Water and Waste

10.45am – 11.15am

Keeping Rainwater out from Wastewater Network - Disna Pathirage, David Nelson & Remi Cruz

Abstract
Waitakere City Council is implementing a dedicated wastewater programme with the objective of minimising the stormwater entering into its ageing wastewater network either as direct inflow or infiltration, resulting system overloads during wet weather periods causing further damages to the assets, sewage overflows which affects public health and environment.

This 20 year city wide programme was commenced in financial year 1998/99 in a very smaller scale in NewLynn, the leakiest super catchment and has been implemented progressively over the years and currently has become the largest wastewater programme among other wastewater programmes of the Council.

This paper endeavours to discuss the significant differences added by this programme to the current well improved performance of the Waitakere City Council's wastewater network through:

- Holistic and well coordinated programme management
- Using cost effective and innovative approaches
- Effective and efficient participation of the property owners in the programme
- Public private partnership between Council employees and external consultants

The programme has also created an important vehicle to train young Engineers and technicians who are needed for future New Zealand to lead and continue with similar programmes.

Disna Pathirage – Principal Engineer, Water Projects, Waitakere City Council Key personnel from public side for the public/private partnership arrangement of Waitakere City Council's wastewater programme.

Remi Cruz – Contract Manager, Gilliespie Consultants. Key personnel from private side for the public/private partnership arrangement of Waitakere City Council's wastewater programme.

David Nelson – Manager, Water Projects, Waitakere City Council Programme Sponsor

11.25am – 11.55am

Water supply: Who benefits? – Anna Robak & Henning Bjornlund

Abstract
Benefit cost analysis for all types of infrastructure is becoming a political requirement. In New Zealand, government has deferred the legislative requirement to comply with the Drinking Water Standards (DWSNZ) in part because small communities feel that the per capita costs are too high, and in part because the benefits have not been demonstrated. The New Zealand Treasury's new National Infrastructure Plan will also require the benefits of any government-funded infrastructure to be demonstrated. No longer will it be sufficient to assume benefits and apply only least cost analysis; benefits need to be measured, too.

Measuring benefits requires identifying beneficiaries and how they benefit. For upgrades of water supply systems, this means identifying existing benefits for current users and their additional upgrade benefits, as well as identifying potential new beneficiaries. As new users connect, new uses may arise bringing economic opportunities for the community. Costs to others, such as impact on downstream users from upstream user's abstractions or discharges, also need to be measured. This paper examines who is and who is not using community water supply systems and why; and who is affected by use of community water supply systems.

Anna Robak - University of South Australia, Adelaide, Australia; Opus International Consultants, Auckland, New Zealand

Anna is a water treatment engineer based in Auckland and is currently pursuing her PhD at the University of South Australia. Anna's research is on measuring the social, economic and environmental costs and benefits of a drinking water supply.

Henning Bjornlund - University of South Australia, Adelaide, Australia, University of Lethbridge, Alberta, Canada.

12.05pm – 12.35pm

Smart Procurement of a Medium Sized Water Treatment Plant
- Jonathan Krause and Martin Hildreth

Abstract
Smart thinking during the scoping and procurement phase created more from less for Dunedin City Council. With a budget originally intended for a 3-log water treatment plant using conventional treatment processes, a 4-log state of the art membrane plant was achieved.

In 2005, DCC embarked on the planning of the upgrade of the Waikouaiti water treatment plant, a medium sized plant fitted with pressure filters, but unable to continuously meet the Drinking Water Standards.

Underpinned by a collaborative working style, several key initiatives were implemented to maximise the outcome. This included forming a coalition with a similar, but commercially separate DCC WTP project managed by another engineering consultant for a joint registration of interest phase and a coordinated tendering process.

This enabled sharing of technical resources between consultants and DCC staff, collective consideration of budgets, savings due to efficiencies of scale and long term operational benefits from the use of common technology. Ultimately, one contractor, offering a price savings of nearly $100,000 was selected for both contracts.

The constructed plant, which was completed on time and budget, has been operating very reliably for over a year, and is providing excellent treatment results.

Jonathan Krause is a Project Manager with MWH New Zealand Ltd based in Dunedin where he has worked since 2005. Jonathan has been active in the industry since 1999 and has also worked in the USA, England and Guatemala on a wide variety of water related projects. He holds Bachelor of Science and Masters of Science degrees in Civil Engineering and is a licensed Professional Engineer in the State of Connecticut, USA.