



COMPARATIVE ANALYSIS OF RIVER MOUTH GEOMETRY USING A 2D MORPHOLOGICAL MODEL

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¹**Tonkin + Taylor**

ABSTRACT

To assist with consenting of the training walls to form a navigable river mouth at Opotiki, Tonkin & Taylor developed a 2D morphological model of the Waioeka and Otara river mouth system. This was needed as the mouth geometry is highly variable and responds to changes in flow, thus forming an integral part of the flood management system in place for Opotiki.

Subsequent to consenting, this model has been used during the construction phases to aid with ongoing management decisions. Since construction began, the combination of river flows and complex coastal processes has resulted in the mouth migrating westwards, beyond its location at the time of consenting. This has required ongoing attention and the 2D morphological model has been used repeatedly to aid with decision making. Coupled with this, the bathymetry of the estuary and mouth has undergone repeated survey.

This sequence of available bathymetric survey has enabled a comparison of river mouth geometry to be undertaken. To demonstrate the ability for the 2D morphological model to be useful in predictions, the model was run for an extended period of time between two successive bathymetric surveys. Recorded boundary data over a month-long time period was applied, with the start model bathymetry being set by bathymetric survey. A comparison between the end model bathymetry (which allows the bed to deform) was compared against the subsequent bathymetric survey results. The results of these comparisons are shown and discussed in this paper.



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Declaration

Topic	Modelling to support outcomes
<input checked="" type="checkbox"/>	Can attend in person
<input type="checkbox"/>	Have permission / authority to speak on the topic – not yet granted
<input checked="" type="checkbox"/>	Have a backup speaker if they fall ill or cannot present



Abstract Guidelines

1. Abstract Guidelines

- Abstracts submitted must be between 300 – 500 words, excluding title and authors.
- Abstracts must use the template above
- Font used should be Times New Roman or Arial size 11.

2. Call for Abstracts closes 4pm, Tuesday 31st January 2023 and submitted to [Katrina Guy](#)

3. Abstract Selection

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

4. Abstract Acceptance

- If accepted into the programme, you will only have to submit a presentation. No paper is required.
- Final presentation will be due by **28th February 2023**

5. Presentation

- Powerpoint 16:9
- Slide Pack will be attached shortly