Value of recycled water for non-residential use from the Subiaco Wastewater Treatment Plant

1 The Backstory
Perth’s water supply is under ever-increasing pressure due to climate change and population growth.
Recycling treated wastewater and stormwater could make a big difference to Perth’s water security, sustainability and liveability.

2 The Subiaco WWTP
Subiaco Wastewater Treatment Plant (WWTP) services a catchment of ~240,000 people, and includes the Perth CBD.

Less than 10% of the 21.9 million kL of wastewater that is treated annually is currently recycled.
None of the 1.5-3 million kL of stormwater that runs underneath the plant each year is currently recycled.
Together, these sources could supply an additional 4-5 million kilolitres annually, or ~13-16% of annual water consumption of the catchment.

3 Motivation and Questions
Motivation: To explore current and future non-residential demand for recycled water from the Subiaco WWTP.

Questions:
1) How are land and water currently being used? How might this change in the future?
2) How much are non-residential users willing to pay for recycled wastewater and stormwater across a range of different non-potable uses?

4 Our Approach
Face-to-face interviews with existing and potential non-residential users of recycled water in the suburbs surrounding the Subiaco WWTP
Contingent valuation survey to estimate the willingness-to-pay (WTP) for recycled wastewater and stormwater of non-residential users
Payment card value elicitation format

5 Pilot Test Results
There could be substantial demand for recycled water for the irrigation of sports ovals and golf courses, but little demand for other uses (e.g., indoors, industrial processing).

WTP for recycled water mainly depends on the ongoing security of groundwater availability and costs of groundwater abstraction.
WTP does not differ between recycled wastewater and stormwater, provided water quality standards are met.

6 Expected Contributions
Once completed, this study is expected to:
1) Fill a knowledge gap in the literature with regards to the value of recycled water to urban non-residential users.
2) Offer policy-relevant insights, for example that:
   - Demand for recycled water is likely to be highly seasonal, with high demand in summer, and low or no demand in winter.
   - Storage of recycled water during the winter months could therefore be an important issue to resolve.