



Paper #-#-0#

Open-cut vs. trenchless technology Bursting tradition at the Bagley Industrial Park

Leo Florence, PE¹, and Robert Webb²

¹ Project Engineering Consultants, Ltd., Salt Lake City, UT

² Project Engineering Consultants, Ltd., Phoenix, AZ

ABSTRACT: Project Engineering Consultants (PEC) provided planning, design, and construction management of a sewer capacity project for the Bagley Industrial Park located within West Jordan, Utah. Preliminary analysis demonstrated that the 10 inch outfall for the industrial park was undersized, approaching capacity during peak flows, and would require upsizing to 18 inches O.D. in order to accommodate recent growth and future demands. The initial concept for this project was to commence with conventional cut-and-cover methods. Upon additional investigation however, it was discovered that the project corridor was extremely constrained by existing travel lanes and access to the industrial park, right-of-way, landscaping including walkways, decorative concrete, and stone/concrete fencing, as well as an overabundance of underground and overhead utilities including communication lines, fiber optics, high voltage power, intermediate and high pressure gas lines. Due to these restrictions, typical excavation alternatives became less attractive, and trenchless methods were considered.

Pipe bursting was selected as the preferred alternative. The pipe burst consisted of a triple upsize from an existing 10 inch (ID) concrete pipe to 18 Inch HDPE (OD). The necessity for a 22 inch bursting head constituted a 120% increase in size and placed this project within experimental ranges. The construction costs for the pipe bursting proved to be 24% less per linear foot than average open-cut costs. Additionally, the anticipated construction duration was also reduced by an excess of 30% due to elimination of complications with backfill moisture content, bracing of existing utilities, and paving restrictions generated by winter weather conditions. In summary pipe bursting allowed the contractor to avoid lane closures, right-of-way constraints, and impacts to communication lines as well as intermediate and high pressure gas lines. Additional benefits included construction during winter conditions, an expedited construction schedule, and cost efficient bid prices.