



Sewer Rising Main Condition Assessment & Risk Management Manual

Background

This project builds on industry knowledge relating to condition assessment and risk management of sewer rising mains. The work has developed assessment protocols, investigate the application of a range of modelling approaches, case studies and bring together the findings into a practitioner guidance document delivered as a web-based e-Manual.

Rising mains convey sewage under pressure from a pumping station to a point of discharge such as a gravity sewer or a sewage treatment works. Rising mains are commonly constructed from plastic or ferrous materials, although some older assets were constructed from asbestos cement. Rising mains can be exposed to highly corrosive environments and must resist static, dynamic and transient (surge) pressures over the life of the asset. Design, construction and operational practices also have an impact on rising main life and performance. The likelihood of structural failure of rising mains depends on a range of factors and must be managed. The probability of pollution incidents arising from any failure is significant because the sewage is transported under pressure. It is often difficult to set up by-pass arrangements for rising mains, especially during wet weather events, and it can be difficult to carry out repairs. Environmental clean-up costs can therefore be significant and such incidents may lead to prosecutions.

The management of rising mains must be undertaken within a risk informed framework. One approach for understanding failure likelihood is to undertake condition assessments. Since most mains are buried, the process for establishment of targeted condition assessment programmes based on operational/ environmental parameters need to be considered. The water sector of Australia has identified that there is a need for standardised approaches to condition assessment for this and other asset classes. The information gained from condition assessments also needs to be interpreted, which can be undertaken in a variety of ways, ranging from sophisticated modelling work through to simple risk ranking procedures. Similarly different levels of assessment can be applied to understand potential failure consequences. This project was completed in August 2013.

Outcomes and benefits

Outcomes:

Web-based condition assessment and risk management e-Manual for rising mains

Benefits:

The participating utilities will be able to use the outputs of this project to improve financial planning and performance, and implement best-practice approaches for the management of rising mains (pressure

sewers) including renewal/maintenance decision making. Participation in the project will also allow WSAA members to develop:

- A shared understanding of condition assessment and risk management strategies being applied across the Australian sector.
- Improved analytical and/or predictive capacity, maximising use of existing and collectable data.
- Risk-based management of rising mains, which will benefit communities and the environment.

How to purchase

This subscription project was funded by participating WSAA Member utilities. Non-participating WSAA Members and those without WSAA membership will be required to purchase the project deliverable. The deliverable will only be made available to water utilities. Prices will be calculated according to a utility's number of connections.

Participating members can access this project via the [WSAA Member Portal](#). If you do not have access to the portal please contact web@wsaa.asn.au.

Further Information

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