Pipe Bursting Projects

Prepared by
The Pipe Bursting Task Force of
the Trenchless Installation of Pipelines (TIPS)
Committee of the American Society of Civil Engineers

Edited by
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A manual or report in this series consists of an orderly presentation of facts on a particular subject, supplemented by an analysis of limitations and applications of these facts. It contains information useful to the average engineer in his or her everyday work, rather than findings that may be useful only occasionally or rarely. It is not in any sense a “standard,” however; nor is it so elementary or so conclusive as to provide a “rule of thumb” for nonengineers.

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PREFACE

This Manual of Practice (MOP) was prepared by the Pipe Bursting Task Force of the ASCE Committee on Trenchless Installation of Pipelines (TIPS), under supervision of the Pipeline Division. This manual describes current pipe bursting practices used by engineers and construction professionals in designing and constructing pipelines under roads, railroads, streets, and other man-made and natural structures and obstacles. The Trenchless Installation of Pipelines (TIPS) Committee under leadership of Dr. Ahmad Habibian, P.E. (Past Chair) and Mr. Timothy Stinson, P.E. (Current Chair) is credited for the efforts leading to this publication. The committee would like to thank contributors, task committee members, and blue ribbon reviewers, whose names follow, for their support, time, and efforts.

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1.1 INTRODUCTION

Pipe bursting is a well-established trenchless method that is widely used for the replacement of an existing and deteriorated pipe with a new pipe of the same or larger diameter. Many factors should be reviewed thoroughly before pipe bursting projects are considered and released for bid. Engineers should consider different options and select the most cost-effective and environmentally friendly methods for bid. The method selection should not be left to only the judgment of the contractor. This manual will help engineers and owners in the method selection process.

Pipe bursting is especially cost-effective if the existing pipe is out of capacity. This method can be used advantageously to reduce damage to pavements and disruptions to traffic, hence reducing the social costs associated with pipeline installations. There are, however, limits to the use of the pipe bursting method, and various conditions challenge the successful use of its application. This manual provides information that is essential for the engineer as well as the contractor for the successful and safe execution of pipe bursting projects.

Although the pipe bursting method is commonly used for replacing an existing pipe, it has not been covered adequately by manuals, guidelines, or standards. The need to develop a comprehensive manual for pipe bursting projects arose as a result of steady advancements in the field and the lack of proper engineering guidelines. This manual, developed by the Pipe Bursting Task Force of the ASCE Committee on Trenchless Installation of Pipelines (TIPS), is a major step toward promoting best practices and creating a knowledge base for pipe bursting projects. This manual will assist engineers, contractors, and owners in designing and carrying