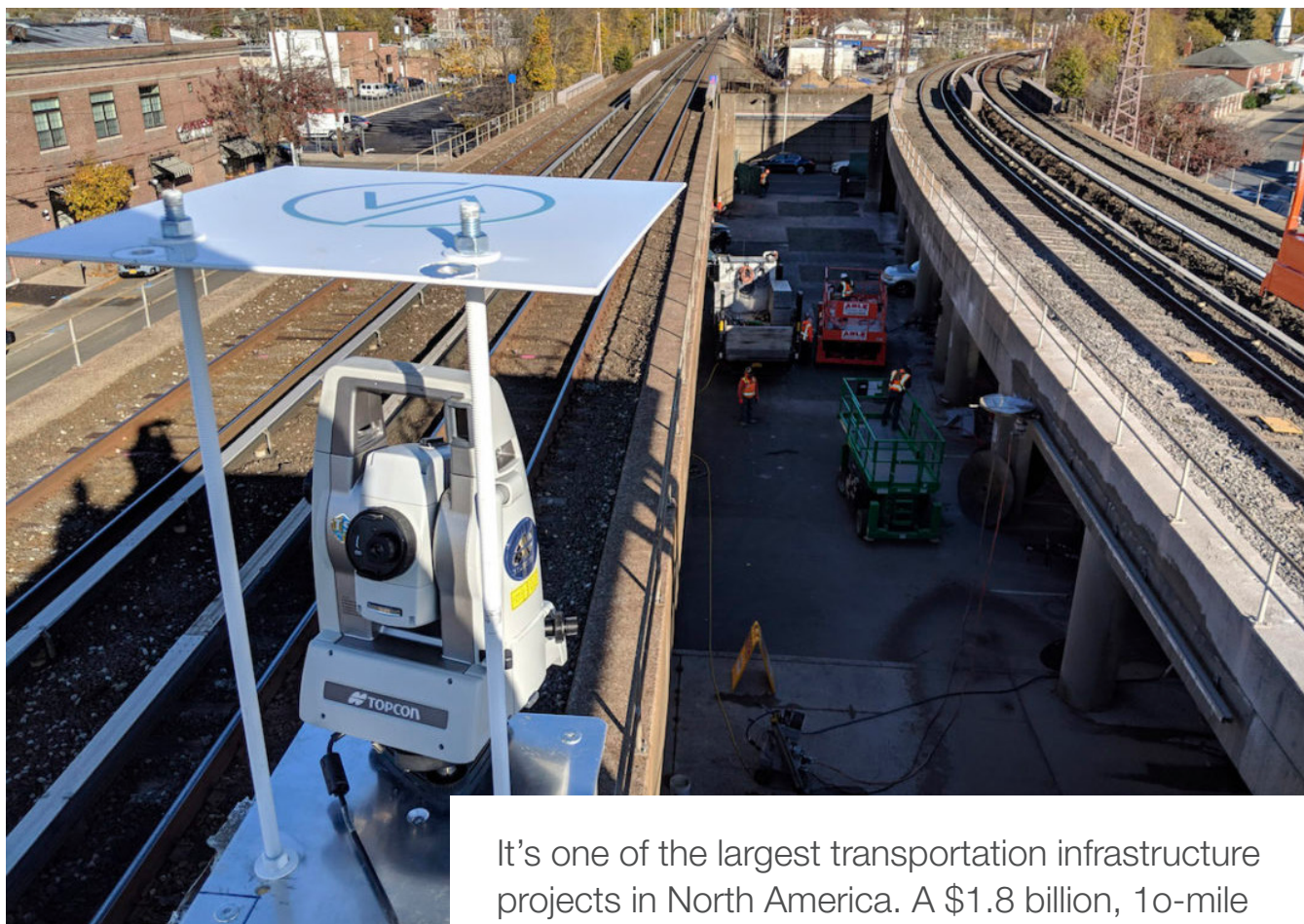




Laying the track to a stress-free expansion

Major infrastructure project stays perfectly on track with Topcon monitoring technology



It's one of the largest transportation infrastructure projects in North America. A \$1.8 billion, 10-mile expansion of the Long Island Rail Road, the nation's busiest commuter line.



Company

MTA (Metropolitan Transportation Authority)

Project Scope

10-Mile expansion of the Long Island Rail Road, the nation's busiest commuter line.

Solutions Used

MS05AXII, Delta Link controller, Delta Watch software

As one of the world's few commuter systems that runs 24/7 year-round and carrying over 208,000 passengers every day, the expansion project is incredibly complex, with close dangerous grade crossings, upgrade stations and a host of other difficult factors to deal with, all in the midst of a devastating pandemic.

Yet, in spite of incredible hurdles, LIRR ended 2020 with this historic project landing ahead of schedule and under budget.

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Playing a significant role in this remarkable achievement was pre-construction surveying and tracking. Critical for identifying existing conditions of adjacent properties before work begins, then monitoring those same properties for movement after startup, these facets can be as important to a design-build team as the project itself.

To fully understand if construction was having any adverse effect on nearby assets, New York-based Vibranalysis equipped each of the seven Main Line stations with a Topcon fully Automated Deformation Monitoring System (ADMS). The system is centered around a Topcon MS05AXII total station, which provides angular accuracies of 0.5-inch; reliable distance accuracy at 0.5-millimeter; customizable 2-D monitoring; and an autocollimation accuracy of 1-inch. Unlike conventional total stations that simply lock on to the nearest targets, the MS05AXII autocollimation system allows the instrument to lock on to targets that are closest to the center view of the instrument, providing long-range precision and accuracy even in low-light conditions.

The ADMS also includes a Topcon Delta Link controller, which provides support for autonomous operation of the total station in the field, and offers communications options that include Ethernet, Wi-Fi, and a globally approved integrated cellular modem (data SIM provided by third parties).

With twenty MS05AX2 monitoring stations plus Delta Link controllers deployed along the 10-mile alignment at various locations to help mitigate possible damage to nearby structures, each station provided real-time data to project stakeholders. Data from each system was fed to Topcon's Delta Watch geodetic software for processing before being pushed to Vibranalysis' Eagle.IO data management software.

This means that instead of utilizing multiple solutions for deformation monitoring, the multiplicity of powerful features and cost make Topcon's system efficient, affordable and all-inclusive.

All of which will put you on the fast track to increased profits, a destination you'll never tire of visiting.



To read more about the [LIRR project](#), see the Topcon website.

