

# Modelling Group News

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## Sixth Edition

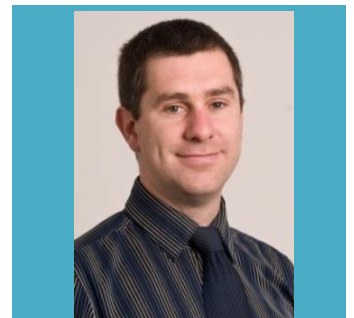
In this issue we have more committee member profiles, share some recent events and highlight some upcoming events you may be interested in attending.

## Committee Chair Profile – Jeff McLean

I am a Senior Hydraulic Modeller with Opus International Consultants, based in Christchurch. I have been working on water supply models for 13 years, and have worked on models for 27 different local authorities in New Zealand, as well as models for irrigation schemes, and water companies in Australia.

My expertise is in the building and calibrating of water models, and then using the models for design optimisation, growth planning, improving level of service, operational improvements, fire compliance and pressure management. Modelling makes up the majority of my workday, and I am also involved in design and asset management projects as an environmental engineer.

I have the honour of being the current chair of the Modelling Group, and have been involved with all aspects of the Modelling Group, including assisting the organisation of the Modelling Stream of the Water New Zealand annual conference, the Modelling Symposium, and the update of technical documents for the industry.



Jeff McLean

## Committee Member Profile – Mark Baker

A mechanical engineer and originally from the UK, I landed on New Zealand's shores in 2005 with an intention to stay in Queenstown for 3 months skiing before heading back to Europe to continue a career in the aerospace industry.

However, the New Zealand lifestyle caught hold and I soon transformed from modelling jet engines to modelling hydraulics. I spent the next 9 years working at Rationale in Arrowtown with the majority of my time spent modelling the township and rural wastewater (and some water) networks of Otago.

Being employed by a small but diverse company I also had a workload outside of modelling and gained an extensive asset management and analytics skill set as well. This broader experience is now standing me in good stead as I have taken on a new role at QLDC being responsible for 3 waters data and analytics, including being the owner of the Hydraulic models.



Mark Baker

## Recent Events

### Modelling Symposium

The Modelling Symposium was held at the West Plaza Hotel in Wellington on the 16<sup>th</sup> and 17<sup>th</sup> March. The event started with a very interesting keynote presentation from Stewart Sargent regarding Modeller Extinction and how models and the people who use them have changed and are still changing. This was followed by a range of presentations on data, sediment modelling, and water supply modelling. The first day ended with a presentation about collecting data using drones and the uses for that data in modelling.

A networking function was held in the evening with drinks and nibbles at the West Plaza followed by a fantastic dinner at St John's Bar on the Wellington Waterfront. A great time was had by all who attended, with a lovely meal and some interesting debate on modelling topics and current affairs.

Day 2 started with another thought provoking keynote from Jan Heijs – Are we (you!) getting carried away and who can keep up? This was followed by a variety of stormwater and river modelling presentations covering the length of New Zealand. The final presentation outlined the rewards and risks of modelling and was a fitting close to the Symposium.

We had a wide range of people attending, there was plenty to discuss during the conference breaks, the presenters all fielded interesting and thoughtful questions at the completion of their presentations and numerous delegates commented on the very open and friendly environment.



## Joint Regional Meeting – Modelling & Rivers Group

Wellington Water is in the process of developing a regional hydrological standard. This will provide developers, the councils and Wellington Water with an agreed and consistent way of calculating rainfall runoff. This standard will have many benefits for all involved and should save considerable effort in hydraulic modelling, developing and assessing the suitability of stormwater network designs and managing the runoff from new subdivisions. Because of its far reaching implications it is important that this standard is both defensible and accepted. Part of the journey to achieving this is to spread the message of what, how and why we are doing this. On the 19<sup>th</sup> of April, Ben Fountain of Wellington Water along with Kyle Christensen and Charlotte Lockyer of Cardno organised a regional meeting of the Water NZ Modelling and Rivers Groups. At this meeting the draft findings were presented of the Wellington Water regional hydrological standard. It proved to be a popular event with over 50 people enjoying an after work drink, some pizza and the technical presentations. There was plenty of interest and some great opportunities for integration with related projects being undertaken by NIWA and Water NZ.



Ben Fountain

## Auckland Regional Meeting

A modelling SIG event was held in Auckland on 8 June 2016. Auckland University kindly hosted the event at the Faculty of Engineering building.

Two interesting presentations were given, the first by Dr Heide Friedrich of Auckland University on '*Physical Modelling: The need for a hydraulic engineering laboratory*' in which she covered some of the recent practical applications of the laboratory, provided a valuable insight into the linkage between theory and reality, and highlighted some potential real world applications of the laboratory.

Nicola Haszard of Watercare then gave a presentation entitled '*Mangere Strategic Management Area, Wastewater Network Model Development – A Brief History of Wastewater Network Planning in Auckland*'. Nicola gave an interesting overview of the evolution of Auckland's wastewater network over the last 100+ years, and the various network planning studies undertaken in recent years. She then detailed the recent project undertaken by Watercare which involved the merging of information from several previous modelling studies to create a city wide strategic model which is being used to quantify current and future network performance, and inform the future capital works programme, in response to the requirements of Watercare's recently granted network discharge consent.



Brian Robinson

This event was well attended with over 30 people, and culminated with some 'networking' at the nearby student bar, where some recent and not so recent Auckland University graduates attempted to relive their glory days.



## Tauranga Regional Meeting – with Rivers Group & Stormwater Group

On 29 September 2016 the IPENZ Tauranga Branch hosted an event jointly with the Rivers Group and the Modelling and Stormwater Groups. The event comprised two related presentations from Western Bay of Plenty District Council:

- *“Not a storm in a teacup”*
- *“Two Mile Creek Waihi Beach – Implications today of a 1930’s decision”*

These were presented jointly by:

- Coral-Lee Ertel (Project and Design Engineer Team Leader) and
- Kelvin Hill (Utilities Manager).

The presentations focussed on challenges associated with stormwater drainage and flooding at Waihi Beach, and particularly on the interactions required in Council meeting the expectations of ratepayers. One issue in particular that was discussed was the 1930’s decision to build two drains through the existing dune system to outfall at the beach, to provide drainage to what was a back-swamp area. Land ownership, maintenance and upgrading of these two drains as further development has occurred in this high-value beach township has been an ongoing challenge, and Council staff have undertaken significant analysis, design and consultation on these in attempts to find solutions agreeable to all.

Both presentations were followed by lively question-and-answer sessions, with many of the attendees participating and sharing their knowledge while asking a range of questions on the content of the presentations.

The event was attended by 31 people. In addition to many from the Tauranga area, some had travelled from Rotorua and from Hamilton to attend, making for good networking opportunities amongst like-minded peers. It was pleasing to see a good range in the ages of those attending.



## Water NZ Journal – September/October

In the latest issue of the Water NZ Journal there are two modelling related articles that may be of interest to readers. These are:

- *Kapiti Coast strategic asset forecast – Confident planning in a changing world*
- *The future of Water Modelling*

## Upcoming Events

### Water NZ Annual Conference



Water NZ's Annual Conference is being held at the Rotorua Energy Events Centre from 19-21 October 2016. There are a number of papers being presented at the conference with modelling themes that will be of interest. Some of these are:

- Water information – a thirst for insight, igniting information – Keynote by Graham Hawke, Australian Bureau of Meteorology
- Inflow and Infiltration Assessments – Easy To Get It Wrong – Jan Heijs
- The Importance Of Maintaining 'Live' Strategic Wastewater Planning Models – A 3<sup>rd</sup> Generation Model – Richard Pullar
- Automate As-Built Processing – It's About Time – Scott Ferguson
- Implementation of Intelligent Water Network Solutions – Experiences from Australia – Eric Skowron
- The Future of Water Modelling – Dan Stevens & Emily Stevens
- Modelling the Performance of Water Treatment Plants using Artificial Neural Networks – A Literature Review – Ivan Ottenheijm
- Watercare's Comprehensive Wastewater Network Discharge Permit – Wastewater Network Strategy – Nicola Haszard
- Community Engagement and Technical Collaboration Leads to a Greatly Improved Wastewater Service for Whangarei – Steve Couper & Andrew Carvell
- Intelligent Water Networks – The Emergence of Operational Modelling and Real Time Decision Support Tools – Patrick Bonk
- International Moves on Accuracy Testing of Flood Models – Alastair Barnett
- Operational and Strategic Planning for a Dynamic Water Supply System – Shailesh Kumar Singh & Geoff Williams

Additionally we are having the Modelling Dinner at 7:30pm on Wednesday 19<sup>th</sup> October with our very popular quiz back for another year. If you want to join us register at:

<http://www.waternzconference.org.nz/>

## Water, Infrastructure & the Environment



## Modelling Symposium 2017

### SAVE THE DATE!

The 2017 Modelling Symposium will be held in **Auckland on 15-16 March 2017**. The Digital Water Group has joined with the Modelling Group for this event and we are planning keynote sessions and workshops along with a range of presentations.

**We will be releasing a call for papers for this event very soon so start thinking about topics you may wish to share with your fellow modellers.**

The Symposium is great for meeting your peers, networking and there is always plenty of robust discussion.

Some feedback on what delegates liked from last year's Symposium:

- The focus on using modelling as a tool, whatever the discipline, to achieve good outcomes for communities and our environment (i.e. lots of big picture thinking and motivation)
- Friendly / warm atmosphere

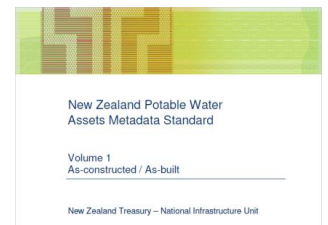
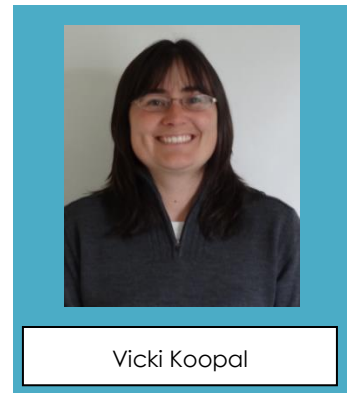
## Metadata Standards

Recently, I had the opportunity to be involved with the Water Technical Working Group (WTWG) for the New Zealand Metadata Standards. The standards are being developed to help improve how vital infrastructure in New Zealand is managed and enable more informed decisions to be made.

The WTWG had a number of meetings in Wellington throughout the first half of the year where the various data requirements for decision-making were discussed by a range of practitioners from varying roles throughout the country.

Hopefully, more standardised data collection will help us as modellers by providing similarly structured datasets around the country, enabling quicker import and assessment of the information we use to build our models.

Draft Standards for Potable Water, Wastewater and Stormwater are available to download from the LINZ website, however the feedback period has closed.



## LinkedIn

Please join the Water New Zealand - Modelling Group on LinkedIn.

We are seeking to use this group as a way of networking, information sharing, and updating members. We encourage you post in the group as we are aiming to increase engagement and interest. There are currently 86 members.

More information regarding the Modelling Group can be found on the Water NZ website:

<https://www.waternz.org.nz/Modelling>