BEFORE THE FAST-TRACK EXPERT CONSENTING PANEL

IN THE MATTER	An application for approvals under section 42 of the Fast-track Approvals Act 2024
AND	
IN THE MATTER	Delmore, a project listed in Schedule 2 to the Fast-track Approvals Act 2024

MEMORANDUM OF COUNSEL FOR THE APPLICANT RESPONDING TO MINUTE 11

5 August 2025

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MAY IT PLEASE THE PANEL

1. The applicant's response to the further information requested in Minute 11 is set out in Table 1 below, with detail provided in 3 attachments:

   a. Attachment A McKenzie & Co memorandum

   b. Attachment B Barker & Associates memorandum

   c. Attachment C Urban Economics memorandum

2. The applicant thanks the panel for attending to this matter.

Table 1

Ref	Question	Response	Response Author
Questions relating to Appendix 45.1			
1	The "McKenzie Water Capacity Memorandum Capacity Assessment - Overview" referred to on the first page of this document: is this Appendix 45.2 McKenzie Delmore Capacity memo or some other document?	It is confirmed that the reference made by Barker & Associates to "McKenzie Water Capacity Memorandum ('Capacity Assessment - Overview')" should have read as "Appendix 45.2 McKenzie Delmore Capacity Memo". It is also noted that 'Section 8' and 'Figure 4' as referenced by Barker & Associates in Appendix 45.1 are references to a draft version of Appendix 45.2, which had different references to the final version lodged with the EPA. These references should therefore be treated as deleted.	Barker & Associates - planning
Questions relating to Appendix 45.2			
1	Please provide an updated Figure 1 showing Orewa Pipelines 1,2 and 3 in different colours and location of the East Coast Road booster pump.	See Attachment A section 2 (point 1) and Attachment A appendix 2.	McKenzie & Co
2	Please advise what geographical areas Orewa pipeline 1 serves.	See Attachment A section 2 (point 2).	McKenzie & Co

3	Please advise what geographical areas Orewa pipeline 2 serves.	See Attachment A section 2 (point 3).	McKenzie & Co
4	Please advise what geographical areas proposed Orewa pipeline 3 will serve.	See Attachment A section 2 (point 4).	McKenzie & Co
5	Regarding the capacity of the Orewa 2 pipeline the WSL email of 20/5/25 stated "the East Coast Road booster pump can pump up to 34MLD. However, the downstream pipe network can convey 25MLD currently. So, the maximum is 25MLD." Section 6 of Appendix 45.2 states "the Delmore supply main connects directly to Orewa 2, so any downstream bottleneck is unlikely to restrict Delmore as this off take is at the downstream end of the transmission pipe." This statement appears contrary to the WSL email of 20/5.25. Please address this apparent inconsistency.	See Attachment A section 2 (point 5).	McKenzie & Co
6	In the table of water demand in Section 6 there appears to be a typographical error in the demand for existing + consented dwellings- should be 20,822?	See Attachment A section 2 (point 6).	McKenzie & Co
7	In Appendix B Water Capacity Calculations, the existing population for the Army Bay catchment area of 53,700 cites Urban Economics, 2024. Please provide that document	See Attachment A section 2 (point 7) and Attachment A appendix 1.	McKenzie & Co
8	In the UE economic report for Delmore, dated Feb 25, in Figure 22 a year 2023 population estimate for the Hibiscus Coast of 62,120 is	The population estimate in Figure 22 for the year 2023 applies to the study area shown in Figure 3 of our 25 February 2025 report. This area and population estimate	Urban Economics

	given. Please explain why this differs from the population figure in item 7 above.	were used for the purposes of the housing supply and demand estimate in our report and is based on Statistics New Zealand data. It differs from the figure referred to in item 7 above (and used by McKenzie & Co for its capacity assessments) because that figure represents the population estimate based on Watercare's data (as explained in Attachment A section 7) which is used by Watercare for the purpose for determining existing connection population. In short, the different figures represent the different data sources, and the different data sources reflect the different purposes for which the figure is being used.	
9	In Appendix B under Resource consented land the numbers of consented lots without connections is based on B&A calculations for Strathmill, Ara Hills, Milldale, Pacific Heights, Millwater., Woodlands Rise and East Coast Heights. Please advise why this assessment has not considered the wider catchment contributing to Army Bay, including any consented subdivisions and developments eastward and south-eastward ward of the ones assessed by B&A. Quick perusal of Geomaps indicates possible additional future connections at Anehana Place and Pamu Wera Drive and	See Attachment A section 2 (point 9) and Attachment B.	McKenzie & Co (Attachment A) Barker & Associates – planning (Attachment B)

	there is a recently approved subdivision at Daisy Burrell Drive.		
10	Please advise whether the Applicant has confirmed that the capacity of the existing wastewater gravity sewers, pump stations and rising mains from the Delmore site to the Army Bay treatment is sufficient for existing development together with all live zoned and FUZ zoned land within the Army Bay WWTP catchment.	The applicant has not confirmed there is wastewater capacity for all live zoned land and all FUZ land. The applicant has confirmed there is capacity within the wastewater network with the Army Bay Stage 1 upgrade (and the current water supply network) for existing connections, live zoned land,[1] the Milldale fast-track project, and the full Delmore development. Residual capacity remains in both networks after meeting this demand. McKenzie & Co's revised capacity assessments are provided in Attachment A appendix 1 to this memorandum. For completeness it is also noted that there is capacity for approximately 3,703 homes to connect to the public wastewater network before the Army Bay Stage 1 upgrade.[2] The applicant has not confirmed there is capacity within these networks for all FUZ land as well. This approach has been taken on the basis that Delmore's listing in Schedule 2 FTAA, and its allocation to the fast-track process, removes the distinction between its FUZ zoning and 'live zoned land', and there is therefore no need to demonstrate	Legal counsel

[1] As estimated using the data that is available and capturing resource consented dwellings and dwellings without a resource consent. Refer to Attachments A and B.

[2] https://www.watercare.co.nz/builders-and-developers/consultation/growth-constraints-in-hibiscus-coast: "In November 2024, we estimated the Army Bay Wastewater Treatment Plant had capacity to connect approximately another 4000 homes. Since then, we have connected 297 new homes."

		capacity within the water supply and wastewater networks for other FUZ land. For the applicant's detailed comments supporting this approach, refer to: • Section 2, Section 5 para 5.9(1), (2) and (10) of the memorandum of counsel in response to comments dated 7 July. • Attachment 53.2 as lodged with the applicant's response to comments 7 July. Vineway Ltd also wishes counsel to note that Watercare's policy for granting connections in the Hibiscus Coast is that a connection is only guaranteed for those with building consent. [3] Watercare also treats applications on a first come first served basis. In Vineway Ltd's opinion this is contrary to Watercare's position on Delmore that capacity needs to be reserved for consented live zoned land, and unconsented live zoned land and pre-2050 FUZ land both of which have indeterminate development dates. On one hand Watercare is saying building consent justifies a connection and on the other hand it is saying live zone land and pre-2050 FUZ land is enough to justify a connection. However, for 2050-FUZ land it is essentially saying that neither a	

[3] https://www.watercare.co.nz/builders-and-developers/consultation/growth-constraints-in-hibiscus-coast: "Anyone with a valid building consent will be able to connect when they're ready."
"

		building consent nor a resource would justify a connection, even if there is sufficient capacity for connections to also be provided to surrounding live-zoned land which has neither building consent nor resource consent.	
11	Please comment on whether assessment of existing sewer flows and demand has taken into account the large extent of rain tanks on the Whangaparaoa Peninsula- see results of Google search below. Use of rain tanks can result in less water demand and associated wastewater flows compared with that where there is mains water supply.	See Attachment A section 2 (point 11). See also Attachment C regarding why it is unlikely that existing water tanks will stop being utilised.	Mackenzie & Co (Attachment A) Urban Economics (Attachment C)
12	Please identify whether wastewater from Stillwater contributes to sewer flows at Army Bay WWTP.	See Attachment A section 2 (point 12).	McKenzie & Co

Attachment A

McKenzie & Co memorandum

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Memo

To: Vineway Ltd

From: James Kitchen

Date: 05/08/55

Questions in relation to Appendix 45.2 McKenzie &Co. Memo 2/7/25 Transmission Water and Wastewater supply Capacity Assessment

Introduction

Questions 1, 2, 3, 4, 5, 6, 7, 9 (also addressed by Barker & Associates), 11, and 12 relating to Appendix 45.2 are addressed in Section 2 to this memorandum.

In response to the panel's questions we have also prepared an updated capacity assessment for both water supply and wastewater. This was undertaken so that the capacity assessments before the panel reflected the further information provided in this memorandum. These assessments are provided in Appendix 1 to this memorandum. A summary is provided in table form in Section 1 below.

Section 1 summary of updated capacity assessments

Scenario 1: all lots with existing resource consents, the Milldale fast-track project, and Delmore have connected to the network. L/p/d of 220.

Scenario 2: all live-zoned lots (both with existing resource consents and with no resource consent), the Milldale fast-track project , and Delmore have connected to the network. L/p/d of 220.

Scenario 3: all live-zoned lots (both with existing resource consents and with no resource consent), the Milldale fast-track project, and Delmore have connected to the network. L/p/d of 170.

The following tables summarise the results of the water supply and wastewater analyses in Appendix 1.

Water Demand summary table

Scenario	1	2	3
Capacity (MLD)	25.0	25.0	25.0
Existing Demand (MLD)	17.7	17.7	13.8
Future Demand (MLD)	2.1	4.4*	3.5
Delmore Demand (MLD)	1.2	1.2	0.9
Total Demand (MLD)	21.0	23.3	17.2
Remaining (MLD)	4.0	1.7	7.8

Remaining (DUE's)	4,215	1,783	10,564

***live zoned (consented and unconsented) and Milldale fast-track**

Wastewater Demand summary table

Scenario	**1**	**2**
Capacity (m3/d)	22,500	22,500
Existing Demand (m3/d)	11,653	11,653
Future Demand (m3/d)	1843	3156 *
Delmore Demand (m3/d)	675	675
Total Demand (m3/d)	14171	15485
Remaining (m3/d)	8329	7015
Remaining (DUE's)	15,424	12,991

***(live zoned (consented and unconsented) and Milldale fast-track)**

Section 2 response to Minute 11 specific questions relating to Appendix 45.2

1. Please provide an updated Figure 1 showing Orewa Pipelines 1,2 and 3 in different colours and location of the East Coast Road booster pump.

Figure 1 - Aerial imagery of Orewa Rising Main Booster Pumpstation

Updated plans have been prepared and is available for reference under drawing number 3725-S1-6100 to 6104, which illustrates the three Orewa pipelines with individual colour coding for easy identification (see Appendix 2 to this memo). The location of the East Coast Road booster pump station is also depicted—refer to the figures above for visual context

2. Please advise what geographical areas Orewa pipeline 1 serves.

Orewa 1 runs as a loop up to the Maire Rd Reservoir, and also provides a connection to the Whangaparāoa 1 pipeline, which services the Whangaparāoa peninsula.

It is supported by Orewa 2 transmission main, and ultimately the future Orewa 3 transmission main, converge within the Silverdale area. They are hydraulically interconnected with additional pipework and valves.

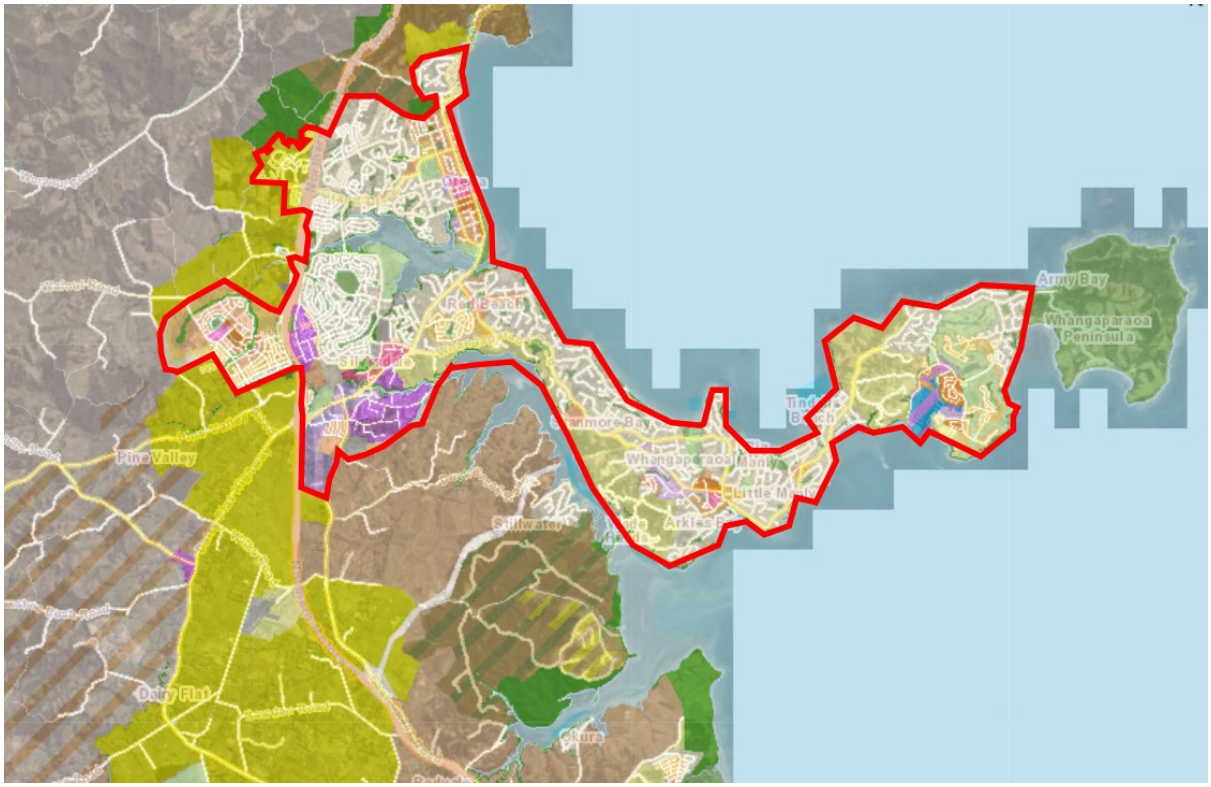


Figure 2 - Current Water servicing area for Orewa 1 & 2.

3. Please advise what geographical areas Orewa pipeline 2 serves.

The Orewa 2 generally follows the same alignment as Orewa 1 along East Coast Bays Road, before diverging within the Silverdale area. It terminates at the intersection of Hibiscus Coast Highway and Whangaparāoa Road.

Orewa 2 is hydraulically linked to Orewa 1 through supplementary pipework at multiple locations, including a key connection at the intersection of Silverdale Road and Wainui Road. Due to this interconnectivity, Orewa 2 does not appear to serve a distinct or isolated geographical area. Instead, it functions to suppliment Orewa 1, contributing to the overall resilience of the transmission network.

Refer to Figure 3 below for the alignment of Orewa 2 relative to Orewa 1. Yellow shows Orewa 2and orange shows Orewa 1.

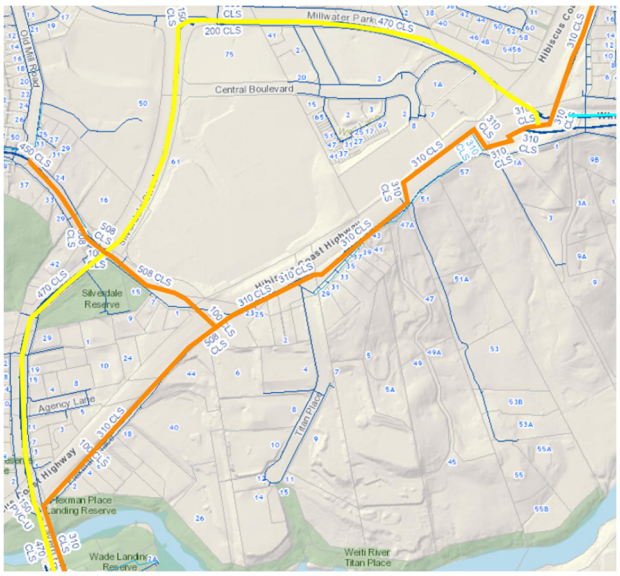


Figure 3 - Orewa 1 & Orewa 2 transmission lines within Silverdale. Source Auckland Council GIS.

4. Please advise what geographical areas the proposed Orewa pipeline 3 will serve.
The Orewa 3 will be located west of SH1 and connect into the Orewa 1 transmission main. There is currently no transmission water main on the western side of the motorway, so this pipe is to ultimately proposed to service areas west of SH1, including Silverdale west area, and Wainui. Initially, Orewa 3 will be fed from Orewa 1 as shown below in Figure 4.

Water Pipe (Transmission)

Attribute	Value
GIS ID	5731501
COMP KEY	82721961
FACILTIY CODE	WMOW3
FACILITY DESCRIPTION	Orewa 3 Watermain
UNIT ID	G5715522
PROCESS	Distribution
GROUP	Pipe
POSITION	Buried
STATUS	OUT
MATERIAL	CLS
LINING	None
INSTALLED	30/03/2022
TYPE	Pot
SERVICE	Transmission
SUBTYPE	Main Distribution (T)
DIAMETER	747

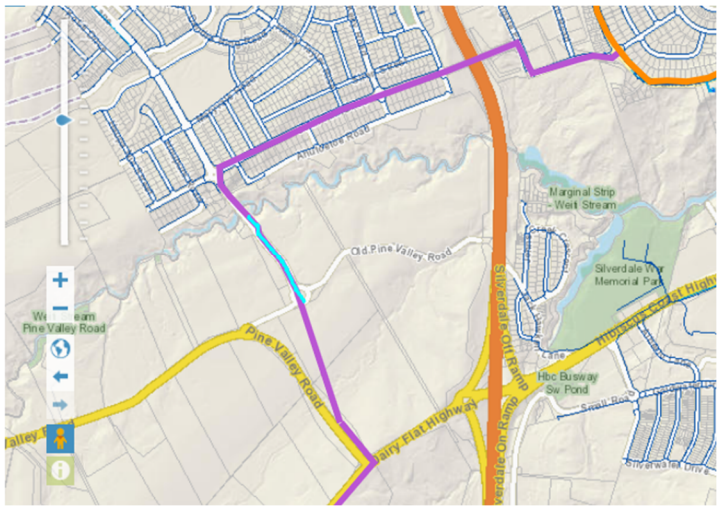


Figure 4 - Orewa 3 connection to Orewa 1

5. Regarding the capacity of the Orewa 2 pipeline the WSL email of 20/5/25 stated "the East Coast Road booster pump can pump up to 34MLD. However, the downstream pipe network can convey 25MLD currently. So, the maximum is 25MLD." Section 6 of Appendix 45.2 states " the Delmore supply main connects directly to Orewa 2, so any downstream bottleneck is unlikely to restrict Delmore

as this off take is at the downstream end of the transmission pipe." This statement appears contrary to the WSL email of 20/5.25. Please address this apparent inconsistency.

This is not an inconsistency.

Watercare has advised that the downstream pipe network currently limits conveyance to 25 MLD despite the East Coast Road booster pump's capacity of 34 MLD. We do not believe this constraint affects the Delmore connection for the reasons set out below.

The Delmore supply main connects directly to the Orewa 2 pipeline near the downstream end. Because of this direct connection, flow to Delmore does not rely on the capacity of the downstream reticulation network beyond this point. In other words, the Delmore off-take occurs upstream of what we understand is the identified limit on conveyance (or 'bottleneck'), and as such, is not restricted by it.

Therefore, the statement in the Appendix remains valid and is consistent with the information provided by Watercare.

6. In the table of water demand in Section 6 there appears to be a typographical error in the demand for existing + consented dwellings- should be 20,822?

Noted, yes this was a typo. The correct figure was 20,022. However this has been revised following comments from the Panel and that revised figure is used in our update capacity assessments in Appendix 1 to this memo (and summarised in Section 1).

7. In Appendix B Water Capacity Calculations, the existing population for the Army Bay catchment area of 53,700 cites Urban Economics, 2024. Please provide that document

This was an incorrect reference. This figure was calculated using the population figure in Watercares' 2021-2024 Asset Management Plan, on page 67, plus the growth factor in the ART i11.6 model, noted in 7.1.1. Growth forecasts on page 105. We have added on a 20% contingency. A population figure of 53,700 was adopted following this calculation. We used Watercare's figures and model for our assessment because our assessment relates to Watercare's infrastructure.

Year	i11v6				
	1,577,806				
	1,603,827	Growth Rate	Plus 20% contingency	Population	
2020	1,630,184			**49,300**	**Watercare population Figure, AMP 2021- 2041**
2021	1,655,905	1.58%	1.89%	50233.42	
2022	1,681,229	1.53%	1.84%	51155.3	
2023	1,704,547	1.39%	1.66%	52006.7	
2024	1,729,330	1.45%	1.74%	52914.07	
2025	1,752,806	1.36%	1.63%	53776.06	
	1,778,664				
	1,806,884		say:	**53,700**	

Figure 5 - Population forecast

With the addition of an allowance of some commercial land (which was done in our original capacity assessment in Appendix 45.2 and has been done in our updated capacity assessment (Appendix 1 to this memo), this leaves a spare capacity of 7.3MLD.

In comparison, Watercare's 28 July 2025 response to the panel's request for further information identified a spare capacity of 7.7MLD, or 17.3MLD pipe utilisation, which is consistent with our estimate of 17.7MLD. This is a difference of 2.3% and as such consider it consistent with our estimate.

8. In the UE economic report for Delmore, dated Feb 25, in Figure 22 a year 2023 population estimate for the Hibiscus Coast of 62,120 is given. Please explain why this differs from the population figure in item 7 above.

Not addressed in this memorandum except to the extent that the comments at point 7 above are relevant.

9. In Appendix B under *Resource consented land* the numbers of consented lots without connections is based on B&A calculations for Strathmill, Ara Hills, Milldale, Pacific Heights, Millwater., Woodlands Rise and East Coast Heights. Please advise why this assessment has not considered the wider catchment contributing to Army Bay, including any consented subdivisions and developments eastward and south-eastward ward of the ones assessed by B&A. Quick perusal of

Geomaps indicates possible additional future connections at Anehana Place and Pamu Wera Drive and there is a recently approved subdivision at Daisy Burrell Drive.

These developments have been added into the updated capacity assessment (including updated water demand table) along with some additional areas that have been identified by Barker & Associates. Our updated capacity assessment is in Appendix 1 to this memorandum.

10. Please advise whether the Applicant has confirmed that the capacity of the existing wastewater gravity sewers, pump stations and rising mains from the Delmore site to the Army Bay treatment is sufficient for existing development together with all live zoned and FUZ zoned land within the Army Bay WWTP catchment.

Not addressed in this memorandum.

11. Please comment on whether assessment of existing sewer flows and demand has taken into account the large extent of rain tanks on the Whangaparaoa Peninsula- see results of Google search below. Use of rain tanks can result in less water demand and associated wastewater flows compared with that where there is mains water supply.

Our Appendix 45.2 assessment did not factor in the use of rain water tanks. This was because we took a conservative approach given uncertainties in determining if properties with rain tanks nevertheless had a public network connection, and because Watercare's population data does not state if these are included or excluded.

In response to the further information request in Minute 11 we have undertaken a review of aerial imagery to count the number of properties with tanks on the Peninsula. This shows, show that over 1,300 properties on the Peninsula are equipped with rainwater tanks, as shown in Appendix 3 to this memorandum.

If these properties were subtracted from the existing connection figure in each of the scenarios in our capacity assessment in Appendix 1 it would reduce the peak day flow by 1,272m3/d, as outlined in Figure 6.

EXISTING WATER TANK USERS ON WHANGAPARAOA PENINSULA		
Total number of dwellings with water tanks	1,329	Refer to plan 3920-0-SK9000 showing tank locations
Less water demand (m3/d) from dwellings with water tanks	877 m3/d	Assumed 3 people per dwelling @220 L/p/d
Including 1.45 Peak Factor	**1272 m3/d**	Watercare Transmission standards Peaking Factor of 1.45

Figure 6 - Potential reduction in water demand due to presence of tanks

It is noted that there is a similar layer of conservatism built into the original capacity assessments in Appendix 45.2, and into Scenarios 1 and 2 in the updated capacity assessments in Appendix 1 to this memorandum. We have assumed that all dwellings have a 220 L/p/d per person water demand and corresponding wastewater flow. This aligns with Watercare's standard design Wastewater flow. However, Watercare's data on the actual average water usage per person per day ranges between 140–170 L/p/d which is notably lower than the design usage. To provide and understanding of what is likely to be a more realistic calculation of used and remaining capacity within both networks, we have used 170 L/p/d in Scenario 3 in our updated capacity assessments in Appendix 1 to this memorandum.

We also acknowledge that the widespread use of rainwater tanks on the Whangaparāoa Peninsula may contribute to reduced potable water demand and, by extension, lower wastewater generation for some properties. This dynamic introduces an additional buffer to our wastewater flow estimates, which are otherwise based on conservative assumptions.

It is important to note that while rainwater tanks reduce reliance on the mains water supply, their effect on wastewater generation is less straightforward. Some properties with water tanks may also still be using on-site wastewater systems such as septic tanks. These may remain active even after public wastewater infrastructure becomes available, particularly since septic systems are underground and not always decommissioned. Other properties with water tanks may not use septic tanks.

Figures below illustrate:

Figure 7: Watercare's stated average per capita water use.

Figure 8: The presence and distribution of rainwater tanks in older areas of the Peninsula—highlighting that many properties with tanks are still connected to the public wastewater system.

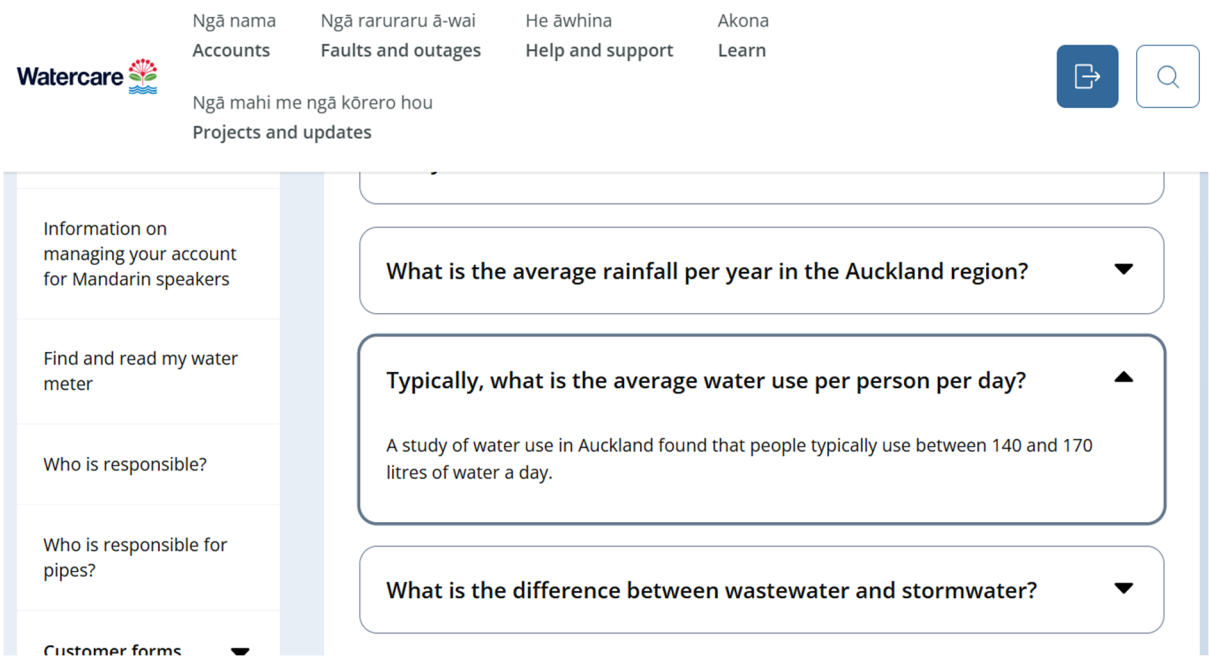


Figure 7 - Average water use per person per day

Figure 8 - Presence of Water Tanks, in older areas. Note they still have Wastewater connections

By incorporating this data, scenario 3 demonstrates that the effective wastewater demand could be lower than shown in our original capacity scenarios, and that there is additional capacity in the network until full connection of all dwellings

12. Please identify whether wastewater from Stillwater contributes to sewer flows at Army Bay WWTP.

Yes. Wastewater from Stillwater does contribute to the sewer flows received by the Army Bay Wastewater Treatment Plant. The flow is conveyed via a series of pump

stations and rising mains, including a pipeline that crosses beneath the Weiti River, as illustrated in the image below.

These flows are incorporated within the “existing dwellings” population figures used in our capacity assessment, and are therefore included in the total load received by the Army Bay Wastewater Treatment Plant.

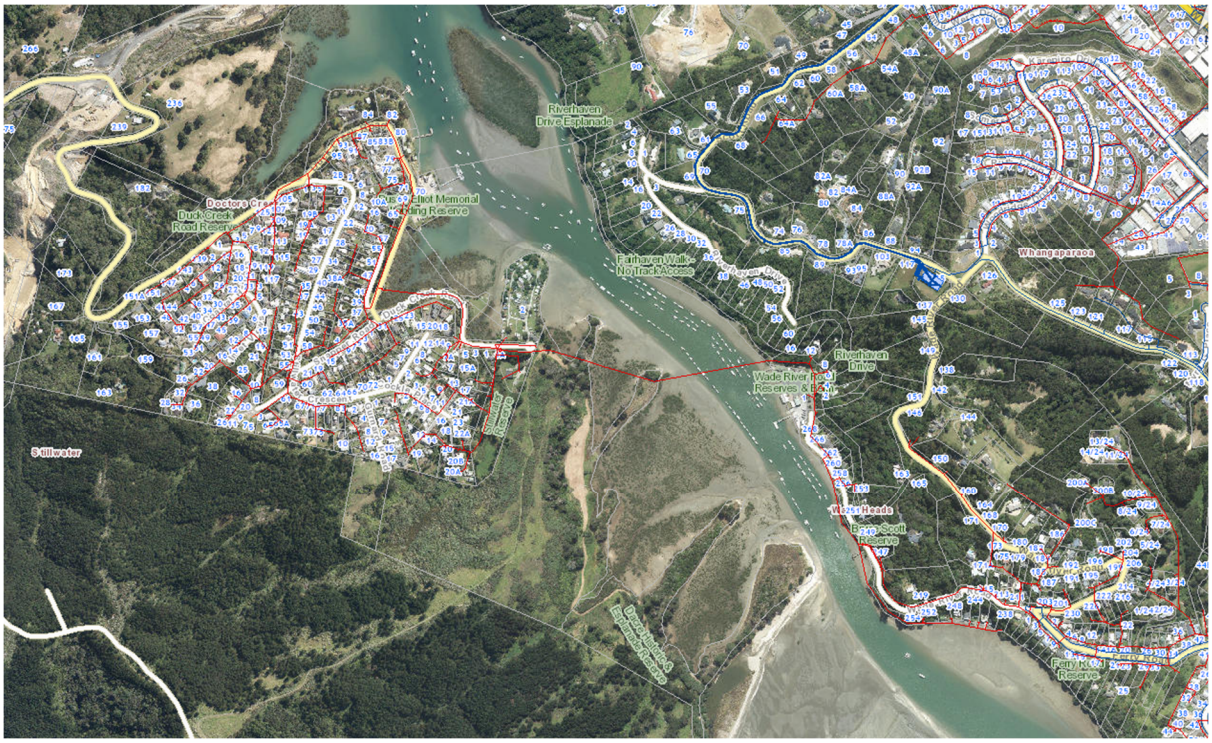


Figure 9 - Stillwater wastewater connection

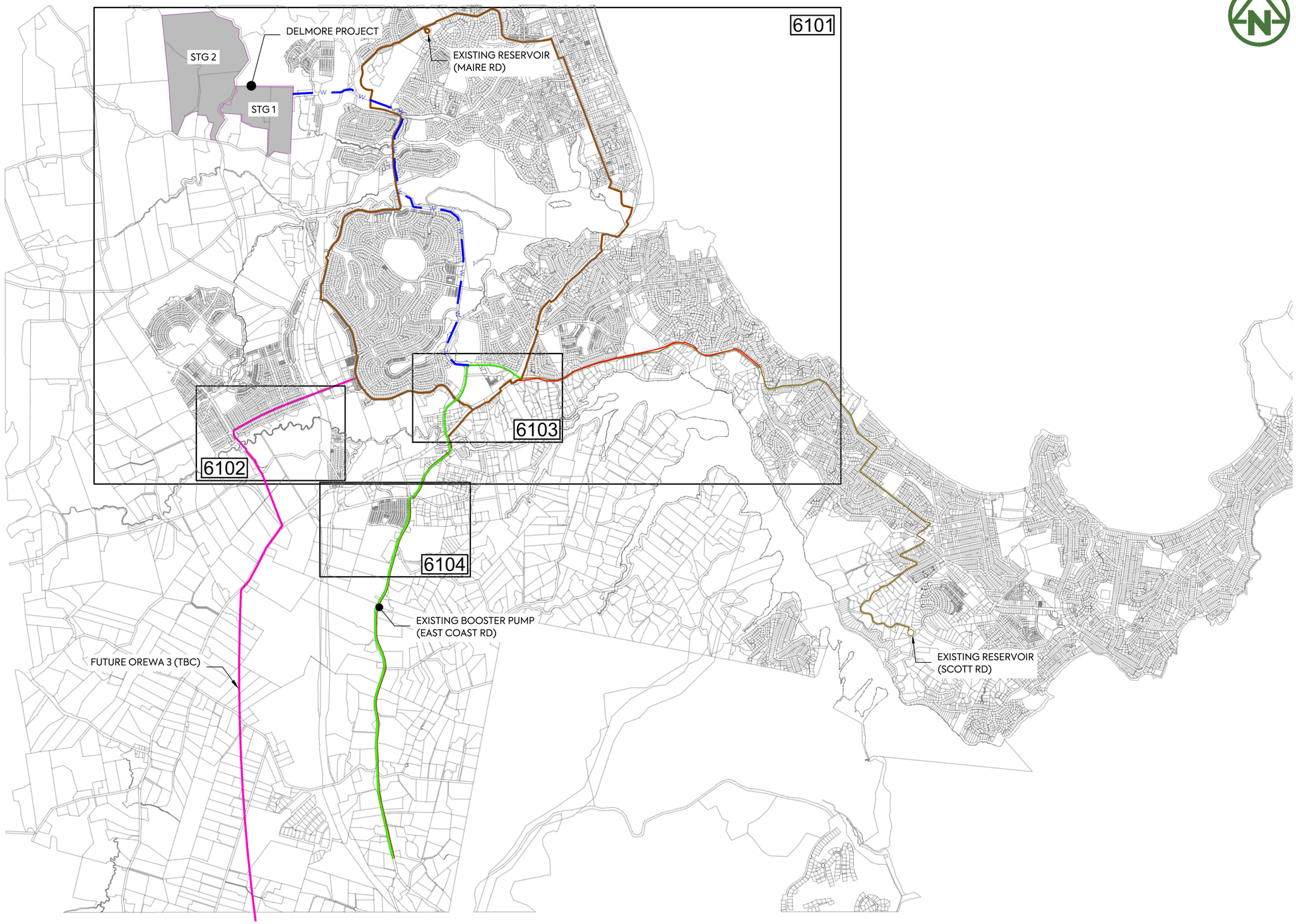
Appendix 1 – Updated capacity assessment

Breakdown of development captured within the capacity assessment					
				Number of lots which are remaining to connect (not built out)	
Greenfield	Live-zoned land development capacity (total number of lots including existing and future developments)	Total number of lots within live-zoned land areas that have granted resource consents (this is a subset of Column B)	Total number of lots that have been connected to the network (this is a subset of Column C)	Total number of live-zoned lots not yet connected to the network	Total number of consented lots not yet connected to the network (this is a subset of Column E)
Milldale	4642	2818	2376	2266	442
Millwater	610	610	494	116	116
Ara Hills	575	575	196	379	379
Pacific Heights	550	358	224	326	134
East Coast Heights	655	655	287	368	368
Strathmill	433	443	0	433	443
Woodlands Rise	91	91	0	91	91
Millwater South	0	0	0	0	0
Total Greenfield	7556	5550	3577	3979	1973
Whangaparāoa Brownfield					
1-29 Anehana Place	29	29	29	0	0
Pamu Wera Drive	50	50	50	0	0
5 Daisy Burrell Drive	89	0	0	89	0
20 Melia Place	59	0	0	59	0
Cedar Terrace	0	0	0	0	0
Te Kauaue Rise	28	28	28	0	0
Awanui Road	33	33	33	0	0
Total Brownfield	288	140	140	148	0
Total Brownfield and Greenfield Development	7844	5690	3717	4127	1973

Water Capacity Calculation - August 2025	Scenario 1	Source	Scenario 2	Source	Scenario 3	Source
	Remaining water capacity once all lots with existing resource consents have connected to the network		Remaining water capacity once all live-zoned lots have connected to the network (includes lots with existing resource consents under scenario 1)		Remaining water capacity once all live-zoned lots (including consented lots) have connected to the network (with updated figures using adjusted L/P/d and accounting for existing water tanks)	
Total number of people per household	3	Watercare Water Code of Practice (COP) section 6.3.5.6	3	Watercare Water Code of Practice (COP) section	3	
L/P/d - Watercare Code of Practice	220 l/p/d		220 l/p/d	6.3.5.6	170 l/p/d	Average Auckland water use per person per day as outlined by Watercare (https://www.watercare.co.nz/residents/help-and-support/faqs).
EXISTING WATER DEMAND						
Existing catchment population	53,700	Calculated from Watercare's' Asset Management Plan 21-24 Army Bay Wastewater Treatment Plant servicing population estimate of 49,300 (pg. 67) + ARTi11v6 population growth (pg. 105) +20% contingency.	53,700	Calculated from Watercare's' Asset Management Plan 21-24 Army Bay Wastewater Treatment Plant servicing population estimate of 49,300 (pg. 67) + ARTi11v6 population growth (pg. 105) +20% contingency.	53,700	Calculated from Watercare's' Asset Management Plan 21-24 Army Bay Wastewater Treatment Plant servicing population estimate of 49,300 (pg. 67) + ARTi11v6 population growth (pg. 105) +20% contingency.
Flow	11,814 m3/d	@ 220 L/p/d	11,814 m3/d	@ 220 L/p/d	9,129 m3/d	@170 L/p/d
Existing commercial and industrial area	23 Ha	Measured from GIS	23 Ha	Measured from GIS	23 Ha	Measured from GIS
Existing commercial and industrial flow @ 4.5 L/m2	373 m3/d	Watercare COP Table 6.1.d. Assume 60% net yield, and 60% site coverage.	373 m3/d	Watercare COP Table 6.1.d. Assume 60% net yield, and 60% site coverage.	373 m3/d	Watercare COP Table 6.1.d. Assume 60% net yield, and 60% site coverage.
Total Existing Flows	12,187 m3/d	Population + Commercial	12,187 m3/d	Population + Commercial	9,502 m3/d	Population + Commercial
With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	17,671 m3/d	Watercare Transmission standards Peaking Factor of 1.45. Note Watercare estimate 17.3MLD, this is approximately 2% higher.	17,671 m3/d	Watercare Transmission standards Peaking Factor of 1.45. Note Watercare estimate 17.3MLD, this is approximately 2% higher.	13,777 m3/d	Watercare Transmission standards Peaking Factor of 1.45. Note Watercare estimate 17.3MLD, this is approximately 2% higher.
Current Spare Capacity Mega Litres per Day, based on 25MLD capacity (MLD)	**7.3**	With the addition of an allowance of some commercial land, this leaves a spare capacity of 7.3MLD. In comparison, Watercare's 28 July 2025 response to the panel's request for further information identified a spare capacity of 7.7MLD, or 17.3MLD pipe utilisation, which is consistent with our estimate of 17.7MLD. This is a difference of 2.3% and as such consider it consistent with our estimate.	**7.3**	With the addition of an allowance of some commercial land, this leaves a spare capacity of 7.3MLD. In comparison, Watercare's 28 July 2025 response to the panel's request for further information identified a spare capacity of 7.7MLD, or 17.3MLD pipe utilisation, which is consistent with our estimate of 17.7MLD. This is a difference of 2.3% and as such consider it consistent with our estimate.	**11.2**	Higher capacity is a consequence of using rate of 170 l/p/d instead of 220L/p/d
FUTURE DEMAND OF LOTS NOT YET CONNECTED TO THE NETWORK						
Total number of live zoned lots not yet connected to the network		N/A - considered under scenario 2	4,127	Refer to Sheet 1 - Breakdown of Development Capacity Table	4,127	Refer to Sheet 1 - Breakdown of Development Capacity Table
Total number of consented lots not yet connected to the network	1,973	Refer to Sheet 1 - Breakdown of Development Capacity Table		N/A - considered under scenario 1		N/A - considered under scenario 1
Water demand from lots not yet connected to the network	1302 m3/d	3 people per dwelling, 220 L/p/d	2724 m3/d	3 people per dwelling, 220 L/p/d	2105 m3/d	3 people per dwelling @170 L/p/d
Industrial area	9 Ha		9 Ha		9 Ha	
Industrial @ 4.5 L/m2/d	146 m3/d	Light water use, 60% site Dev coverage, 60% site coverage.	146 m3/d	Light water use, 60% site Dev coverage, 60% site coverage.	146 m3/d	Light water use, 60% site Dev coverage, 60% site coverage.
Water demand from lots not yet connected to the network plus industrial land	1,448 m3/d		2,870 m3/d		2,251 m3/d	
With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	2,100 m3/d	Watercare Transmission standards Peaking Factor of 1.45. Note Watercare estimate 17.3MLD, this is approximately 2% higher.	4,161 m3/d	Watercare Transmission standards Peaking Factor of 1.45. Note Watercare estimate 17.3MLD, this is approximately 2% higher.	3,263 m3/d	Watercare Transmission standards Peaking Factor of 1.45. Note Watercare estimate 17.3MLD, this is approximately 2% higher.
Total Existing Flow plus water demand from lots not yet connected to the network plus industrial land	13,635 m3/d		15,056 m3/d		11,752 m3/d	
With 1.45 Peak Factor	**19,770 m3/d**	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	**21,832 m3/d**	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	**17,041 m3/d**	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)
DELMORE WATER DEMAND						
Total water demand for Stage 1 (486 Lots)	321 m3/d		321 m3/d		248 m3/d	
Total water demand for the full development (1250 Lots)	825 m3/d		825 m3/d		638 m3/d	
Stage 1 total water demand with 1.45 Peak Factor applied	465 m3/d	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	465 m3/d	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	359 m3/d	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)
Full development water demand with 1.45 Peak Factor applied	1196 m3/d	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	1196 m3/d	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)	924 m3/d	With Peak Factor (pf) of 1.45 (DP-07, Section 3.2c)
Total existing flow, plus water demand from lots not yet connected to the network, plus Delmore Stage 1	**20,235 m3/d**		**22,297 m3/d**		**17,400 m3/d**	
Total existing flow, plus water demand from lots not yet connected to the network, plus the full Delmore development	**20,966 m3/d**		**23,028 m3/d**		**17,965 m3/d**	
REMAINING NETWORK CAPACITY INCLUDING DELMORE						
Existing capacity as per Watercare News Release January 2023	34000 MLD		34000 MLD		34000 MLD	
Remaining water capacity once the Stage 1 Delmore development is connected (2023 Watercare figures)	60%		66%		51%	
Remaining water capacity once the full Delmore development is connected (2023 Watercare figures)	62%		68%		53%	
2025	25000 MLD	Per subsequent advice from Watercare - Downstream infrastructure Constrained	25000 MLD	Per subsequent advice from Watercare - Downstream infrastructure Constrained	25000 MLD	Per subsequent advice from Watercare - Downstream infrastructure Constrained
Remaining water capacity once the Stage 1 Delmore development is connected (2025 Watercare figures)	81%		89%		70%	
Remaining water capacity once the full Delmore development is connected (2025 Watercare figures)	84%	Remaining water capacity (as a % of network capacity) once all lots with existing resource consents have connected to the network. This figure includes the full Delmore development.	92%	Remaining water capacity (as a % of network capacity) once all live-zoned land is connected to the network. This figure includes the full Delmore development.	72%	Remaining water capacity (as a % of network capacity) once all live-zoned land is connected to the network. This figure includes the full Delmore development and includes adjusted figures for L/P/d and existing water tanks
Remaining water capacity in DUE's once the full Delmore capacity is connected (2025 figures)	**4,215**	**Remaining water capacity (in DUE's) once all lots with existing resource consents have connected to the network. This figure includes the full Delmore development.**	**2,061**	**Remaining water capacity (in DUE's) once all live-zoned land is connected to the network (this includes lots with existing resource consents). This figure includes the full Delmore development.**	**9,513**	**Remaining water capacity (in DUE's) once all live-zoned land (including consented land) is connected to the network. This figure includes the full Delmore development and includes adjusted figures for L/P/d and existing water tanks**
Remaining water capacity in MLD once the full Delmore capacity is connected (2025 figures)	**4,034**		**1,972**		**7,035**	

Wastewater Capacity Calculation - August 2025	Scenario 1	Scenario 2	Source
Wastewater - ADWF	**Remaining wastewater capacity, once all lots with existing resource consents have connected to the network**	**Remaining wastewater capacity once all live-zoned lots have connected to the network (includes lots with existing resource consents under scenario 1)**	
Total number of people per household	3	3	
L/P/d - Watercare Code of Practice	180 l/p/d	180 l/p/d	WC WW COP - Network
EXISTING WASTEWATER DEMAND			
Existing catchment population	53,700	53,700.00	Calculated from Watercare's' Asset Management Plan 21-24 Army Bay Wastewater Treatment Plant servicing population estimate of 49,300 (pg. 67) + ARTi11v6 population growth (pg. 105) +20% contingency.
Existing wastewater flows (at 180 L/p/d)	9666 m3/d	9666 m3/d	
Existing industrial wastewater flows (at 1 l/s/Ha)	1987 m3/d	1987 m3/d	Industrial area measured from GIS
Existing wastewater flows (residential plus industrial)	11653 m3/d	11653 m3/d	
FUTURE DEMAND OF LOTS NOT YET CONNECTED TO THE NETWORK			
Total number of live zoned lots not yet connected to the network	-	4,127	Refer to development breakdown
Total number of consented lots not yet connected to the network	1,973	-	Refer to development breakdown
Wastewater demand from lots not yet connected to the network	1065 m3/d	2229 m3/d	
Industrial area	9 Ha	9 Ha	
Industrial @ 1L/s/Ha	778 m3/d	778 m3/d	WC W COP - Network - 1 L/Ha/s
Wastewater demand from lots not yet connected to the network plus industrial land	1843 m3/d	3006 m3/d	
Total existing wasterwater flow plus wastewater demand from lots not yet connected to the network plus industrial land	13496 m3/d	14659 m3/d	
DELMORE WASTEWATER DEMAND			
Total wastewater demand for Delmore Stage 1 (486 lots) @ 180/l/p/d	262 m3/d	262 m3/d	
Total wastewater demand for the full Delmore Development (1250 lots) @ 180/l/p/d	675 m3/d	675 m3/d	
Total existing flow, plus Delmore Stage 1	11916 m3/d	11916 m3/d	
REMAINING NETWORK CAPACITY INCLUDING DELMORE			
Army Bay existing ADWF capacity - ADWF	13500 m3/d	13500 m3/d	This is the current ADWF capacity of the Army Bay WWTP.
Remaining wastewater capacity (as a % of total network capacity)	88%	88%	This is the percentage of Army Bay's current total capacity that would be used with all existing connections and Delmore stage 1 discharging to Army Bay. This does not include live-zoned land.
Total ADWF including Delmore	14171 m3/d	15334 m3/d	This includes Delmore, the Existing Flows, and wastewater demand from lots not yet connected to the network
Army Bay Stage 1 - WWTP Consent - ADWF	22500 m3/d	22500 m3/d	This is the ADWF capacity after the Stage 1 upgrade to Army Bay. Condition 9 of WWTP consent.
Remaining wastewater capacity at Army Bay after the Stage 1 upgrade is complete (as a % of total network capacity)	63%	68%	This is the percentage of Army Bay's capacity after its stage 1 upgrade that would be used with all existing connections, all lots not yet connected to the network, and the Full Delmore development discharging to Army Bay.
Remaining wastewater capacity (in DUE's) once the full development capacity is connected and Army Bay Stage 1 upgrade is complete	**15,424**	**13,270**	**Number of lot connections available after WWTP upgrade until 100% utilisation**

Appendix 2 – Orewa 1, 2 & 3 Transmission route drawings



LEGEND:

- OREWA 1 MAIN
- OREWA 2MAIN
- OREWA 3 MAIN
- WHANGAPARAOA 1 MAIN
- WHANGAPARAOA 2 MAIN
- WATERMAIN TO DELMORE BOUNDARY

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	WIP DRAFT	-	-	-	-

CLIENT: VINEWAY LIMITED

PROJECT: DELMORE STAGE 1 53A, 53B & 55 RUSSELL RD OREWA

TITLE: WATERMAIN STRUCTURE PLAN EXISTING PUBLIC NETWORK

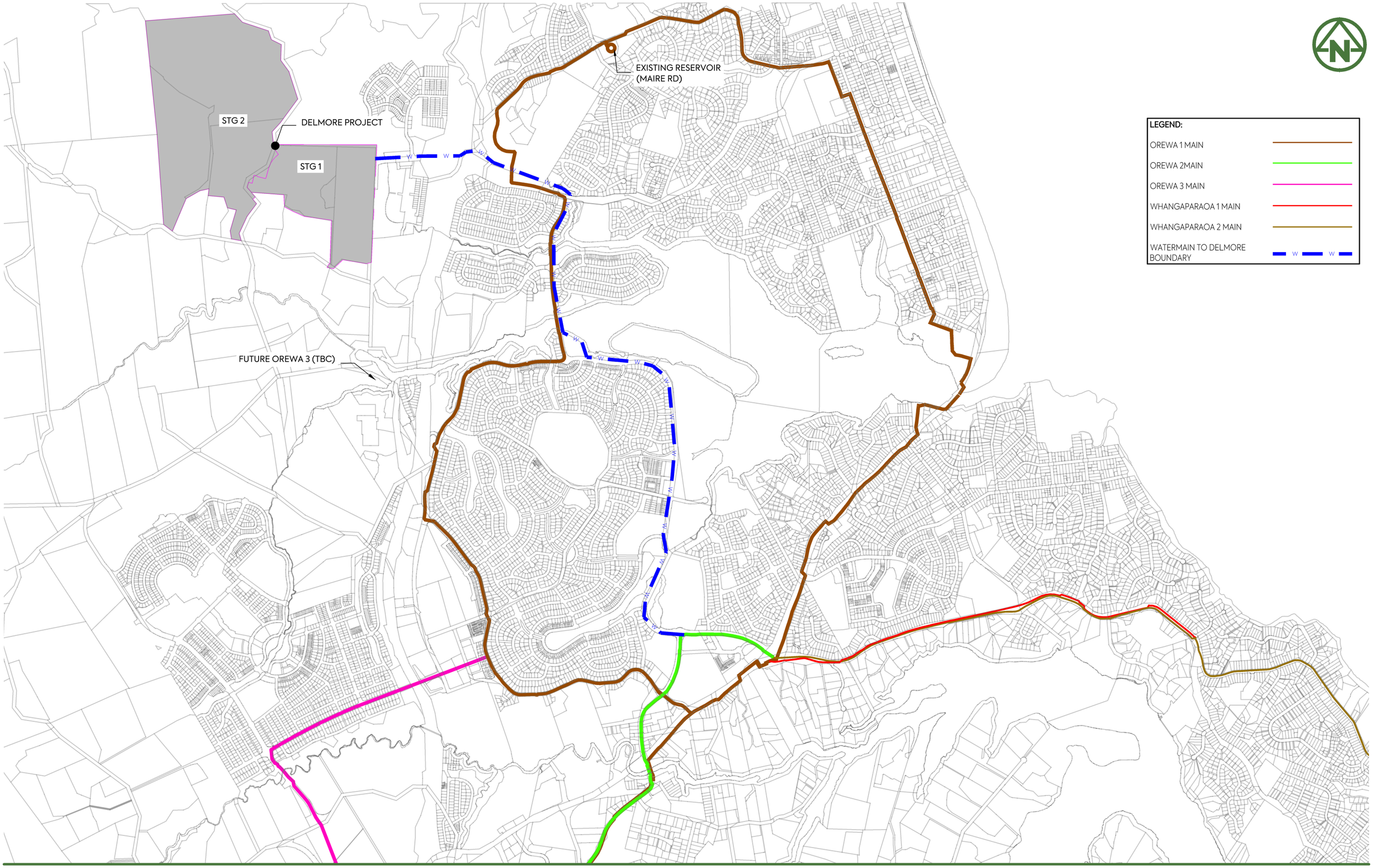
PURPOSE OF ISSUE: FOR INFORMATION

SCALE: 1:40000m @ A3 DO NOT SCALE

DRAWING NO: 3725-1-6100

REV: A

C:\12DS\DATA\MCKFS01\3725-1 DELMORE STAGE 1_5231\06000. ENGINEERING DESIGN\6500. DRAWINGS\6100.DWG



MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	WIP DRAFT	-	-	-	-

PROJECT:

VINEWAY LIMITED

DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

TITLE:

WATERMAIN
STRUCTURE PLAN
EXISTING PUBLIC NETWORK
SHEET 1

PURPOSE OF ISSUE:
FOR INFORMATION

SCALE:
1:20000m @ A3
DO NOT SCALE

DRAWING NO: 3725-1-6101

REV: A

LEGEND:

- OREWA 1 MAIN
- OREWA 2MAIN
- OREWA 3 MAIN
- WHANGAPARAOA 1 MAIN
- WHANGAPARAOA 2 MAIN
- WATERMAIN TO DELMORE BOUNDARY — W — W —

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	WIP DRAFT	-	-	-	-

CLIENT: VINEWAY LIMITED

PROJECT: DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

TITLE: WATERMAIN
STRUCTURE PLAN
EXISTING PUBLIC NETWORK
SHEET 2

PURPOSE OF ISSUE: FOR INFORMATION

SCALE: 1:4000m @ A3
DO NOT SCALE

DRAWING NO: 3725-1-6102

REV: A

LEGEND:

- OREWA 1 MAIN
- OREWA 2MAIN
- OREWA 3 MAIN
- WHANGAPARAOA 1 MAIN
- WHANGAPARAOA 2 MAIN
- WATERMAIN TO DELMORE BOUNDARY

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	WIP DRAFT	-	-	-	-

MCKENZIE & CO.

CLIENT: VINEWAY LIMITED

PROJECT: DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

TITLE: WATERMAIN
STRUCTURE PLAN
EXISTING PUBLIC NETWORK
SHEET 3

PURPOSE OF ISSUE: FOR INFORMATION

SCALE: 1:4000m @ A3
DO NOT SCALE

DRAWING NO: 3725-1-6103

REV: A

LEGEND:

- OREWA 1 MAIN
- OREWA 2MAIN
- OREWA 3 MAIN
- WHANGAPARAOA 1 MAIN
- WHANGAPARAOA 2 MAIN
- WATERMAIN TO DELMORE BOUNDARY — W — W —

MCKENZIE & CO.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	WIP DRAFT	-	-	-	-

CLIENT: VINEWAY LIMITED

PROJECT: DELMORE
STAGE 1
53A, 53B & 55 RUSSELL RD
OREWA

TITLE: WATERMAIN
STRUCTURE PLAN
EXISTING PUBLIC NETWORK
SHEET 4

PURPOSE OF ISSUE: FOR INFORMATION

SCALE: 1:4000m @ A3
DO NOT SCALE

DRAWING NO: 3725-1-6104

REV: A

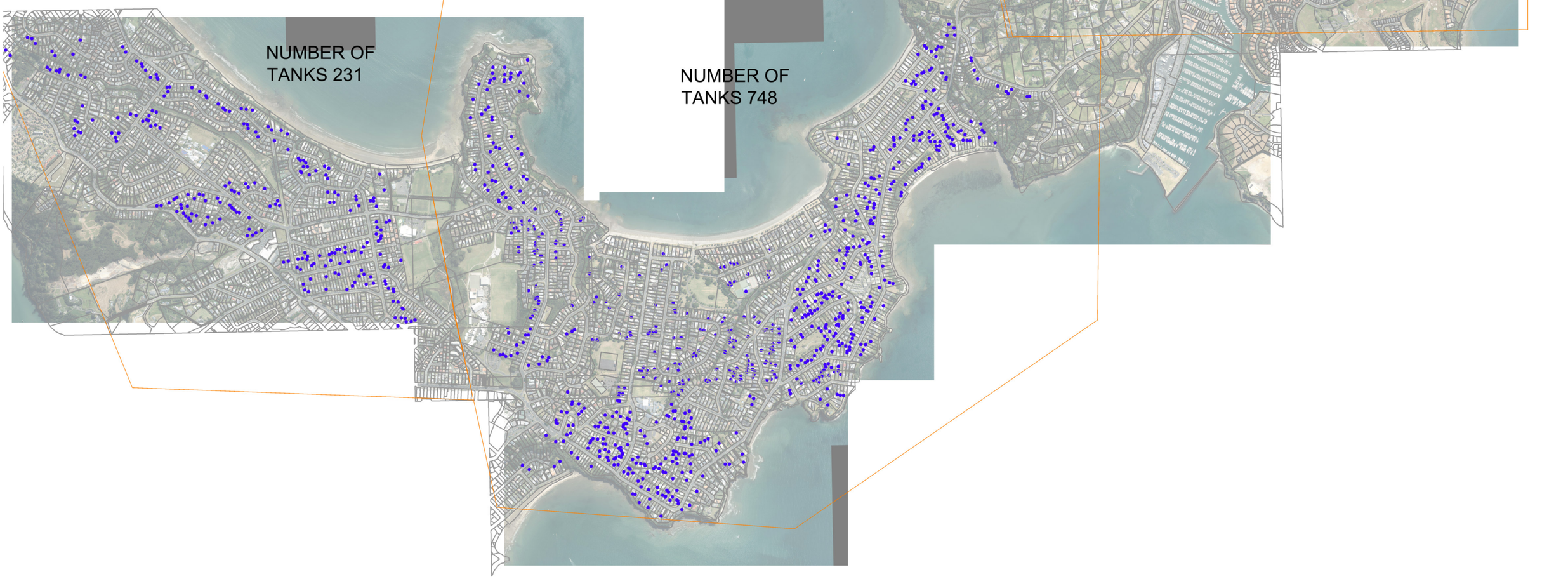
Appendix 3 – Tank location drawing

TOTAL NUMBER
OF TANKS 1329

NUMBER OF
TANKS 231

NUMBER OF
TANKS 748

NUMBER OF
TANKS 336



MCKENZIE & CO.

CLIENT:

PROJECT:

DELMORE
WHAGAPAROA / OREWA AREA

TITLE:

WHAGAPAROA
NUMBER OF WATER TANK

PURPOSE OF ISSUE:
FOR INFORMATION

SCALE:
NTS
DO NOT SCALE

DRAWING NO: 3920-0-SK9000

REV: A

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	MO	JK		04/08/25

Attachment B

Barker & Associates memorandum

Memorandum

To: Environmental Protection Authority

From: Gus Finlayson – Barker & Associates Limited

Date: 5 August 2025

Re: Response to the Panel's Minute 11

Item 9

The purpose of the assessment undertaken by B&A was to identify significant residential developments within the same water and wastewater supply catchment that is proposed to service Delmore. The total figures provided by B&A is noted as being approximate. The focus was on significant residential developments because they represent a significant proportion of demand.

However, whilst the areas identified by the Panel are relatively small in scale in the context of the areas already identified by B&A, they have been incorporated into an updated capacity calculation undertaken by McKenzie & Co (and provided in Attachment A to the applicant's response to Minute 11) as follows:

- Anehana Place: 29 residential lots consented, 29 connections provided;
- Pāmu Wēra Drive: 50 residential lots consented, 50 connections provided; and
- Daisy Burrell Drive: 89 residential lots consented, 0 connections provided.

Further, B&A have undertaken further review of the area as requested by the Panel via Auckland Council Geomaps and the Auckland Council list of resource applications lodged. Based on that review the following development areas have also been incorporated into the McKenzie & Co calculations:

- Melia Place: 59 residential lots consented, 0 connections provided;
- Te Kauaue Rise: 28 residential lots consented, 28 connections provided; and
- Awanui Road: 33 residential lots consented, 33 connections provided.

This has resulted in additions to the total number as follows:

- Addition to total consented residential lots: 288
- Addition to total consented residential lots without connections: 148

These additional figures have been provided to McKenzie & Co, who has updated its water and wastewater capacity calculations as requested by the Panel (see Attachment A).

It is noted that the Silverdale West plan change area referred to by Watercare has been omitted from the McKenzie & Co capacity calculations because it is FUZ land.

In terms of the McKenzie & Co capacity calculations provided in Attachment A, it is noted that the figures used for Scenario 1 which reference granted resource consents, have been produced by B&A. The figures provided for the large developments referred to above and captured by the original calculations are the same as set out in Appendix 45.1 – B&A Delmore Capacity Memo. To see the methodology which informed these figures, please refer to Appendix 45.1 – B&A Delmore Capacity Memo, which was provided to the

Panel as part of the applicant's 7 July Response. The figures provided for the additional, smaller developments are those set out above.

The figures in the 'Total Zoned Capacity' column have been determined as follows. The Milldale figure (4,642 lots) has been taken using the number from the Milldale Masterplan[1]. Other figures within this column have been estimated using the numbers provided on the specific development websites. For example, the Pacific Heights website states that "Pacific Heights will feature over 550 high-quality homes upon completion". As such, 550 lots has been used by McKenzie & Co in this column. The Millwater South figure is an estimation which has been produced by McKenzie & Co, as there are currently no approved consents for this area, nor is there information available online. This figure was estimated by taking the gross Millwater South area, applying a 0.5 net area efficiency and dividing this number by the minimum lot size for the zone within the AUP(OP).

[1] https://environment.govt.nz/assets/what-government-is-doing/Fast-track-approved/Milldale-Stages-4C-and-10-13/111.02-Appendix-1-Plans.pdf

Attachment C

Urban Economics memorandum

Memorandum

To: Madeleine Wright

Client: Vineway Ltd

From: Adam Thompson,

Date: 5 August 2025

Re: On-site Water Tank System Retention Assessment

This memo evaluates the economic propensity for households in the Hibiscus Coast that are presently using on-site water tank systems in urban zones, to connect to Watercare's public water system.

Figure 1 outlines the costs involved in connecting to the Watercare water network and compares this with the cost to set up private water tanks. This shows that the total cost to connect and operate a Watercare water connection is $26,640. This includes an approximate 'net present cost' of $9,500, which reflects the annual charges of $950. By comparison, the private water tank system, including two 30,000 litre tanks, and one 'summer tank fill', also assessed in terms of the net present cost, has a total set and operating cost of $17,000.

Figure 1: Public vs Private Water System Costs per Household

Watercare Connection & Charges	Price
IGC	$12,230
Water Metre	$1,910
Drainlaying, Other	$3,000
Sub-Total	**$17,140**
Annual Charges	$950
Annual Charges (10 Years)	$9,500
Total Cost	**$26,640**

Private Water System & Costs	Price
Tanks (2*30,000l)	$8,000
Filters	$1,500
Installation, Drainlaying, Other	$5,000
Sub-Total	**$14,500**
Annual Costs (1 Summer Tank Fill)	$250
Annual Costs (10 Years)	$2,500
Total Cost	**$17,000**

Source: Watercare, UE

If a household was to choose to dis-establish their on-site water tank system, and connect to the public system, this would cost $26,640. If they were to upgrade their existing water tank system (i.e. if their tanks were not working sufficiently) then the cost would be less, at $17,000.

In terms of the total costs, there is a strong economic incentive for households to continue to use an existing private water tank system, given the sunk cost investment, and the high cost in connecting to the public system. It is therefore reasonable to conclude that there would be very few households that decide to connect to the public system, if they have private water tanks operating.