
WA Ref: WA/004

Date: 28 September 2023

To: Karl Cook, Barker and Associates

cc: Rebecca Sanders, Barker and Associates
Kelsey Bergin, Fletcher Residential Ltd

From: Robert White

Re: Riverhead Plan Change / Riverhead Landowner Group – Water and Wastewater Servicing – September 2023

This memo is an update to the 'Riverhead Future Urban Zone | Water and Wastewater Servicing Strategy Development' report prepared by GHD, dated 28 June 2022.

The 2022 report was based on servicing 1,966 Dwelling Unit Equivalents (DUE) in Riverhead, within an area of approximately 80ha (80.5195 ha).

The proposal has now been revised to cover a reduced area of 71.9337ha, with the exclusion of part of 22 Duke Street and part of 30 Cambridge Road totaling (8.5858ha.)

The proposal now equates to a total of approximately 1,861 DUE, as detailed in Table 1 below. This is a reduction of 105 DUE from the 2022 report.

As per the 2022 report, a conservative approach has been taken for the Retirement Village, with three and two people assumed per villa and apartment, respectively. In reality, average people per villa in a retirement village is anticipated to be less than three, with average people per apartment considered closer to an average of one person rather than two.

Activity	No.	People / Unit	People	L/p/day	m ³ /day	Comments:
Lower Density Dwellings	385	3	1155	180	207.90	
Medium Density Dwellings	775	3	2325	180	418.50	
Higher Density Dwellings	100	3	300	180	54.00	
Retirement Village - Villas	208	3	624	180	112.32	
Retirement Village - Apartments	310	2	620	180	111.60	
Retirement Village - Care/Dementia beds	90	1	90	570	51.30	Hospitals
Retirement Village - Care/Dementia staff			60	45	2.70	Hospital staff
Primary School (students)	1100		1100	15	16.50	
Primary School (teachers)	55		55	45	2.48	1 Teacher / 20 Pupils
Childcare (students)	100		100	42	4.20	
Childcare (staff)	10		10	45	0.45	1 Staff/ 10 Children
Supermarket (GFA) m ²	4000		80	65	5.20	Dry Retail
Retail (GFA) m ²	450		9	95	0.86	Dry Retail
Café (GFA) m ²	600				9.00	Wet Retail (15L/m ²)
Medical Centre (GFA) m ²	250				3.75	Wet Retail (15L/m ²)
General offices (GFA) m ²	1000		67	65	4.33	Office Building
					1,005.08	TOTAL
				DUE	1,861	(@540L/DUE/day

Table 1 – Dwelling Unit Equivalents

Water

As identified in the 2022 report, water servicing can be achieved with the construction of a second water main from the Reservoir, located at 403 Old North Road, Huapai, into Riverhead. This second pipe provides resilience, well as additional capacity, with Riverhead currently serviced via a single supply pipe.

The recommended route for this duplicate pipeline is along Deacon Road and Riverhead Road.

The requirement for this duplicate watermain has not changed. As identified in the 2022 report, there are options for the design of this pipeline, including connection point, pipe diameter and precise route which are to be agreed with Watercare as part of the detailed design / Engineering Plan Approval (EPA) stage.

Local water reticulation within the plan change area would be designed to the Watercare Code of Practice with detailed design / EPA drawing and documents submitted to Watercare for approval.

Local reticulation within the Botanic Retirement Village would remain private with bulk supply meter(s) connected to the Watercare network.

Wastewater

As identified in the 2022 report, an additional 1,000 DUE within the Riverhead Future Urban Zone can be serviced (adopting a conventional pressure sewer system and further to the abandonment of Tamiro WWPS) by the existing Riverhead Wastewater Pump Station and rising main without the need for any upgrades. Five hundred DUE were shown to be able to be serviced ahead of the abandonment of Tamiro WWPS, which is currently programmed for October 2025.

"The installation of larger pumps, the construction of additional storage capacity or the adoption of a smart pressure sewer system [within the Retirement Village] would allow the servicing of additional DUE. For example, the model identifies that Scenario 3c (2,500 DUE) can be serviced by installing larger pumps, increasing the pump duty point to 75 L/s at 69m pump head, and providing 150m³ of operational storage".

The reduction in the number of DUE would potentially delay and/or reduce the required upgrades.

2022 Report also identifies that if the retirement village was serviced via a SMART pressure sewer system, programmed to not operate during peak periods, 1,000 DUE (in addition to the retirement village) could be serviced without requiring any further upgrades, assuming that Tamiro WWPS had been abandoned (and ahead of separating Kumeū / Huapai from the Riverhead system).

Your sincerely
For an on behalf of Water Acumen



Robert White
BEng(Hons), PGDipBA, CEng (UK), FEngNZ, FICE, FIEAust, CMIInstD
Director / Consultant

¹ GHD, Riverhead Future Urban Zone Water and Wastewater Servicing Strategy Development, Riverhead Landowners Group, 28 June 2022.

Attachments:

GHD, Riverhead Future Urban Zone Water and Wastewater Servicing Strategy Development, Riverhead Landowners Group, 28 June 2022.

Memorandum 01, dated 13 September 2022, Riverhead – Response to Clause 23 - Wastewater

Memorandum 02, dated 1 December 2022, Riverhead Plan Change / Riverhead Landowner Group – Water and Wastewater Servicing