



# INTEGRITY OF BURIED WATER MAINS AND ENERGY PIPELINES

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FACULTY OF ENGINEERING AND APPLIED SCIENCE  
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**Abstract:** Buried pipelines have been used to transport potable water to city dwellers and remove wastewater from the cities perhaps since the beginning of modern civilization. Pipes now-a-days are used as water-mains, storm sewers, sanitary sewers, drainage culverts and for transporting oil, natural gas, and other petroleum products. Despite huge volume of buried pipelines used for different applications, the pipes are often paid less attention due to the fact that these are invisible. However, with the aging of municipal water, sewer, and gas distribution systems and their exposure to various natural hazards, including climate change, pipe failure incidents are rising in recent years within the municipalities. Besides, the energy pipelines have been in the news due to the environmental concerns of pipeline projects associated with potential leaking. The risk of pipe leaking or failure could, however, be minimized by advancing technology to ensure pipeline safety. This seminar presents an overview of pipeline infrastructure, factor causing the pipeline failure and technological advancement made toward maintaining the pipeline integrity.



**Dr. Ashutosh Dhar** is an Associate Professor in the Civil Engineering Department at Memorial University of Newfoundland. He has over 20 years of academic and consulting experience in Bangladesh, USA, and Canada, with expertise in geotechnical engineering and soil-structure interaction. His current research focuses on developing tools for risk-informed decision-making for the integrity of urban water and energy transmission and distribution systems using laboratory testing and numerical modeling. Major research topics include the remaining strength of corroded pipelines, pipelines subjected to ground movements, leak detection using the acoustic emission method, and the development of municipal pipe integrity assessment tools. In these areas, he has published 110 research papers (38 journal articles and 72 conference papers). Dr. Dhar earned his Ph.D. in Geotechnical Engineering from the Department of Civil and Environmental Engineering of the University of Western Ontario. He received his M.Sc. in Geotechnical Engineering and B.Sc. in Civil Engineering from Bangladesh University of Engineering and Technology (BUET). He is currently as a registered Professional Engineer in the province of Newfoundland and Labrador.

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