

# Sunfield Fast-track

Auckland Council Specialist Memo

**Annexure 14:**

**Groundwater**

**Andy Samaratunga**

**4 August 2025**

# Groundwater Memo

**Prepared by:** Andy Samaratunga, Senior Specialist, Coastal and Water Allocation Team, Auckland Council

**Date:** 4 August 2025

1. This memorandum addresses groundwater aspects of the Sunfield proposal.

## **Qualifications and Relevant Experience**

2. I hold a Master of Science (MSc) in Engineering Geology & Hydrogeology from the University of Peradeniya, Sri Lanka. I have prepared expert evidence and technical assessments for resource consent applications and notices of requirement for designation applications.

## **Code of Conduct**

3. I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (**Code**), 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.

## **Overview of Proposal**

4. The Applicant is seeking approval to take groundwater for dewatering and groundwater diversion during the subdivision of the Sunfield Development site. The proposed development of Sunfield is a large-scale master-planned community, consisting of 3,854 dwelling units (including 3,197 individual homes and three retirement villages), and approximately 56.5ha of industrial/employment land.
5. Earthworks are required to facilitate the Site's development, including the construction of necessary infrastructure to support the development. Earthworks are proposed over an area of 244 ha and comprise cut and fill operations associated with the formation of finished ground levels across the Site.
6. Below is a summary of earthworks quantities based on the earthwork modelling completed by Maven Associates:
  - Total area of ground disturbance = 244Ha
  - Maximum cut and fill depth = 18m cut and 6m fill.
7. The earthwork plan of the proposed development is shown in Figure 1 below.



Figure 1: Cut/Fill Plan (Source: Maven, Drawing No:M-C210, Rev: A, February 2025)

#### Documents Reviewed

8. In preparing this memorandum, I have reviewed the following:
  - Report titled “Sunfield Fast-track Approvals Act 2024 Substantive Application Planning Report”, prepared by Tattico Limited, dated 31 March 2025 (“the AEE”).
  - Report titled “Geotechnical Assessment Report, Sunfield Developments Limited, Sunfield Landholding, Ardmore”, prepared by LDE, Project Reference: J01627, dated 6 December 2024.
  - Report titled “Infrastructure Report - Sunfield Fast-track Approvals Application, Ardmore, Auckland”, prepared by Maven Limited, Project: 215010, Rev: A dated 07 February 2025.
  - Report titled “Groundwater Dewatering and Ground Settlement Effects Assessment - Review of Awakeri Wetlands Stage 1 Construction and Assessment for Stages 2 and 3”, prepared by Earthtech Consulting Limited (Earthtech), dated 13 June 2024, ref. R10015-1, Draft, Rev. B.
  - Report titled “Awakeri Wetlands Stages 2 and 3 - Groundwater and Settlement Monitoring and Contingency Plan”, prepared by Earthtech, dated 25 March 2025, ref. R10015-2, Draft, Rev. D.

#### Reasons for Consent – Ground Dewatering and Diversion

##### Auckland Unitary Plan (Operative in Part) (AUP(OP))

9. Although the AEE states that a consent under Rule E7.4.1 (A28) of the Auckland Unitary Plan (Operative in Part) (AUP(OP)) is required for the proposed development, it does not explain why this consent is needed. In addition, the application documents do not include an

assessment of the proposed activity for the whole development against Standards E7.6.1.6 and E7.6.1.10 of the AUP(OP).

10. An assessment against the standards has been provided for ground dewatering and groundwater diversion associated with the proposed works for Stages 2 and 3 of the Awakeri Wetlands /Takanini Stormwater Conveyance Channel only, which is included in the Earthtech report (dated 13 June 2024, ref. R10015-1, Draft, rev. B) lodged as part of this application. The Earthtech report concludes that a consent is required under AUP(OP) Chapter E Rule 7.4.1 (A28) for the diversion of groundwater and Chapter E Rule 7.4.1 (A20) for dewatering associated with Awakeri Wetlands /Takanini Stormwater Conveyance Channel works. However, these are already covered by a separate application (BUN60434634 & WAT60434635) which was lodged in July 2024, and is currently being processed by Auckland Council.
11. An assessment of the proposed activity against each of the permitted standards E7.6.1.10(1) to (6) and E7.6.1.6(1) to (3) should be undertaken based on the proposed Cut/Fill plan shown in Figure 1 above, to confirm whether the application complies with these standards, or if a water permit is required.

#### National Environmental Standards for Freshwater (NES-F)

12. The AEE indicates that a natural inland wetland is located in the south-eastern corner of the subject site. Although the Cut/Fill Plan (Figure 1) indicates that deep excavations in the area of the wetland are proposed, no assessment has been provided which confirms whether the proposed dewatering and/or groundwater diversion associated with the proposed works, triggers the need for a consent under the NES-F, specifically Regulation 39 [Restoration, wetland maintenance, and biosecurity of natural inland wetlands](#), for the taking or diversion of water within, or within a 100 m setback from, a natural inland wetland. The applicant needs to confirm whether the proposal is a Restricted Discretionary Activity (**RDA**) under this regulation, providing justification for its conclusion. If it is deemed that a consent is required, then an assessment of effects on the wetlands must be undertaken.

#### **Technical Assessment of Effects**

##### Consolidation Settlement Effects on Adjacent Assets

13. The Geotechnical Assessment Report prepared by Earthtech only covers the effects anticipated as a result of proposed excavations for the Awakeri Wetlands /Takanini Stormwater Conveyance Channel. Commentary on groundwater drawdown settlement effects associated with the wider site development has not been provided.
14. I note that Engineering drawings for the proposed development (*Proposed Overview, Cut / Fill Plan*, prepared by Maven Associates, Rev: A, dated February 2025) were not available during preparation of the Geotechnical Report, prepared by LDE, Project Ref: J01627, dated 6 December 2024, and which referenced Cut to Fill Plans, prepared by Maven Associates, Rev: C, dated December 2023, which show different excavation levels. Therefore, a geotechnical

review of the proposed works must be undertaken, with reference to the latest earthworks plans, which confirms if the assessment, recommendations, and conclusions in the Geotechnical Report remain relevant. If the review concludes that they do not, an updated Geotechnical Report must be provided.

#### Mechanical Settlement Effects on Adjacent Assets

15. No assessment of mechanical settlement effects associated with proposed cut retaining structures to support the proposed deep excavations has been provided. This assessment is necessary to enable calculation of total settlement effects (consolidation and mechanical settlement combined) on third-party assets, and to determine whether any mitigation or monitoring is required, to minimise these effects.

#### Monitoring

16. Although Earthtech provided a Groundwater and Settlement Monitoring and Contingency Plan for the Awakeri Wetlands Stages 2 and 3 application (BUN60434634 / WAT60434635) (*"Groundwater and Settlement Monitoring and Contingency Plan - Awakeri Wetlands Stages 2 and 3 Construction"*, dated 25 March 2025, ref. R10015-2, Draft, rev. D), this is only relevant for the Stormwater Conveyance Channel construction works.
17. No recommendations for dewatering and groundwater diversion monitoring, such as groundwater level, ground settlement or building settlement monitoring, have been provided by the Applicant for the wider site development proposed under this Application.

#### **Conclusions**

18. Based on the information provided by the Applicant, I consider that the adverse effects on the environment, structures and other assets, have not been appropriately assessed.
19. The scope of the geotechnical and hydrogeological investigations is inadequate to cover all the works proposed under this application, and the potential risk to third-party assets has not been assessed. This assessment is required as a key matter of discretion for groundwater diversion under E7.8.1 (6)(a)(vi), which requires consideration of how the proposal will avoid, remedy, or mitigate adverse effects from ground settlement on existing buildings, structures, and services, including roads, pavements, power, gas, electricity, water mains, sewers, and fibre optic cables. No cumulative effects assessment for ground settlement effects has been undertaken as result of the Stages 2 and 3 of the Awakeri Wetlands/Takanini Stormwater Conveyance Channel project and the other works proposed for the Sunfield development.
20. There is insufficient geotechnical and hydrogeological investigation data available for groundwater modelling purposes in order to determine the likely ground movement adjacent to the proposed Sunfield project.
21. It is my opinion that there is insufficient information to demonstrate that the activity complies with the general standards, and the requested information is necessary to understand its

potential effects on the surrounding environment. As a result, my assessment is constrained, and the E7 assessment cannot be completed at this stage.

### **Recommendation**

22. Based on the size of the excavation, and the groundwater drawdown anticipated, there remains a risk that ground conditions are not as they have been evaluated, and variability within the peat soil has been noted based on the site investigations.
23. The extent of adverse effects on built elements and the environment must be appropriately evaluated, including the cumulative effects from other ongoing projects at the site.

### **Comments on Conditions Proposed by Applicant**

24. The proposed conditions from 41 to 71 are taken from the application for the construction of the proposed stormwater channels (Awakeri Wetlands, Stages 2 and 3) under application numbers BUN60434634 & WAT60434635. These should be updated following a site-specific assessment of effects resulting from the proposed dewatering and/or groundwater diversion associated with proposed development, so that they are suitable and specific to this application.