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HARRY W. NICE MEMORIAL BRIDGE PROJECT BRIEF

High-precision geotechnical and structural monitoring to mitigate risk for construction adjacent to operational infrastructure.

OVERVIEW

To support construction of the 1.9-mile Nice-Middleton Bridge, FTG executed a comprehensive structural health monitoring program to safeguard the existing 1940 truss structure. Maintaining the integrity of this active Potomac River crossing required careful management of several high-stakes construction variables.

THE CHALLENGE

Critical Proximity Pile Driving
36-inch prestressed concrete pile driving within 35 feet of existing bridge foundations.

Embankment Construction
Embankment fills up to 30 feet constructed near critical bridge substructures.

Challenging Soil Conditions
Soft Coastal Plain soils prone to movement and vibration

Continuous Public Traffic
Protecting 18,200+ daily vehicles & vital transit.

SOLUTION PROVIDED

FTG designed and implemented a comprehensive 24/7 monitoring program across the 1.9-mile corridor. Providing baseline analysis, active threshold management, and real-time engineering oversight, the automated system utilized:

- 122 structural prisms monitored with automated total stations
- Tilt sensors and strain gauges on critical elements
- Triaxial vibration sensors during pile driving
- Inclinometers and settlement instruments for subsurface movement

AT A GLANCE

Project Profile

Client: Maryland Transportation Authority (MDTA)
Construction Team: Skanska, Corman, McLean JV
Location: US301 Bridge Over the Potomac River, MD-VA

Results

✓ Enabled construction within 150 feet of an operational bridge
✓ Zero structural impacts
✓ Vibration levels remained within tolerance
✓ Bridge remained fully operational
✓ Delivered on schedule

New bridge opened in 2022 with a 100+ year design life

Diana L. Goodwin P.G., ENV.SP

"FTG's comprehensive monitoring program enabled construction of a new four-lane bridge within 150 feet of an operational 80-year-old bridge while maintaining full structural integrity."

Need real-time monitoring? Let's talk.
410-517-0715

1.9	140+	2.5	0
MILES MONITORED	INSTRUMENTS INSTALLED	YEARS OF CONTINUOUS MONITORING	STRUCTURAL IMPACTS