Sunfield Fast-track

Auckland Council Specialist Memo

Annexure 10:

Development Engineering

John Newsome and Maria Baring

4 August 2025

Development Engineering Memo

Prepared by: John Newsome, Team Leader – Regulatory Engineering (South), Auckland Council, and Maria Baring, Project Manager Regulatory Engineering, Auckland Council

Date: 4 August 2025

1. This specialist response from John Newsome and Maria Baring relates to the development engineering aspects of the Sunfield Fast-track Application (**Application**) submitted under the Fast-track Approvals Act 2024 (**Act**).
2. The Application proposes a large-scale mixed-use development featuring approximately 3,854 dwellings, three retirement villages totalling around 600 units, a 7.5-hectare town centre, 46 hectares of retail, healthcare, and educational facilities, and 25.6 hectares of parks and reserves.
3. The Application covers 244.5 hectares of rural land located between Takanini and Papakura. Of this, 57 hectares are zoned Future Urban Zone (**FUZ**), while the remaining 187 hectares are zoned Rural – Mixed Rural Zone (**MRZ**).
4. John Newsome's response provides a peer-review of the geotechnical issues associated with urban development on peat soils.
5. Maria Baring's response addresses other development engineering aspects.

Qualifications, experience and code of conduct

John Newsome

6. My name is John Newsome, and I currently hold one of the two Team Leader – Regulatory Engineering (South) positions with Auckland Council.
7. I hold a bachelor's degree in Earth Sciences from Waikato University.
8. I have 10 years' experience with a geotechnical engineering consultancy during the 1980s before joining Council in January 1991 as a development engineer.
9. I have nearly 35 years of professional experience in Resource Consents processing and other engineering aspects of land development with Manukau City Council and then Auckland Council and am familiar with a wide range of projects over this period. I have maintained my interest in geotechnical aspects of Auckland soils and provide advice to staff on projects as required.
10. 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.

Maria Baring

11. My name is Maria Baring, and I currently hold the position of Project Manager Regulatory Engineering at Auckland Council.

12. I hold a bachelor's degree in civil engineering from the University of San Carlos in the Philippines. I am a member of Engineering New Zealand [1010183].

13. I am a project manager for premium applications at Regulatory Engineering South and have held this position for approximately three years. I was a senior development engineer prior and held the position for five years and a development engineer for eleven years.

14. I have approximately 19 years of professional experience in Resource Consents processing. In this position I have processed the following applications of a similar nature:

    a. The major upgrade, including enabling works of State Highway 20A and associated local roads.

    b. Earthworks and stormwater controls associated with the enabling works for the Manukau Rail at Hayman Park, Manukau City

    c. Auckland Transport for Eastern Busway Stages EB2, EB3R, EB3C, and EB4L Link Road

    d. Hindu Temple at 378 Ararimu Road, Drury

15. In this capacity, I also process Engineering Plan Approval applications. The engineering plan approvals involve installing an infrastructure asset like public stormwater and wastewater drainage and public water supply. The Engineering approval process will consult with the asset owners [Healthy Waters, Watercare Services, Transpower, Auckland Transport] and other asset owners, to ensure that any connections or changes to public infrastructure are undertaken appropriately and maintain the effectiveness and efficiency of all the public infrastructure assets.

16. 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.

Documents reviewed

17. The following documents have been reviewed in preparing this specialist response:

    - Sunfield Planning Report Attachment 2 – Draft Conditions
    - Sunfield Scheme Plans
    - Sunfield Geotechnical Assessment Report prepared by Land Development and Engineering reference no. J01627 dated 6 December 2024 (**Geotech Report**).

Geotechnical assessment review

Prepared by: John Newsome

18. There are generally acknowledged challenges with urban development on peat soils related to subsidence and instability. This is also referred to as differential settlement. However, these can be overcome with appropriate investigations of specific ground conditions and engineering design solutions that are appropriate to these conditions and to minimise these effects. For residential development, there is a need for stormwater recharge of peat soils which can be achieved through stormwater management methodologies with each site having a recharge pit or similar.

19. I have undertaken a preliminary desktop review of the Geotech Report. Subject to the matters noted in paragraph 20 below, I consider that:
    a. The report demonstrates the extent of investigation and engineering commentary involved, which indicates that this site is suitable for the proposed Sunfield development as generally detailed in the application.
    b. I am generally satisfied that the report has covered all matters of importance and that adequate geotechnical expertise has been demonstrated to allow progression to the next stage of the approval process, and to facilitate the necessary ongoing supervision and monitoring during the construction and final certification phases of the development.

20. However, I note the following matters:

    a. The comments from Andy Samaratunga's groundwater memorandum for Council 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 Geotech Report 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. I agree with Mr Samaratunga that a further 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.
    b. I also consider that the concerns raised in the Healthy Waters assessment (at paragraphs 3.39 to 3.43) should be examined as part of the further geotechnical review referred to by Mr Samaratunga.

Other development engineering aspects

Prepared by: Maria Baring

21. I set out below my assessment of the Application against relevant provisions of the Auckland Unitary Plan and comment on the extent to which proposed conditions of consent are appropriate or require alteration.

E12 Land disturbance

22. The proposed land disturbance will be undertaken in accordance with the proposed conditions that remedy or mitigate adverse effects such as noise (proposed condition 102) and dust (e.g. condition 136) on the surrounding environment.

23. E12.6.2(2) General Standards in the AUP provides:

> (2) Land disturbance must not result in any instability of land or structures at or beyond the boundary of the property where the land disturbance occurs.

24. To achieve this standard it is important that conditions 38-41 remain and a new condition be inserted at this point of the condition suite which reads:

> *#. Earthworks, construction of retaining walls, the placement and compaction of fill material on site, and building foundations must be supervised by a suitably qualified engineering professional. In supervising the works, the suitably qualified engineering professional must ensure that the works are in accordance with the study area geology plan no. 2.1 prepared by LDE dated 28.11.23 and the geotechnical assessment report prepared by Land Development & Engineering reference no. J01627 dated 6 December 2024.*

25. I otherwise defer to the Council's groundwater specialist, Mr Samaratunga, who has prepared a separate memorandum.

26. E12.6.2(11)-(12) General Standards in the AUP provide:

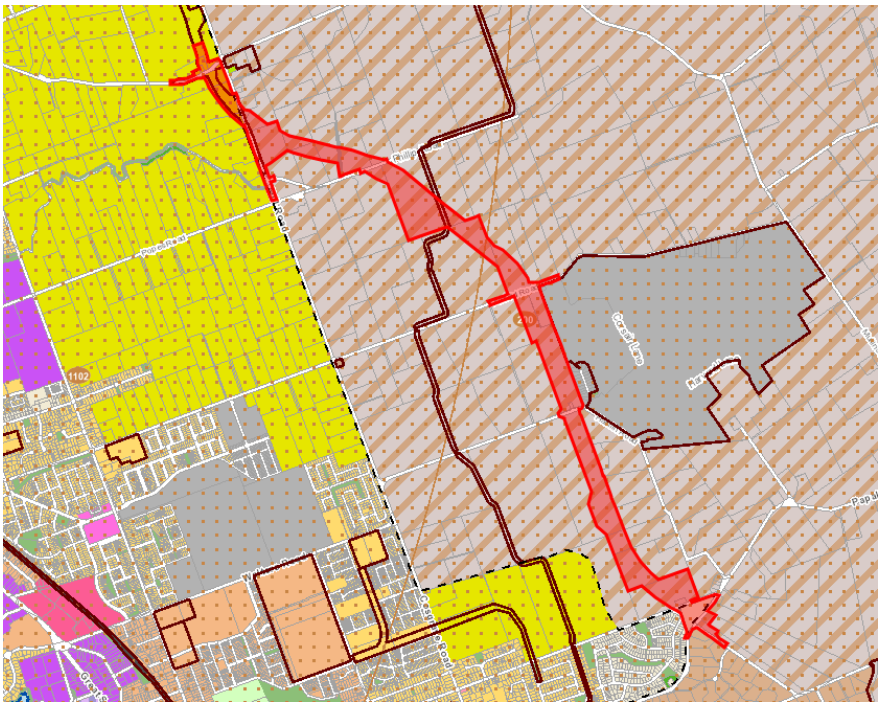
> (11) Earthworks (including filling) within a 100 year annual exceedance probability (AEP) flood plain:
>
> (a) must not raise ground levels more than 300mm, to a total fill volume up to $10m^3$ which must not be exceeded through multiple filling operations; and
>
> (b) must not result in any adverse changes in flood hazard beyond the site.
>
> Note1
>
> This standard does not limit excavation and replacement of fill to form building platforms, where those works do not raise ground levels.
>
> (12) Earthworks (including filling) within overland flow paths must maintain the same entry and exit point at the boundaries of a site and not result in any adverse changes in flood hazards beyond the site, unless such a change is authorised by an existing resource consent.

27. Earthworks are proposed within the flood plain areas and major overland flow paths. The proposed earthworks and final ground levels will adversely affect overland flow paths or increase potential volume or frequency of flooding on the surrounding sites.

28. Following the provision of further information requested in Auckland Council's Section 67 request, the Applicant's flood modelling was recently provided to Healthy Waters. However, as Andrew Chin notes in his separate memorandum for Healthy Waters, there

has been insufficient time for Healthy Waters to conduct a detailed review of this flood modelling. Auckland Council has undertaken its own flood hazard assessment of the potential effects of the development, and the proposed infrastructure required to mitigate adverse effects.

29. In June 2025, the New Zealand Transport Agency (**NZTA**) lodged a Notice of Requirement to designate land for the Mill Road Stage 2 (Takanini Section) Project. The proposed corridor intersects the eastern portion of the Sunfield development site, overlapping a critical area of the proposed stormwater system intended to capture and convey flows from eastern catchments northward to the Papakura Stream. As Mr Chin notes in his memo, this overlap necessitates a fundamental reconsideration of Sunfield's stormwater management approach.



30. As matters stand, it is not possible to assess compliance with general standards E12.6.2(11)-(12) with any certainty. Please refer to the Healthy Waters comments for more detail.

31. Subject to those comments, if the application is approved, the following additional conditions are recommended to mitigate the flooding effects upstream and downstream catchment:

> *Upon completion of earthworks, the consent holder must provide an as-built overland flow path plan prepared by an appropriately suitably qualified and experienced professional to the Council identifying the following:*
>
> *a. A layout plan of the overland flow paths in accordance with the approved Resource Consent/Engineering Plan; AND*

b. *The overland flow path plan must include as built cross sections including the ponding areas with levels before overtopping; AND*

c. *As built longitudinal plan and cross sections must be provided for overland flow path locations; AND*

d. *that any building within or adjacent to the 1% AEP flood is subject to the minimum floor level in the Stormwater Code of Practice. This may be enforced through a covenant; AND*

e. *No buildings, structures or other obstructions are to be erected in the overland flow paths without prior written permission from the Council.*

E36 Natural hazards and flooding

32. Resource consent is required under E36.4 – Table E36.4.1 for the following activities in the 1 per cent annual exceedance probability (**AEP**) floodplain:

- (A33) - Stormwater management devices or flood mitigation works in the 1 per cent AEP floodplain
- (A37) - All other new structures and buildings within the 1 per cent AEP floodplain
- (A38) - Use of new buildings to accommodate more vulnerable activities located within the 1 per cent AEP floodplain.

33. As noted above, while flood modelling information has been provided by the Applicant in response to Council's Section 67 request, there has been insufficient time for detailed review. Additionally, the Mill Road NoR lodged by NZTA in June 2025 intersects the eastern portion of the Sunfield site, overlapping critical stormwater infrastructure and necessitating reconsideration of the stormwater management approach. This is necessary to identify the effects of potential changes in flood depth, velocity, and frequency on adjoining sites, including upstream and downstream from buildings and structures. The development may create a new flood hazard and possible effects on public safety and other properties. The proposed development may require additional hard engineering solutions to mitigate the flooding hazard.

34. The proposed development diverts the entry and exits point in any part of an overland flow path on site and may have a potential impact on other properties. The Healthy Waters catchment-wide flood models will show the potential effects of flood hazards on chosen access routes and the effects on people during a flood event and the ability to avoid, remedy or mitigate these.

35. Minimum floor levels may be required for the proposed dwellings along an overland flow paths and easements may be required for long term maintenance affected by flooding.

36. The proposed land use condition 27 regarding the requirement of Stormwater Management Plan may be able to indicate the freeboard requirements needed for the

proposed dwellings. Mr Chin in his memo for Healthy Waters comments further on this condition, and the conditions generally, and I defer to her discussion in that regard.

37. The recommended condition required for the as-built overland flow paths after the completion of earthworks allows the processing Development Engineer at Building Consent to have the information for the freeboard requirements.

Subdivision

38. Chapter H18 Future Urban Zone has the following objective with respect to subdivision:

H18.2 Objectives

(4) Urbanisation on sites zoned Future Urban Zone is avoided until the sites have been rezoned for urban purposes.

39. Relevant restricted discretionary activity matters of discretion include H18.8.1 (2):

The requirement for infrastructure and whether the provision of infrastructure will affect the future subdivision, use or development of the site for urban purposes

40. Chapter E39 Subdivision – Rural has the following relevant objectives:

(3) Land is vested to provide for esplanades, reserves, roads, stormwater, infrastructure and other purposes.

(4) Infrastructure supporting subdivision and development is planned and provided for in an integrated and comprehensive manner and provided for to be in place at the time of the subdivision or development.

(6) Subdivision has a layout which is safe, efficient, convenient and accessible.

41. The development is designed for urban purposes. The applicant's proposed conditions 159 – 162 and 164 – 171 relate to the development of infrastructure such as public roads, wastewater and stormwater reticulation, supply of water, and utilities. The acceptability of those conditions, and the vesting of any assets is subject to comment and approval from Watercare, Healthy Waters and Auckland Transport, and I defer to their comments on those proposed conditions and related matters.

42. Proposed condition 175 relates to the installation of the infrastructure by reference to stages shown in the scheme plan.

43. The final flood report conditions 177 – 178 must be amended to delete the word "stormwater" and change to "flood".

44. The geotechnical completion report condition 179 should be amended to read:

179. A Geotechnical Completion Report from a suitably qualified and experienced geo-professional to confirm that the lots are stable and suitable for development must be provided when applying for a certificate under section 224(c) of the RMA.

Development [construction of dwellings, increase in impervious surfaces and soil recharge systems] on all lots must be undertaken in accordance with the recommendations of this Geotechnical Completion Report.

The preceding paragraph must be registered as a consent notice on the record(s) of title to be issued for all lots to ensure that it is complied with on a continuing basis. The specific name and date of the Geotechnical Completion Report provided must be referenced in the consent notice.

Advice Note:
A building consent will be required for the construction or installation of counterfort drains, under fill drainage, and ground recharge systems.
Consent Notices

- *for geotechnical condition 191 is indicated in the recommended condition 177.*
- *Condition 192 if not vested to Council and is maintained by the applicant and therefore falls under the incorporated society condition 196*

45. Prior to applying for individual lot subdivisions, conditions 175 – 176 must be completed and the earthworks recommended conditions for as-built overland flow paths provided to Council to determine the freeboard requirements for each lot if subdivision will occur prior to building.

46. I concur with the proposed s224 engineering conditions for the infrastructure (205, 206, 207), vehicle access (209), and vehicle crossings (210) on their face, however this is subject to any comments Council's planner may have, and subject to Watercare's and Auckland Transport's comments. I note, for instance, that the conditions relating to water and wastewater assume public servicing. In that regard, I note that Watercare's comments state that the applicant will need to demonstrate permanent ***private*** servicing solutions for both potable water and wastewater, and that the application should not be approved on an assumption of public capacity being available.