

MEETING: COUNCIL – 11 August 2022
Name of item: ELECTED MEMBER TRAINING AND CONFERENCE
ATTENDANCE REPORT
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Event

Water NZ Workshop and Conference 2021, Hamilton

Purpose

Water NZ Conference 2021 was postponed twice. Part of the conference was streamed online, and then finally Part Two took place May 2022 in Hamilton.

Delegates that attended included workers in the 3 waters industry both in the public and private sector, business, government and non-government agencies, with a handful of mayors, chairs, chief executives and councillors, and senior management from New Zealand's councils.

Report

Water New Zealand is the industry body for the three waters sector – drinking water, wastewater and stormwater. Their role is advocating and promoting the sustainable management of water and the environment, by supporting members and engaging with key partners and stakeholders. Officially known as The Water and Wastes Association, the Association has its origins in several different organisations dating back to the late 1950s. Through a process of formal amalgamation in 1992, these organisations came together to form New Zealand Water and Wastes Association (NZWWA).

PART ONE

We kicked off with a workshop on 3 waters reform, with updates from the new water regulator Taumata Arowai and the Department of Internal Affairs.

- Safe, clean drinking water everywhere, every day is the goal for Taumata Arowai
- The regulator is one of the first organisations giving effect to Te Mana o Te Wai and their regulating powers are in legislation, to support them to do so
- During the workshop some of the questions from attendees were around, “Is reform a done deal? What if a future government repeal?” Members of the National Transition Unit replied, “we are doing all the work in this space to benefit the people, and infrastructure needed. Regardless of what happens, from a transition and operations perspective, it’s good sense to take part and do the work. It is work that needed doing anyway, the work will not be wasted.”
- Chief Executive of Taumata Arowai, Bill Bayfield gave the keynote address. Key statements included Calm the Farm – let’s dispel the misinformation for water suppliers getting ready to work with the regulator. Unregistered water suppliers have up to four years to register, and a further 3 years to meet requirements of the Water Services Act 2021. The entities and regulator are

not taking privately owned water supplies. "Some of the misinformation may be winding people up. They may be feeling pressured. There are 74,000 of you, Taumata Arowai are there to work WITH you".

Further highlights from online sessions:

- Shannon Davies from AECOM presented on incorporating a cultural context into water management, she took us through her India Exchange. It was a fabulous insight into how cultures have different relationships with a river, with water...to many cultures it is not just water. Lesson she wanted to impart on us is that water staff need to listen and to take time to learn the cultural context water has in Aotearoa.
- BECA and Tonkin + Taylor presentation on measuring drought resilience, the UK 2004 – 2006 drought and the uncertainty of supply or when the drought would end. So too for the Auckland 2019 drought. Water resources got down to 40%. Watercare had restrictions on use for homes and businesses. Predictions were all they had, or prior droughts, which didn't give them an idea of when the drought would ease.
- Climate Change Pressures in the Wastewater Sector and Adaptive Planning cemented a lot of what we already knew but on a national scale. 19% of NZ wastewater treatment plants are at risk due to sea level rise. Precipitation and flooding are set to increase in some parts of NZ, and projected decreases too. NZ projections are highly variable. Flooding can overwhelm a wastewater treatment plant.
- Future of wastewater: There is an overall cost issue. Especially for small rating bases. Risk vulnerability varies significantly. National level guidance needs to be flexible for the varying needs. There are concerns for future planning and development – consents need to have a staged approach to be able to adapt to climate change.
- The Paihia Wastewater Treatment Plant was in the spotlight for our Bioshells® we used to provide an in-pond treatment system within existing assets. With over 550 Bioshells® operating, this is the first NZ nitrifying plant and the largest of its kind outside of the USA. Performance monitoring over more than 1 year of operation has demonstrated that ammonia concentrations have been reduced from typically 50 mg/l to less than 2 mg/l. Total nitrogen has been reduced by 40% and additional benefits to BOD, TSS and E coli concentrations have been recorded. Alkalinity has been identified as a major issue within pond treatment, resulting in the need for chemical addition to ensure full ammonia removal occurs and to maintain acceptable discharge ph. In a tight capital programme and space restricted site an innovative solution has been realised, saving ratepayers \$18M. And the project was recognised at the Public Works Engineering Australasia (IPWEA)2021 NZ Excellence awards.
- Microplastics in the NZ water environment was a startling session. We have an important role as leaders to raise awareness of plastics ending up in the environment. Kitchen sponges and our plastic kitchenware break down into smaller pieces, clothing is a contributor too. A lot of us don't think of glitter as a microplastic, but it is. Make better choices, reduce, even with filters on, the plastics break down and NEVER go away. Presenter Helen Ruffell also took the opportunity to remind everyone, "If you are one of the naughty ones flushing wet wipes, you need to stop that now".

PART TWO – Wednesday 25 May – Thursday 26th May

Pre-Conference Workshop

I attended the pre-conference workshop which was all about 3 waters transition, with Taumata Arowai and the Department of Internal Affairs team. A panel provided a good opportunity for Q & A

- Day One looks like - a seamless transition for customers, the workforce and wider industry; taps still run, toilets continue to flush and stormwater continues to drain; rapid response from the entities to any unexpected faults
- Taking 69 providers of services and amalgamating into 4 entities whilst achieving continuity of services
- Gave assurance that the legislation will withstand future attempts to sell our public assets to overseas or private investors

Conference

The conference was opened with a powhiri and address from the Water NZ president. Then our guest speaker was Minister of Local Government, Nanaia Mahuta. She spoke about the 3 waters reform legislation. Reiterating that there has been underspend in water, wastewater and stormwater by successive local and central governments. And the opportunity the entities along with Taumata Aromai present in working with iwi and hapu to give effect to Te Mana o Te Wai. She also highlighted the significant amount of works with about \$180 Billion forecast to be spent over the next 30 years. She acknowledged too, the workforce constraints.

- Encourage participation, it will address some of the mistruths
- The bill sets out the ownership, accountability and essential provisions for ongoing public ownership and sanctions against privatisation.
- Powers of internal affairs during transition. TO assist in smooth operating during the transition.
- We cannot get the details of these bills right, without working together. Reflect on how we implement the changes – we need local expertise and experience to stand up these four entities to provide services. NTU has been working with councils to establish regional transitional teams, to be the primary interface to enable continuity and effective service. Councils to be involved in this space too. Closer coordination between water services has already begun.

She closed with comments about the interrelationship with climate change adaptation, and “Leave no footprints – play our part to reduce our carbon footprint”.

There were simultaneous sessions, it was hard to choose which sessions to attend.

Climate Change

Goal is low emission solutions. Zero Carbon Act helped take some of the politics out of the equation. The Climate Commission provides independent evidence based advice to government of the day. The commission will have to report on the implementation of zero carbon, emissions reduction plan, national adaptation plan. 3 waters reform – resilience to climate change and natural hazards. Will require concerted sustained actions. Commission recommended shadow emission pricing, and will help LG to do the same. But LG needs support on how to implement shadow emission pricing. Need to encourage RDD in our operations so that they can come up with new technology. We all need to understand our emissions and where they come from.

Within 10 years – a clear picture of what our emissions are. Also have a clearer understanding on what the impacts are. We will have plants that are effective, not invest in infrastructure on coasts that aren't going to be there in 20 – 30 years!

120 – 160 Billion, does not include climate change and net zero infrastructural upgrades. At a global level there are founders looking for places to invest their money – to address climate change. The capital is coming from stimulus packages. Big investment funds. For example, Black Rock investment who are prioritising climate change, which is one of their key risk.

Measuring Carbon Emissions on a Pathway to Net Zero

A look at carbon accounting guidelines for wastewater treatment. There is a 2022 detailed guide on measuring emissions for organisations.

Moata Carbon Portal – Mott McDonald sponsored, creating models to estimate what our carbon values are. You can get a baseline on how much carbon at the completion of the asset.

CONSTRUCT – how to convert your site-based materials into GHG measurables.

Why is updating the mission factors important? Based on updated emission factors the Auckland Efs went down, the activity didn't change, the measuring did.

What are the variables – we have a global methodology being used. "Typically for process emissions IPCC looks at the NZ population, estimate how much protein we are eating, 0.5% we were told by commission yesterday". We want to measure in influent effluent, but we aren't there yet. We want to have some accurate data to ensure we are showing how the plants are working. So we have a Pecaro monitor, and gas hood. \$100k worth of equipment. Kevin Brian is measuring the gas coming straight off the effluent. This will help us determine the emissions. Rosedale are using it to measure greenhouse gas emissions.

We want to measure so we can set targets and reduce our emissions. As an emission reductions hierarchy – avoid, change where they come from and/or offset where they come from. There are some opportunities to avoid, by designing it out.

Scenarios showing emissions pathways, helps with decision making.

Process emissions from wastewater – aeration and capturing the emission as a fuel – look for the opportunities. Integrating trees into our portfolio is the way of the future. Once you have realised what your emissions baseline is, set targets, measure. Think about what you as an organisation can do to get there!

Lessons on Green Infrastructure with 3 Waters Reform

- Proactive maintenance schedules are the priority.
- Lack of maintenance turns a wetland into a liability rather than an asset
- Make sure the design at outset is not creating a liability
- Lack of operational input at design can result in unsafe and/or expensive assets to maintain
- Need to have right policy environment around green infrastructure
- Land ownership should guide public private status of new green infrastructure. Access can be limited on private land.
- Where there is required to be private green infrastructure, there is risk so there needs to be a compliance regime.

RMA Reform Implications for 3 waters

- WSEs will need to operate within the existing RMA framework for some time
- WSEs need to be integrated into the RMA right now

Minister Parker expects the NBA and Built environment changes in the later part of this year to be introduced to parliament. It will take some time before all the planning transition is completed.

WSEs need to be involved with the planning processes at a regional and district level.

- WSEs will be the largest users of the new RMA framework. There are some huge infrastructure projects that will be impacted by the RMA reform
- Environmental protection and improvement, infrastructure has effects that will occur – without them the costs will climb
- The new regime will bring in further limits, minimum bottom lines for certain resources, that prevail over enablement of three waters infrastructure

One of the key features of the natural and built environment act and meeting planning outcomes, will be achieved through spatial planning. Aims to address growth related issues and better integrate infrastructure planning and growth.

- Critical documents in informing the 14 NBA plans
- Clear provision for infrastructure in spatial plans

There is likely to be maximum allowable limits specified /contaminate limits

Wetlands as Carbon Sinks

We had a presentation on the Awarai Kākāriki wetland restoration programme and 4G wetlands project in Florida, USA.

Wetlands can act as carbon sink converting greenhouse gases into carbon. Improve water quality and water storage to reduce flooding, stabilise water tables, have high aesthetic appeal – destination for recreation. Taonga to Māori.

They say that superhero's come in all shapes and sizes, after you have heard all the wonderful things wetlands do – do you think wetlands are a superhero?

Blue carbon – government organisations are using wetlands to offset carbon.

Rainwater detection – A young engineer came up with innovative technology to detect water levels and alert leaders of a community or emergency management. Te Kao area water tanks project in conjunction with NRC

Becky McDonald, Chemical Engineer, on Emerging Contaminants in Wastewater

A contaminant is any synthetic or naturally occurring chemical or microorganism that is not commonly monitored in the environment but has the potential to enter the environment and cause known or suspected adverse ecological and/or human effects” US Geological Survey.

Enormous array of chemicals. Acidic, positive charged - so many. Big challenge globally.

Key guidelines: ANZ Guidelines for fresh and marine water quality, NZ Municipal Wastewater Monitoring Guidelines, Landfill Guidelines, Guidelines for beneficial use of organic materials on productive land.

- Changing legislation – Te Mana o Te Wai, NPS Fresh water, Guidelines for Drinking water, coastal policy statement.
- Chemical engineers get information on emerging contaminants by doing a discreet study of all reports
- Resource consents: AEEs, technical reports, and monitoring (its focussed on the receiving environment)
- SOE environment monitoring. Driven by regional councils.

Looked at 250 consents. They are an average of 24 years long. Many commenced around 2010. In the early 2030s many will need renewing. This is when we need to have baseline data and work done to address emerging contaminants.

There isn't a lot of regular monitoring for VOCs. PAH, DDT, SVOC, TPH, Phenols BTEX

AUCKLAND COUNCIL – HEALTHY WATERS

Monitoring and reporting on 27 sites every two years since 1998, and regional discharges project 51 sites.

TAURANGA COUNCIL – TCC AND BPORC

Three global stormwater consents, threshold values, 51 stormwater monitoring sites across 28 sub catchments.

Summary: Emerging contaminants are not routinely monitored in NZ. Monitoring is inconsistent between regions and studies.

Solutions:

- Well-developed guidelines
- Extensive experience internationally
- Standard indicators based on global expertise

Clare Feeney, on Workforce

2008 korero prompted the environmental switch, which led to Environmental management training companies and boards.

She has found that companies who are delivering environmental training, aren't measuring the full suite of amazing across all their deliverables.

There is a war for talent – “people are fleeing to the councils”. There is a growing sweatshop mentality within the sector – people constantly working long hours just to get through the projects. Sweating the new graduates, don't have the time to mentor them properly. Working at or beyond the limits of your competence. You know what training your staff need, but you don't find it. Your most capable staff will be able to deliver training, but they will end up doing it during the weekend or at nights.

NO overarching strategy for continuing learning. Need seed funding to do the work, to set up requirements for skills update.

Communicating Difficult Topics, Dr Siouxsie Wiles

Disinformation is false information created with the intention of harming a person, group, organisation or even a country.

Misinformation is false information that people didn't create with the intention to hurt others. For example, some health conspiracy theories circulate with good intentions for the wellbeing of others.

Science doesn't end with a published paper. It is not engaging. Dr Wiles prompted us to reflect on what we do with information, and how we can make it more engaging so that it is in the hands of those that need it most.

With media, you can't ignore their calls, they want you straight away. Want your responses quick and sharp and to the point.

She even highlighted, put energy into talking to adults, a lot of focus on communicating in schools on big issues. But don't forget to engage with the adults, the decisionmakers.

1. It takes lots of practice communicating difficult information
2. Work with the professionals. Collaborate (like what we have done with League of Illustrators)
3. Work with trusted voices. Think about how you could communicate information in a trusted manner. During Covid, they sought out Tina Ngata, a trusted Maori health advocate.