



NEW ZEALAND WATER CONFERENCE AND EXPO 2021 ABSTRACT GUIDELINES

Thank you for your interest in presenting at New Zealand Water 2020 being held at Claudelands, Hamilton from **21-23 September 2021**.

For more information about the conference, topics and streams, please visit <http://www.waternzconference.org.nz/>

This document outlines the following:

1. Abstract guidelines
2. Abstract selection
3. Accepted abstracts
4. Final papers
5. Eligibility
6. Young Author Award eligibility
7. Abstract template and sample abstract

1. ABSTRACT GUIDELINES

- Abstracts submitted must be a minimum of 200 and a maximum of 500 words, excluding title and authors.
- Abstracts must use the same format as the Abstract Template (see section 7 for template and example abstract).
- Font used should be Times New Roman or Arial size 11.

Call for Abstracts closes at 5pm on Wednesday, 24 March 2021.

2. ABSTRACT SELECTION

The selection of papers to be presented will be determined by an abstract peer review process guided by the Technical Committee.

Scoring will be based on:

- Wider applicability
- Demonstrated results and conclusions
- Relevance to the current state of the industry
- Content, including innovation
- Clarity and quality

3. ACCEPTED ABSTRACTS

If accepted into the programme, a full paper must be submitted for review by **5pm Monday, 12 July 2021**. The abstract in the final paper will be 200 words. Presentations will be limited to 30 minutes, which includes 5–8 minutes for questions and discussion.

At the time of loading your abstract you will be given the opportunity to upload an optional short two minute video about your abstract. You will be asked to paste the URL of your video (YouTube or similar) into the applicable section of your abstract submission.

4. FINAL PAPER

Should your abstract be accepted into the Conference Programme your final paper will be due by **5pm Monday, 12 July 2021** and must meet the following requirements:

- The abstract in the final paper must be 200 words.
- The final paper must be submitted using the Paper Template provided to you upon your acceptance into the final programme.
- The final paper must be no longer than 20 pages including all drawings, graphs, figures, appendices, tables and references.
- Presentations will be limited to 30 minutes, which includes 5–8 minutes for questions and discussion.

Detailed guidelines and templates for the final paper will be provided to you should your abstract be included in the programme.

5. ELIGIBILITY

- Papers will be eligible for consideration for inclusion in the conference programme, despite the fact that they have been substantially published or presented at regional or national conferences worldwide.
- Papers and Posters will not be eligible for prizes if they have been substantially published or presented at regional or national conferences worldwide.
- Late submissions will be included in the Conference Programme however they will not be marked or considered for prizes.

6. YOUNG AUTHOR AWARD ELIGIBILITY

If you are eligible for the Young Author Award please ensure that you confirm this at the time you upload your abstract (there is a section to complete in the online submission portal for this award).

Eligibility criteria:

- Lead author to be under 30 years of age at conference time **or** within two years of graduation
- Support author to be responsible for mentoring author and reviewing paper
- Lead author must present paper, with support from support author

7. ABSTRACT TEMPLATE AND SAMPLE TEMPLATE – SEE FOLLOWING PAGES

[CLICK TO ENTER PAPER TITLE]

"[Click here to Enter Author/s & Affiliation/s]"

ABSTRACT

"[Click here to Enter Abstract]"

KEYWORDS

"[Click here to Enter Keywords]"

EARTHQUAKE REPAIRS AT CHRISTCHURCH WWTP – CLARIFYING THE SITUATION

Greg Offer (CH2M Beca Ltd), Tim Scott (Christchurch City Council), and Ian Billings (CH2M Beca Ltd)

ABSTRACT

Christchurch Wastewater Treatment Plant has four large secondary clarifiers that separate solids from the mixed liquor in the final stage of treatment, allowing waste activated sludge (WAS) to be recycled within the biological process. The major earthquake on 22nd of February 2011 (MM X) and resulting liquefaction at the site rendered all four clarifiers unserviceable, with varying degrees of structural and mechanical damage. Failure of the clarifiers put the plant operations into a position of serious risk.

This paper outlines the investigations of the earthquake damage, the strategy for “quick fix” repairs to restore plant function, decisions on permanent repair priorities and methods, and the management of operational risks over the two year duration of the repair works. It also discusses resilience issues for large infrastructure assets.

Without the clarifiers in operation the treatment plant was exposed to operational risks related to discharge of high loads solids to the downstream oxidation ponds. This created urgency to put in place a temporary repair on at least 2 clarifiers. The paper describes how a temporary “quick fix” was identified and successfully implemented within 3 months to deal with operational risks and restored basic plant functionality.

More difficult and complex issues were faced with the permanent repairs. The paper describes the method for selecting repair options for each clarifier taking into account repair option costs ranging, from \$2M to \$45M, the relative performance of each option, and the varying level of damage discovered. Furthermore, as new information came to hand during the repair works the repairs had to be modified “on the go” to address additional failure modes.

Designing resilience into infrastructural assets is a key issue for local authorities. The paper discusses some approaches to designing for resilience using the clarifier repairs as a working example.

The paper also describes how operational risks were managed over the two year period while the works were undertaken as well as some technical highlights including the success and failure of various diagnostic tools, and the use of very large bore (1.8M diameter) CIPP liners for pipe repairs.

Key words: earthquake repairs, resilience, operations