



PROJECT SPOTLIGHT

EMERGENCY WATER MAIN INSPECTION & REPAIR ON UNDERSIDE OF BRIDGE



MINIMIZE OPERATIONAL RISKS AND OPTIMIZE ASSETS

SUMMARY

There are two 30 inch diameter $\frac{1}{4}$ " wall thickness steel water mains, which run along the underside of the bridge over a river way, that provide major water distribution to the community. The mains were installed in 1961 and suffered leakage at support guide attachments due to external corrosion.

The leak locations were difficult to access and on pipe which had an old asbestos coating. Acuren's engineering and rope access crew provided a safe, economical, and timely repair solution to get the lines back into operating condition.



INITIAL ASSESSMENT & INSPECTION PROGRAM

The crew performed rope access visual inspection and ultrasonic thickness testing of the pipe at all 17 guides on each line. With consideration to timing and budget, along with the need to get the lines back into service, the determination was made to repair the pipe at all guides on one line and the most severely corroded guides on the other line. The pipe had corroded nearly through wall at many of the guides on each line. Acuren completed safe asbestos abatement and removal at locations on the lines requiring further assessment and inspection.

Acuren also performed inspection and assessment of exposed bell and spigot pipe joints and support hangers situated below a bridge expansion joint, which had severely corroded due to overhead drainage, debris, and road salts. We located and identified through wall corrosion at these locations that were moments away from leakage.

The leak locations were difficult to access and on pipe which had old asbestos coating. Acuren was able to provide a complete single source, local, in-house rope access solution.

ENGINEERING & REPAIR PLAN

Our engineering team created design and repair solutions for locations of corrosion and leakage. Designs included temporary pipe supports, structural integrity review, welding design details, and in-situ coating repair suitable with the existing lines. Detailed repair designs included lap plates, encirclement sleeves with pressure grouting, replacement guides, and new hanger supports. Designs were in accordance with recognized engineering piping standards including AWWA, ASME B31.3, ASME PCC-2 and CSA Z662.

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ACUREN IS A SINGLE-SOURCE SOLUTIONS PROVIDER

We were able to complete this work at an estimated 50% cost and time savings when compared with traditional methods utilizing multiple contractors and scaffolding

REPAIR DETAILS

- 14 welded lap plate repairs and guide replacements
- Weld metal build-up of corroded pipe at 4 guides
- 2 full encirclement welded sleeves with pressure grout at corroded bell and spigot joints
- 2 support hanger rebuild/fabrication and replacement
- Weld repair inspection
- Coating repairs at weld locations
- QA/QC

WHY ACUREN?

- Immediate turnaround with inspection and repair utilizing rope access
- Complete single source, local, in-house solution – inspection, coating removal, engineering, repair program and procedure development, repair execution, asbestos abatement, welding, fitting, project management
- Execution excellence – shortest outage window possible, on time, on budget, zero safety incidents

Acuren had 20 team members executing this work:

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| ▪ NDE technicians | ▪ Insulators |
| ▪ QA/QC | ▪ Coating personnel |
| ▪ Welders | ▪ Project management |
| ▪ Fitters | ▪ Accounting |
| ▪ Engineering (mechanical, materials, welding) | ▪ Safety experts |
| | ▪ Water rescue |



SERVICES

- Inspection methods: VT, UT, MT, PT
- Wall thickness survey
- Engineering repair design
- Coating removal
- Asbestos abatement
- Surface repair preparation
- Developed repair procedures
- Performed weld repair in accordance with engineering design
- Re-inspection
- Re-coating

Contact us today to find out how we can efficiently execute complicated scopes of work for your projects. **We go places, and do things, others simply can't.**