



Water Industry Operators Association of Australia

Submission of Abstract

Platform or Poster: Platform Paper

Title of Abstract: Understanding and Improving on the Pump Station Design Process

Abstract:

The process of concept design for potable water pump stations is an iterative and time-consuming process as a base requirement. The number of complex variables such as power access, demand patterns, network storage capacities, pipe construction and future growth requirements contributes to a time-consuming design process and makes non-technical understanding of the process inaccessible to non-technical staff.

Following the recent design of Riverina Water's Bomen Pump Station, the process of pump station sizing, and pipeline strategic development was reviewed, broken down and adjusted as a Civil Engineering thesis project.

The review considered whether the multivariable nature of a concept design could be simplified for design efficiency, and the process could become more accessible to staff with no formal engineering background.

The review found that the variables can be defined and programmed to optimise the design through a procedure and template approach. Compared to a full design process, there was negligible difference between the outputs as they fulfil all requirements to move to a construction or strategic planning phase. Working from the procedure allows for templates to be made for more robust concept designs to inform better decision-making on capital budget allocation for future pump station and pipeline upgrades.

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