

Version	Date	Last edited By
V1	29 April 16	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 will be to provide these regularly: feel free to circulate as necessary.

### Governance

Water NZ, IPWEA and the Quake Centre have agreed to form a Governance Group comprising:

- Peter Higgs, IPWEA;
- John Pfahlert, Water NZ;
- Greg Preston, Quake Centre
- Dukessa Blackburn-Huettner; IPWEA, Water NZ, NAMS
- Richard Ward or other representative of National Infrastructure Unit.

It was also agreed that the Quake Centre would provide the programme management.

### Technical oversight

It was also agreed that a Technical Oversight Group (TOG) was formed. Currently this comprises:

- Rob Blakemore, Wellington Water
- Representative from Auckland Council, to be confirmed
- Nick Walmsley, Water New Zealand

Other recommendations are:

- Frank O'Callaghan, Iplex
- A contractor representative
- A representative from the consultancy sector.

Volunteers and recommendations for membership of the TOG are welcomed.

### Workstreams

A number of activities are underway:

1. Conversations with as many parties as possible to create the 'coalition of the willing'; those organisations and people who wish to support this endeavour.
2. A two month piece of work funded by the Quake Centre and carried out by Opus to undertake a:
  - a. national and international literature search

- b. comprehensive scoping exercise to provide likely costs associated with the complete programme
- c. prioritisation list based on availability of source material and importance
- d. review of the framework developed at the February workshop to assist in the design of workstreams (Appendix A)
- e. check on alignment with the Metadata Standards Project.

Opus will report back to the steering committee by the end of June so that project funding requests can be aligned with the funding of the implementation of the Metadata Standards.

- 3. Funding is being sought to allow Project Max to scope the required updates for the pipe inspection manual. This funding is yet to be confirmed.

It is anticipated that activities 2 and 3 will be presented at the Water New Zealand Conference in October.

## Appendix A: Framework for Pipe Renewals Guidance

The following was the output of a workshop hosted by the Quake Centre at the University of Canterbury on Tuesday 2 February 2016 to explore the need for and scope of a guidance document relating to the renewal of New Zealand's 3 water buried infrastructure. The workshop identified 10 themes. These themes created a framework for the creation of guidance material which contextualised the asset management and renewals guidance and decision tools set out in the International Infrastructure Management Manual 2015 Edition for use within the New Zealand 3 Waters Industry.

### Framework themes

The 10 themes comprised:

- Strategy and Planning for Capacity and Growth (both positive and negative)
- Levels of Service, Risk and Resilience
- Pipe Criticality
- Pipe Vulnerability
- Pipe Inspection and Condition
- Forecasting Remaining Pipe Life
- Business Processes
- Data management
- Building Standards and Constructability
- Life-cycle Cost of Pipes

It was recognised that underlying all the themes are the Metadata standards currently under development. The standards will provide a consistent methodology for describing three waters assets and are an essential underpinning for any national guidance framework.

### Specific Guidance by Theme

Within each theme a number of specific guidance modules were identified.

Theme	Strategy and Planning for Capacity and Growth
Scope	Current pipe utilisation Spatial planning Interdependencies and coordination with other utilities Environmental standards Understanding the ownership implications of laterals and inherited systems Impacts of negative growth

<b>Theme</b>	Levels of Service, Risk and Resilience
<b>Scope</b>	Level of Service Definitions and applications Application of AS/NZS ISO 31000:2009 in the context of 3 Waters at suitable scale and in the context of extreme events

<b>Theme</b>	Pipe Criticality
<b>Scope</b>	Creation of a common framework for assessing pipe criticality

<b>Theme</b>	Pipe Vulnerability and Likelihood of Failure
<b>Scope</b>	Understanding Hazards Failure modes in pipes and creation of a failure database Quality assurance Standard useful life

<b>Theme</b>	Pipe Inspection and Condition
<b>Scope</b>	<i>Pipe Inspection Manual</i> update and extension to pressurised pipelines Pros, cons, comparisons and calibration of new technologies Sampling rates and currency of pipe inspection in relation to criticality and knowledge of condition Guidance on assumed condition Contractor guidance on fault recording

<b>Theme</b>	Forecasting Remaining Pipe Life
<b>Scope</b>	Development of repair and maintenance versus time and asset deterioration curves Guidance on forecasting for generic renewals and critical pipelines

<b>Theme</b>	Business Processes
<b>Scope</b>	Better business case in the 3 Waters context Appropriate allocation of risks Procurement standards for water Whole of life cost modelling Asset inheritance issues

<b>Theme</b>	Data management
<b>Scope</b>	Implementation of metadata standards Data collection, storage and analysis

<b>Theme</b>	Building Standards and Constructability
<b>Scope</b>	Standardisation of specifications Trenchless technologies Introduction of innovative methods and materials.

<b>Theme</b>	Life-cycle Cost of Pipes
<b>Scope</b>	Pipe performance – physical Pipe financial performance Pipe LoS performance

Other areas identified as requiring coordination or further research are:

- Creation of a NZ Pipe database
- Research on pipe condition as a function of time from the extensive data collections of SCIRT, CCC and international data sources
- Value of data archives as a source of information for future planning