

THE CASE FOR FAST-TRACKING SERVICE CONNECTION RENEWALS TO REDUCE WATER LOSS

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water
NEW ZEALAND
CONFERENCE & EXPO
17-19 OCTOBER 2023
Tākina, Te Whanganui-a-Tara Wellington

WATER LOSS IN WELLINGTON

Wellington faces highest level of water restrictions

Water usage

Erin Gourley

Two minute showers, one weekly load of laundry and no washing the car or watering the garden – this is the summer holiday facing the region. Storms are likely to come but Wellington balances dry weather.

The last two summers were saved by cyclone Dovi in 2022 and cyclone Dovi in 2023. However, this year was likely to bring drier weather.

All it would take

rainfall for tough water restrictions to apply, said Wellington Water chief executive Tonia Haskell. Level 4 water restrictions, the highest level available, would mean two-minute showers, one weekly load of washing per person, and a total ban on outdoor water use.

The restrictions were intended to avoid an

Awa Kairangi/Hutt River.

Yesterday, leaders held the region's first Water Shortage Summit to discuss how to make the water supply more sustainable.

Sixty representatives from councils and iwi attended the summit, with the majority agreeing to three solutions recommended

At the moment Wellington Water was making a "real increased effort" to detect leaks, but had struggled to make a dent in the litres lost through leaks, said Barry.

Staff did not have the "intel" to know where leaks were, unless they visited the site and used sonar tools. But water meters were used for years to research and implement help this summer.

Wellington Water is drawing up the emergency plans for how it would manage drought restrictions, businesses and councils.

From September 24 the region will move to tighter water restrictions, where outdoor water use is limited to odd or even days between 6am and 7-9pm.

On the brink of water crisis

Local Government

Ethan Te Ora

When it comes to Wellington's water shortage, there is no shortage of suggested solutions.

Fix the leaky pipes, install water meters, build another dam; inevitably, one day, all of the above. But in what order?

Today's first-ever water shortage summit puts the relevant authorities in the same room – district mayors, city and regional councillors alike, mana whenua – to weigh those options, in the hopes of reaching consensus.

Lower Hutt mayor and chairperson of the regional water committee Campbell Barry is convening the summit – and says the stakes are high. "If we have a dry summer – or even just a summer without the type of rainfall we've had the last couple of years – then we're steering down major water shortages."

That could mean the prospect of level-three water restrictions – including unpopular concessions like two-minute showers. And if last week's predicted El Niño-like pattern is any indication, then that dry summer could come to pass.

Rainfall aside, leaky pipes remain a constant worry – with about 44% of the region's water supply lost to leaks. In the capital alone, that's roughly the equivalent of 27 Olympic-sized swimming pools down the gurgler each day.

Barry said the summit was an opportunity for all parties to consider the same up-to-date information about the crises, and "get on the same page". However, a brief survey of the region points to entrenched differences.

Porirua City mayor Anita Baker said leaks were only part of the waste.

"It's not just what we're losing; it's what we're using. People just turn on the tap – and don't think about it."

Once people were charged for the volume of water they used, they tended to use less, Baker said – pointing to the recent experience of neighbouring Kapiti Coast District Council. Indeed, people across the Wellington region use between 210 and 224 litres per person per day. By comparison, Aucklanders, who are incumbent upon water meters, use between 140 and 175 litres a day.



Anita Baker

Upper Hutt mayor Warren Guppy doesn't think meters should come first. They would be costly to install, he said, with the expense likely passed onto cost-burdened ratepayers. "You need to be up front with people that you're gonna charge them much more for water, 'cause that's the only way to pay for [the metres]."

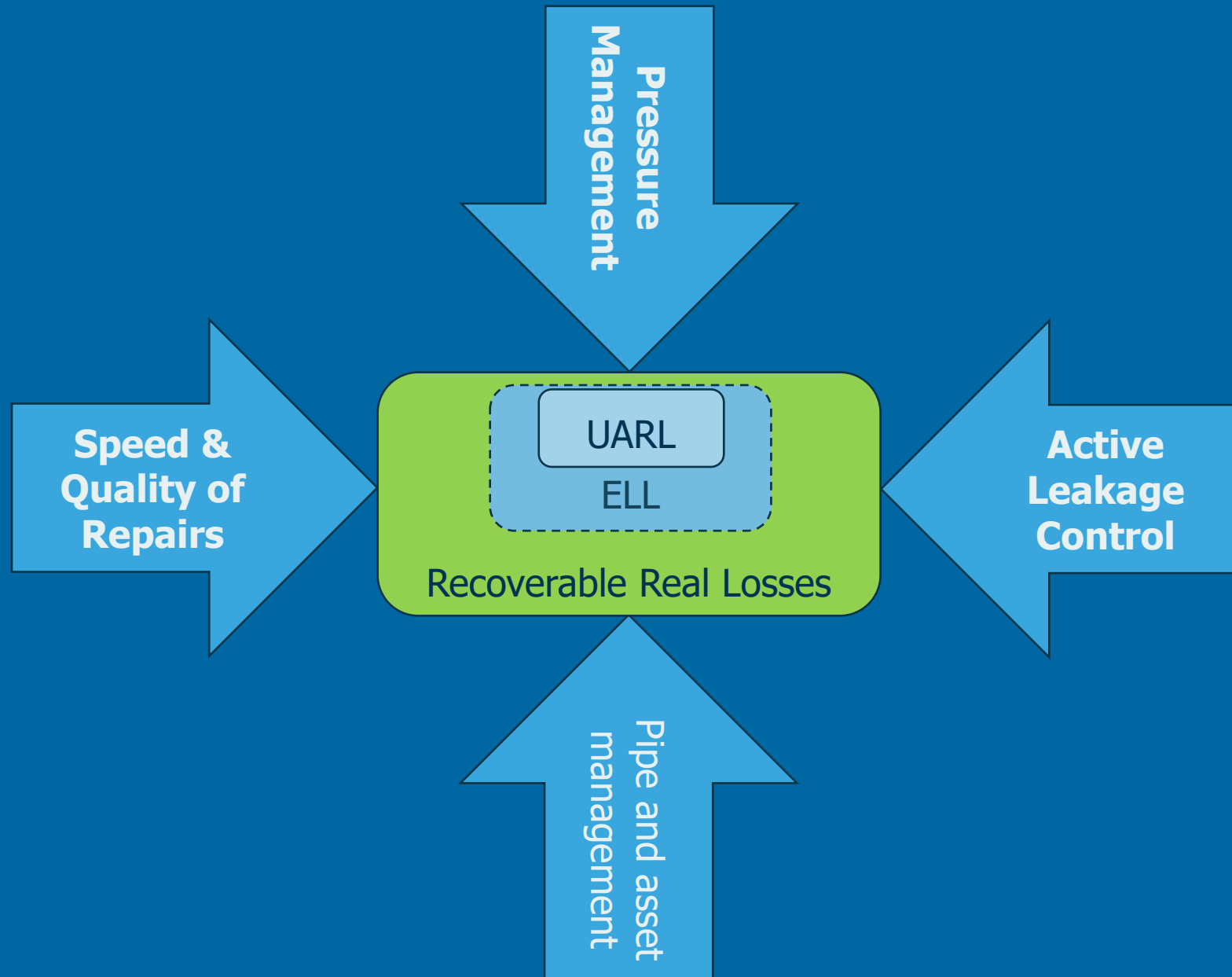
Instead, Guppy backed building "a new water supply" – in the form of a dam – something he believed the Greater Wellington Regional Council (GWRC) and Wellington Water should have already done.

GWRC chairperson Daran Ponter poured cold water on this suggestion. "We shouldn't think we can just build our way out of this with more dams – while we just keep on mindlessly consuming more water."

The actual answer was two-prong, Ponter suggested: fix the leaks, commit to installing water meters. Only then would GWRC be armed with the information necessary to decide when to build a new dam.

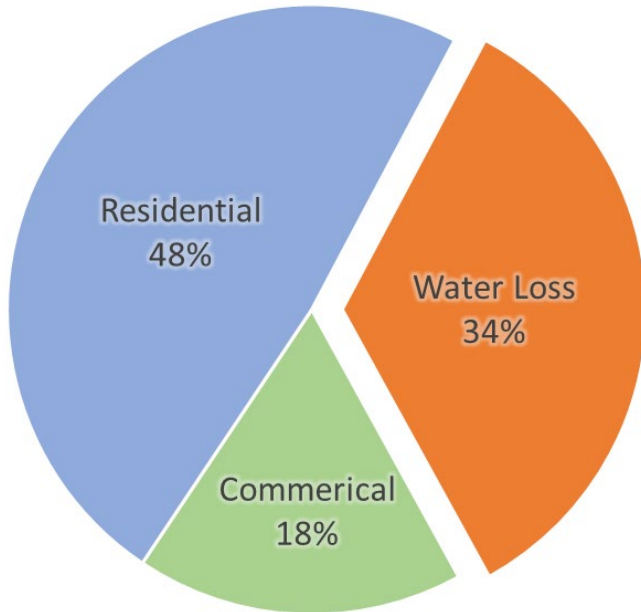
Wellington Water chief executive Tonia Haskell said the decision around water meters was for each council to take.

WWL WATER LOSS REDUCTION PLAN



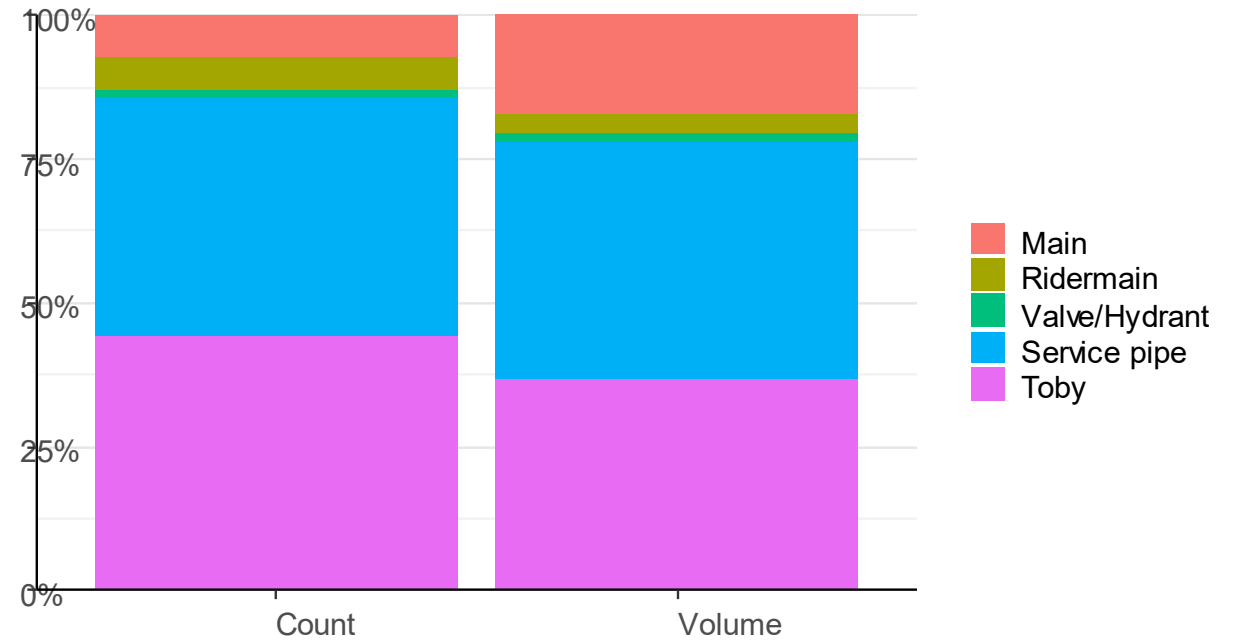
WATER LOSS FROM SERVICE CONNECTIONS

Wellington Region 2022-23 Water Demand



Proportion

Leak count and volume estimate

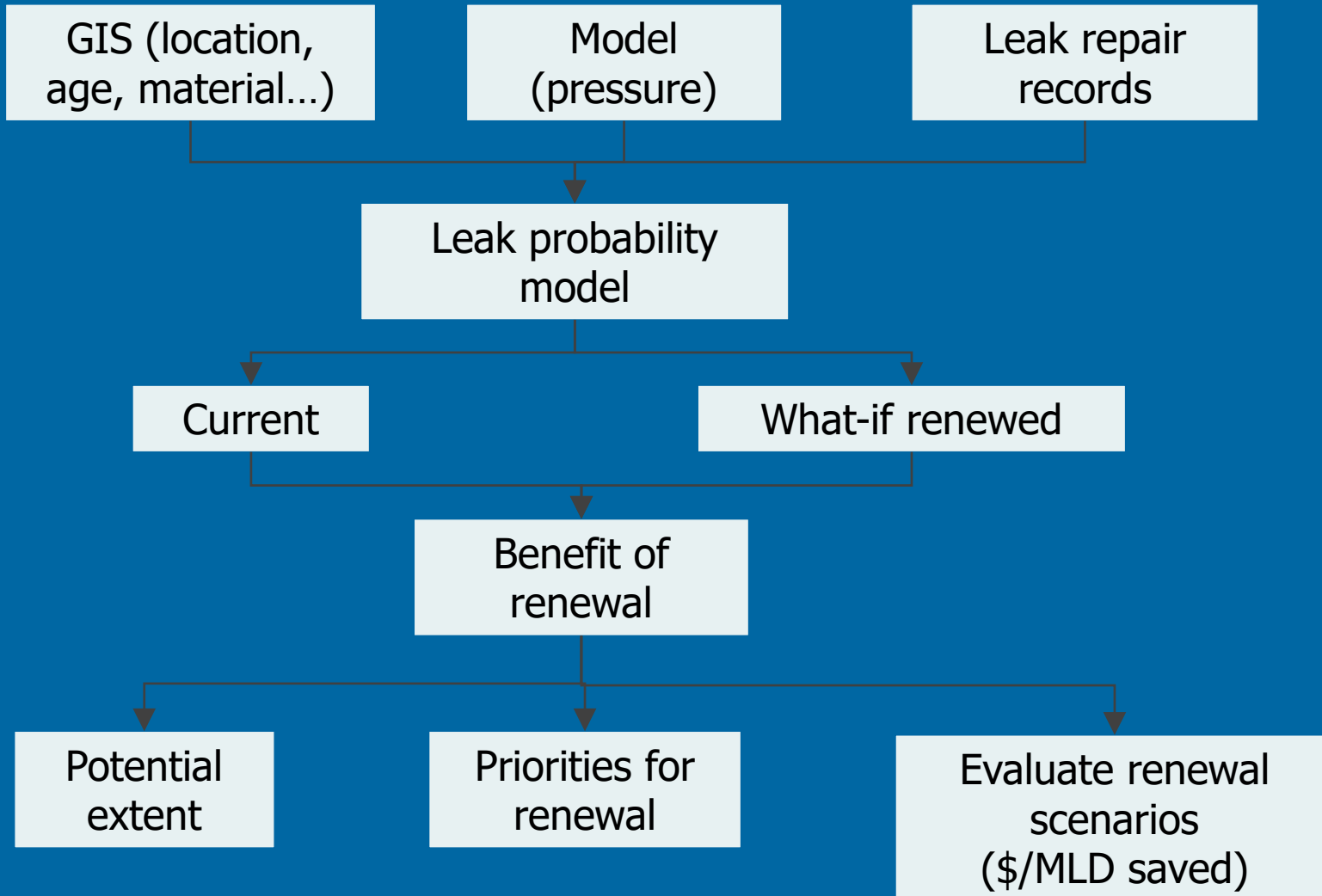


Metro area, June 2020
Excluding private leaks

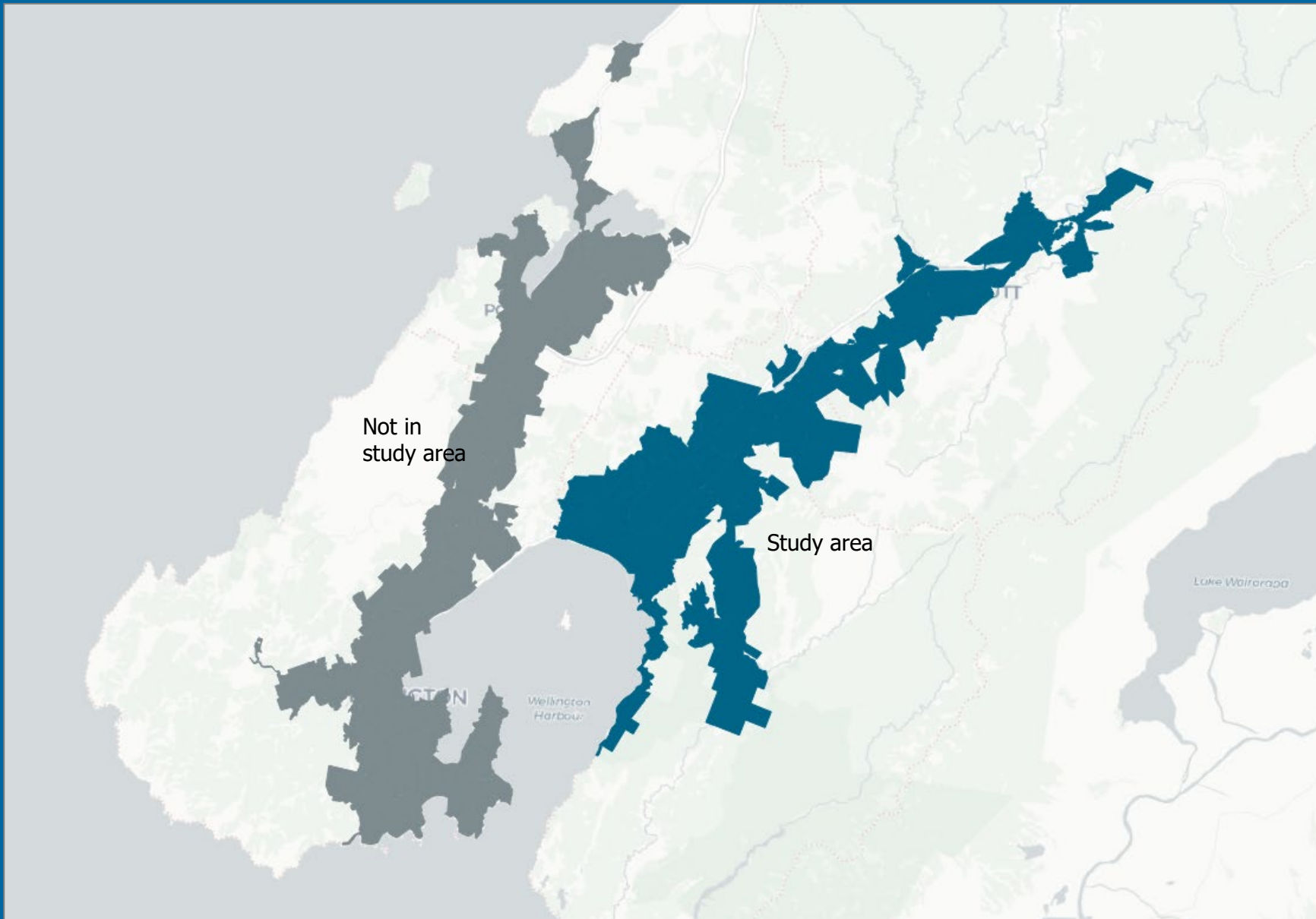
MAINS VS SERVICE CONNECTIONS RENEWALS



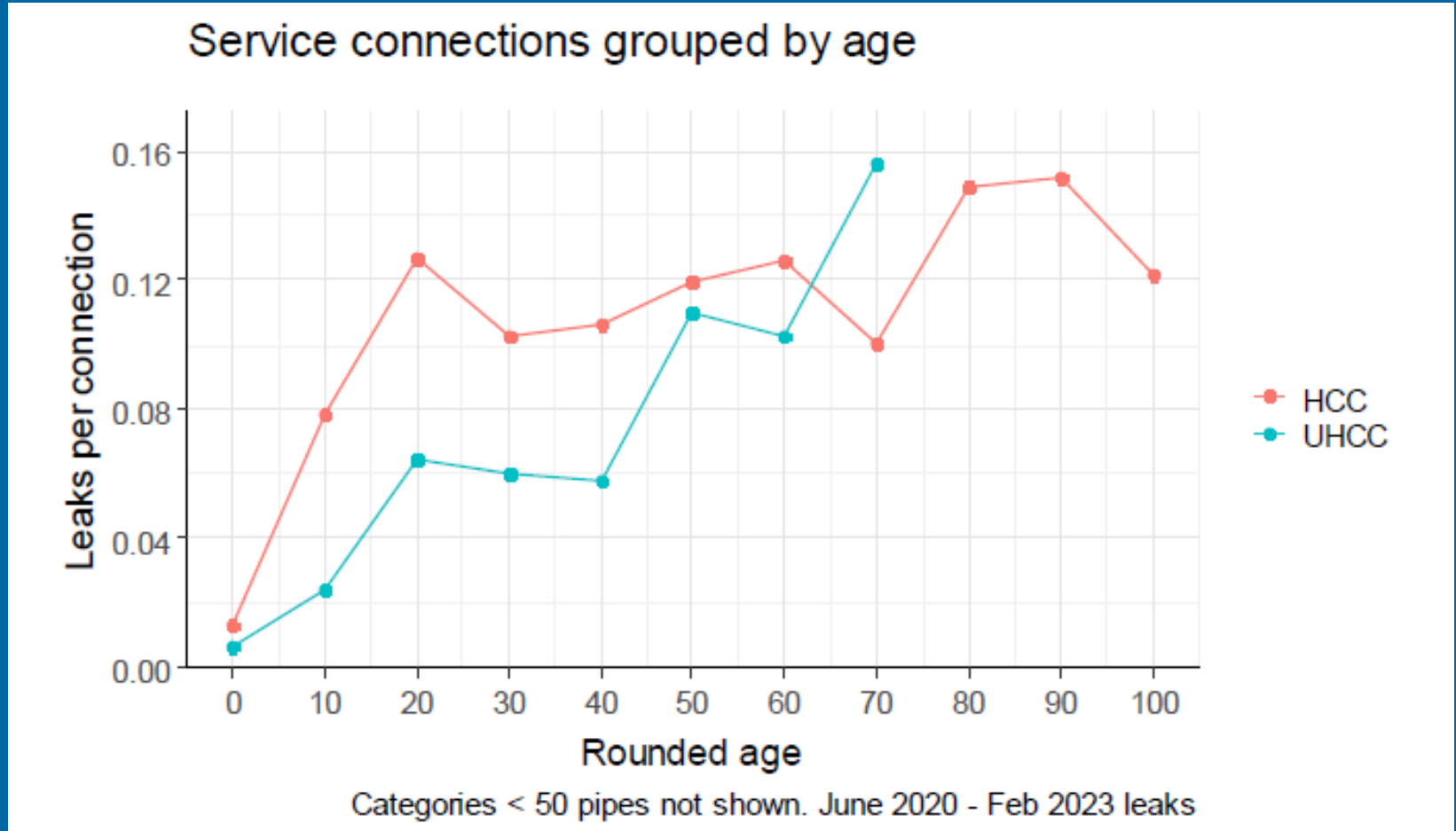
STUDY OUTLINE



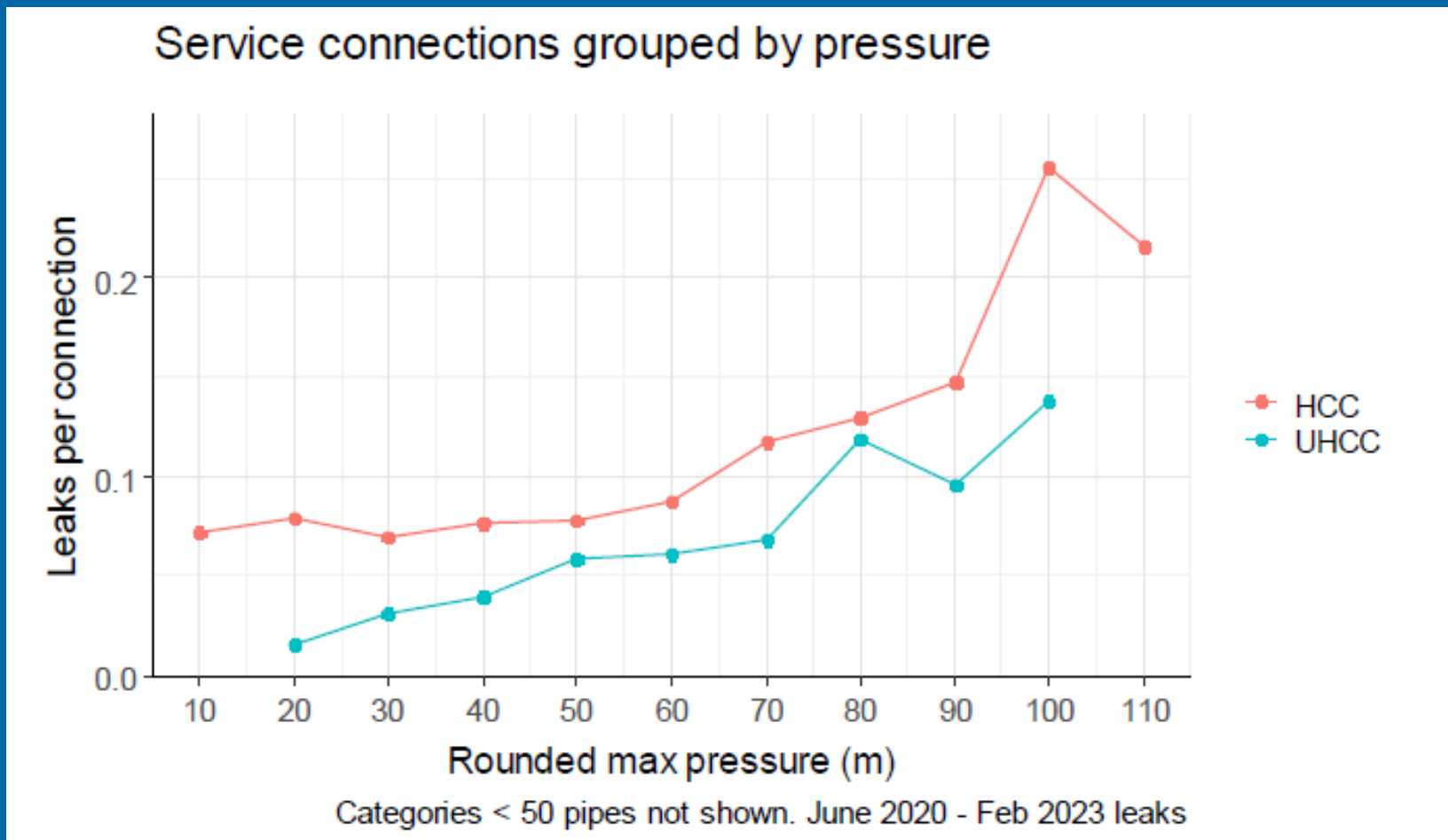
STUDY AREA



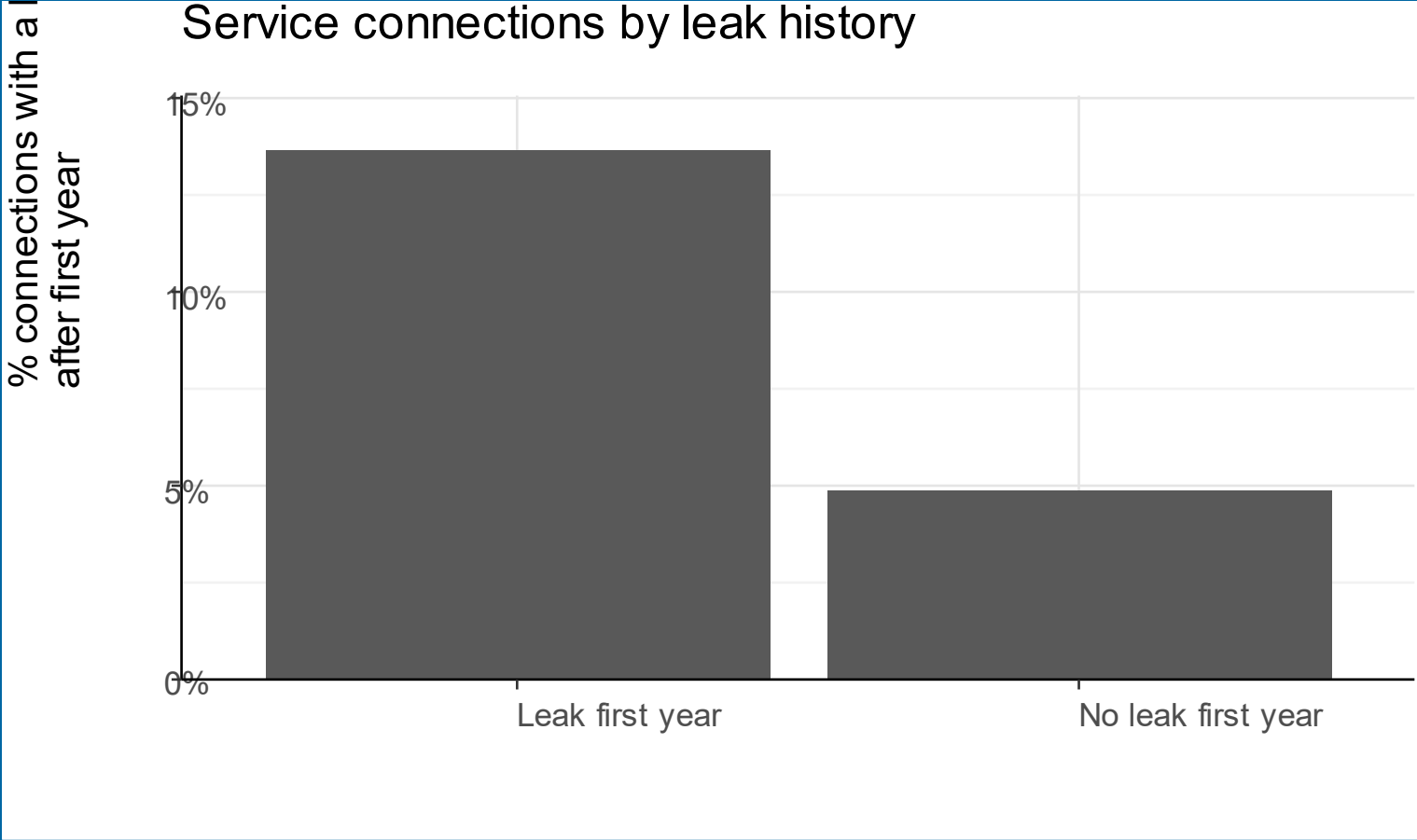
PREDICTORS (AGE)



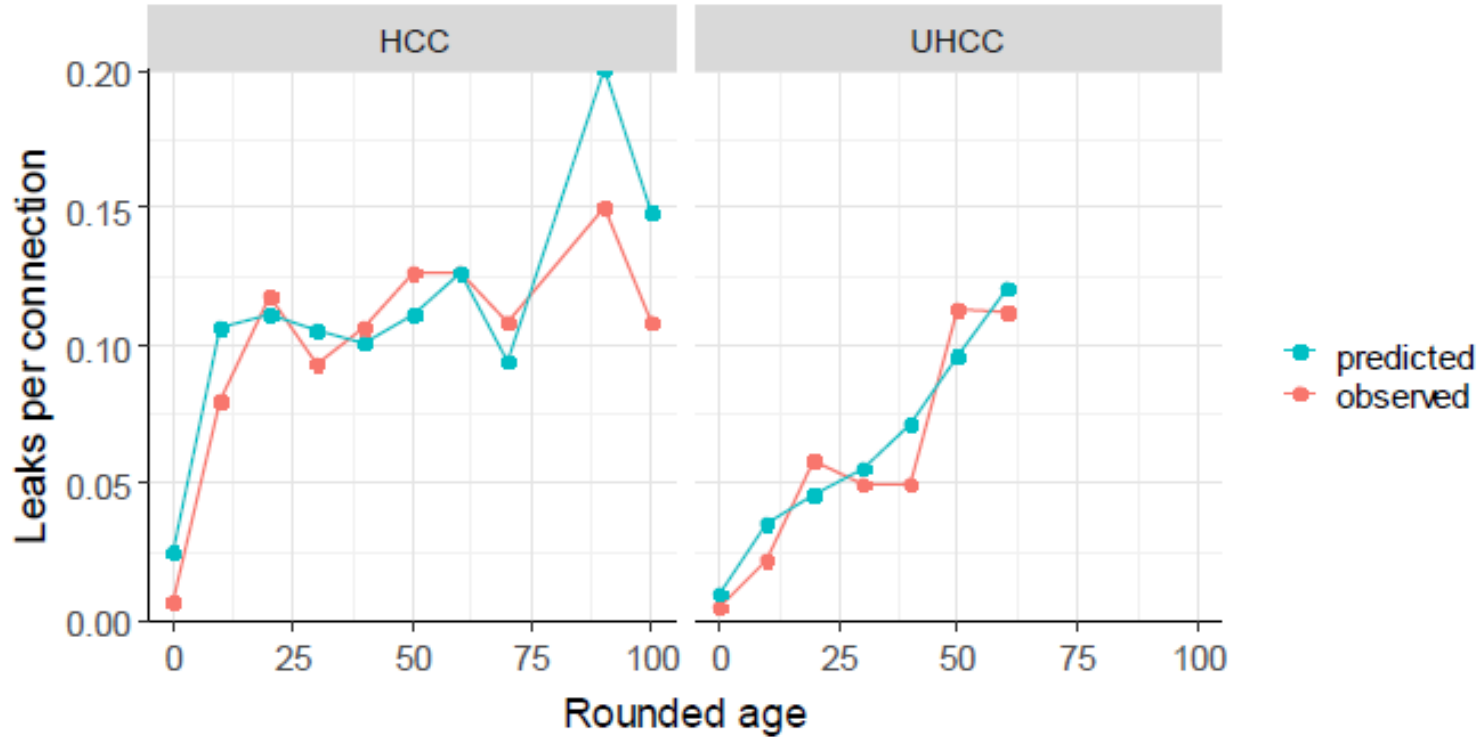
PREDICTORS (PRESSURE)



PREDICTORS (HISTORY)

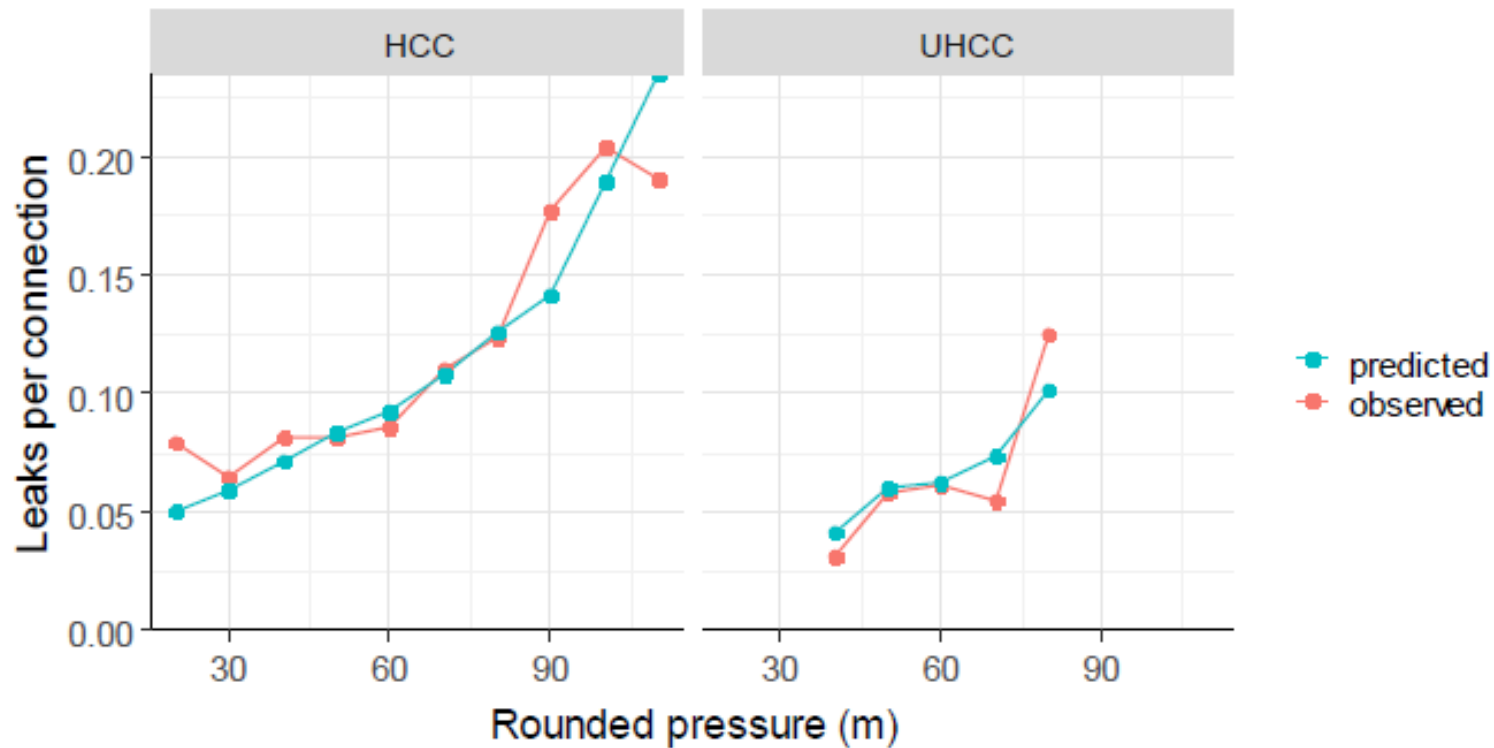


MODEL EVALUATION (AGE)



Train on 75%, test on 25%, groups < 100 dropped

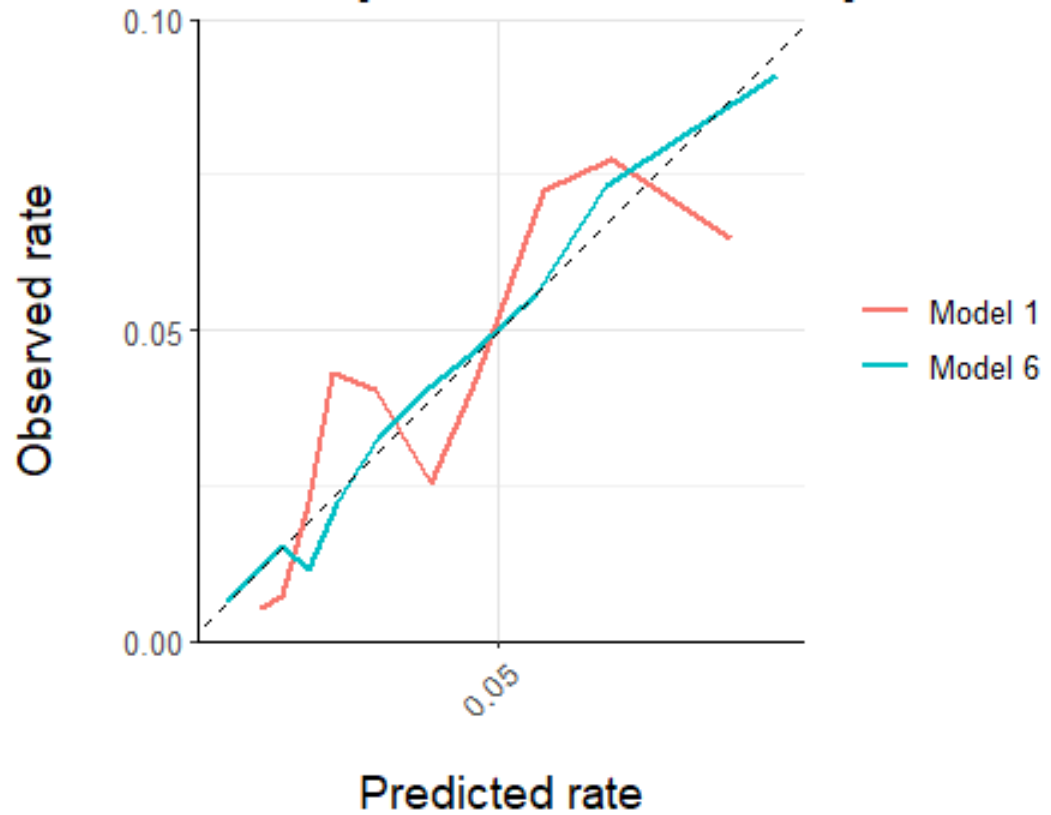
MODEL EVALUATION (PRESSURE)



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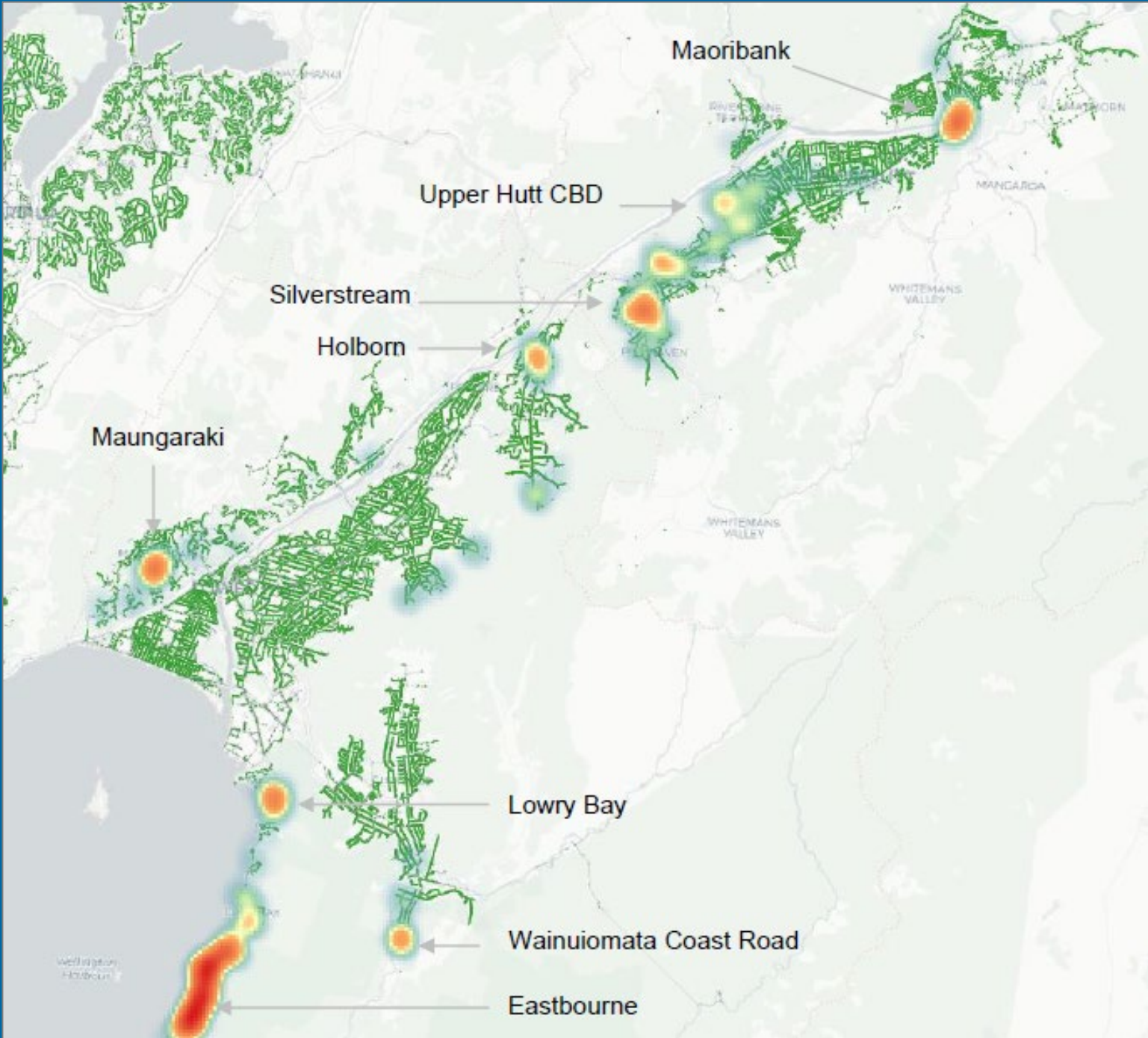
MODEL EVALUATION

Example of model comparison

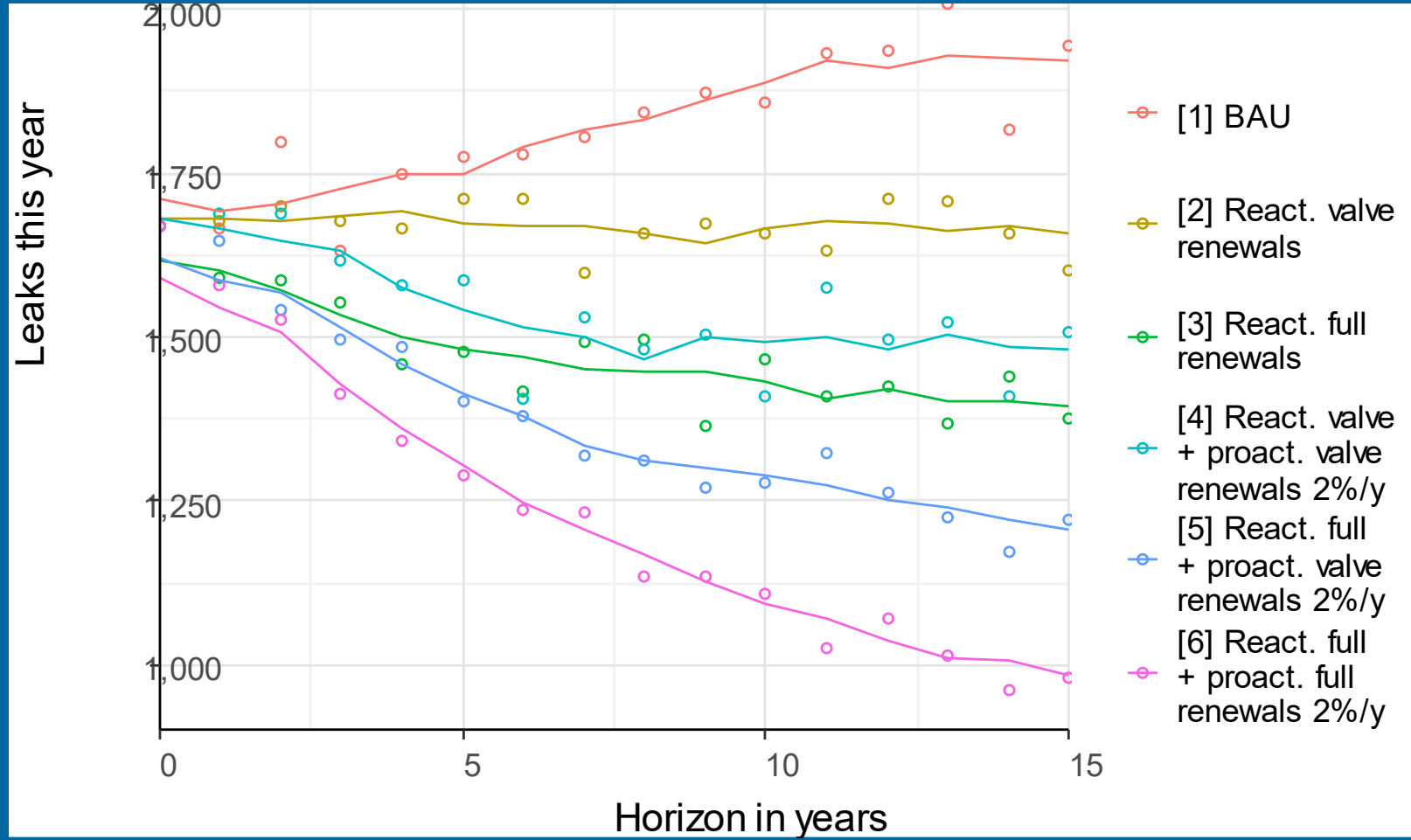


Rate in leaks per connection over the data period.
Train and test on full set.
Grouped by quantile. Groups < 100 not shown.

RENEWAL PRIORITY AREAS



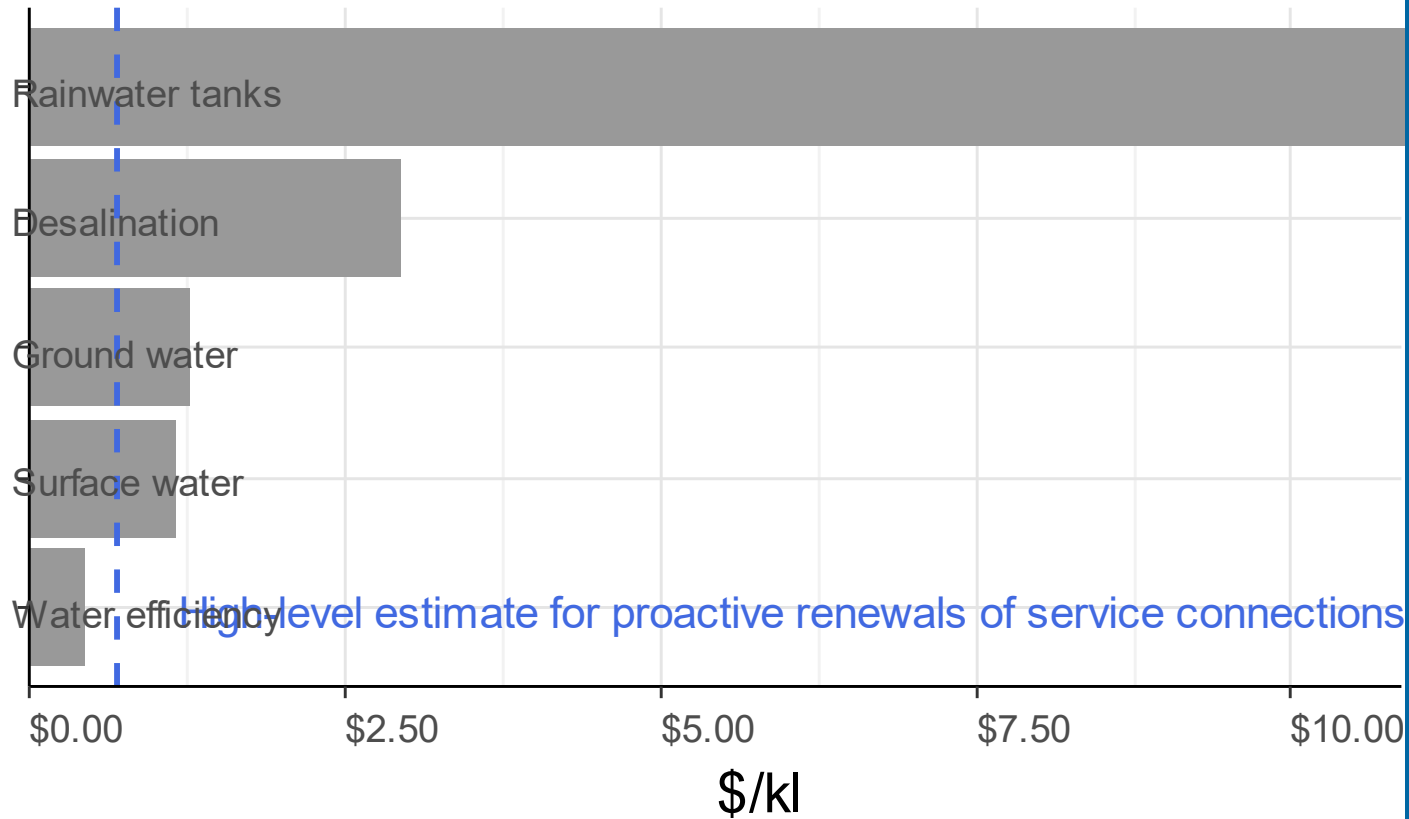
LEAKAGE REDUCTION BENEFITS



WATER SAVINGS

Scenario		Saving from BAU (ML/year)
2	Reactive valve renewals	412
3	Reactive full renewals	950
4	Reactive valve renewals + 2%/year proactive valve renewals	764
5	Reactive full renewals + 2%/year proactive valve renewals	1,225
6	Reactive full renewals + 2%/year proactive full renewals	1,619

Levelised cost per unit of water saved



LEVELISED COST

DISCUSSION

Improvements

Only 3 years of data

Cost uncertainties

Ridermains

Benefits

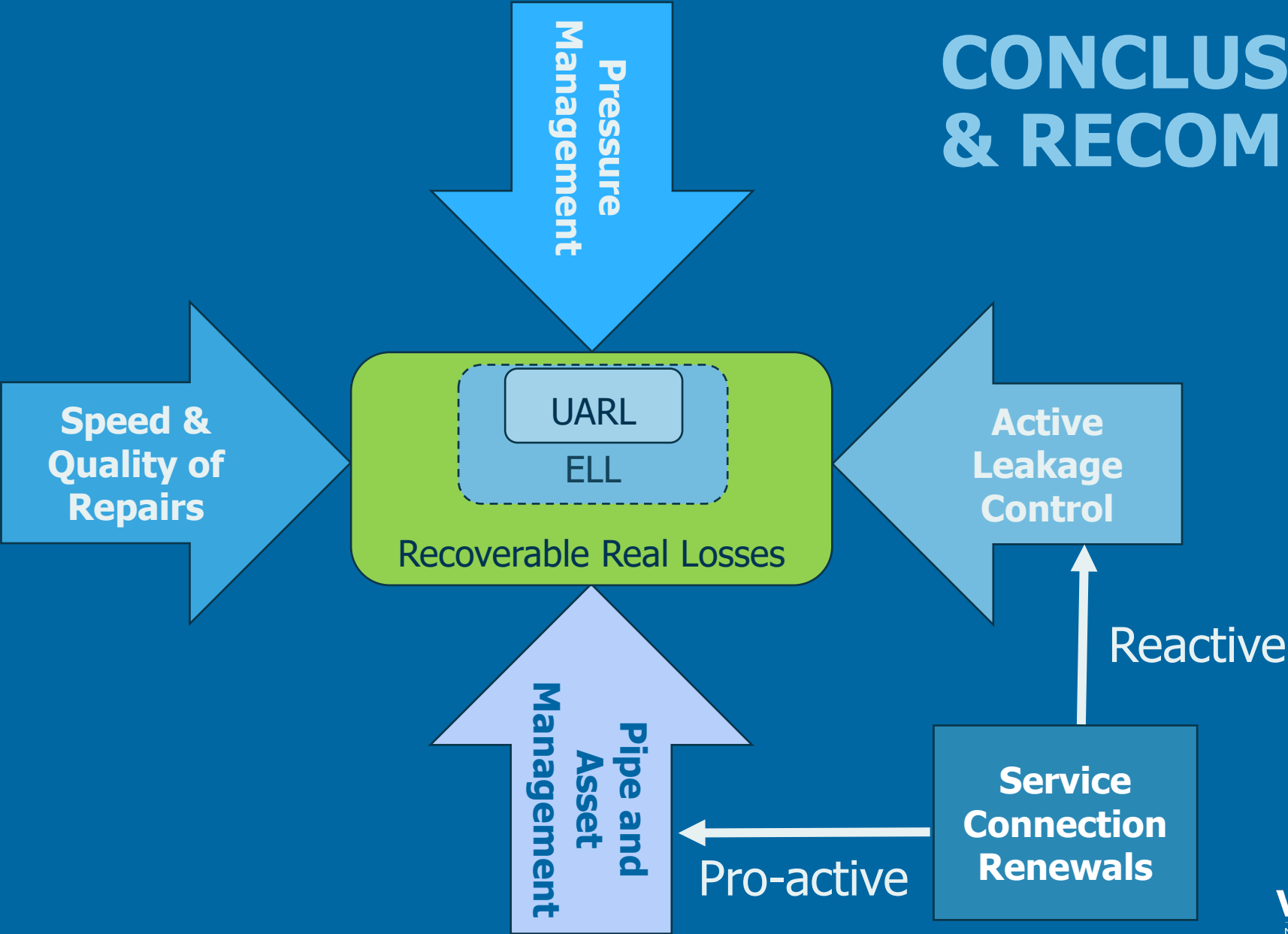
Low risk

Relatively straight forward

Frees up O&M resources

Helps to capitalise the solution

CONCLUSIONS & RECOMMENDATIONS



ACKNOWLEDGEMENTS

Wellington Water

- Customer Operations Group
- Network Engineering Team