

**BEFORE THE FAST TRACK APPROVALS EXPERT CONSENTING PANEL**

**IN THE MATTER**                      **of Delmore (residential subdivision and roading  
interchange at Orewa)**

**STATEMENT OF EVIDENCE OF MITCHELL LOGAN ROBERTS FOR**

**AVJ HOBSONVILLE PTY LTD**

**(CIVIL ENGINEERING)**

**25 JUNE 2025**

**1. INTRODUCTION, QUALIFICATIONS AND EXPERIENCE**

1.1 My full name is Mitchell Logan Roberts

1.2 I hold a degree of Bachelor of Civil Engineering (Hons), University of Auckland. I am a Chartered Member and Chartered Professional Engineer of Engineering New Zealand (Institution of Engineering Professionals New Zealand) and a Member of ACE New Zealand (Association of Consulting Engineers New Zealand).

1.3 I am an Associate Director of Airey Consultants Ltd (ACL). I have held that position for 3 years, prior to which I was a Senior Civil Engineer at ACL. In total I have over 12 years' experience as a civil engineer. I have worked on land development projects such as:

- a) Ara Hills, Orewa, Auckland - Residential subdivision development, Stages 1, 2, 3A and 4.
- b) 73, 75, 83 & 85 Muriwai Road, Waimauku, Auckland – 67 Lot residential subdivision development.
- c) Princess Royal Barracks, Deepcut, United Kingdom – 1,200 Lot residential subdivision & commercial/retail land development.
- d) 50 Tavern Road, Silverdale – Commercial/industrial land development.

1.4 Although this is not an Environment Court hearing, I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and agree to comply with it while giving oral evidence (if required by the Expert Consenting Panel). Except where I state that I am relying on the evidence of another person, this written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

- 1.5 ACL Associate Director Ashley Watson has provided substantial civil engineering input on the Ara Hills project and has provided substantial assistance in writing this evidence, his qualifications and experience are set out in **Appendix A**, along with confirmation that he has also complied with the Code of Conduct.
- 1.6 Given the potential need to attend to matters at short notice, Mr Watson or I will be available to give oral evidence before the Expert Consenting Panel if the Panel wishes or otherwise attend expert witness conferencing or workshopping.

## **2. SCOPE OF EVIDENCE**

- 2.1 My evidence is presented on behalf of AVJ Hobsonville Pty Ltd (AVJ). AVJ owns the development known as Ara Hills (comprising 226 Grand Drive and 47 Ara Hills Drive) which is located east and north of the Delmore site. I have been asked by AVJ to provide an assessment of the impact of civil engineering matters on their site as a result of the proposed Delmore development.
- 2.2 My evidence addresses earthworks, roading, flooding, stormwater, wastewater and water supply.
- 2.3 I have reviewed the substantive application materials for the Delmore project including the AEE and drawings prepared by McKenzie & Co including the following which are particularly relevant to my evidence:
- a) Appendix 11 Water, Wastewater and Utilities Report and various plans / drawings which are relevant to the issues I have identified.
  - b) Appendix 12 Stormwater Report and various plans / drawings which are relevant to the issues I have identified.
  - c) Appendix 16 Earthworks Report and various plans / drawings which are relevant to the issues I have identified.
  - d) Appendix 18 Roding and Access report and various plans / drawings which are relevant to the issues I have identified.
  - e) Appendix 28, the Integrated Transport Assessment.

- f) Appendix 29 Flood Assessment report and various plans / drawings which are relevant to the issues I have identified.

2.4 I have prepared this evidence in conjunction with Ila Daniels, a planner who has also prepared evidence for AVJ. I have visited the AVJ site a number of times and have viewed the interface with the adjacent Delmore land.

2.5 I have reviewed the substantive application materials for the Delmore project including the engineering reports and drawings prepared by McKenzie & Co. The following are key topics which I address:

- a) Roading – section 4;
- b) Earthworks – section 5;
- c) Stormwater / flooding – section 6;
- d) Wastewater – section 7;
- e) Water supply – section 8; and
- f) Conclusions / Recommendations – section 9.

### **3. SUMMARY**

3.1 Delmore have assumed that AVJ will construct the Grand Drive road extension to their land. AVJ is not intended to do that work. As a result there is a need for further designs and assessments for the extension of Grand Drive to the Delmore boundary and also to manage the interface between the two sites where a cut of up to around 11m is proposed. There is also some uncertainty about when the paper road will vest. See section 4.

3.2 Additional assessments of the impact of construction truck movements and adverse effects (e.g. dust) is needed, along with more detailed consent conditions. See section 5.

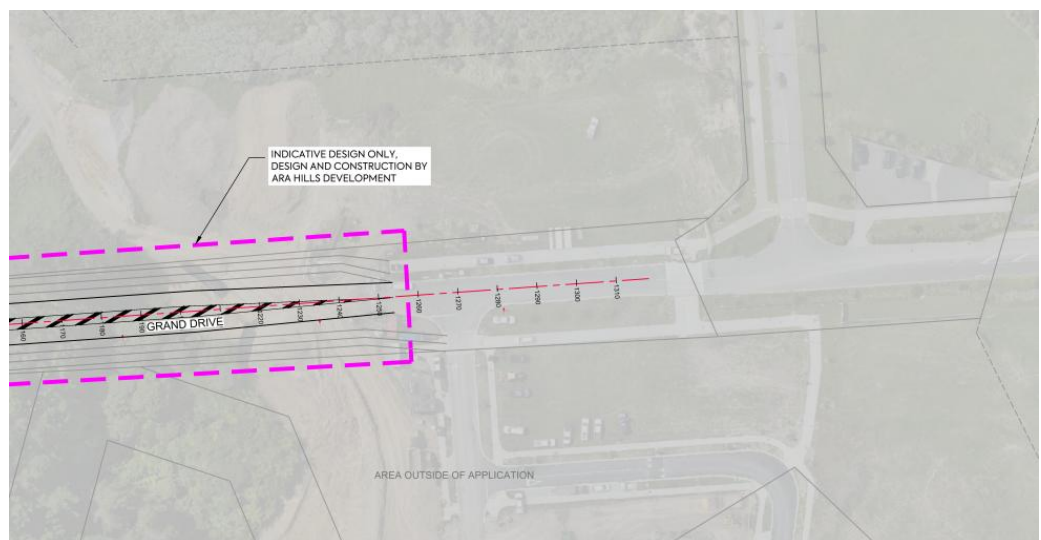
3.3 The flood calculations show that AVJ's development sites will be flooded to a greater depth, in all rainfall events analysed. Additional

modelling and stormwater mitigation is required. There are a range of options available. See section 6.

- 3.4 AVJ's consented development will use more peak capacity within the wastewater pipeline than Demore's consultants have assumed and AVJ has plans to increase the intensity of its development. Options to mitigate impacts on peak wastewater flows should be assessed and conditioned. Watercare should treat AVJ and Delmore consistently in relation to potential capacity constraints arising at the Army Bay treatment plant.
- 3.5 Some changes to the water supply servicing strategy would be required as Demore's consultants have not properly understood how the existing water supply lines within AVJ's site will be used in the future.

#### 4. **ROADING**

- 4.1 The roading plans propose an extension from Grand Drive to service the Stage 1 development (which currently terminates within Ara Hills), with a note indicating that this extension will be constructed by AVJ.
- 4.2 This can be seen in Appendix 18-1: Stage 1 road drawings, particularly sheets 3000, 3003 and 3008. Below is a snip from sheet 3008 showing the proposed Grand Drive extension.



- 4.3 I understand that AVJ has a contract with Auckland Transport and I have discussed this issue with AVJ. My understanding is that AVJ have

no obligation to construct the Grand Drive road extension to the boundary of the Delmore property and has no intention of constructing that extension. Ila Daniels addresses this matter in more detail in terms of AVJ's resource consent. ACL is not working on any design work for that extension.

4.4 I have been further informed that AVJ is not required to vest the road prior to 19 April 2028, being the date of the original agreement. Handover occurs only once AVJ elects to seek sign-off following completion of the works, and Council cannot compel early vesting. Though AVJ could choose to vest the land earlier because its subdivision consent allows it to do so.

4.5 As explained by Ila Daniels, this view is consistent with the Supporting Growth Alliance (SGA) Notice of Requirement 6 (NoR 6) design plans that show the proposed extension of Grand Drive commencing within the Ara Hills site, implying that the SGA does not expect AVJ to construct the road to the boundary (see Figure 1 below).

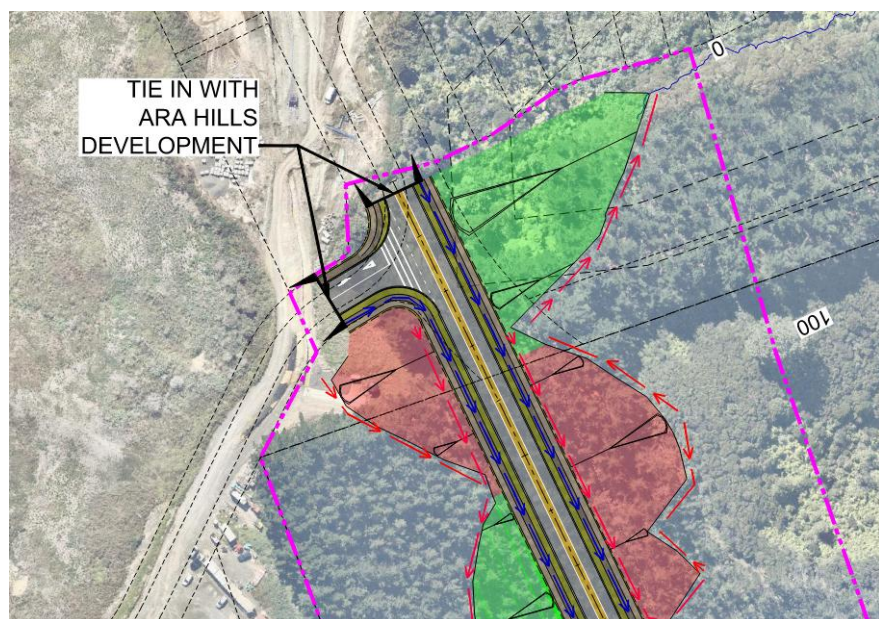


Figure 1 - NoR 6 road extension plan (note north is to the left of the image)

4.6 The traffic report included with the Delmore application states that “As such, in the short term (before the development occurs to the south or Auckland Transport constructs the remainder of the NoR road), all the

site traffic will enter / exit via the Grand Drive interchange which is considered to be acceptable from a traffic perspective.”

- 4.7 This confirms that all of Stage 1 of the Delmore development is proposed to be accessed via Grand Drive through Ara Hills. As noted previously, my understanding is that there is no requirement or obligation for AVJ to form Grand Drive up to the boundary with the Delmore site.
- 4.8 The Grand Drive road connection proposed within AVJ land is a critical access component to service the proposed Delmore Stage 1 development. If Delmore are not going to construct the extension, then an alternative access strategy would need to be demonstrated for Stage 1.
- 4.9 If Stage 1 is to access Grand Drive, as proposed, then a design for the road extension will need to be prepared. The topography is steep and any solution will need careful analysis. Ila Daniels also notes that the work required to construct a road is likely to trigger a number of resource consents.

## **5. EARTHWORKS**

- 5.1 The earthworks plans indicate up to 11m of cut on the western boundary of Ara Hills, at the location of the future Grand Drive road extension.
- 5.2 This extent of earthworks can be seen in Appendix 16- Stage-1- Earthworks-Final-Contours drawing 3725-1-2003, and Appendix 16-3 Stage 1 Earthworks cut fills plans drawing 3725-1-2103:



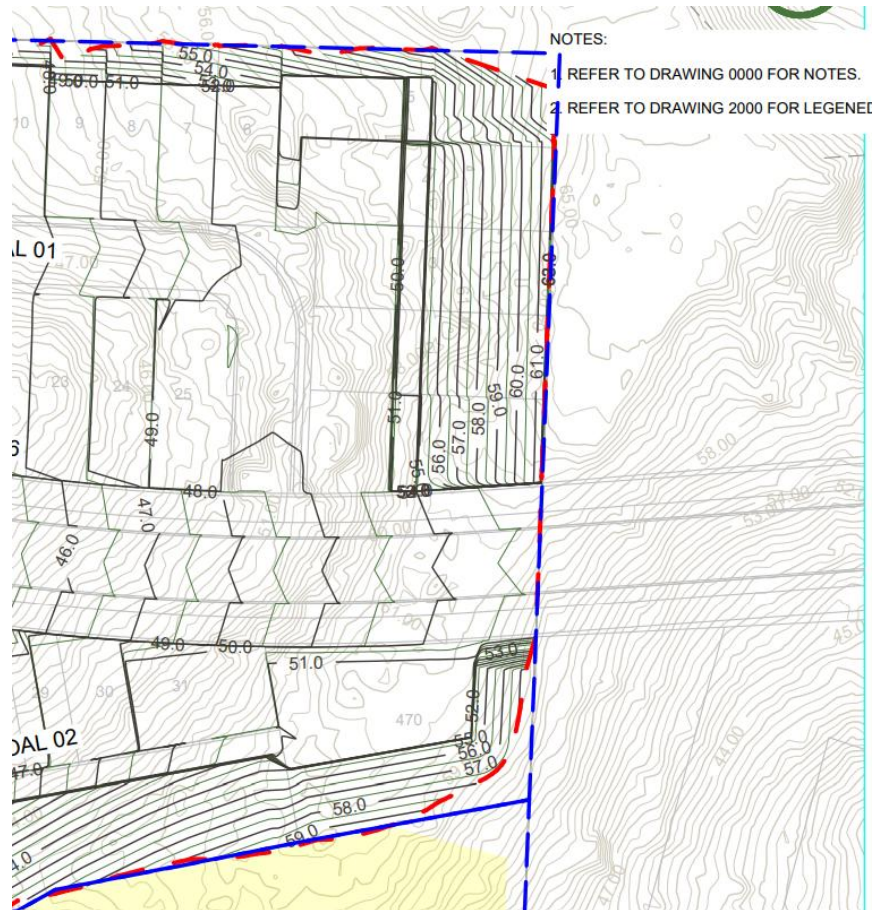


Figure 2 - Snip from Appendix 16 Stage 1 Earthworks Final Contours drawing 3725-1-2003

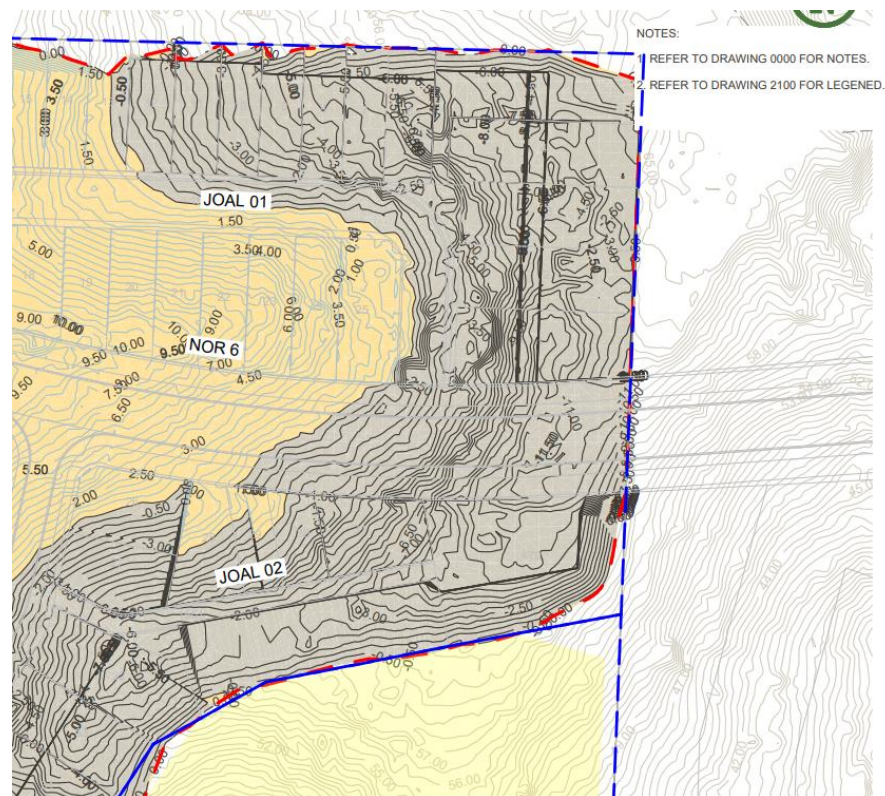


Figure 3 - Snip from Appendix 16-3 Stage 1 Earthworks cut fill plans drawing 3725-1-2103



- 5.3 This extent of cut would also impact how any extension of the road stub was constructed. I assume, based on my analysis of the roading connection, that Delmore have not assessed the extent of earthworks that would be required on the AVJ land in order to achieve an acceptable road gradient and connection to the Delmore site.
- 5.4 As a result, it is unclear how the earthworks to form the road are intended to be undertaken within the Ara Hills site, and in my opinion it would be difficult to contain these to the road reserve width with a conventional 1:3 batter slope (i.e. potentially more land than the proposed paper road would be required from Ara Hills to construct batter slopes and/or retaining walls in order to form the finished road levels). This might be a temporary or permanent issue depending on the construction methodology and final levels proposed.
- 5.5 The Delmore project results in an excess cut volume of 146,000m<sup>3</sup> to complete the Stage 1 development, and a total excess cut volume of 319,000m<sup>3</sup> across all stages of the development (solid measure with compaction factors excluded), and so it appears that Delmore has excess spoil that could potentially be used to assist with constructing the stub road.
- 5.6 A substantial amount of earthworks would be required to navigate the steep topography at the point of the road stub connection.
- 5.7 Allowing for a 20% fill compaction factor, as being a reasonable compaction estimate, this would reduce the excess cut volume to approximately 88,000m<sup>3</sup> (to complete Stage 1), and 128,000m<sup>3</sup> (to complete all stages). This is the likely volume of excess soil that will have to be transported off-site.
- 5.8 Transporting the balance material off site will generate a large number of truck movements (in excess of 6,000 truck movements), which is assumed to be through Ara Hills (along Grand Drive). The site access section 12.2 of Appendix 28 (ITA) only mentions heavy vehicles associated with construction of residential dwellings, but doesn't specifically mention or assess the anticipated truck & trailer movements

to remove excess spoil from the site. In my view the large number of truck movements have not been sufficiently considered or assessed as part of the Delmore application (particularly given the amount of excess soil in stage 1). Auckland Council has comprehensive standard consent conditions relating to establishing Construction Management Plans and Construction Traffic Management Plans and those conditions should be applied along with the more detailed reporting / analysis required.

## **6. STORMWATER/FLOODING**

6.1 The Delmore flood assessment has determined that there will be an increase in flood levels within the Ara Hills property (south of Stage 2), in all storm events analysed. This will impact the southern-most residential lots of the Ara Hills Stage 2 development as the stream the Delmore site flows into runs through Ara Hills south of Stage 2. The increase in flood level may also affect the wastewater pump station constructed by AVJ which is positioned in close proximity to the flood plain. The flood levels are identified to be increased by the below heights:-

- 2 year storm event = 667mm increase
- 5 year storm event = 538mm increase
- 10 year storm event = 459mm increase
- 100 year storm event = 311mm increase

6.2 The Delmore flood report has simply referred to this increase in flood level within Ara Hills as being “contained within the existing channel, with no anticipated consequences”. Further, Section 6.6 of the Stormwater Management Plan (SMP) prepared by McKenzie & Co (Appendix 6 of the Application). states that the design surface level of the lower Stage 2 lots is approximately RL26m, being significantly higher than the modelled flood plain level. However, this level is the highest elevation on the Ara Hills Stage 2 lots, whereas the lower end of the Ara Hills lots have a finished level of approximately RL15m, being

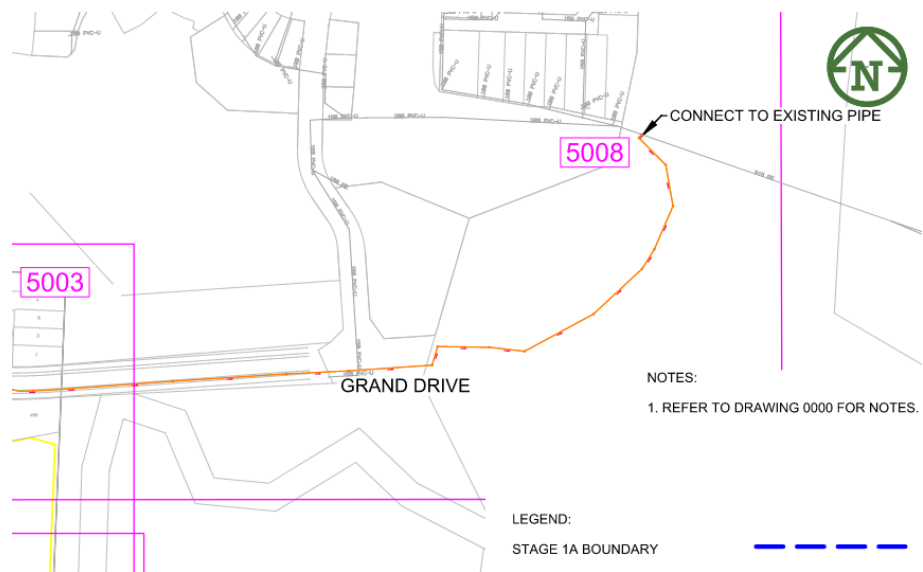
below the flood level. I consider that these lots do not form part of the “existing channel” as stated by Mckenzie & Co.

- 6.3 My opinion is that the proposed increase in flood levels is likely to have an effect on the lower residential lots of the Ara Hills development, due to being flooded to a higher elevation in excess of 300mm in the 100 year storm event. In my view this has not been sufficiently considered or assessed as part of the Delmore flood assessment. While I acknowledge that there is potential / likelihood of dwellings being constructed on the more elevated areas of those sites, it is not a guarantee. Also, the lower areas may still be used for amenity / outdoor living such as patio’s, decking, swimming pools etc. The increased 100 year flood plain will be shown on LIMs for future purchasers of AVJ’s sites. Flooding risk is an issue which is often carefully considered by purchasers following the Anniversary Day floods and cyclone Gabrielle.
- 6.4 Based on my experience of residential developments in Auckland I would expect any development of this nature to demonstrate that any increase in flood levels will not result in increased flood risk downstream. In my opinion this has not been demonstrated sufficiently by the Delmore project.
- 6.5 I consider that there are two conventional options available to mitigate the increase in flood levels:
- a) Upgrading or duplicating the existing culvert running under SH1 (currently a 2100mm diameter concrete pipe)
  - b) Providing peak flow attenuation within the Delmore site, using stormwater devices such as tanks, ponds or wetlands.

## **7. WASTEWATER**

- 7.1 If Watercare allow a connection, the Delmore project proposes to collect wastewater at a pump station and then ultimately pump the wastewater to the existing DN315 gravity wastewater pipe located within the NZTA land east of Ara Hills (of which AVJ have installed as part of the Ara Hills Stage 1 development).

- 7.2 The extension of the Grand Drive road reserve up to the Delmore boundary has not been vested, and so currently the construction of this pipeline within AVJ land would require approval from AVJ as landowner. As outlined above in relation to roading, AVJ is not contractually required to vest the paper road until 2028.
- 7.3 The proposed rising main alignment is shown in Figure 4 below. See Drawing 3725-1-5000 within Appendix-11-1-Stage-1-Wastewater.



*Figure 4 - Proposed Wastewater Connection Plan*

- 7.4 AVJ constructed the pipeline which Delmore wishes to connect into, and ACL provided the calculations for sizing the pipeline.
- 7.5 I have reviewed the ACL calculations provided to Watercare in support of the EPA application for the DN315 gravity pipe under the NZTA motorway, that demonstrated that this pipe has a full capacity of approximately 60L/s which includes a spare capacity of approximately 20L/s following the complete intended<sup>1</sup> development of Ara Hills (which assumed 900 lots plus an allowance for dry and wet retail).
- 7.6 The Delmore report states an ultimate development peak wet weather flow of 50.9l/s (for 1,250 lots) which exceeds the planned spare capacity of this pipe. The completed development of Stages 1, 2 and 3 of Ara

---

<sup>1</sup> Subject to a plan change and further resource consents

Hills have already reserved a portion of this capacity and will continue to utilise this capacity as the development progresses.

- 7.7 I acknowledge that once assets have been vested to Watercare (of which the DN315 pipe has been) the developer that built the asset has no direct control over other properties connecting to the asset. However, it should also be noted that AVJ is continuing to develop Ara Hills in stages and completing new lots regularly, so in my opinion it is likely that the majority of the capacity available within the DN315 pipe will be taken up by the Ara Hills development over the next several years.
- 7.8 There does not appear to have been any analysis of the total capacity of the DN315 pipe against the consented Ara Hills development (575 lots) and the proposed Delmore development (1,250) lots. I have undertaken calculations which demonstrate that this would generate a peak wet weather wastewater flow of approximately 76L/s, which exceeds the full capacity of the pipe. There is no mention in the Delmore application of how this is proposed to be addressed.
- 7.9 In my opinion there is a potential solution, subject to Watercare's views, which would require 24 hours of wet weather wastewater storage at the relevant Delmore pumpstation. This would allow peak flows to be stored and discharged at off-peak times.

## **8. WATER SUPPLY**

- 8.1 The Ara Hills development has a relatively complex water supply arrangement which is summarised briefly below for context:
- a) Ara Hills currently obtains water supply from the corner of Arran Dr and Grand Drive.
  - b) A DN180 pipeline extends along Grand Dr and a DN355 pipe runs under the motorway. There is a DN355 pipe running next to the DN180, which is not currently connected to the network.
  - c) Once the water storage reservoir in Ara Hills is built, the DN355 pipe will be connected to the Watercare transmission network on Grand

Dr (north of 103 Godfrey Dr). At this point the DN180 connection to Arran Dr can be closed off.

- d) Within Ara Hills there is a DN180 and DN355 pipe running along Grand Dr, ultimately the DN355 will be extended and utilised to supply water to the reservoir, and the DN180 will be used as a supply pipe for the subdivision (i.e. from the reservoir).

8.2 Attached as **Appendix B** is recent correspondence highlighting how complicated the water reservoir issue is. As per the attached Watercare feedback, AVJ's proposed reservoir layout has not been accepted in principle. Watercare raised several concerns:

- a) The site is too constrained to allow future reservoir construction or adequate access;
- b) Operational access, turning areas for tankers, and constructability during poor conditions need to be resolved;
- c) The top water level and reservoir configuration require review; and
- d) Property acquisition is contingent on future internal approvals by Watercare.

8.3 The Delmore development appears to propose extending both the DN355 and DN180 pipes from Grand Drive, but adopts a DN315 and what I assume is a DN125 (i.e. slightly smaller pipes). It appears that there is a misconception by Delmore's consultants as to the purpose of the DN355 pipe as it was never intended to be utilised to provide water supply directly to properties, i.e. it is intended as a transmission main servicing the reservoir. The DN355 pipe will be classified as a transmission line and limited to supplying water to the reservoir. Watercare do not allow direct property connections to transmission systems.

8.4 I note that Watercare have been clear with AVJ and their consultants for a number of years about the security of supply risk (in their view) of having large numbers of dwellings serviced by a single water feed (i.e. not a looped network).



- 8.5 This has led to AVJ not being permitted to develop any more stages beyond Stages 1, 2, 3 and 4 until a new reservoir is constructed and vested to Watercare. The water reservoir is to be constructed by AVJ and is located within the Ara Hills property boundary.
- 8.6 As the Delmore development would add significantly more properties on a single water feed, and would extend the length of the water pipe, then it is likely that Watercare will impose the same requirements on Delmore if a connection is allowed by Watercare.
- 8.7 If so, that would mean that no properties can be developed by Delmore until a second reservoir is constructed, or a looped main installed. This is consistent with my recent and ongoing meetings and discussions held with WSL relating to the design parameters for the proposed Ara Hills reservoir.
- 8.8 Delmore proposes a second water connection to the south of the site to provide a looped feed, however this is not proposed to be constructed until the Stage 2 development. Delmore reference a maximum limit of 1,000 houses to be serviced from the water main on Grand Drive before this looped feed is required, however it is unclear where this number originates or whether this has been agreed with Watercare. Also, AVJ is planning for circa 900+ dwellings on its own site.
- 8.9 There is no suggestion of constructing a water reservoir in any of the Delmore application materials, which appears at odds with the advice AVJ and their consultants have received from Watercare for well over 5 years (including in recent discussions held in May and June 2025).
- 8.10 I also note that Section 7 of Appendix 11 to the Delmore application, the Water, Wastewater and Utilities Report incorrectly notes that Ara Hills will ultimately develop 550 properties, however AVJ hold a current resource consent to develop 575 properties and have lodged plan change which will significantly increase the density on the site.
- 8.11 As noted previously, the vested road reserve within Ara Hills does not currently extend to the boundary of the Delmore site, and therefore Delmore would require approval from AVJ to extend the water network over private property up to the boundary. It is very unlikely that

Watercare will provide approval for a public water supply pipe to be constructed over private property as this does not comply with their Code of Practice.

- 8.12 Given the above, AVJ's reservoir design and associated infrastructure are not yet approved, Delmore cannot not rely on or integrate with AVJ's water infrastructure unless and until AVJ's designs have been approved and there is clarity that the timing will align (and if AVJ's land is to be acquired, that relevant land acquisition agreements are in place). Given Watercare's concerns about land availability / suitability it is not immediately clear that there is sufficient land within AVJ's land for a reservoir to service Delmore. AVJ is not required to design and construct a reservoir to service Delmore's land.
- 8.13 Delmore should be required to deliver its own compliant water storage and supply system and be required to meet the same standards that AVJ is.

## **9. CONCLUSIONS/RECOMMENDATIONS**

- 9.1 Having considered the application material and AVJ's development intentions, I consider that the following should be addressed by Delmore and/or controlled by conditions of consent imposed by the Expert Consenting Panel:
- 9.2 Confirmation that Delmore will construct the Grand Drive road extension required to access their site.
- 9.3 Detailed retaining wall and earthworks plans and a construction methodology for the:
- a) road connection of the future Grand Drive road extension to the Delmore land; and
  - b) location and extent of earthworks proposed at the boundary interface between Ara Hills and Delmore, including demonstration that temporary or permanent works will not occur on the AVJ land without agreement.

- 9.4 Detailed earthworks plans and a construction methodology to demonstrate that:
- a) all temporary and permanent works can be undertaken within the future road; and
  - b) there will be no impact on the Ara Hills site as a result of the proposed deep excavations on the boundary (this will require geotechnical and engineering evidence).
- 9.5 Assessment of the impacts from the large number of truck movements required to cart excess cut material from the Delmore site, including an assessment of noise and dust associated with these truck movements and appropriate construction management and construction traffic management conditions (especially noting the lack of reticulated water available at the site)
- 9.6 Confirmation that there will be no increase in flood risk downstream of the Delmore development, specifically on the Ara Hills Stage 2 development, such as by mitigating the increased flows & volumes on site or upgrading the culvert under SH1.
- 9.7 Confirmation that the Delmore development (taken together with the consented Ara Hills development) will not exceed the capacity of the existing DN315 wastewater pipe located under SH1 if a wastewater connection is allowed. This could involve either providing additional storage at the Delmore pump stations to enable pumping to occur at off-peak times, or implementing a low-pressure sewer system that pumps wastewater at off-peak times, or by way of another gravity connection to an alternative Watercare reticulation, such as the large diameter pipe running south of Wainui Road (approximately 1.1km from the Delmore site).
- 9.8 Provision of a water supply servicing proposal which is technically feasible, complies with Watercare's requirements and provides security of supply. In my view this would involve:
- a) a water storage reservoir or a looped water supply reticulation.

- b) a water supply feed taken either from Grand Drive east of SH1 (not from the DN355 pipe) or Wainui Road. The latter would likely require a booster pump station.
- c) Timing to be aligned with vesting and construction of the Grand Drive road extension and other potentially necessary works to connect to / from the reservoir (depending on reservoir location).



**Mitchell Roberts**

Associate Director

Airey Consultants Ltd

BE(Hons) CEngNZ CPEng IntPE(NZ)

25 June 2025

**Appendices:**

**Appendix A: Qualifications and Experience and confirmation of compliance with expert witness code of conduct for Ashley Watson.**

**Appendix B: Email from Shabneez Hussain Watercare Development Programme Lead**

## **Appendix A**

- 1.1 My full name is Ashley Martin Watson. I am a chartered professional engineer and hold the position of Associate Director at Airey Consultants (“Airey”). I have been employed by Airey since 2019.
- 1.2 I hold the qualification of Bachelor of Engineering (Honours) from the University of Auckland. I am also a Chartered Professional Engineer.
- 1.3 I have over 12 years’ experience in civil engineering in New Zealand and Australia.
- 1.4 I have been involved in numerous land development projects in Auckland. Example of my experience relevant to this project are:
- a) 36 Sandspit Road, Warkworth – resource consent;
  - b) 14 Mason Heights, Warkworth – resource consent; and
  - c) 312 Upper Harbour Drive, Greenhithe – resource consent.
- 1.5 Although this is not a hearing before the Environment Court, I confirm that I have read and abide by the Environment Court’s Code of Conduct for Expert Witnesses as specified in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in assisting in preparing this evidence and agree to comply if required to give oral evidence before the Expert Consenting Panel. Except where I state that I am relying on the evidence of another person, this written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

**Ashley Martin Watson**

**25 June 2025**



## Appendix B

### Mitchell Roberts

---

**From:** Shabneez Hussain <Shabneez.Hussain@water.co.nz>  
**Sent:** Wednesday, 18 June 2025 1:22 pm  
**To:** Mitchell Roberts; Edzard Verseput; Diana Galindo Salazar  
**Cc:** Ashley Watson; Carolyn Powles; mdemagalhaes@avjennings.co.nz; Ila Daniels; Katelyn Orton  
**Subject:** FW: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi Mitchell,

Please refer to comments below (in blue) from our Water planning team, following review of the Preliminary Water Reservoir Layout Plan.

Changes have been suggested for the proposed layout of the reservoir and so the concept/preliminary design cannot be currently approved as proposed.

We are happy to have further discussions as needed. Please do not hesitate to reach out if you have any questions or need clarification.

Kind Regards

Shabneez

**Shabneez Hussain** | Development Programme Lead

**Watercare Services Limited**

**Team:** Major Developments

**Mobile Phone:** 0212206591

**Physical address:** 73 Remuera Road, Remuera, Auckland 1050, New Zealand

**Website:** [www.watercare.co.nz](http://www.watercare.co.nz)

---

**From:** Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>  
**Sent:** Friday, 6 June 2025 10:10 am  
**To:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>; Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar <[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>  
**Cc:** Ashley Watson <[AshleyW@aireys.co.nz](mailto:AshleyW@aireys.co.nz)>; Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>; mdemagalhaes@avjennings.co.nz; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>; Katelyn Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>  
**Subject:** RE: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi Shabneez, Edzard & Diana

As per our previous discussion & post meeting notes, please find attached our Preliminary Water Reservoir Layout Plan for the proposed water storage reservoir at Ara Hills, Orewa.

A summary below:-

- The location of the water reservoir site has been positioned at the highest elevation on the property, which is on the westernmost boundary of the site.
  - We don't necessarily need to place the reservoir at the highest elevation if there is no space to work around the reservoir during construction.
  - The indicated TWL required in the Northern Growth Strategy is 97mRL but can be lowered a little if needed since they would require a pump station to service the high lying areas in any case.
- The Ara hills water reservoir is shown in red (20m diameter, 5m high, 1,600m<sup>3</sup> volume). This is sufficient to cater for the MPD Ara Hills development of 1,200 lots, 3,600 people occupancy, 48-hour storage.
  - The two reservoirs should ideally be identical to each other.
  - If not the diameter can vary as is shown, but the height and top water level should not differ.
- We have allowed space for a future water reservoir as shown in blue (30m diameter, 7m high, 5,000m<sup>3</sup> volume). This is sufficient to cater for the full catchment to provide a total storage volume of 6,600m<sup>3</sup> (48-hour).
  - Same comment as above, this might be something worth discussing.
- We have allowed to provide a clear space of 3.5m around the perimeter of the reservoirs which can be utilised for an access path.
- We have allowed to provide an 'auxiliary' area of 110m<sup>2</sup> to be used for any utility buildings, valve chambers, additional structures etc. The details of these will be provided as part of the detailed design, but this area is expected to be plenty for these requirements.
- We have allowed to provide a vehicle access, truck turning and carparking area of 250m<sup>2</sup>.
- We have allowed to provide an additional area of 320m<sup>2</sup> which can be utilised as a construction laydown area for when the future reservoir is constructed.
- The total site to be vested to WSL is 2,860m<sup>2</sup>, being a rectangular shape 65m x 44m. This is made up of the area required to construct the Ara Hills reservoir (1,200m<sup>2</sup> area), and the additional area required to be vested for the future reservoir and laydown area (1,660m<sup>2</sup>).
  - All the areas stated above, in my opinion isn't sufficient to enable the construction of the second reservoir sometime in the future.
  - Also I could not tell where this location was as the proposed parcels were not shown, but from the contours it looks quite constrained and potentially not the best location for a reservoir. We would need to review alternative options and how they were evaluated.
  - There is quite a bit of discussion to be had around the area topic.
- We have shown the approximate location of the access road to the reservoir site (4.0m wide, chip sealed at a maximum gradient of 16% as previously proposed). We are still awaiting comments back from the operations team regarding agreement of these parameters.
  - The comments provided previously did include the updated comments from Ops.
  - Their ideal scenario would be to access the reservoir via the final roads, but would consider a access as shown.
  - Their other concerns were around tankers and chemical dosing vehicles being able to access the reservoir, at night in poor conditions with sufficient turning areas for multiple large vehicles moving around at once.
- The reservoir site will be earthworked to provide a level platform at 95mRL (approx.). A retaining wall may be needed along the western and northern boundaries to provide for the finished levels. We may be able to avoid the retaining wall if we can obtain approval from Council to extend the earthworks into the adjacent paper road (TBC as part of the detailed design).
  - I think the required site would need be bigger than shown on the drawings.
  - Something to discuss further.
- We understand that Watercare are open to entering into a property agreement with AV Jennings to purchase the additional land required to construct the future reservoir including the construction laydown area, being a total area of 1,660m<sup>2</sup>. Watercare to engage their property team following approval in principle.
  - Agreed, once we have agreed in principle we would need to prepare a business case to secure the funding required to acquire the land.

Are you able to please review this plan and come back to us with any comments and/or suggested amendments?

If no changes are suggested, then we would seek an approval in principle for the concept/preliminary design as proposed. This approval in principle would include the items we have discussed and agreed as part of this consultation process, which will allow us to move forward with undertaking the detailed design of the reservoir for Council & Watercare approval.

- We are suggesting multiple changes so the proposed layout is not approved in principle.

Any queries, please don't hesitate to contact us.

Regards

**Mitch Roberts**

**Associate Director**

BE(Hons) CMEngNZ CPEng IntPE(NZ)

**AIREY CONSULTANTS LTD**

**CIVIL, STRUCTURAL & FIRE ENGINEERS**

**Mob** 021 087 29131 | **Ph** 09 486 4542 | **Email** [mitchellr@aireys.co.nz](mailto:mitchellr@aireys.co.nz)

**P.O.Box** 33-103, Takapuna, North Shore City, 0740 | Level 8, 19-21 Como Street, Takapuna

[www.aireys.co.nz](http://www.aireys.co.nz)

---

**From:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>

**Sent:** Thursday, May 29, 2025 9:54 AM

**To:** Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>;  
[mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz); Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar  
<[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>; Katelyn Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>

**Cc:** Ashley Watson <[AshleyW@aireys.co.nz](mailto:AshleyW@aireys.co.nz)>; Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>

**Subject:** RE: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi Mitchell,

Thank you for sharing the meeting notes and clearly highlighting the action items.

We will review the outstanding items and come back to you with responses shortly. Please do not hesitate to reach out if anything further is needed in the meantime.

Thanks

Shabneez

**Shabneez Hussain** | Development Programme Lead

**Watercare Services Limited**

**Team:** Major Developments

**Mobile Phone:** 0212206591

**Physical address:** 73 Remuera Road, Remuera, Auckland 1050, New Zealand

**Website:** [www.watercare.co.nz](http://www.watercare.co.nz)

---

**From:** Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>

**Sent:** Tuesday, 27 May 2025 3:28 pm

**To:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>;  
[mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz); Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar  
<[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>; Katelyn Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>

**Cc:** Ashley Watson <[AshleyW@aireys.co.nz](mailto:AshleyW@aireys.co.nz)>; Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>

**Subject:** RE: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi All,

Please find attached meeting notes from our water reservoir meeting held last week. I have highlighted the actions for Watercare in red and for Airey in blue.

Look forward to hearing back from you with responses on these remaining items to be agreed.

Any queries, please let us know.

Cheers

Regards

**Mitch Roberts**

**Associate Director**

BE(Hons) CMEngNZ CPEng IntPE(NZ)

**AIREY CONSULTANTS LTD**

**CIVIL, STRUCTURAL & FIRE ENGINEERS**

**Mob** 021 087 29131 | **Ph** 09 486 4542 | **Email** [mitchellr@aireys.co.nz](mailto:mitchellr@aireys.co.nz)

**P.O.Box** 33-103, Takapuna, North Shore City, 0740 | Level 8, 19-21 Como Street, Takapuna

[www.aireys.co.nz](http://www.aireys.co.nz)

---

**From:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>

**Sent:** Wednesday, May 21, 2025 10:23 AM

**To:** Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>;  
[mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz); Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar  
<[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>; Katelyn Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>

**Cc:** Ashley Watson <[AshleyW@aireys.co.nz](mailto:AshleyW@aireys.co.nz)>; Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>

**Subject:** RE: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi Mitchell,

Thank you for sharing the preliminary access plan and associated details ahead of our discussions today.

We will review the proposal in more detail and provide initial feedback on the proposed design parameters during the meeting.

Thanks

Shabneez

**Watercare Services Limited**

**Team:** Major Developments

**Mobile Phone:** 0212206591

**Physical address:** 73 Remuera Road, Remuera, Auckland 1050, New Zealand

**Website:** [www.watercare.co.nz](http://www.watercare.co.nz)

---

**From:** Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>

**Sent:** Tuesday, 20 May 2025 4:34 pm

**To:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>;  
[mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz); Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar  
<[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>; Katelyn Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>

**Cc:** Ashley Watson <[AshleyW@aireys.co.nz](mailto:AshleyW@aireys.co.nz)>; Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>

**Subject:** RE: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi Shabneez

Please find attached our preliminary water reservoir access plan for discussion tomorrow. We are proposing to construct a temporary access road to provide all weather access to the reservoir, prior to a public road being formed which will occur as part of future stages of development. We propose for the access road to include the following design specifications:-

- A 400m long, 4.0m wide chip sealed access road which will provide all weather vehicle access to the reservoir.
- A maximum longitudinal gradient of 16% which we consider is sufficient for water tankers and other O&M vehicles to obtain access the reservoir.
- Large radius corners for easy truck tracking.
- A legal access easement will be installed over the road to allow Watercare the legal right to obtain access to the reservoir. We have suggested for this easement to be 6.0m wide at this stage but this can be widened if required.
- Stormwater control will be provided by way of swales to prevent any issue with water ponding or flowing over the access road during a storm event.



I have included an example picture below of a similar chip sealed access road which we are proposing to construct in this case – to give you a visual representation of what we are proposing.

We are seeking Watercare's confirmation that these design guidelines/parameters are acceptable for us to move forward with the design.



Regards

**Mitch Roberts**

**Associate Director**

BE(Hons) CMEngNZ CPEng IntPE(NZ)

**AIREY CONSULTANTS LTD**

**CIVIL, STRUCTURAL & FIRE ENGINEERS**

**Mob** 021 087 29131 | **Ph** 09 486 4542 | **Email** [mitchellr@aireys.co.nz](mailto:mitchellr@aireys.co.nz)

[P.O.Box](#) 33-103, Takapuna, North Shore City, 0740 | Level 8, 19-21 Como Street, Takapuna

[www.aireys.co.nz](http://www.aireys.co.nz)

---

**From:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>  
**Sent:** Monday, May 19, 2025 9:22 AM  
**To:** Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>; Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>; [mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz); Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar <[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>; Katelyn Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>  
**Subject:** RE: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi Carolyn,

Thank you for sharing the memo. I appreciate you outlining the discussion points for the upcoming meeting.

Please note that the meeting has been rescheduled and will now take place on Wednesday.

Let me know if there is anything else you would like included in the discussion.

Kind Regards,

**Shabneez Hussain** | Development Programme Lead

**Watercare Services Limited**  
**Team:** Major Developments

**Mobile Phone:** 0212206591

**Physical address:** 73 Remuera Road, Remuera, Auckland 1050, New Zealand

**Website:** [www.watercare.co.nz](http://www.watercare.co.nz)

---

**From:** Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>  
**Sent:** Friday, 16 May 2025 2:46 pm  
**To:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>; Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>; [mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz); Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar <[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>; Katelyn Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>  
**Subject:** Re: Ara Hills Development, Orewa - Water Reservoir Proposed Changes

Hi Shabneez,

Thank you for arranging this. I will not be in attendance, but please find attached a memo based on your advice letter, outlining what we would like to discuss/clarify at the meeting.

Regards

**Carolyn Powles** BE

**Senior Civil Engineer**

*Please note –My hours are:*

*Mon - Fri: 11:00am – 5.00pm*

**AIREY CONSULTANTS LTD**

**CIVIL, STRUCTURAL & FIRE ENGINEERS**

| Ph 09 486 4542 | Email [carolynp@aireys.co.nz](mailto:carolynp@aireys.co.nz)

[P.O.Box](#) 33-103, Takapuna, North Shore City, 0740 | Level 8, 19-21 Como Street, Takapuna

[www.aireys.co.nz](http://www.aireys.co.nz)



The information contained in this email is privileged and confidential and intended for the addressee only. If you are not the intended recipient, you are asked to respect that confidentiality and not disclose, copy or make use of its contents. AIREY CONSULTANTS LIMITED ACCEPTS NO RESPONSIBILITY FOR CHANGES MADE TO THIS EMAIL OR ANY ATTACHMENTS AFTER TRANSMISSION FROM AIREY CONSULTANTS LTD. If received in error you are asked to destroy the email and contact the sender immediately.



Please consider the environment before printing this email.

---

**From:** Shabneez Hussain <[Shabneez.Hussain@water.co.nz](mailto:Shabneez.Hussain@water.co.nz)>  
**Sent:** Wednesday, May 14, 2025 10:31 AM  
**To:** Mitchell Roberts <[MitchellR@aireys.co.nz](mailto:MitchellR@aireys.co.nz)>; Ila Daniels <[ila@campbellbrown.co.nz](mailto:ila@campbellbrown.co.nz)>;  
[mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz) <[mdemagalhaes@avjennings.co.nz](mailto:mdemagalhaes@avjennings.co.nz)>; Carolyn Powles <[CarolynP@aireys.co.nz](mailto:CarolynP@aireys.co.nz)>;  
Edzard Verseput <[Edzard.Verseput@water.co.nz](mailto:Edzard.Verseput@water.co.nz)>; Diana Galindo Salazar <[Diana.Galindo@water.co.nz](mailto:Diana.Galindo@water.co.nz)>; Katelyn  
Orton <[korton@avjennings.co.nz](mailto:korton@avjennings.co.nz)>  
**Subject:** Ara Hills Development, Orewa - Water Reservoir Proposed Changes  
**When:** Monday, May 19, 2025 2:00 PM-2:30 PM.  
**Where:** Microsoft Teams Meeting

---

## Microsoft Teams [Need help?](#)

### [Join the meeting now](#)

Meeting ID: 421 067 974 392 0

Passcode: cS96mA76

---

### Dial in by phone

[+64 9 886 8064,,568569919#](tel:+6498868064568569919) New Zealand, Auckland

[Find a local number](#)

Phone conference ID: 568 569 919#

For organizers: [Meeting options](#) | [Reset dial-in PIN](#)

---