1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name:	Auckland Surf Park Community Stage 2
Fast-Track application number / Council reference number:	FTAA-2606-1246 / BUN60467823

2.0 Technical Specialist Memo – Groundwater

To:	Brooke Dales - Consultant Planner and Warwick Pascoe - Principal Project Lead, Auckland Council
From:	Richard Simonds - Principal Engineering Geologist – Fraser Thomas Ltd
Qualifications & Relevant Experience:	I hold the qualification(s) of: Bachelor of Science in Geology and Master of Science in Engineering Geology and have forty years of experience in engineering geology and groundwater assessments. I am a Chartered Member (PENGEOL) of Engineering New Zealand. I have prepared expert evidence and technical assessments for resource consent applications and fast-track applications and have appeared as an expert witness before consent authorities and the Environment Court. I worked as a Senior Specialist at Auckland Council in the NRSI Team from 2015 to 2019, reviewing applications for dewatering and groundwater diversion. Since 2019, whilst at Fraser Thomas Limited, the majority of my work has been supporting Auckland Council by reviewing applications for dewatering and groundwater diversion.
Preparation in Accordance with the Code of Conduct:	I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.
Signature:	
Date:	1 October 2026

3.0 Executive Summary

With respect to groundwater-related matters, I concur with the assessment provided in Section 9.2.1 of the AEE that the proposed works do not meet the permitted activity standards and are restricted discretionary activities under rules E7.4.1(A20) and E7.4.1(A28).

I consider that sufficient geotechnical investigation data is available for groundwater and geotechnical modelling purposes in order to determine the likely ground settlement adjacent to the proposed development.

The assessment undertaken by Inita Geotechnical Specialists (IGS) indicates that the proposed groundwater related-activity i.e. groundwater drawdown and groundwater diversion will not result in any "offsite" settlement effects. I concur with their assessment and consider that no specific groundwater level or ground or building settlement monitoring is necessary and that a groundwater settlement monitoring and contingency plan (GSMCP) is not required as a condition of the Water Permit consent.

It is my opinion that provided that there is strict adherence, by the Consent Holder, to the requirements of the proposed conditions of the Water Permit, as amended in Section 9.0 of this memorandum, then the settlement effects of the proposed activity on the receiving environment will be less than minor.

In summary, based on the information that I have reviewed as listed in Section 4.0 below, **I support the application**.

4.0 Documents Reviewed

The following documents have been reviewed in preparing this memorandum:

- A report titled "*Groundwater Take Assessment - Auckland Surf Park Community – Groundwater Take"*, prepared by Williamson Water & Land Advisory (WWLA), dated 19 February 2026, rev 4, ref WWLA1623.
- A report titled "*Auckland Surf Park Community – Geotechnical Factual Report*", prepared by Inita Geotechnical Specialists (IGS), dated 15 April 2026, rev G, ref P-001537.
- A report titled *"Auckland Surf Park Community - Stage 2 Development – Ecological Impact Assessment"*, prepared by Viridis Environmental Consultants (VEC), dated 2 June 2026, rev final 2, ref 1034-010-2.
- A report titled *"Auckland Surf Park Community – Stage 2 - 1320 and 1350 Dairy Flat Highway, 89 and 105 Lascelles Drive, 237 and 253 Postman Road Dairy Flat - Hyperscale Artificial Intelligence Data Centre, Intergraded Residential Development, Town Centre, Live-Work Development, Associated Activities, Subdivision and Variation to Stage 1 Decision BUN60429155 – Assessment of Environmental Effects and Statutory Analysis"*, prepared by B & A Urban & Environmental, dated 8 June 2026, rev C, ref 19264.
- Engineering drawings titled *"Auckland Surf Park – AW Holdings 2021 Ltd, Engineering Drawings - Resource Consent"*, prepared by Mckenzie & Co, dated 8 June 2026, ref 3325-2.
- A report titled *"Auckland Surf Park Community – Stage 2 Fast Track Consent – Geotechnical Assessment Report"*, prepared by IGS, dated 9 June 2026, rev D, ref P-001537-2.

5.0 Additional Reasons for Consent Not included in AEE / Incorrect Reasons for Consent

AUP Standards

With respect to groundwater-related matters, I concur with the assessment provided in Section 9.2.1 of the AEE that the proposed works do not meet the permitted activity standards and are restricted discretionary activities under rules E7.4.1(A20) and E7.4.1(A28).

6.0 Specialist Assessment

6.1. Proposed Groundwater Activity

The AEE states:

> *"The proposal is for the expansion of the ASPC* [Auckland Surf Park Community] *to include a hyperscale artificial intelligence data centre campus, an integrated residential development including 486 units (detached dwellings, apartments and live/work units), visitor accommodation, a village centre, work-live precinct, extensive riparian planting and landscaping, subdivision and ancillary activities. The proposal also involves variations to Stage 1 of the development."*

IGS state the following with respect to the proposed earthworks:

> *"Civil earthworks plans indicate that, apart from the lagoon, bulk earthworks are expected to comprise filling of up to 3 m in the central core of the site to lift levels to between RL 55 and 57 m (c.f. existing typical site levels of RL 54 – 55 m). Bulk cuts of up to 6.5 m below existing ground level are proposed within the elevated northern and southern solar farms and northern neighbourhood precincts to win fill materials. Filling up to approximately 4 m in height is proposed across the western edge of the NorthWest Neighbourhood Precinct to re-grade the existing sloping ground. A series of retaining walls, up to approximately 4 m in height, are proposed across the site including abutments for the proposed vehicle bridge."*

I consider that the potential effects of the proposed groundwater-related activity are primarily associated with the bulk cut earthworks and installation of any associated subsoil drainage, and may result in drawdown and/or diversion of groundwater.

6.2. Engineering Geological Model and Groundwater Conditions

IGS has reviewed historic geotechnical investigations, undertaken by Tonkin & Taylor Ltd and Aurecon and has subsequently undertaken geotechnical investigations for the purposes of developing a detailed engineering geological model for the site. The investigations undertaken to date include hand augered boreholes, machine boreholes, test pits, cone penetration tests (CPTs) and seismic dilatometer tests (DMTs). Standpipe piezometers were installed within six of the hand augered boreholes and eleven machine boreholes following completion of drilling to inform the groundwater model.

Ground conditions encountered generally comprise topsoil and localised uncontrolled fill, overlying Tauranga Group alluvium, overlying Weathered Mahurangi Limestone of the Northland Allochthon.

Based on the groundwater level monitoring, IGS has determined that the groundwater conditions at the site are complex, with the static groundwater level inferred to be present at between approximately RL 51 m to RL 52 m,

reducing to RL 49 m at the western end of the creek. A perched groundwater surface was also encountered at the interface between the topsoil material and underlying alluvium. In addition IGS note that artesian groundwater conditions were encountered within the Mahurangi Limestone rock at Borehole MBH01 and that such conditions may be present within other areas of the site.

Groundwater was not encountered during the geotechnical investigations that were undertaken on the hillsides above RL 56 m, and IGS comment that the groundwater surface in these areas is likely within the fractured Mahurangi Limestone rock.

I consider that the hydrogeological model, developed by IGS is appropriate for the site and the development proposed.

6.3. Assessment of Groundwater Drawdown and Associated Consolidation Settlement

IGS has identified areas of the site where cut earthworks of greater than 1 m depth are proposed in order to assess groundwater drawdown and associated consolidation settlement. The approximate locations assessed are shown in the image below:



With respect to Areas 1.1, 1.2 and 1.3, IGS state:

> *"Bulk cuts up to 6.5 m, 3.5 m and 4.5 m deep are proposed for Areas 1.1, 2.2 and 1.3 respectively. The proposed cuts are located on the elevated hillsides where groundwater was generally not encountered above the Mahurangi Limestone rock. The proposed cuts may intercept percolating flows in the Limestone*

rock mass, however, offsite settlement effects will be negligible due to the age and stiffness of the Limestone materials and because groundwater is not present in the overlying soils."

With respect to Area 2, IGSA state:

"A cut to approximately RL 53.5 m is proposed in Area 2. This involves internal cut batters up to 4.5 m deep, however, cuts along the eastern boundary are less than 2m deep. Whilst shallow perched groundwater may be encountered during wet periods, the groundwater conditions presented in Table 7-4 indicate the cut will not extend below historic groundwater levels and will therefore not cause offsite settlement effects."

With respect to Area 3, IGS state:

"Area 3 comprises a cut to RL 51.6 m to form a stormwater pond. The elevation of this cut sits above the ground level on the adjacent site boundary (approximately RL 50 m). The cut will therefore not drawdown groundwater levels beyond the boundary or cause offsite settlement effects."

With respect to Area 4, IGS state:

"Area 4 comprises cuts to approximately RL 51 to 52 m to form stormwater ponds and a flood storage area. These cuts will intercept shallow perched groundwater (in the topsoil) and may intercept the static groundwater by up to 1 m. However, due to the low permeability of the alluvium and the minimum 100 m offsite to the site boundary, groundwater drawdown effects will not extend beyond the site boundary."

With respect to Area 5, IGS state:

"Area 5 comprises a 1V:3H cut to steepen an existing north-facing slope above the creek which runs along the northern boundary. The cut, up to 2 m below existing ground level, will not extend below the existing creek channel invert. On this basis:

- *The cut will not drawdown groundwater beyond the northern boundary; and*
- *The cut may drawdown groundwater to the south as it may intercept the existing groundwater gradient within the north facing slope.*

A conservative estimate of the potential radius of influence of groundwater drawdown towards the south has been undertaken using the empirical Sichardt Formula presented in CIRIA C750. Conservatively assuming a groundwater drawdown of 2 m, a Sichardt coefficient, C, of 2000 and a horizontal hydraulic conductivity, k = 3 x 10-7 m/s, the conservative maximum radius of groundwater drawdown is estimated to be 2.5 m. Therefore, groundwater drawdown and associated settlement effects at the nearest existing structures at 1368 Dairy Flat Highway, offset a minimum of 40 m, are assessed as negligible."

With respect to Area 6, IGS state:

"Area 6 comprises the lagoon which was previously assessed and consented in the Stage 1 Reporting. The previous assessment concluded there will be no offsite groundwater drawdown effects beyond the project boundary. Designers should refer to the Stage 1 Reporting for sequencing considerations within the project site."

I concur with the above statements by IGS in relation to the assessment of groundwater drawdown and consolidation settlement.

6.4. Assessment of Groundwater Dewatering Effects on Nearby Buildings, Structures and Services

IGS conclude that the proposed groundwater-related activity will not result in any "offsite" groundwater settlement effects.

I concur with the assessment undertaken by IGS and consider that no specific groundwater level or ground or building settlement monitoring is necessary, and that a groundwater settlement monitoring and contingency plan (GSMCP) is not required as a condition of the Water Permit consent.

7.0 Section 67 Information Gap

Regarding the assessment of the proposed dewatering and groundwater diversion, I have not identified any section 67 information gaps.

8.0 Recommendation

Based on the information provided, it is my opinion that the settlement effects of the proposed groundwater - related activity are likely to be less than minor and I support the application.

9.0 Proposed Conditions

I have reviewed the proposed Conditions for the Water Permit (Conditions 47 to 56 inclusive), provided in Appendix 61 of the Application documents and consider that they are generally appropriate, <u>subject to the following amendments.</u>

Condition	Proposed Conditions	Comment or suggestion
47	<u>Activity in Accordance with Plans</u> The Consent Holder must undertake any dewatering works in ~~general~~ accordance with the application formally received by the Environmental Protection Authority on [insert date], and the following documents: (a) Application form and Statutory Analysis and Assessment of Environmental Effects prepared by Barker & Associates Ltd titled "Auckland Surf Park Community - Stage 2 and s.127	I recommend removing the reference to "general" accordance and suggest adding final document dates. I otherwise agree with this condition.

	for Stage 1" and dated [insert date]; (b) The reports listed at Attachment 1; and (c) The drawings and plans listed at Attachment 2. If any of the provisions of the documents at Attachments 1 or 2 conflict with the requirements of these conditions of consent, these conditions of consent must prevail.	
48	Expiry of Consent Water permit [insert WAT ref] will expire 35 years from the commencement date unless it has lapsed, been surrendered, or been cancelled at an earlier date, pursuant to section 123 the RMA.	I recommend adding the WAT reference but otherwise agree with this condition.
49	Notice of Commencement of Dewatering The Council must be advised in writing at least ten (10) working days prior to the date of the Commencement of Construction Phase Dewatering. *Advice Note:* *Commencement of Construction Phase Dewatering means commencement of excavation (excluding minor enabling works and piling less than 1.5m in diameter) and/or the commencement of the taking or diversion of groundwater, other than for initial state monitoring purposes*	I agree with this condition.
50	Notice of Completion of Dewatering The Council must be advised in writing that Construction Phase Dewatering has been completed within ten (10) working days of the date of Completion of Dewatering. *Advice Note:* *Completion of Construction Phase Dewatering means when no further groundwater is being taken from excavations.*	I recommend adding an advice note for the definition of Completion of Construction Phase Dewatering. This is also relevant to Condition 56 below. I otherwise agree with this condition.
51	Review under Section 128 Under section 128 of the RMA, the conditions of this consent [insert	I recommend adding the WAT reference but otherwise agree

	WAT ref] may be reviewed by the Council at the Consent Holder's cost within six (6) months after Completion of Dewatering and subsequently at intervals of not less than five (5) years thereafter in order to: (a) Deal with any adverse effects on the environment which may arise or potentially arise from the exercise of this consent and which it is appropriate to deal with at a later stage. (b) Vary the monitoring and reporting requirements, and performance standards, to take account of information, including the results of previous monitoring and changed environmental knowledge on: i. Ground conditions; ii. Aquifer parameters; iii. Groundwater levels; and iv. Ground surface movement.	with this condition.
52	<u>Excavation and Land Disturbance</u> All excavation that affects groundwater, excluding minor enabling works and piling less than 1.5m in diameter, must not extend below the levels shown on the Earthworks Plans listed at Attachment 2.	I agree with this condition.
53	<u>Groundwater</u> Any perched groundwater, or surface water encountered within the excavation area requiring removal must be considered potentially contaminated, and therefore, for the protection of the human health and the environment, the impacted water must either be: (a) Disposed of by a licenced liquid waste contractor; or (b) Pumped to sewer, providing the relevant permits are obtained; or (c) Discharged to the site's stormwater system or surface waters provided testing demonstrates compliance with the Australian and New Zealand Environment Conservation the Consent Authority (ANZECC) Guidelines for Fresh and Marine Water Quality (2000) for protection	I agree with this condition.

	of 80% of freshwater species, with the exception of benzene where the 95% protection level must apply, and the water is free from petroleum hydrocarbons.	
54	Damage Avoidance All excavation, dewatering systems, retaining structures, basements and works associated with the diversion or taking of groundwater, must be designed, constructed, and maintained to avoid any damage to land, buildings, structures and services on the site and adjacent properties, unless otherwise agreed in writing with the asset owner.	I recommend including "land," to ensure damage is avoided to neighbouring land. I otherwise agree with this condition.
55	Permanent Drainage Any permanent drainage systems installed behind retaining walls must not cause groundwater levels adjacent to the site to reduce below pre-dewatering seasonal low levels, after the completion of dewatering. *Advice Note:* *The Consent Holder is advised that the discharge of pumped groundwater to a stormwater system or waterbody will need to comply with any other regulation, bylaw or discharge rule that may apply.*	I agree with this condition.
56	Groundwater Maintenance Programme At the Completion of Construction Phase Dewatering, the Consent Authority must be provided with a maintenance program for any permanent groundwater drainage system used to manage groundwater levels. *Advice Note~~s~~:* *Any discharge of pumped groundwater to a stormwater system or waterbody will need to comply with any other regulations, bylaws or discharge rules that may apply.* ~~*Completion of Construction Phase Dewatering means:*~~	I recommend removing the second advice note in its entirety as the definition is not relevant to this development. I have suggested the correct definition above under Condition 50 above. I otherwise agree with the rest of this condition.

	~~(a) In the case of tunnels and shafts, when the tunnel and shafts have been constructed and effectively no further groundwater is being taken/diverted for the construction of the tunnel and shafts in accordance with the design.~~ (b) ~~In the case of pipe infrastructure, the stage when all pipework and pipe seals (and where required trench stops (collars) have been installed and all back filling is completed within 50 metres of a building or structure and effectively no further groundwater is being taken for the construction of the network at that location.~~	