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TITLE: AZ100 Total Guidance System for Extended Length and Curved Microtunneling

Within the family of trenchless technologies, microtunneling projects are often the most complex in nature and contractors must be able to rely on a competent microtunneling system and the precision of a monitoring system to ensure accurate line and grade alignments. The AZ100 Total Guidance System (TGS) was first introduced in 2015 and has since been used to successfully execute many extended length and value engineered alignments with curves.

The AZ100 TGS is comprised of individual, self-leveling, station units that maintain a surveyed connection throughout the alignment without the need for continuous manual surveying. The first pipe station is added at 300-feet (100m) and additional pipe stations are positioned every as needed along the alignment to maintain a line of sight between pipe stations. The combined stations communicate a continuous electronic distance measurement for the operator to monitor MTBM X and Y positioning, real-time cutter head location and vertical deviation.

The presentation will describe the set-up and operation of the AZ100 TGS tunneling navigation system and highlight four microtunneling project case studies employing its use on straight and curved tunnels up to 1,890-linear feet (576m) in length and 72-inch (1,800 mm) diameter.