

# A Collaborative Approach for Preserving Queensland's Networks

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The total value of Queensland's in-ground water and sewerage assets is estimated at around \$21 billion. A significant portion of this infrastructure is made up of pipes installed prior to the 1970s. This means that a large part of the state's water and sewerage mains are more than half way through their expected useful life of 70 years. Careful investment can avoid future costs from breaks, bursts, leaks and emergency works that will increase as networks age. The sector is moving from a period focused on growth and maintenance to incorporate strategic renewals in to their investment pipeline.

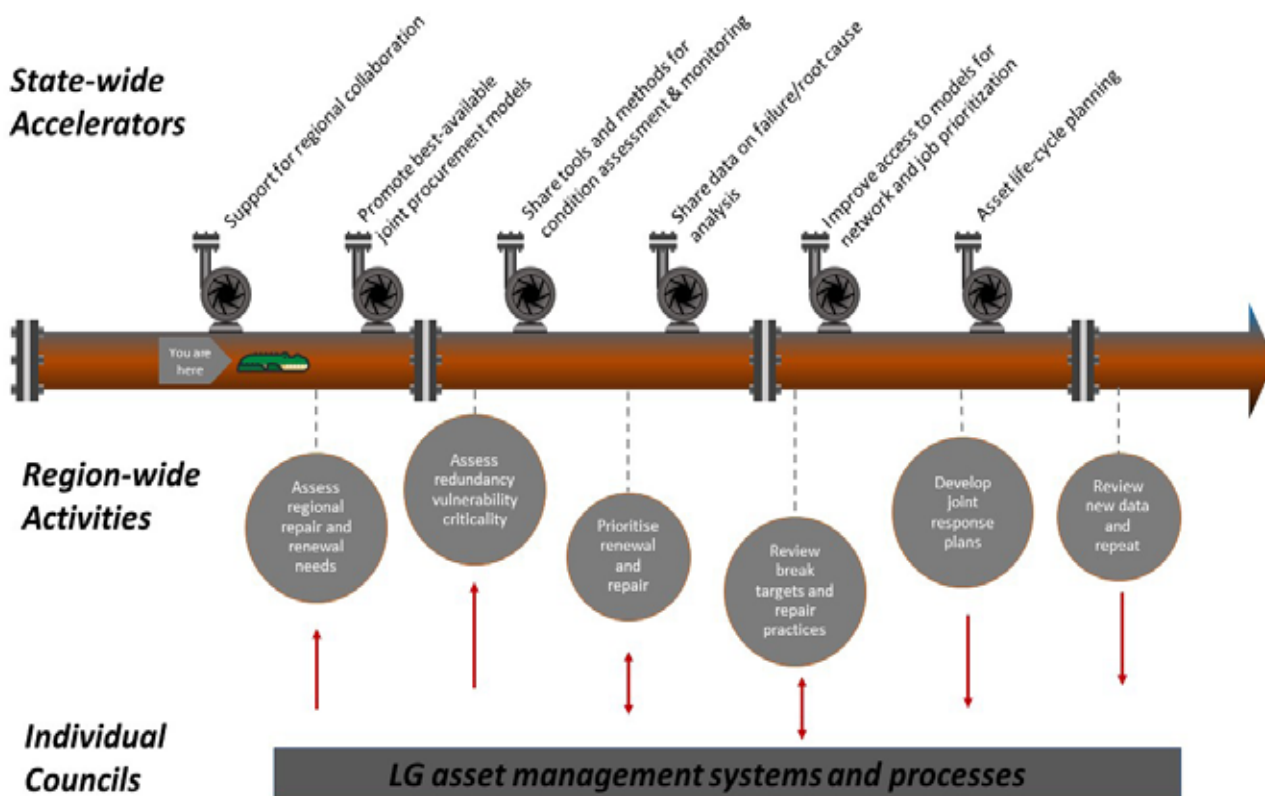
All urban service providers in regional Queensland are local governments and for some councils, multiple barriers inhibit strategic management of network assets:

*Network Assets have not required significant replacement in the past.*

Councils often have mature systems for managing visible assets (e.g. roads and corporate assets) but many are not optimised for network assets. Being out-of-sight and having required little renewal in the past, pipes may be overlooked until service expectations are not met, usually because of breaks and leaks. This becomes a problem when large areas of network reach renewal age at the same time.

*Funding for renewals can be inconsistent.*

Renewals are commonly funded through one-off investments or grants creating a perverse incentive for reactive replacement without improving targeting of renewals.



Poorly targeted investment inflates costs over the long term but avoiding these costs requires often difficult and expensive adaption of standard practices and systems.

*Condition and criticality information is incomplete for many networks and can be expensive to derive.*

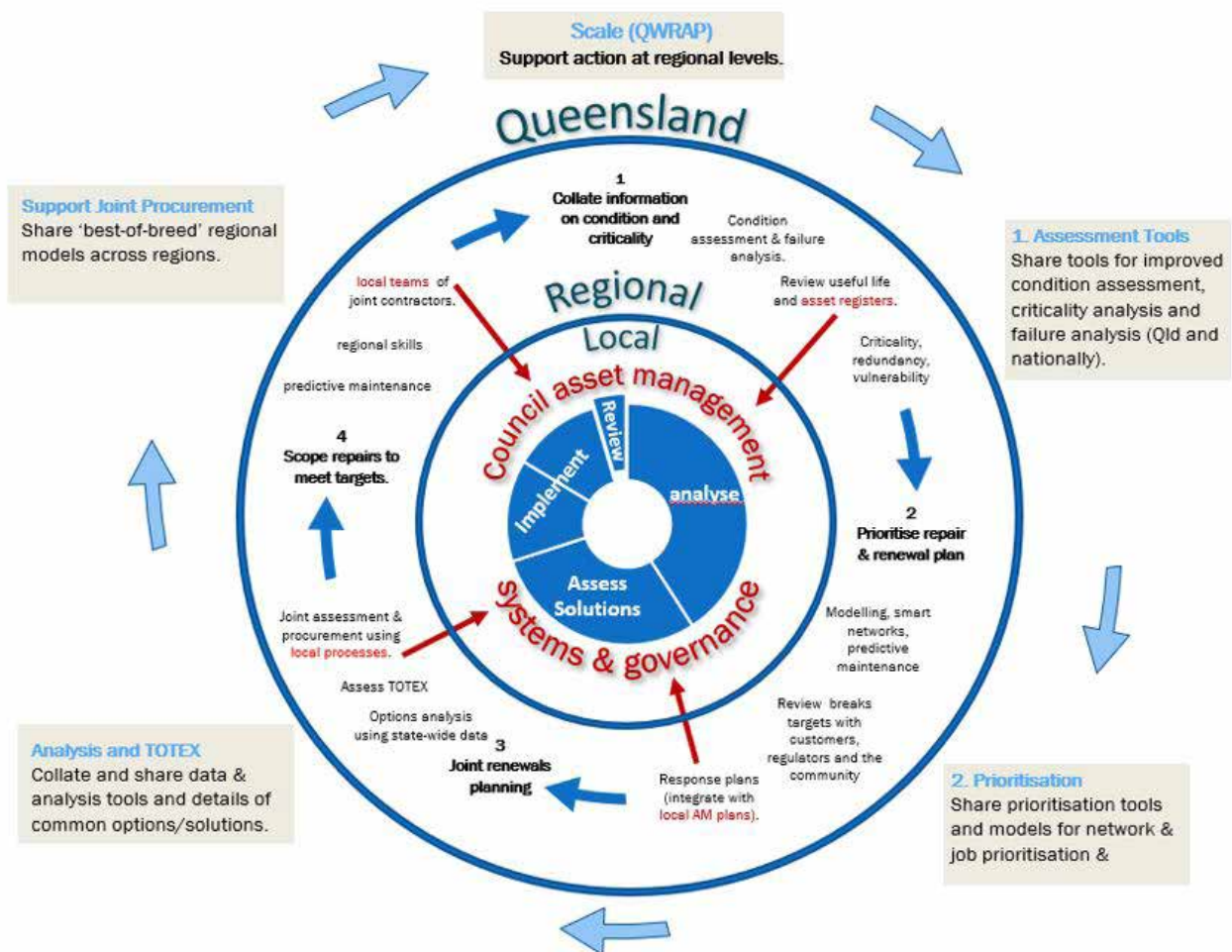
Without this information service providers are unable to prioritise renewals and repairs. It also means that life-cycle planning (examining the full implications of acquiring, operating, maintaining and disposing of new assets) is difficult or impossible. More data is needed to inform capital investment and operational decisions.

For some regional councils these barriers persist due to a lack of resources and inertia in changing business-as-usual operations. Others are proving to be leaders in optimizing network asset management.

Through regional collaboration, councils can benefit from shared local knowledge and economies of scale.

Such collaboration has also been shown to help overcome the sorts of barriers listed above. Some ways this could be achieved were explored in recent research undertaken under the Queensland Water Regional Alliances Program (QWRAP) which provided four recommendations for improving local network investment through collaboration at a regional level supported by 'accelerators' at a State level.

A primary driver of efficiency for a network utility is the density of its connections. High densities mean more customers are served with a smaller total 'footprint' of infrastructure thus reducing costs. Consequently, economies of scale are elusive where density is low and networks are too small and isolated for viable interconnection. Queensland is one of the largest sub-national jurisdictions in the world but has a relatively large population. The population is widely dispersed: Queensland has the largest number of residents outside major cities and 'inner regional' areas of all Australian jurisdictions.



### Recommendation 1 (asset assessment)

*Facilitate a regional approach to condition and criticality assessment, linked back to council asset management plans.*

Collaboration delivers economies of scale for data collection, analysis and benchmarking while building on local knowledge. It can also allow local targeting of new technologies (e.g. automatic sensors and metering, ultrasonic and vibration analysis) that may otherwise be inaccessible to individual councils. It is essential that any regional work feeds directly back to individual council plans and corporate systems.

### Recommendation 2 (prioritisation of renewals)

*Support processes for continuous improvement of prioritisation of renewal and repair.*

Prioritisation is inherently local as it is based on the needs of different sized councils and the expectations of their customers and regulators. However, regional coordination of these processes can provide continuous improvement and support alternative approaches through modelling and joint adoption of emerging assessment technologies.

Collaboration can increase critical mass and assist in negotiations with customers (internal and external) and regulators.

### Recommendation 3 (joint procurement)

*Facilitate procurement of repair and renewal services through regional cooperation.*

Joint design and procurement processes have been shown by QWRAP regions to reduce costs and increase focus on whole-of-life implications of new assets. Future network costs have been reduced through fit-for-purpose sizing and design and optimised rehabilitation processes. Coordination of procurement will become more important as networks age and utilities seek to procure services in a market that is serving other Queensland and national utilities that are also facing ageing assets.

### Recommendation 4 (optimise repair processes)

*Develop a regional approach to facilitate sharing of information and skills in repair of networks and a stronger foundation for engaging regulators and customers.*

Ageing networks suffer higher rates of breaks. Coupled with tightening regulation and customer expectations, this will require a change to how service providers respond to breaks. Reactive repair programs will need to be augmented with predictive maintenance programs and increased communication with customers and regulators. This will be difficult for some councils on an individual basis but can be facilitated at a regional level.



*\*\*This information sheet is part of a series aimed at preparing regional councils for changing investment needs of network assets. They are available along with two detailed reviews at <https://www.qldwater.com.au/QWRAP>.*