

Version	Date	Last edited By
V3	10 October 2017	Greg Preston

## Pipe Renewals Guidance Programme Update

This is a general update to keep interested parties abreast of progress with the Pipe Renewals Guidance Programme. The aim is to provide these regularly: feel free to circulate as necessary.

### Work streams

There are a number of pieces of work that should be completed within 2017 year that will form the first useful outputs from the *Evidenced-based Investment Decision Making for 3 Waters Networks* project. These are:

- Resilience of Three Water Networks to Natural Hazards
- Decision Support Framework
- Update of New Zealand Pipe Inspection Manual

In addition preliminary work is underway towards the creation of a National Pipe Data Portal.

The steering committee will meet early in December to consider the highest priorities for 2018.

### Resilience of Three Water Networks to Natural Hazards

This piece of work, contracted to Beca and Marcus Gibson and Melanie Liu, covers the following scope:

- An integrated approach to assess and plan for improved resilience for 3 waters service delivery. The focus will be on use by engineers and asset managers to enable them to provide balanced and informed commentary to elected members and other decision makers.
- Natural hazards (earthquake, faulting, landslides, flooding, sea level rise, fire, loss of critical supporting infrastructure, etc.)
- Pipe assets from water treatment plants to wastewater treatment plants, but excluding these assets.
- Post-event reactive approach and pre-event proactive approach
- Engineering + emergency response + service delivery
- Providing information to the decision support framework being developed by Opus.

This work is being funded by the Quake Centre partners.

## **Decision Support Framework**

This piece of work is at the centre of the Pipe Renewals project. The initial scope is aimed at developing the 30-year infrastructure plans in the context of both a large and a small water authority. Using different degrees of sophistication and source data, the project is to build up a picture of the benefits and costs of using different asset management decision-making processes. Importantly, it is also forming the basis for business cases that can be developed by water authorities for future investment into pipe renewals. The initial focus has been on developing a strategy for selected wastewater networks. The project is being run by Philip McFarlane at Opus.

A series of virtual workshops have been carried out with input from a broad range of asset managers and owners and the framework is in the final stages of distillation. Observing presentations at the Water NZ conference and other discussions around the country it is clear that many of the major 3 Water agencies across NZ are at different stages of developing a strategic approach to wastewater renewals. It is likely that a final workshop will be run with key agencies within the next six weeks to ensure that the Framework reflects and informs the practices of these agencies.

This project has been sponsored by Watercare. The scale and diversity of Watercare's wastewater networks has allowed the framework to be developed on a range of different ages, scales, conditions, etc. The Quake Centre is funding the application of the framework to Kaikoura District Council's wastewater network to assist KDC in its future planning.

## **Update of New Zealand Pipe Inspection Manual**

During 2016 and funded with assistance from Quake Centre and EQC, ProjectMax was engaged to scope the required changes to the New Zealand Pipe Inspection Manual (NZPIM). The Water Services Managers Group Water NZ has agreed to fund this update and the contract has been awarded to ProjectMax and Citycare to deliver the updated NZPIM sometime in the middle of 2018. The update will take into account changes in technology since the last update in 2006 and also address integration with the NZ metadata standards.

## **NZ Pipe Data Portal**

The Quake Centre has recently made an application to MBIE for Partnership Funding whereby every \$6 of industry money is matched by \$4 of government funding. We find out whether we were successful sometime in November. If this is successful then some of this funding will go towards developing a NZ Pipe Data Portal.

Through this portal we plan to be able to interact with asset management databases around the country. We will set up industry and academic virtual teams to tackle some of the questions to issues that limit the effectiveness of current asset management practices. These include such problems as the useful life of a pipe and the links between condition rating and risk of failure, etc.

## **Other projects**

With the assistance of EQC, the Quake Centre has a project being carried out by a team at Tonkin and Taylor to correlate the pipe damage in the Christchurch Earthquakes with LIDAR data. This is showing interesting results and should lead to a methodology that can be used after a seismic event to rapidly assess the overall likely damage to a network. Used in conjunction with other predictive tools this should give a far more accurate assessment of the likely repair costs within days of an earthquake.

**Further information on any of the above can be downloaded from the Quake Centre Resource portal here: <http://resources.quakecentre.co.nz/3-waters/>**