

Omaroro Reservoir

Critical Expansion to City's Water Infrastructure





Need for the Omaroro reservoir

- ✓ **Addresses a significant existing shortfall of safe drinking water storage**
- ✓ **Supports planned population growth in the city**
- ✓ **Forms a key part of the planned response to delivering an emergency water supply to the Wellington CBD in the event of a natural disaster.**



But how do we plug it in to the Wellington water network?

Wellington water supply overview

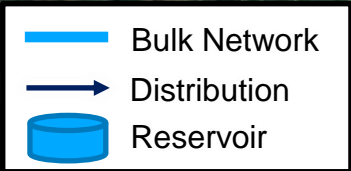


Thorndon pump station

Te Marua WTP

Waterloo WTP

Wainuiomata WTP



Thorndon PRV

Hataitai Tunnel

Macalister Reservoir

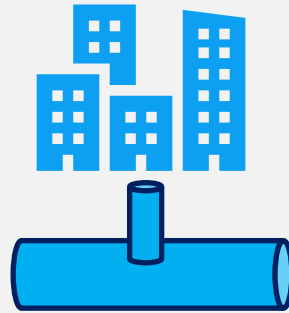
Carmichael Reservoir

Kilbirnie

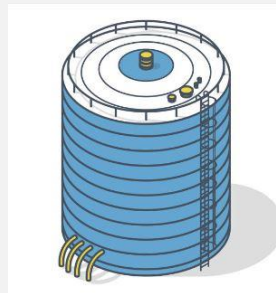
Current Operational Challenges



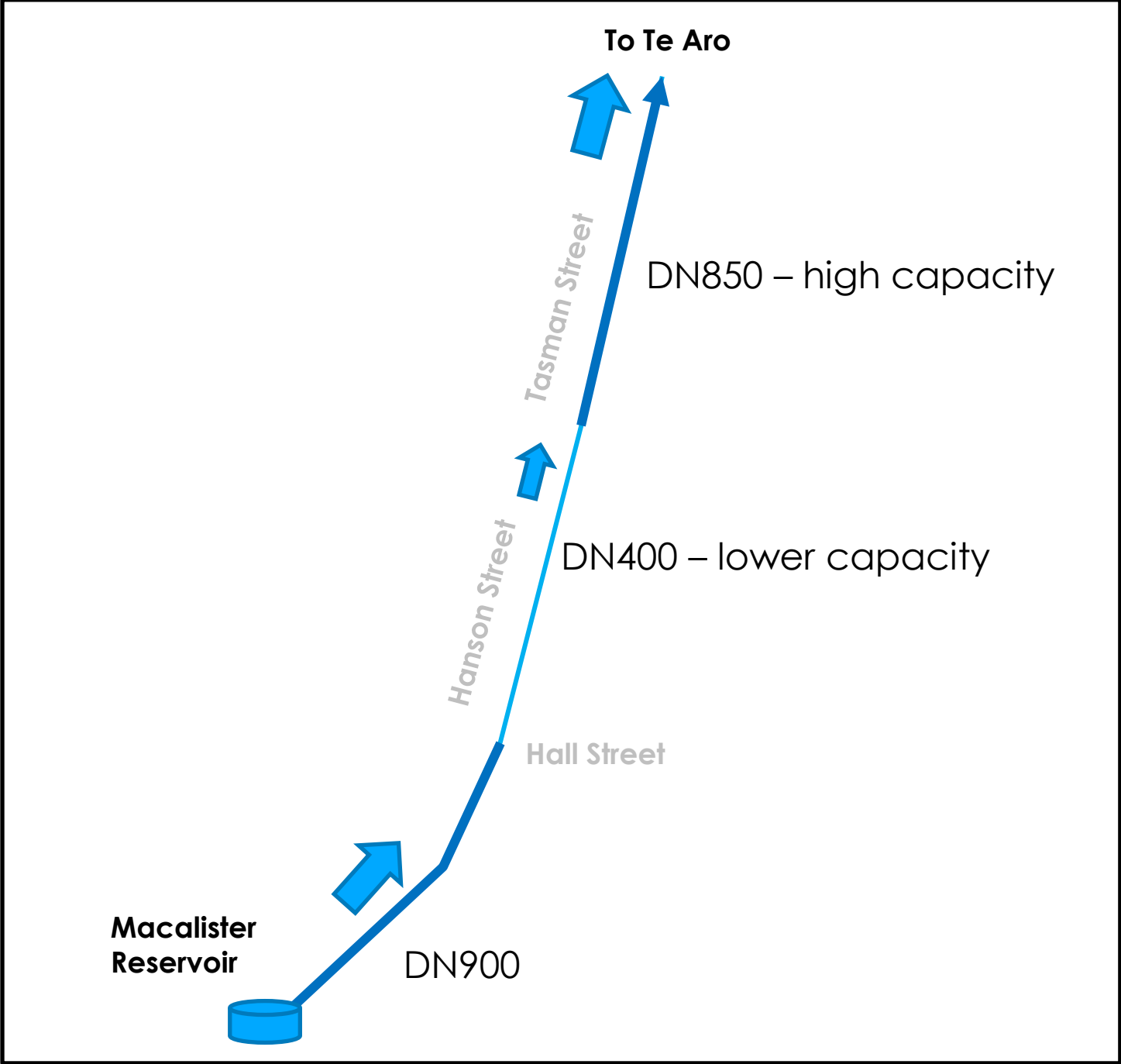
Difficulty getting water to city from Macalister






Thorndon PRVs deliver up to 10 ML/day direct from bulk network



Carmichael Res level drops under peak demand



Jessie Street Solution - intent

-  Bulk Network
-  Distribution
-  Reservoir



Thorndon PRV

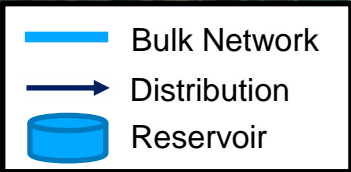
Jessie Street PRV

Hataitai Tunnel

Macalister Reservoir

Carmichael Reservoir

Kilbirnie



Jessie Street Solution - actual



Thorndon PRV

Jessie Street PRV

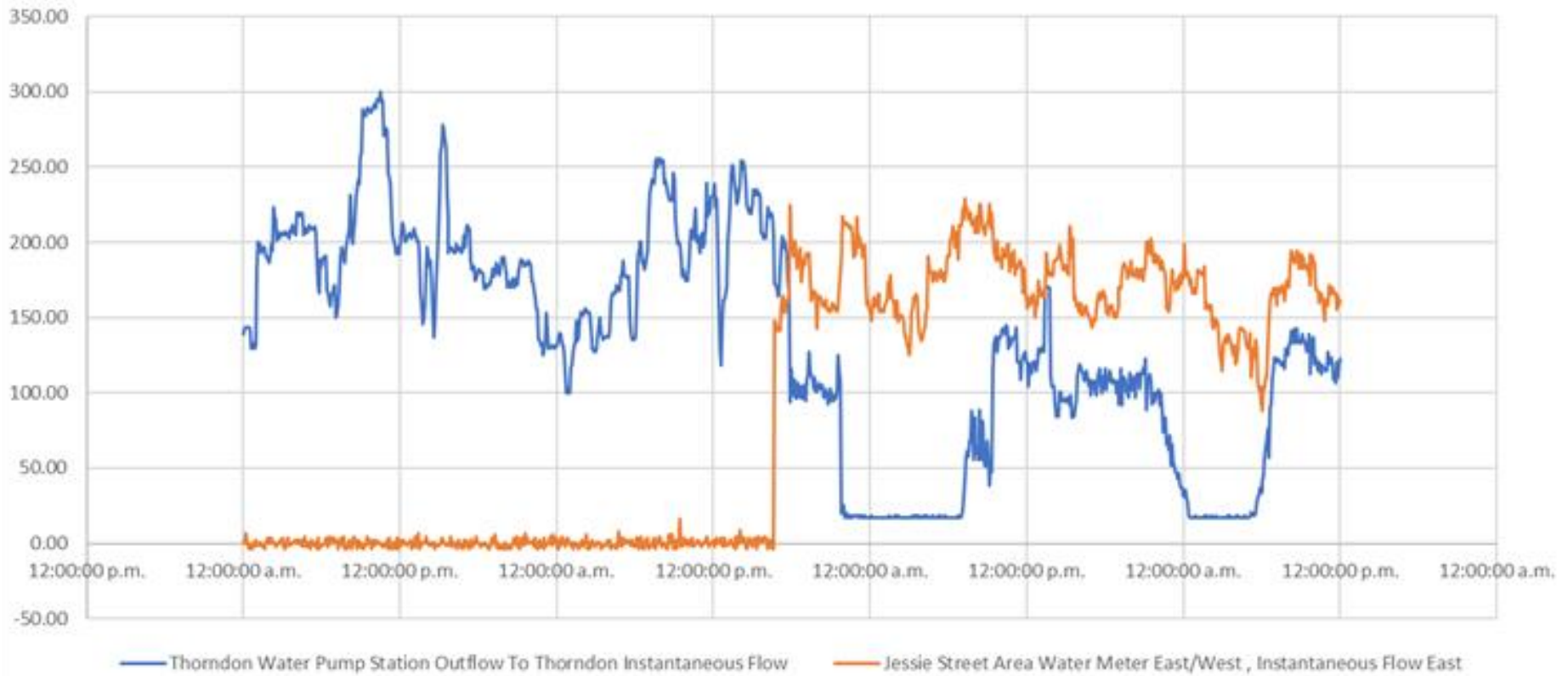
Hataitai Tunnel

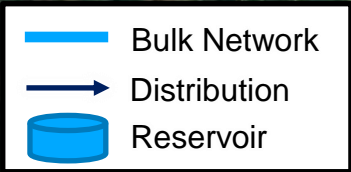
Macalister Reservoir

Carmichael Reservoir

Kilbirnie

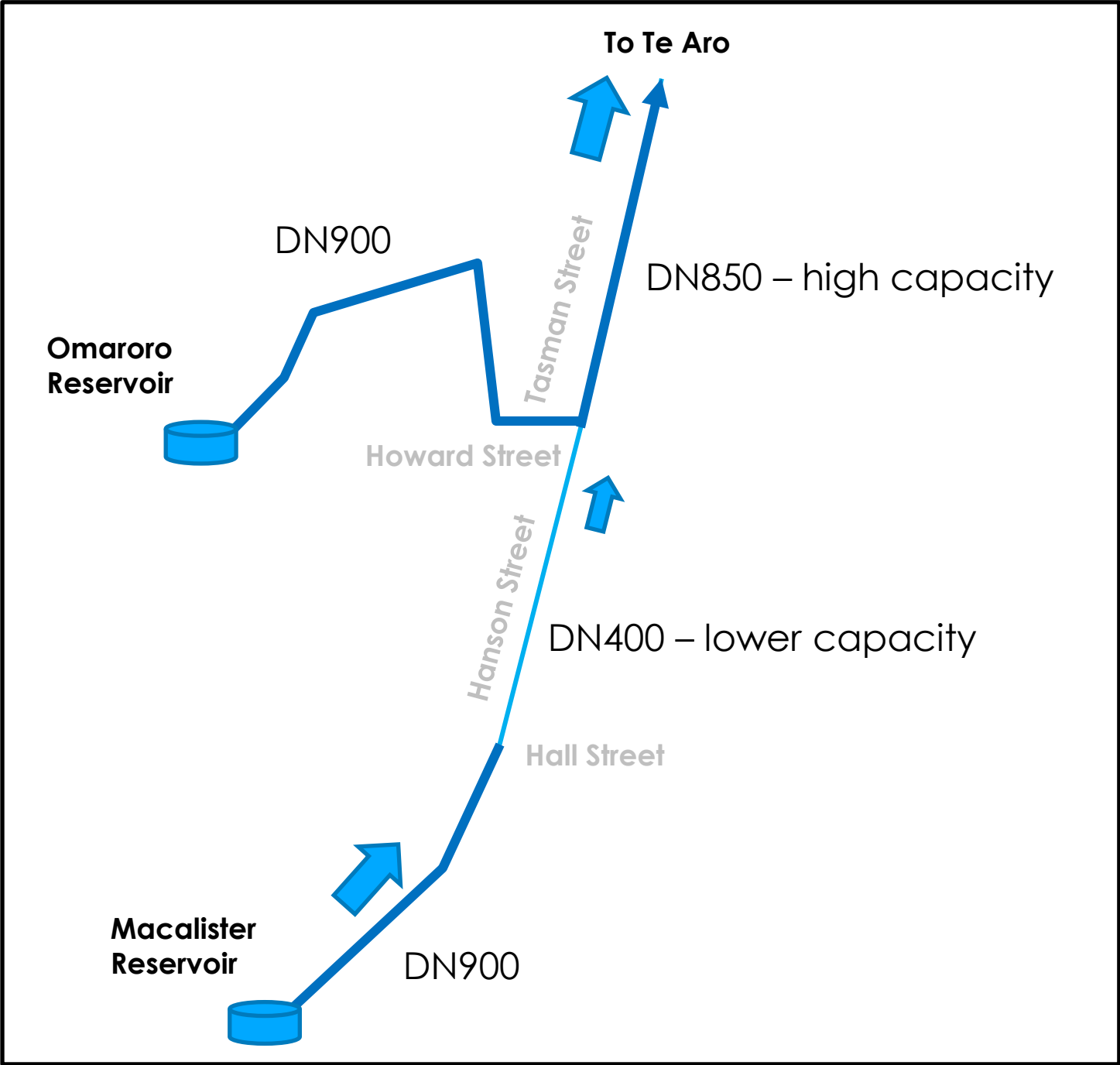
SCADA for Jessie St x-conn / Thorndon PRV flows

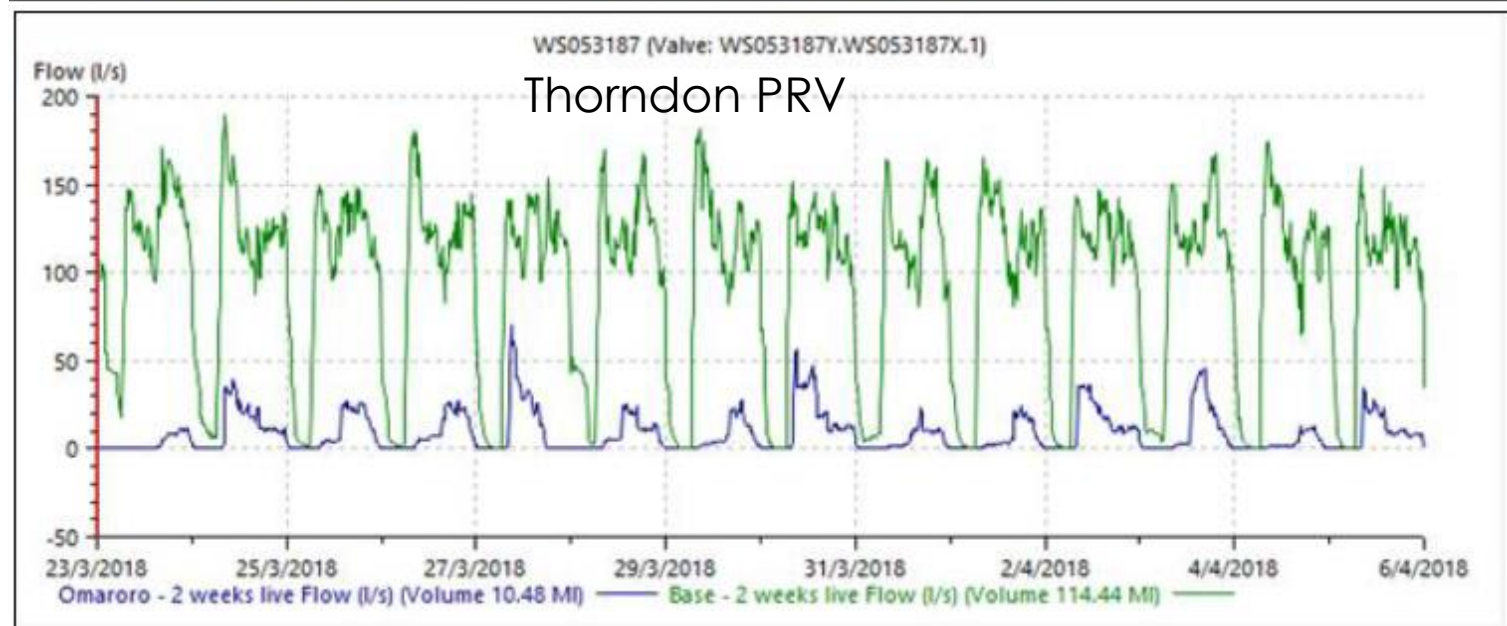
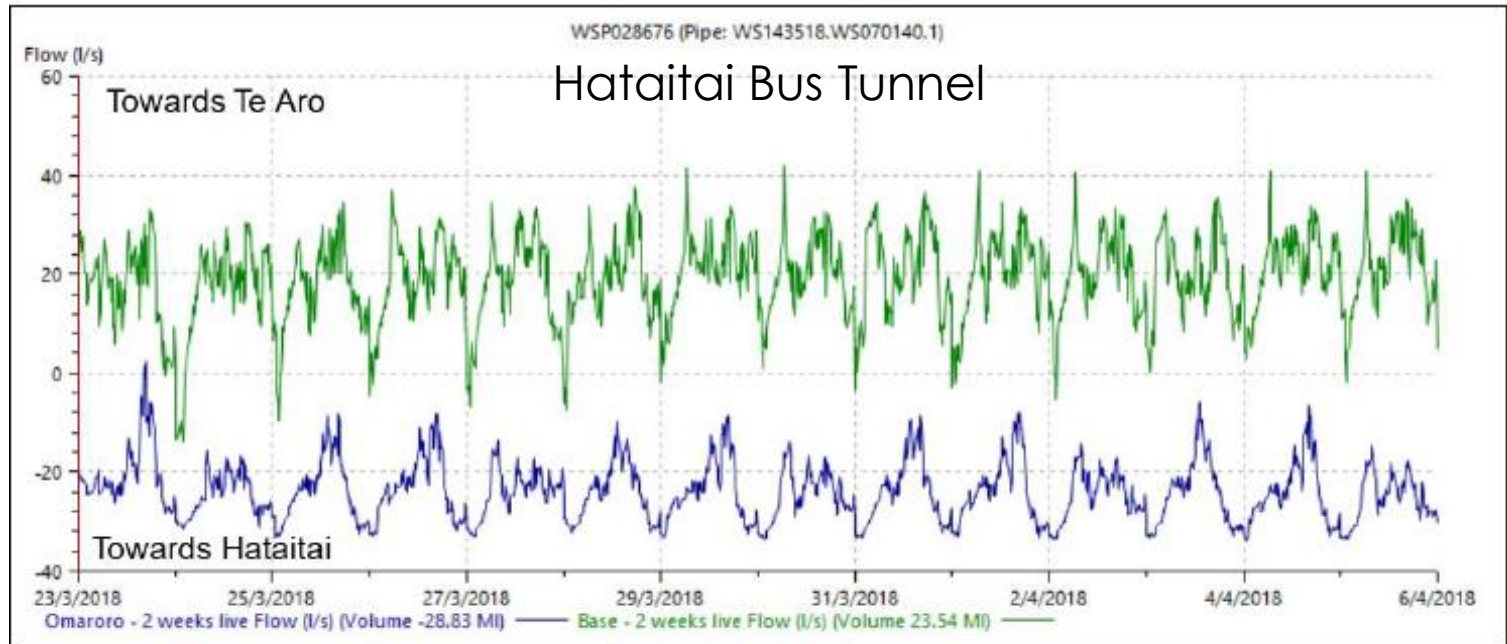




Adding Omaroro





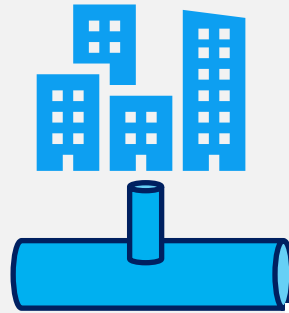


Operational Challenges update: with Omaroro



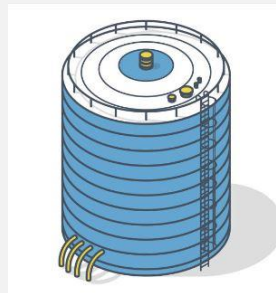
Difficulty getting water to city from Macalister

Solved - Omaroro is well-connected to city



Thorndon PRVs deliver up to 10 ML/day direct from bulk network

Solved - Pressures in city higher, flow drops to 1 ML/day



Carmichael Res level drops under peak demand

Improved - Bus tunnel flows reversed by 3 ML/day

Model Recommendations

Increase Waterloo delivery pressure to deliver 104m HGL at Thorndon PS (current peak day)



We will need increase to 115m in future peak day



We need to keep Omaroro at around 95% full to ensure Carmichael remains replenished



We can set Thorndon PRVs to open only as backup for primary supply from Omaroro



New or upgraded bulk main from Thorndon to Omaroro will be required in future to reduce the required pressure at Thorndon

Thankyou

