# The Importance of Geomorphic Risk Assessments Along Proposed and Existing Pipelines

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***Abstract***

*Pipeline failures resulting in environmental damage or impacts to humans can significantly affect an operator's value and reputation. Recent highly-publicized rupture incidents have focused the attention of industry and the public on the risks associated with pipelines. Characterizing the risk associated with water and drainage crossings should be based on the findings of a geomorphic risk assessment.*

*Stantec's geomorphic risk assessment protocol allows pipeline companies to properly allocate financial resources to scientifically prioritized, high-risk locations. By closely examining the dynamic landscape context in which a pipeline is situated, a geomorphic risk assessment provides a scientific basis with which to prioritize pipeline segments where overall risk is the greatest.*

*When pipelines along streams and rivers become exposed, the traditional stabilization methods have been centered on burying the exposures in concrete or rock. Understanding the geomorphic conditions of the pipeline setting and developing an appropriate, location-specific solution, will lead to a durable, costeffective, and ecologically-based stabilization. Pipeline stability can mean reduced risks to your asset and minimized long-term maintenance and monitoring costs when using a geomorphic risk assessment protocol. Furthermore, an engineered design that is geomorphic-based is typically less costly than other methods while also being easier to permit. Environmental regulators understand that this approach works with the natural tendencies of a river, improving the local ecological values, while still ultimately serving to protect a pipeline.*

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**Mike Vukman** serves as a Project Manager with experience in pipeline stabilization, stream restoration, Natural Channel Design, fluvial geomorphology, and biotechnical streambank erosion control methods. Mike's involvement with these projects has included management of subcontractors, budget tracking, grant writing, facilitation of stakeholder meetings, preparation of required permits, data gathering and processing, construction and construction observation, and post-project monitoring, maintenance, and final report writing. Furthermore, Mike is trained as a fluvial geomorphologist, having completed Levels I-IV of Dr. David Rosgen's Wildland Hydrology short courses. With approximately 18 years of experience designing and implementing numerous biotechnical streambank erosion control projects, he is an expert practitioner of soil bioengineering and other biotechnical erosion control methods and is often called upon by local agencies for advice and guidance.