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## PIPE BURSTING FIELD STUDY IN CLAY

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**ABSTRACT:** Measurements of ground movements associated with pipe bursting have been reported for various laboratory and field studies involving pipes buried in sand. However, there is little if any data available for installations in clay. This project reports on visual observations and ground movements for replacement of 50 year old unreinforced concrete sewers buried within clay.

The project in Ottawa Ontario featured colored HDPE pipe pulled into place using both static and pneumatic pipe bursting techniques. The aging and undersized infrastructure has internal diameters varying from 150 mm to 300 mm and burial depths ranging from 1.5 m to 4 m. Measurements of ground movements were recorded in the field using a servo-controlled total station for both replacement and upsize conditions. The three-dimensional pattern of surface deflections induced by pipe bursting is quantified and compared to full scale laboratory experiments performed in a sand backfill, as well as calculations obtained from design charts. The surface heave patterns, degree of lateral spreading, and visual observations of the pulled in place pipe are provided.