Pipelines 2020

Condition Assessment, Construction, Rehabilitation, and Trenchless Technologies

Papers from Sessions of the Pipelines 2020 Conference
San Antonio, Texas • August 9–12, 2020

EDITED BY

J. Felipe Pulido, P.E.

ASCE

UESI UTILITY ENGINEERING & SURVEYING INSTITUTE

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SPONSORED BY
Utility Engineering and Surveying Institute of the
American Society of Civil Engineers

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Published by the American Society of Civil Engineers

Published by American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, Virginia, 20191-4382
www.asce.org/publications | ascelibrary.org

Errata: **Errata, if any, can be found at https://doi.org/10.1061/9780784483206**

ISBN 978-0-7844-8320-6 (PDF)
Manufactured in the United States of America.

Preface

Pipelines are the arteries of the modern world that convey the essence of what drives the quality of life, commerce, and public health for all of society. Whether conveying drinking water, collecting wastewater, storage and conveyance of storm water, or transport of petroleum or other fluids – pipelines are one of the most essential elements of modern infrastructure that impacts the way we live and ability to improve the world around us.

This year's conference theme is *Pipeline Engineering – Resiliency in Infrastructure*. It focuses on the aspect that pipeline engineers must fit pipes into the world in a way that minimizes disruption with an awareness that pipelines are essential to our quality of life. The outbreak of the COVD-19 virus has disrupted modern society's way of life, how utilities operate, and has brought attention to how important reliable pipelines are for delivering water, conveying wastewater, and providing many other services that rely on pipelines. The pipeline industry must work together to address the looming infrastructure needs to extend pipe life and increase pipe reliability. This is a bigger picture view and conference goal to work towards that holds hope that together, we are better.

In coordination with the American Society of Civil Engineers, the technical program and this publication were planned and implemented by the Technical Program Committee, led by the Technical Co-Chairs. A call for abstracts was made, from which approximately 280 abstracts were submitted. These abstracts were then sorted into tracks based on the general topic areas of Planning and Design, Trenchless, Condition Assessment, Construction and Rehabilitation, Utility Engineering and Surveying, Multidiscipline, and Technical Posters. In addition, 6 panel sessions were included with topics from Diversity and Inclusion in Engineering, Risk Management in Utility Construction, Nuclear Power Buried Pipelines, Asset Management, Thrust Restraint Design, and Ethics. This resulted in an extraordinarily high-quality program containing close to 160 papers and more than 15 poster presentations.

For publication purposes, technical papers from the eight presentation tracks were consolidated into the following three subjects: *1- Pipelines 2020: Planning & Design, 2- Pipelines 2020: Condition Assessment, Construction, Rehabilitation, and Trenchless Technologies, and 3- Pipelines 2020: Utility Engineering, Surveying, and Multidisciplinary Topics.*

On behalf of the Technical Program Committee, we are pleased to offer you the Proceedings of ASCE Pipelines 2020 "*Pipeline Engineering – Resiliency in Infrastructure*".

Respectfully yours,
Mark A. Poppe, P.E., M.ASCE, and J. Felipe Pulido, P.E. M.ASCE
Technical Co-Chairs

Acknowledgments

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Jerry Snead, P.E., JQ Infrastructure, Multidiscipline
Harshit Shukla, Clemson University, Poster Coordinator

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Workshop Co-Chair – Renee Mayer, P.E., HDR Engineering, Inc.

Jason Gehrig, P.E. - Large Diameter Pipeline Forum
Michael Thomas, P.E. – Large Diameter Equipment Forum
Sri Rajah, Ph.D., P.E., G.E., S.E., P.Eng – Seismic Design of Buried Water & Wastewater Pipelines
Glenn Boyce, Ph.D., P.E., Pipe Ramming
Stephen Shumaker, P.E., BCEE – Thrust Restraint Design of Buried Pipelines
Ed Kampbell, P.E. – Design of Close-fit Flexible Liners for Gravity Pipe Applications

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The Technical Program Co-Chairs and the Steering Committee would like to thank the over 100 professionals who volunteered their time and talents to serve as part of the 2020 Technical Committee. Everyone worked as a team to review abstracts, papers, and posters and continued to collaborate throughout the development and fine-tuning of this year's technical program, *Resiliency in Infrastructure*. Many of the technical committee members also served as Track Chairs and Moderators for the conference.

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The Technical Program Co-Chairs also thank the authors and exhibitors for their dedication to the industry in presenting at this conference. Without your effort and contributions, the UESI Pipelines Conference would not be possible.

And lastly, the Technical Program Co-Chairs express special thanks to Jim Geisbush and Juan Gomez, Conference Co-Chairs, and the Steering Committee for their efforts and leadership during the planning and execution of Pipelines 2020 Conference.

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