

Sewer Rising Main Assessment and Rehabilitation

case study: Eagle Farm Rising Main

Brisbane, Australia

The Eagle Farm rising mains are a pair of parallel 51 inch (1300mm) diameter prestressed concrete rising mains, each 11km in length, that carry wastewater from Luggage Point pumping station to the Eagle Farm Treatment Works. The mains carry most of the wastewater for the city of Brisbane, the third largest in Australia with a population of almost 2 million. The Client was planning replacement of the lines and wished to review alternative asset management options and costs.

Our team, working in conjunction with Jason Consultants Ltd, provided specialist consultancy services in condition assessment and rehabilitation recommendations. The mains had been the subject of much previous investigation by the Client which had identified internal corrosion over some sections, believed to be associated with extensive pockets of hydrogen sulphide gas. The team's role was to recommend and develop the repair methodology to be adopted for the mains, and to cost the various rehabilitation options. This was completed successfully resulting in a repair programme being undertaken that saved the Client approx. \$10 million of expenditure on capital replacement.

A second project was undertaken to assess the condition of the parallel steel rising main which had been subject to serious concern over its condition. Our engineers reviewed all pipeline data, recommended and specified field inspection of the steel pipeline, its lining and samples of the wastewater. Using this data a complete condition assessment was completed including options on ongoing management of the pipeline and their capital and operational costs.

The detailed works included:

- Audit and review of investigation data on H₂S and pipe condition
- Site visits and investigation of collected information for detailed condition assessment
- Development and preliminary design of repair options
- Economic evaluation of repair and replacement options
- Specification of field inspection requirements for steel rising main
- Condition assessment and rehabilitation options for steel rising main including economic evaluation

client

Brisbane Water (now Queensland Urban Utilities)
Jason Consultants Ltd, UK

date

2008

value

\$105,000 (value of first consultancy contract)

services

Desk study and data review

Condition Assessment

Development of repair and rehabilitation solutions

Economic evaluation and NPV analysis of asset management options

