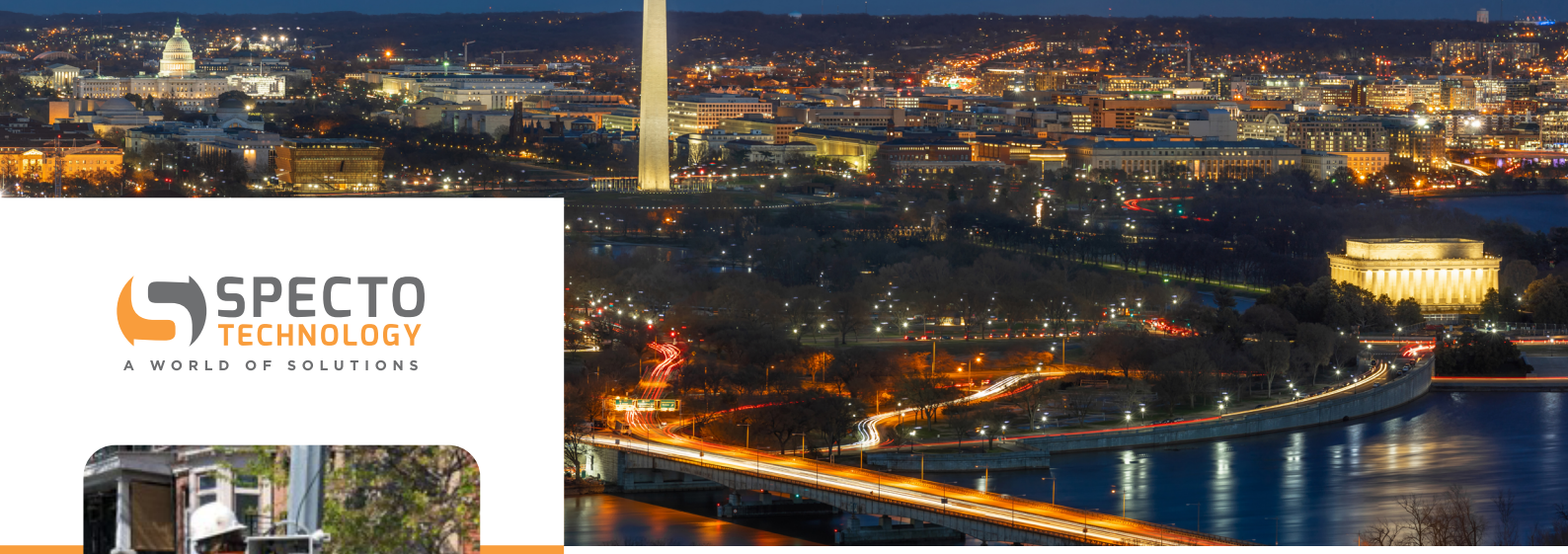

SPECTO TECHNOLOGY
A WORLD OF SOLUTIONS

PROJECT
Northeast Boundary Tunnel (NEBT) project in Washington D.C.

COUNTRY
USA

PROJECT TYPE
Wastewater Tunnel

SECTOR
Construction

MAIN PRODUCT
Monitoring Solution

EQUIPMENT PARTNER
Specto Technology

DATE
2022 - 2024

Everything with the Loadsensing solution is almost plug and play. If there is any increase [in budget] in you buying additional equipment, you will save on manpower easily. Loadsensing is reliable, it's quick, and for that reason you're able to cut back on a lot of costs."

TYREE WILLIAMS
Sales Manager
Specto Technology

How sustainable monitoring methods were deployed for the Northeast Boundary Tunnel (NEBT) project in Washington D.C.

PROJECT CHALLENGES

Ensuring communities are not subject to flooding is a growing concern in a world where the climate is changing. More than 700 cities worldwide have combined sewer systems that could overflow in the event of a severe flood, resulting in major health and infrastructure hazards. One of these cities is Washington DC in the US, where an aging sewer system was overflowing into the nearby Anacostia River.

To avoid such incidents, the city selected Lane Construction to build a large-scale deep-water tunnel called the Northeast Boundary Tunnel or NEBT. The NEBT is the largest of several sections of tunnels that are part of the DC Water Clean Rivers Act. The NEBT was designed to connect sewer systems and reduce stormwater overflow by 98%. But digging a tunnel with a 23-foot diameter for five miles under highly built-up areas was not without its dangers. For Lane Construction, it was vital to ensure the tunneling work was monitored closely so that any risks could be identified and dealt with early on.

PROJECT SOLUTION

Lane Construction brought in the instrumentation and monitoring service provider EnTech Engineering, which used Worldsensing's IoT remote monitoring solution, supplied by Specto Technology, to connect an array of sensors used in the project. The instrumentation installed around the five-mile, $583 million tunneling project included four wireless gateways, configured for redundancy, covering more than 280 monitoring locations and 16 wireless tiltmeters attached to structures around the site.

In addition, EnTech installed 91 vibrating wire one-channel nodes to read piezometers along the tunnel alignment and adjacent to shafts, and 176 vibrating wire five-channel nodes reading multi-point borehole extensometers and strain gauges. Finally, the setup included 15 analog nodes to read previously-deployed Entech tiltmeters. The gateways were installed discretely around the local neighborhood, placed inside enclosures and equipped with three-foot antennas for optimum wireless monitoring capacity.

All the data from the edge devices was sent to the Connectivity Management Tool, the network management platform that helped monitor the status of all the devices and facilitated the integration with 3rd party visualization software.