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Case Study

Real-Time Air Monitoring Protects New Yorkers, Saves Time and Money During Expansion of Nation's Busiest Commuter Rail Line

A New York-based consulting services firm used integrated weather, noise, and particulate matter monitoring to protect communities and ensure regulatory compliance during the redevelopment of the nation's busiest commuter rail line.

Project
Long Island Rail Road (LIRR) Expansion Project

Services
25 x AQS 1

Location
Long Island, New York, USA

Measurements
PM_{10}, VOC, Noise, Weather

Date
2019

Sector
Roadside

Real-time air monitoring protects New Yorkers during multi-billion dollar rail expansion

A New York-based consulting services firm used integrated weather, noise, and particulate matter monitoring to protect communities and ensure regulatory compliance during the redevelopment of the nation's busiest commuter rail line. Real-time data collection meant the client would receive instant notifications if concentrations of PM_{10} or VOCs rose above acceptable levels, ensuring a swift response. Two-way communications with the cloud-based system allowed for remote calibration, reducing site visits, and saving on costs.

Aeroqual Limited

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A robust plan to protect community health and safety

Vibranalysis Inc., specializing in a wide range of instrumentation and monitoring services, was tasked with reducing the environmental risk to surrounding communities near the Metropolitan Transportation Authority (MTA) Long Island Rail Road (LIRR) Expansion Project. Vibranalysis' client, a joint venture between some of the world's largest civil contractors and design firms, engaged their services to help ensure regulatory compliance and protect community health and safety.

> **"Overall, the ecosystem saves time for us and money for our clients as we assist them with regulatory compliance."**
>
> **Howard Jameson**
> Vibranalysis Vice President

The LIRR Expansion Project is part of a comprehensive, interconnected plan, spearheaded by Governor Andrew Cuomo, to improve transit and transportation throughout the New York region. The project is estimated to cost $2.6 billion, exponentially strengthening the local economy and creating a more robust Main Line for the 500,000 weekly passengers using the busiest commuter rail line in the nation. Notable improvements include an additional third track, new parking facilities and passenger rail stations, and elimination of seven street-level crossings. Critically, the construction of this third track was to take place through highly concentrated residential communities in Nassau County, NY.

Vibranalysis and their client anticipated that the work could have significant impacts on the downwind community. The potential for large quantities of dust and other airborne contaminants to be generated during construction activities has made community air monitoring an essential part of achieving regulatory compliance. In New York State, this includes compliance with the New York State Department of Environmental Conservation (NYSDEC) DER-10 – Technical Guidance for Site Investigation and Remediation and associated Community Air Monitoring Plan (CAMP).

Under DER-10 and the resulting CAMP, workers had to conduct real-time monitoring for PM_{10} and VOCs at both the upwind and downwind perimeter locations of each work area for 15 sites in total. The monitoring locations also needed to be modified accordingly in the event of a substantial change in wind direction. Vibranalysis was required to carry out air monitoring during active work hours, ground-intrusive and railroad-intrusive activities, or demolition of contaminated or potentially contaminated structures

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Flexible, integrated system exceeds regulatory requirements

Vibranalysis knew they needed an air monitoring solution that provided credible, defensible data in real-time. Additionally, the system needed to be flexible and maneuverable to allow for targeted monitoring, in line with the requirements of DER-10 for NYSDEC.

Following an investigation of several air quality monitoring options, Jameson and the team selected the Aeroqual AQS 1 from Specto Technology, one of our trusted channel partners. This all-in-one PM_{10} and VOC monitor not only met the requirements outlined in DER-10 and the resulting CAMP plan but exceeded those requirements in a convenient package. The team was able to remotely monitor each site during construction activities, compiling the necessary information from the Aeroqual Cloud server on an on-demand basis. Aeroqual and Specto Technology worked with Vibranalysis to integrate the AQS 1 air monitors with Class 1 sound level meters, weather stations, digital cameras, and a telemetry Cloud data solution. Collectively, the team installed these instruments on portable, battery- and solar-powered trailers for easy maneuverability.

Real-time data and remote diagnostics save time and money

Vibranalysis commissioned 25 portable air quality stations, powered by the AQS 1, for use along the 9.8-mile project alignment throughout the impacted communities. The resulting real-time data allowed Vibranalysis to immediately notify their client if they observed concentrations of PM_{10} or VOCs above the response levels. Aeroqual Cloud was linked to eagle.io, a site-specific IoT data platform, and used to issue real-time alerts via email. The client used this data and alert system to meet the requirements of DER-10 for NYSDEC.

“The equipment integrated easily, creating highly maneuverable stations that were easy to deploy for targeted monitoring when and where we need it,” says Howard Jameson. “The two-way comms feature of Aeroqual Cloud is helpful for remote diagnostics, reducing site visits. Overall, the ecosystem saves time for us and money for our clients as we assist them in complying with regulations.”

Here, Aeroqual’s technology played a crucial role in protecting workers and surrounding communities, ensuring total regulatory compliance. For further insights on regulations that apply in New York and what air monitoring equipment can help with compliance, head here.

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About

Vibranalysis Inc.

Vibranalysis Inc. is a consulting services firm located in New York City. The firm provides a wide range of instrumentation and monitoring services to general contractors, construction and engineering firms, developers, excavators and demolition companies. One of Vibranalysis' core activities is assisting clients to reduce risk to the communities located near construction activity.

Aeroqual

Aeroqual develops integrated monitoring and software systems underpinned by industry-leading sensor technology to support environmental, health, and safety professionals in protecting people and the planet from the impact of air pollution. That's why governments, industry, researchers, and consultants trust Aeroqual to deliver actionable data for their air quality monitoring projects.

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