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Mechanical damage to pipelines from outside forces, if undetected, can lead to leaks and occasionally ruptures. This damage can be caused over time by rocks or abruptly by excavation equipment. A majority of the anomalies due to outside force are not injurious. However, a few prominent pipeline failures have been attributed to mechanical damage.

The pipeline industry has multiple in-line inspection approaches to inspect for mechanical damage. Commonly used methods include in-line deformation (caliper) tools, which measure the bore diameter and magnetic flux leakage technology (MFL). The pipeline industry and government regulatory organizations need to know the relative capability of these approaches and best way to apply these inspection technologies.

The proposed project would identify current capabilities of mechanical damage inspection technologies used in the pipeline industry. This project will provide data to validate assessment capability of in-line inspection tools while tying these results back to fundamentals and performance characteristics.