



Modelling Group
WATER NEW ZEALAND



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The New Zealand Water & Wastes Association Waiora Aotearoa

Calibration using SCADA: Making the most of what you've got!

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It is widely recognised that to some degree all hydraulic network models have limitations, however they remain extremely useful tools within our industry and are a key part of the toolbox used for 3 Waters planning, renewals, resiliency, growth assessments and solution development. One of the great challenges in modelling is understanding the specific model limitations and addressing them within a fixed, often limited budget. One of the main ways model confidence is addressed is through model calibration, the process of changing model parameters against observed data. A major budget constraint is often the cost of traditional flow surveys to support model calibration as they can often be prohibitively expensive in New Zealand, where (currently at least) local Councils rely on limited funds to undertake this type of work. So, how do we improve model confidence in a cost-effective manner and reduce the impact of model limitations to be able to provide additional benefits to the studies that the models are used for?

This presentation reviews a recently completed project for Nelson City Council (NCC), where an existing wastewater hydraulic model was re-calibrated using SCADA data. This assessment included a significant review and analysis of available data sets, identifying and addressing issues with the data, and identifying network trends and suitable calibration periods. Ultimately, the exercise produced a good calibration at most sites and enhanced our confidence in the model outputs, at a lower cost than a traditional flow survey calibration would have. As part of this process and the subsequent calibration, lessons were learned around data management and capture, tools were developed to help with data interrogation, and a better understanding of the benefits of limitations of such an approach for model calibration. These lessons and recommendations will be explored during the presentation to help share these insights across the wider modelling community.



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