# MEMORANDUM

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| **To:** | The Panel for the Sunfield Project |
| **From:** | Will Moore, Director – Maven Associates Limited |
| **Date:** | 10 October 2025 |
| **Subject:** | **Response to Auckland Council's Regional Earthworks Comments – Sunfield Fast-track Application** |

This memorandum responds to Auckland Council's Regional Earthworks comments dated 4 August 2025, which were provided following the Applicant's Substantive Application under the Fast-track Approvals Act 2024 (the "Sunfield FTAA Application". The response has been prepared by Maven Associates (Maven) to support the Sunfield FTAA Application by addressing the comments on bulk earthworks aspects raised by Auckland Council.

## Executive Summary:

Maven's engineering responses to Auckland Council's comments on the Sunfield Fast-track Approvals Act (FTAA) application focus on erosion and sediment control (ESC), adaptive management, staging, and mitigation of environmental effects.

**1. Awakeri Wetlands Earthworks**

- The bulk earthworks for Awakeri Wetlands Stages 2 and 3 are excluded from the FTAA application.
- These works are already consented under Resource Consent BUN60434634.
- Engineering plans have been updated to reflect this exclusion.

**2. ESC Methodologies for Stages 1 and 6**

- ESC in peat soils follows Council-accepted best practice, using perimeter bunding to contain sediment-laden water and promote infiltration.

**3. Adaptive Management Plan (AMP)**

- The applicant has agreed to implement an AMP as a condition of consent.
- This ensures proactive management of sediment-related effects throughout the project duration.

**4. Open Area Restrictions**

- The applicant does not support a fixed 20ha open area restriction due to the scale and complexity of the 244ha development.
- Instead, the AMP will provide a risk-based, site-specific framework for managing open areas dynamically, consistent with GD01 guidance.

**5. Stormwater Channel Construction**

- The applicant accepts the condition requiring a detailed ESCP to be submitted 60 days prior to commencement, allowing for SQEP review.

**6. Annual ESCP Requirement**

- The applicant supports the recommendation to submit annual ESCPs for Council certification.

RESPONSE

This memorandum responds to Auckland Council's assessment of the proposed earthworks for the Sunfield development, specifically addressing concerns related to erosion and sediment control (ESC), staging, adaptive management, and environmental effects. Auckland Council's comments are presented in *italic*, followed by Maven's engineering responses in blue.

Only those matters requiring technical clarification or engineering response have been addressed, with a focus on the feasibility, implementation, and environmental management of the proposed earthworks strategy. The intent is to ensure that sediment-related effects are appropriately mitigated through robust ESC methodologies, adaptive management practices, and staged implementation consistent with best practice and Council expectations.

***Auckland Council's Executive Summary***

10. *The applicant is seeking consent to undertake earthworks associated with a comprehensive community development at Ardmore, Auckland. The development is known as "Sunfield". Approximately 3,390,000m3 of cut to fill earthworks are proposed across 244.5ha.*

The total cut-to-fill volume was incorrectly stated as 3,390,000 m³. The accurate volume for cut to fill is 1,830,000 m³, comprising 1,700,000 m³ of cut, 100,000 m³ of civil spoil, and 30,000 m³ of imported material.

Following minor design amendments made in response to submissions, the revised cut-to-fill volume is now 1,892,000 m³. Please refer to the updated earthworks drawings for further details.

11. *I do not support the proposal as it stands as the application has three (3) significant information gaps in my opinion, which are as follows:*

    a. *The lack of any detail whatsoever surrounding the earthworks and erosion and sediment control (**ESC**) methodologies for the construction of the Awakeri Wetlands ahead of bulk earthworks commencing at the site.*

        The bulk earthworks associated with Awakeri Wetlands Stages 2 and 3 are not included within the scope of this FTAA application. The earthworks associated with Awakeri Wetlands is consented under Resource Consent BUN60434634.

        The Maven engineering plans have now been updated to reflect the exclusion of this area.

    b. *The lack of an ESC methodology or plans for Stages 1 and 6 of the project's bulk earthworks, which covers an area of approximately 125ha.*

        Maven have been involved in numerous completed large-scale projects across the Takanini and Papakura areas over the years. The established best-practice and council accepted approach for managing sediment-laden water in peat soils involves bunding the earthworks area to contain runoff within the site, allowing it to infiltrate into the ground. Therefore, structural controls such as sediment retention ponds are not typically used in these conditions. Accordingly, the current proposal includes perimeter bunding around the area of works Stages 1 and 6.

c. *The lack of an adaptive management plan (**AMP**) and information pertaining to open area restrictions.*

The applicant is happy to incorporate an AMP into the proposal and consider its inclusion as a condition of consent to ensure appropriate flexibility and responsiveness during construction.

d. *The earthworks required to complete the project are significant and I have sought to address these deficiencies by recommending amendments to existing conditions and by recommending additional conditions of consent. Provided the earthworks are completed in accordance with the application documents and the additional and/or amended conditions which I have recommended, I can support the earthworks proposal as I consider that compliance with these additional and/or amended conditions, will result in the potential effects associated with sediment discharge being appropriately managed.*

Noted

16. *During assessment of the application, NZTA lodged a notice of requirement for the Mill Road Stage 2 designation, which transects the eastern portion of the Sunfield site as it runs from Airfield Road in the north, to Old Wairoa Road and Clevedon-Papakura Road in the south. At the time of drafting this memo, the applicant had not provided updated figures relating to the volume and area of earthworks which will effectively be "removed" from the Sunfield application, nor had they provided updated erosion and sediment control plans (**ESCPs**) for the area affected by the designation. However, given the "high level" of the ESCPs that have been provided, these omissions have not affected my overall assessment.*

Engineering Drawings have now been updated to show designation for the notice of requirement (NoR) for the Mill Road Stage 2 project. The proposed earthworks in this area are to remain as the Applicant and NZTA are committed to working collaboratively together to deliver the eastern boundary storm water conveyance channel and the enabling works for Stage 2 of the Mill Road project.

The Applicant acknowledges the NoR lodged by the New Zealand Transport Agency (NZTA) for the Mill Road Stage 2 (Takanini Section) Project, which intersects the eastern portion of the Sunfield development site and overlaps a key area of the proposed stormwater system.

In response, the Applicant has undertaken detailed consultation and coordination with NZTA to ensure that the Sunfield stormwater management approach is compatible with the proposed Mill Road corridor. This process included a comprehensive review of the stormwater design, with specific attention to the affected eastern catchments and conveyance to the Papakura Stream.

Following this engagement, NZTA has reviewed the stormwater design and confirmed that at a high level the proposed stormwater channel geometry and the Mill Road alignment are compatible.

The Applicant remains committed to collaborating with NZTA and other stakeholders to deliver integrated infrastructure outcomes and robust stormwater management across the Sunfield development.

17. *Based on the information provided to date, approximately 1,830,000m$^3$ of cut to fill earthworks are proposed across 244.5ha. An additional 100,000m$^3$ of imported cleanfill associated with pre-loading, based on pre-loading up to 27 stages, one at a time, is also proposed.*

    Refer to response to point 10.

18. *The proposal includes the initial excavation and construction of stormwater channels through the site, followed by the construction and / or installation of erosion and sediment (ECS) measures for bulk earthworks. ESC measures include clean and dirty water diversion bunds, stabilised construction entrances, progressive stabilisation, sediment retention ponds, decanting earth bunds and silt fences.*

19. *The application documents include a set of ESCPs that show the proposed locations of some of the structural controls noted above. These plans, however, are incomplete and do not show ESC measures for all areas of the site where earthworks are proposed.*

    Refer to response to point 11b.

20. *The application documents include a set of earthworks cut and fill plans, which broadly show how the applicant intends to achieve the desired gradients for the overall development. These plans also include notes indicating areas of the site where a series of stormwater channels are proposed to be excavated / constructed. These notes state: "PROPOSED STORMWATER CHANNEL TO BE EXCAVATED FIRST ONSITE". These stormwater channels are associated with the Awakeri Wetland project and are effectively proposed "online" of existing watercourses through the site with the general intention being to widen the channels for flood management, and to install the necessary infrastructure associated with the wider development such as culvert crossings and stormwater infrastructure.*

    Refer to response to point 11a.

    *<u>Erosion and Sediment Control</u>*

21. *An assessment of the technical aspects of the earthworks and ESC methodologies has been undertaken, and in general, I do not consider that the applicant has provided sufficient details to adequately assess the proposal from an earthworks and ESC point of view.*

22. *A general methodology for channel construction has been included in the applicant's Infrastructure Report, which involves the following:*

    - *Fish removal and relocation;*
    - *Damming and diversion of existing stream flows to create a dry length of channel where excavation / construction works is to occur;*
    - *Construction works including the installation of culverts, weirs and other flood control structures where required, and the removal of any existing culverts or instream structures where these devices are no longer required; and,*
    - *The removal of temporary dams and diversions prior to the next section of works occurring.*

23. *The methodology noted above is to be repeated until all stormwater channel excavations have been completed, and whilst the construction methodology is generally fit for purpose, the applicant has not indicated the area or volume of earthworks associated with channel*

*construction, and aside from the temporary diversion of existing channel flows, they have not indicated what ESC measures are to be implemented during channel excavations. It is this lack of any clear or indicative ESC methodology that is problematic from an assessment point of view.*

The earthworks associated with the channel and pond excavation cover an area of 31.5 hectares, with a total cut volume of 430,000 $m^3$. This volume has been incorporated into the overall earthworks calculations.

24. *Based on my experience and given the length and sizes of some of the proposed stormwater channel excavations, I consider that detailed ESCPs will be required and must be implemented ahead of any stormwater channel excavations commencing. Further, earthworks within "live" channels can be difficult, particularly during the wetter winter months and during intense rainfall events, which are often encountered during summer periods, and these factors must be considered when preparing the final ESCPs associated with this aspect of the proposal.*

Noted

25. *As such, I consider that at minimum, a detailed construction methodology and a detailed ESCP, specific to the initial stormwater channel construction, must be provided a minimum of 60 days prior to earthworks commencing. This 60-day period will allow Auckland Council sufficient time to properly assess this particular aspect of the proposal as I consider that an assessment by a suitably qualified and experienced person (SQEP) will be required. I have therefore recommended an additional condition in Table 1 below, to bridge this information gap.*

In response to points 23-25, the applicant accepts this proposal and has included it in the updated proposed conditions of consent

26. *Once construction of the initial stormwater channels (Awakeri Wetland project) has been completed, the applicant intends to commence bulk earthworks across the site in six (6) stages. The application documents include an overall ESCP associated with these 6 stages of work, however, the ESCPs only show full ESC management over two (2) of the 6 stages.*

27. *The ESC measures proposed in Stage 1 include silt fencing installed along the margins of the Awakeri Wetland stormwater channels, the establishment of diversion bunds along the non-stormwater channel boundaries of the area, and the establishment of a stabilised construction entrance and haul road, generally through the stage. No other ESC measures have been proposed, nor has the applicant indicated where runoff is to be diverted for treatment. Based on my experience, significant ESC measures will be required as the Stage 1 area covers approximately 45ha.*

28. *Stage 6 is similar, with only silt fences along the margins of the stormwater channels, silt fences around a proposed stockpile area, perimeter diversion bunds around other boundaries, and the establishment of a stabilised construction entrance and haul road through the stage. As with Stage 1, no indication of where the diversion bunds will direct dirty runoff has been provided, and no other ESC measures have been proposed. Stage 6 appears to cover approximately 80ha.*

In response to points 26-28, refer to response to point 11a.

29. *As noted above, the applicant has proposed the provision of a finalised ESCP ahead of earthworks commencing, however, given the overall area of earthworks proposed, the length of time over which earthworks are to be undertaken, and the level of detail which is required, I consider that the applicant's proposed condition in this regard is not robust enough. A requirement for a finalised ESCP ahead of works commencing does not reflect the dynamic nature of the bulk earthworks which will be required over multiple years, up to fifteen (15) in this case, particularly on a site where the gradients are very low and where construction water management will be difficult.*

30. *More detailed ESCPs for the remaining stages of works have been provided in the application documents, which include not only silt fences, diversion bunds and stabilised entrances and haul roads, but also sediment retention ponds (SRPs) as the main method of sediment control. In general, the SRPs will manage catchments of up to 5ha each and will be chemically treated to maximise their sediment removal efficiencies.*

31. *21 chemically treated SRPs have been proposed across these four (4) remaining stages. I consider that whilst simplistic, these plans at least demonstrate that ESC in accordance with GD05 is required and can be undertaken on site. Regardless, more detained design plans must be provided ahead of earthworks commencing, which the applicant has proposed, however, their proposal is for the provision of a single ESCP ahead of the project commencing, and based on my experience, several ESCPs over several years will be required. These ESCPs must contain further details such as the location of all clean and dirty water diversion bunds for construction water management purposes, and how dirty runoff will be pumped and chemically treated where gradients will not allow for gravity fed diversion.*

32. *The remaining ESCP measures proposed include progressive stabilisation of exposed areas as the desired gradients are achieved, and monitoring and maintenance of all ESC measures in accordance with GD05. These measures represent industry best practice, and I support the applicant's earthworks and ESC proposal in this regard.*

33. *As noted above, the applicant has proposed the provision of a finalised ESCP ahead of earthworks commencing, however, given the overall area of earthworks proposed, the length of time over which earthworks are to be undertaken, and the level of detail which is required, I consider that the applicant's proposed condition in this regard is not robust enough. A requirement for a finalised ESCP ahead of works commencing does not reflect the dynamic nature of the bulk earthworks which will be required over multiple years, up to fifteen (15) in this case, particularly on a site where the gradients are very low and where construction water management will be difficult.*

34. *As such, rather than a requirement for a finalised ESCP ahead of earthworks commencing, I recommend that an annual ESCP be provided to Council for written certification ahead of any earthworks commencing for the following twelve (12) months of earthworks. The annual ESCP*

*should include, but not be limited to, the flowing measures:*

a. *Any areas of the 244ha site where earthworks are proposed over the following 12 months;*
b. *Detailed ESCPs associated with those earthworks; and*
c. *Details of the earthworks which have been carried out over the previous 12 months, including any areas where earthworks have been completed and no further land disturbance is proposed.*

In response to points 29-34, the applicant accepts this proposal and has included it in the updated proposed conditions of consent.

35. *I have proposed this amended condition in Table 1 (see page 12 onwards of this memo).*

***Adaptive Management***

35. *The application documents are silent on whether an adaptive management plan (**AMP**) will be developed and implemented throughout the duration of earthworks. Auckland Council's AMP Guidance Document suggests that adaptive management should be applied to the most significant and/or long-term earthworks activities, and as this proposal is for more than 244ha of earthworks which are likely to take up to 25-years or more to complete, and as the earthworks will be undertaken in close proximity to freshwater streams and in close proximity to or within a natural inland wetland, I consider that the proposal is indeed significant and should therefore be subject to adaptive management practices.*

36. *Whilst the applicant has proposed that all ESC measures are to be constructed and operated in accordance with GD05, an AMP does not replace the day-to-day ESC management recommended in GD05, nor does it apply to compliance with consented ESC methodologies. Its purpose is to address the management of sediment-related effects that may still occur when full compliance with a consent is maintained in order to avoid or minimise adverse effects on the receiving environment.*

37. *For adaptive management to be successful, an earthworks regime must rely heavily on setting appropriate threshold trigger levels as part of a monitoring program and must detail the types of responses and actions that will be undertaken as part of a feedback loop that goes above and beyond any standard maintenance measures such as those detailed in GD05. An AMP must also provide a process for modification of the open area, erosion and sediment control devices and/or earthworks methodology to keep any potential adverse effects within a given range anticipated by a given consent.*

38. *AMPs also provide "real time" information which allows a project team to continuously improve the performance of ESCs on site, whilst also adapting to what does and doesn't work from an ESC point of view on any given site or portion of a site. Further, based on my more than 20 years of assessing and compliance monitoring earthworks sites in the Auckland Region, "appropriate monitoring and maintenance of all controls in accordance with GD05" is often touted, but rarely is it undertaken in full accordance with the guidance contained in GD05.*

39. *Provision and implementation of an AMP addresses this as a project's staff must regularly inspect their ESC measures and as a result, they develop a much better understanding of the ESC process that is specific to that site. Put simply, adherence to an AMP results in better erosion and sediment control and better environmental outcomes.*

40. *A typical AMP would include:*
    a. *Adaptive management "triggers". i.e., thresholds, that when exceeded, trigger a detailed assessment of on-site erosion and sediment control practices, including the collection of samples and/or readings, of discharges from on-site controls such as SRPs, that is over and above that which would be expected during normal, everyday earthworks operations. Typically, these triggers are set against rainfall events where more than 25mm of rainfall over a 24-hour period, as measured by on-site rain gauges, occur.*

b. *Determining efficiency thresholds for SRPs. i.e., by analysing the turbidity of runoff entering any given SRP vs its turbidity at the pond's discharge point, the device's efficiency can be determined and when this efficiency is less than expected, specific actions on site can be undertaken.*
c. *Construction monitoring including monitoring of the weather forecast to determine if pre-rainfall site inspections are required, and actual monitoring of onsite rain gauges to determine whether trigger event sampling is required.*
d. *Baseline monitoring of an appropriately located reach of stream that is subject to discharges from the site's sediment retention and treatment devices, including baseline monitoring of a reach of stream upgradient of the earthworks area as a "control" site.*
e. *An annual stream monitoring report which is intended to measure over time, the potential effects the earthworks might have on that reach of stream, throughout the duration of land disturbance.*
f. *Identification of appropriate responses to rainfall trigger events, and SRP efficiency thresholds, including but not limited to:*
    i. *completing a full audit of all ESC measures within the earthworks area.*
    ii. *remedying any causes on site that may contribute to a threshold breach as soon as practicable, including keeping a record what remedial measures were undertaken.*
    iii. *Auckland Council notification of any trigger level exceedances.*
    iv. *Ongoing monitoring of all ESC measure until baseline conditions have returned to normal.*
    v. *Reduction of open area.*

41. *As I consider the proposal represents a significant earthworks operation, I have included a recommended additional condition in Table 1 below, that requires provision of an AMP ahead of earthworks commencing, and that this AMP be implemented throughout the duration of earthworks at the site. If the applicant does not support the implementation of an AMP throughout the bulk earthworks operation (i.e., bulk earthworks only and not civil earthworks typically associated with subdivision), then I cannot support the applicant's proposal.*

In response to items 35–41, the Applicant is experienced in formulating and implementing an Adaptive Management Plan (AMP) for managing earthworks and has previously agreed to implementing an AMP for the Sunfield site.

An AMP further reduces the need for an open area allowance as it provides an inclusive and structured plan for all stakeholders with real time data on control performance which results in a superior environmental outcome. Sunfield is a largely flat, impounded catchment where the geology is predominantly an alluvial silt and is a low risk of high-volume sediment mobilisation from erosion.

Further there are many precedents in the Auckland isthmus where open area restrictions are either not applied or are significantly greater than 20ha. Both the Milldale and Long Bay developments had a 30ha open area allocation, both developments are in highly clay-based soils in moderate to steep topography with the latter being adjacent a Marine Reserve. The Parata Rise development in Pukekohe has a 60ha allowance and the recently consented Ara Tūhono – Warkworth to Wellsford RoN project has a 75ha open area allowance. All of these projects are seen to have a greater environmental risk from erosion and sediment deposition than Sunfield.

The Applicant agrees to incorporate an Adaptive Management Plan (AMP), including the provisions outlined above, into the proposal. The Applicant supports its inclusion as a condition of consent to ensure appropriate flexibility and responsiveness during construction. Refer to the updated Sunfield proposed conditions of consent.

***Staging & Open Area Restrictions***

42. *As noted above, the applicant has proposed 244ha of earthworks across 6 stages, however, they have not indicated how much of the total area is expected to be exposed at any one time. Based on my experience, it is highly unlikely that the entire 244ha will be exposed at the same time, nor is it considered appropriate for this to occur. Erosion and the generation of sediment is problematic over large areas of exposed ground as significant rainfall events or extended periods of rainfall create ground conditions that make ESC maintenance difficult and ineffective. Put simply, the larger the exposed area, the more sediment is generated.*

43. *Large developments in the Auckland region are typically subject to a 15-20ha open area restriction, whereby no more than 15-20ha of bulk earthworks can be undertaken at any one time. By imposing this restriction, the potential effects of the earthworks will be reduced and better environment outcomes achieved. As such, I have recommended an additional condition that imposes a 20ha limit for the earthworks. I note however, that the 20ha limit would apply to bulk earthworks only and would exclude exposed areas associated with civil or subdivision land disturbance. Further, without acceptance of this 20ha restriction, or additional information and/or justification which clearly demonstrates the need for any more than 20ha to be exposed at any one time, I cannot support the applicant's proposal.*

The Applicant has significant experience in conducting bulk earthworks in steep conditions and adjacent very sensitive receiving environments and contends that the risk associated with sediment generation is more aligned to the time earth is exposed rather than related to area. Structural controls are area based and therefore can be implemented in size and number to accommodate the exposed area. However, if earthworks are prolonged due to work areas being restricted then this leads to earth being unnecessarily exposed for a longer period and therefore at greater risk of erosion.

The Applicant does not support the imposition of a 20ha open area restriction for bulk earthworks. Given the scale of the Sunfield development—spanning approximately 244ha across six stages—such a restriction is not considered appropriate or practical. A fixed cap would significantly constrain construction sequencing and efficiency, potentially delaying the delivery of critical infrastructure and housing outcomes.

The proposed erosion and sediment control (ESC) methodology is tailored to the site's mixed soil profile, including both peat and clay. In peat areas, bunding is used to contain sediment-laden water within the earthworks footprint, allowing infiltration and avoiding reliance on sediment retention ponds, which are generally ineffective in such conditions. In clay-based areas, stormwater retention ponds are incorporated where appropriate, consistent with Auckland Council's GD01 – Erosion and Sediment Control Guide.

The Applicant has committed to implementing an Adaptive Management Plan (AMP), which will include provisions for bunding, sediment control, and open area management. This AMP will incorporate real-time environmental monitoring and responsive controls, allowing exposed areas to be dynamically adjusted based on weather conditions, construction staging, and environmental performance. This approach aligns with GD01's emphasis on risk-based, site-specific ESC planning and provides a more effective framework than a rigid area cap.

Furthermore, the project's scale and complexity require integrated delivery of stormwater, transport, and utility infrastructure. A fixed open area limit would fragment construction sequencing, increase operational risk, and undermine the coordinated delivery of infrastructure. Larger open areas allow for efficient, staged construction that aligns with infrastructure rollout and minimises disruption.

In summary, the proposed 20ha restriction is not acceptable due to the size and nature of the development. The applicant supports a condition of consent requiring an AMP that aligns with GD01 and provides a site-specific, risk-based framework for managing open areas during construction.

***Conclusion***

47. *The application documents and their associated appendices imply that the proposed ESC measures will help ensure the proper management of earthworks and any potential sediment related effects that may arise throughout the duration of the project.*

48. *I do not support the proposal as it stands as the application has three (3) significant information gaps in my opinion. The first information gap is the lack of any detail surrounding the earthworks and ESC methodologies for the construction of the Awakeri Wetlands ahead of bulk earthworks commencing at the site. The second information gap is the lack of ESC methodologies for stages 1 and 6 of the project's bulk earthworks, and the third is the lack of an adaptive management plan (AMP) and information pertaining to open area restrictions associated with what I consider to be, a significant earthworks project.*

**1. Earthworks and ESC Methodologies for Awakeri Wetlands:**

The bulk earthworks associated with Awakeri Wetlands Stages 2 and 3 are not included within the scope of the Sunfield Fast-track Approvals Act (FTAA) application. These works are already consented under Resource Consent BUN60434634, and the engineering plans have been updated to reflect the exclusion of this area from the FTAA application. Therefore, the concern regarding lack of ESC detail for Awakeri Wetlands is not applicable to this application.

**2. ESC Methodologies for Stages 1 and 6:**

The ESC approach for Stages 1 and 6 is based on established best-practice for managing sediment-laden water in peat soils, which is widely accepted by Auckland Council. This involves perimeter bunding to contain runoff and allow infiltration, rather than relying on sediment retention ponds, which are ineffective in peat conditions. The engineering plans have been updated to show structural controls for these stages, including silt fences, diversion bunds, stabilised entrances, and haul roads. These updates directly address the concern regarding lack of ESC methodology.

**3. Adaptive Management Plan (AMP) and Open Area Restrictions:**

The applicant has agreed to incorporate an AMP into the proposal and supports its inclusion as a condition of consent. The AMP will include real-time monitoring, trigger thresholds, stream monitoring, and responsive actions to ensure sediment-related effects are managed proactively. Regarding open area restrictions, the applicant does not support a fixed 20ha cap, citing the scale and complexity of the development. Instead, the AMP will provide a risk-based, site-specific framework for managing open areas dynamically, which aligns with GD01 and offers a more flexible and effective approach than a rigid area limit.

49. *Whilst I have identified information gaps in the application, I have also sought to address these deficiencies by recommending additional conditions of consent. To address the lack of information relating to ESC methodologies for the project's initial stormwater channel construction, I have recommended a condition that requires provision of an ESCP which is specific to this aspect of the proposal. The additional condition I have recommended not only requires provision of a detailed ESCP for this aspect of the proposal, it also requires sufficient time for a SQEP to adequately assess the ESC proposal ahead of the stormwater channel works commencing.*

50. *To address the information gap relating to approximately 125ha of the project's earthworks and ESC methodologies, I have recommended an amendment to the applicant's proposed condition 22. This recommended amendment requires provision of an ESCP for Council's written certification, on an annual basis throughout the duration of any land disturbance associated with the project. Not only will this provide Council with the necessary information to assess the earthworks and ESC methodologies relevant to specific areas of the site where works are proposed, it will also allow for additional input based on changing ground conditions, as well as allowing for any advancements in best practice ESC management over the life of the project to be incorporated into the ESCPs.*

Refer to response to points 29-34.

51. *Lastly, to address the significance of the overall 244ha of earthworks, I have recommended additional conditions that require provision and implementation of an AMP, and a condition that restricts the open area across the entire 244ha, to no more than 20ha at any one time.*

Refer to response to points 35-41.

52. *Overall, provided the earthworks are completed in accordance with the application documents, all supporting information, and on the additional and / or amended conditions included in Table 1 below, I consider that the potential effects associated with sediment discharge will be appropriately managed.*

53. *However, if the applicant does not adopt my recommendations as noted above, I cannot support the proposal in its current form. The earthworks are significant and will occur over a long period of time and are of a nature and type that in Auckland, are typically managed with the assistance of the conditions I have recommended in Table 1.*

***Comment on Proposed Conditions***

***54.*** *Table 1 below (see page 12 onwards) contains the relevant conditions proposed by the applicant, alongside my recommended amendments. Table 1 also includes additional conditions as per the assessment above.*

The applicant has accepted the proposed consent conditions. Please refer to the updated Sunfield proposed conditions of consent for details of the conditions that have been adopted.

Kind Regards,

**Will Moore**
**DIRECTOR**
**BE (Civil), MIPENZ, CPEng, IntPE(NZ)**
**MAVEN ASSOCIATES LIMITED**