

## Memorandum

**To:** District Plan – Resource Management Policy Team, Waikato District Council  
**Date:** 14 April 2021  
**From:** Roger Seyb, Bec Ltd  
**Our Ref:** 4214056-1680710091-12  
**Copy:** Carolyn Wratt, WDC Consultant Planner  
**Subject:** Technical Specialist Review, Three Waters – Kimihia Lakes

## Experience and Qualifications

My name is Roger Morgan Seyb.

I am a Senior Technical Director in the Water Resources and Civil Engineering fields employed by Beca Ltd.

I hold a Bachelor of Civil Engineering degree from the University of Auckland. I am a Chartered Engineer and a Chartered Member of Engineering New Zealand.

I have been working in the civil engineering field since 1990, predominately in New Zealand, and have carried out a wide range of civil engineering, water infrastructure and environmental projects during that time.

### 1. Introduction and purpose

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The purpose of this report is to provide a view as to whether:

- a) Sufficient and appropriate information has been included in the assessment;
- b) The assumptions are sound and reasonable;
- c) The proposed solutions are technically feasible and realistic;
- d) The timeframes for upgrades or connections are realistic; and
- e) There are any potential or actual issues that the planner and Hearings Panel need to be aware of.

### 2. Documents considered

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Document reviewed:

Allen Fabrics Ltd,  
Rezoning – Three Waters Assessment Report - Kimihia Lakes, Rev 3, Lysaght Consultants.

#### 2.1 Limitations

This review is a limited desk top review carried out by reading the above documents and providing general comment on the suitability of the information to be relied upon and recommendations made at the Proposed Waikato District Plan hearing. No site visit has been undertaken and the information referred to in the documents and calculations have not been verified. Detailed knowledge of the constraints within the network was not available - further discussion with the network operator would be required to identify and address any specific constraints within the network.

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### 3. Overview of technical matters

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#### Formation of a lake and potential contamination of the lake from contact with coal workings

The Three Waters report discusses stormwater, wastewater generated by, and water supply demanded by the development.

I understand any potential environmental issues associated with site development, the submergence of former mine workings and environmental effects on the lake are being addressed elsewhere.

#### Developable Area

The proposed development precinct includes a museum, community centre, boat ramp, accommodation facility and outdoor education. The whole site is 164 ha but the report excludes consideration of the wider development including a future residential precinct.

I recommend that the overall degree of development proposed long term is considered so that cumulative effects can be considered. For example, additional development will increase stormwater runoff and affect lake water levels.

The development is within the Kimihia Lakes recreational growth cell identified in Waikato 2070.

#### Stormwater

The report contends that stormwater volumes into the lake will go down post development. This is not self-evident and no justification is given – increasing impervious areas will increase runoff volumes, unless an equivalent amount of infiltration occurs or there is some other use of stormwater.

There is no discussion of lake water quality and what contaminants could adversely affect it. It is expected that erosion and sediment controls will be required during construction.

I consider that stormwater contaminants from the final land use are not of concern and the proposed stormwater management methods are likely to be feasible.

#### Wastewater

The historic wastewater discharge rate is speculative and cannot be relied upon.

The report assumes that they are able to use the existing spare capacity within the WWTP without considering the demands of future growth in other areas that the existing plant services.

Notwithstanding the above, a new pump station is identified as required and therefore there is the potential for storage to attenuate wastewater flows. Consideration is also given to on site wastewater disposal (for the immediate development – not the future residential development). Putting the wastewater on site to land disposal would require 3.2 ha of disposal area out of a 168 ha site so this is considered feasible for the initial phase of development. The potential effects of nutrients from wastewater disposal to land entering the lake by groundwater has not been assessed.

Initial discussions have been held with Watercare on the proposed developments in Huntly and no significant constraints were identified. However further assessment on network capacity is likely to be required as design progresses.

Overall, there is a solution for wastewater treatment for this stage of development, but I note that the full comprehensive site development has not been assessed so this conclusion only applies to the limited scope of the amenity facilities listed.

#### Water Supply

The report notes that the water supply demand from Huntly and Ngaruawahia will exceed the consented take in 2035, however if a proposed new water treatment plant goes ahead to service Huntly there is reported to be sufficient capacity until 2060.

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### 4. Adequacy of assessment

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The development plan for the whole site was not provided within the report and the assessment only relates to the first stage of community type facilities near the lake.

Overall, there is some uncertainty in how stormwater, wastewater and water supply for the initial development area would be provided but I consider that a solution is likely to be feasible.

There are wider issues that should be checked around the quality of water in the proposed lake and the potential contaminants that could affect that. If nutrients in the lake are an issue, on site wastewater disposal and release of nutrients may need further consideration.

### 5. Conclusions

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I consider that Three Waters servicing the initial stage of development is feasible, with my recommendations as follows:

- Considering the full development's water demand and wastewater and stormwater discharges during design of the initial community facilities for which the land use change is sought.
- Considering the water quality of the lake and contaminants that may adversely affect its water quality and whether controls on nutrients, on site wastewater discharges and earthworks may be required.
- Considering future lake levels assuming full development during design of the initial community facilities for which the land use change is sought.