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## POST CONSTRUCTION EVALUATION OF TRENCHLESS CONSTRUCTION

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**ABSTRACT:** The West Sacramento Force Main (WSFM) consist of the installation of 41,000-feet of twin 60-inch diameter pipe through the city of West Sacramento, CA. The WSFM includes approximately 7,900-feet (dual tunnels, 12-feet apart) of Microtunneling and 1800-feet (dual drills, 12-feet apart) of 30-inch HDPE by Directional Drilling.

Due to time constraints for working within the River City High School property, a value engineering proposal was presented. It consisted of eliminating the jacking pit within the School property, extending the tunnel drive length from 1378-feet to 1428-feet and mating and subsequently tunneling two different pipe materials in one drive. This design would allow the tunnel to cross under highway 50 and almost all the School property thus making it possible to construct the tunnel during the non working time constraints.

The increased tunnel distance was 50-feet and although this increases risk, it was not the primary concern. The major risk with the original design was tunneling underneath a 25-meter pool with 14-feet of cover. The new design presented significant risk buy changing the distance for crossing under the pool and not being able to build a 911 shaft while crossing under a freeway.

The VE proposal was accepted. Both tunnels were completed on line and grade. There were problems during each drive – some associated with both tunnels some with on one tunnel. These tunnels are a world record drive for Akkerman tunneling equipment and believed to be the 3<sup>rd</sup> or 4<sup>th</sup> longest in North America.