Technical Memo

To: Ben Cargill, Spiire

From: Ann Pugh, Urban Water Solutions

Date: May 12, 2020

Re: Sth Jerrabomberra – Northern Entry Road Water Infrastructure Review - Addendum

In the original modelling the maximum peak hour demand allowed for the QPRC Sports Centre (J-24) was 3.7L/s and an additional fireflow allowance of 30L/s. A sensitivity test was undertaken to determine a maximum peak hour demand that could be supplied to the Sports Centre, whilst still allowing for a fireflow of 30L/s.

1.1. Maximum Demand Available at QPRC Sports Centre

With a peak hour flow rate of 30 L/s at the Sports Centre the minimum network pressure is predicted to be 48.7m at customer point J-05. At 30 L/s the residual pressure at the Sports Centre is calculated as 16.1 m.

The velocities are all calculated to be below 2 m/s with the exception of the offtake for the Sports Centre, however this could be rectified by increasing the offtake diameter from DN100 to a larger pipe size.

Unit headlosses increase significantly in the network and would require pipes to be upsized to achieve the WSAA guidelines



Allowing for both a peak hour demand of 30 L/s at the QPRC Sports Centre the network was tested to ensure a fireflow of 30L/s could be supplied.

The modelling shows that the fireflow can be supplied through-out the network with residual pressures for most locations above 50m. Node J-23 has a residual pressure of 24.5m during a fireflow event at that location, whilst a demand of 30 L/s from the Sports Centre is occuring.

1.2. Recommendation

It is recommended that the size of the offtake for the QPRC Sports Centre be adjusted in line with the expected peak hourly flow, however the trunk network is able to supply up to 30L/s without concern.