ground condition changes.
- 2) A water level probe was used to monitor the water level in the culvert during construction.
- 3) A vibration sensor was installed to monitor the vibration level on the remaining culvert structure during the repair works.
- 4) Sixense utilized and installed a webcam so the site could be visualized at any time through Sixense's Instrumentation Data Management Platform (Geoscope), and the construction progress and culvert condition were easily observed remotely.
- 5) Meteorological data was imported from nearby stations to ensure safe working conditions for the construction crews and passenger trains.

KEY FACTORS

Time was a challenge, but Sixense managed to have everything running smoothly in a few days at Wicker Creek. Within this short timeframe, they made sure the remediation work was done safely, and the active running commuter trains could cross the area without incident.

 2021 - 2021

 Metro-North Railroad

1
AMTS (Cyclops)

50
Prisms

1
Vibration Monitor

1
Camera

1
Water Level





Emergency Replacement of the Existing Culvert Supporting Railway

White Plains - UNITED STATES

They were also able to satisfy all the client's urgent requests, such as the webcam system, with a quick turnaround. Sixsense Northern America provided a full turnkey monitoring package that allowed the client to keep project information in one secure place with a customized user experience.

