Delmore Fast-Track

25/06/2025 – Auckland Council Response

Annexure 12:

Regional Earthworks

Matt Byrne

Technical Memo – Specialist Unit

To:	Dylan Pope – Lead Planner
From:	Matthew Byrne - Erosion & Sediment Control Consultant to Earth, Streams and Trees Team
Date:	19 June 2025

Executive Summary

This technical memo evaluates the proposed earthworks for the "Delmore" residential development by Vineway Limited at Upper Orewa and Russell Roads, Orewa. While the memo supports granting consent for the project subject to recommended conditions, there are two key outstanding concerns and recommendations to ensure potential effects are appropriately managed.

Key Concerns:

1. Adaptive Management Plan (**AMP**):

    - The applicant has not proposed an AMP, which I consider essential given the scale (60ha) and duration (up to 8 years) of the earthworks.
    - An AMP would provide real-time monitoring of sediment discharges, would trigger adaptive responses to sediment-related effects, and would supplement the Erosion and Sediment Control Plan (**ESCP**).
    - Without implementation of an AMP, I cannot fully support the proposal.

2. Post-Bulk Earthworks Erosion and Sediment Control Plans (ESCPs):

    - The ESCPs provided for bulk earthworks are indicative only and the applicant has agreed that final ESCPs are required ahead of bulk earthworks commencing.
    - However, I also consider that post-bulk earthworks ESCPs, specific to civil / subdivision stages, are necessary to ensure ongoing erosion and sediment control during civil construction.

Recommendations:

a) Prepare and implement an AMP;

b) Include monitoring triggers, efficiency thresholds for sediment retention ponds, and detailed responses to rainfall events and sediment discharges that exceed expected erosion and sediment control efficiencies;

c) Provide finalised post-bulk earthworks ESCPs;

d) Submit finalised plans for certification by Council, for any given stage of the project where bulk earthworks have been completed, and civil / subdivision earthworks are to commence. Provision of these post-bulk earthworks ESCPs must be submitted prior to any land disturbance associated with civil / subdivision works.

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Vineway Limited
Application number:	BUN60444768
Activity type:	Earthworks
Site address:	88, 130, 132 Upper Orewa Road and 53A, 53B and 55 Russell Road, Orewa

2.0 PROPOSAL

2.1 Proposal relevant to this permit only

The applicant is seeking consent to undertake earthworks associated with a comprehensive residential development at Upper Orewa and Russell Roads, Orewa. The development is known as “Delmore”.

Earthworks are required for geotechnical stabilisation of existing soils, for stockpiling of topsoil stripped from the earthworks area for later reuse, for the formation of road corridors and initial building platforms, for the installation of palisade walls, retaining walls and reinforced slopes, for the construction and installation of civil infrastructure including in-stream culverts, for the construction and installation of temporary erosion and sediment controls, and to generally prepare the land for eventual subdivision development.

Site description

Section 6 of the applicant’s assessment of environmental effects (AEE) contains a description of the site and its surrounding environment. I have accepted and adopted these descriptions in my assessment below. Potential sediment discharges associated with the proposed earthworks will be overland to a number of unnamed freshwater tributaries of the Orewa River, the mouth of which is located approximately 1.2 kilometres (channel length), from the site’s mid-eastern boundary. In general, all freshwater flows from the site flow in an easterly direction to the Orewa River which, at the discharge point of the unnamed tributaries, is identified as a marine significant ecological area (SEA-M2-72) under the Auckland Unitary Plan: Operative in Part (AUP:OP).

The application documents also include an Ecological Impact Assessment which has

identified thirty-four natural inland wetlands on the subject site. Earthworks within and within 10m of some of these freshwater features is also proposed.

Earthworks in brief:

- The proposal includes approximately 2,225,000m^3 of cut and fill earthworks across approximately 60ha.
- Earthworks associated with the construction and installation of thirteen culverts within various tributaries of the Orewa River, on the subject site, including temporary stream diversions where necessary.
- The application documents include a set of erosion and sediment control plans (ESCPs) in general accordance with Auckland Council guideline document number 5, Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016 (GD05). These plans are associated with preliminary "bulk" earthworks. No ESCPs for civil development (i.e., land development, post "bulk" earthworks) have been provided.

2.2 Other matters - Streamworks

As noted above, the proposal includes earthworks associated with the installation of culverts within various freshwater streams on site, earthworks within and within 10m of natural inland wetlands on the site, and the reclamation of natural inland wetlands and former farming ponds on the site. Where appropriate, an assessment of the earthworks within, and within 10m of any natural inland wetlands on site has been completed below, however, a streamworks and wetland works rules assessment of the proposal on these freshwater features, i.e., earthworks aside, has been undertaken by Council's Freshwater Ecology expert under separate cover.

3.0 REASON FOR CONSENT – EARTHWORKS

Regional land use consent for a restricted discretionary activity under rules E11.4.1 (A8) and (A9) of the AUP:OP is required as the earthworks proposed are greater than 2,500m^2 on land with a slope greater than 10 degrees (A8), located within the sediment control protection area (A9).

Consent for a restricted discretionary activity is required under Regulation 45C of the National Environmental Standards for Freshwater (NES:F), as the proposal includes earthworks for the purpose of constructing urban development, within and within 10m of a natural inland wetland.

4.0 TECHNICAL ASSESSMENT OF EFFECTS

4.1 Assessment of effects on the environment - Earthworks

The potential environmental effects of the proposed earthworks are those primarily associated with erosion of exposed surfaces at the site and the subsequent sedimentation of the receiving environment, being a number of unnamed tributaries of the Orewa River, which generally flow through the site in an easterly direction.

Sediment can degrade aquatic values such as water quality, smother habitat for aquatic fauna within these receiving environments, and directly impact aquatic fauna by blocking their breathing apparatus. The applicant has stated that the project will utilise erosion and sediment control (ESC) measures, designed in accordance with GD05, to help ensure the proposal does not result in any adverse effects on the receiving environment.

4.2 Erosion and Sediment control

To manage potential sediment discharges resulting from the proposed earthworks, the applicant has prepared a set of ESCPs in general accordance with Auckland Council guidance document number 005, *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016* (GD05). These plans include:

- Completing the earthworks in three (3) stages.
- Stage 1 will utilise ten (10) sediment retention ponds (SRPs) treating catchments that range in size from 1.1ha – 3.64ha.
- Stage 2 AB will utilise six (6) SRPs treating catchments that range in size from 1.03ha – 4.1ha.
- Stage 2 CDE will utilise nine (9) SRPs treating catchments that range in size from 0.73ha – 4.58ha.
- Appropriately located clean and dirty water diversion bunds to direct clean water away from exposed areas and to direct sediment laden water to a respective SRP.
- Chemical treatment of all SRPs has been proposed with provision of a Chemical Treatment Management Plan (ChTMP) to Auckland Council ahead of earthworks commencing.
- The installation of super silt fencing (SSF) below SRPs and in exposed areas where gradients will not allow for runoff to be directed to an SRP. All catchments where SSF is the main method of sediment control are to be no greater than 0.5ha.
- The establishment of a stabilised construction entry and exit point from the site.
- Progressive stabilisation of exposed areas as the desired gradients are achieved.

- Implementing ESC measures in accordance with GD05 for earthworks within or within 10m of a natural inland wetland.

- Monitoring and maintenance of all erosion and sediment controls throughout the duration of earthworks.

4.3 Discussion

An assessment of the technical aspects of the earthworks and ESC methodologies has been undertaken, and it is considered that the methodologies proposed are generally appropriate for the nature and type of earthworks to be undertaken.

Firstly, I note that the ESCPs included with the application documents, whilst generally appropriate, are indicative only and the applicant has provided proposed conditions that require provision of a finalised ESCP ahead of earthworks commencing. This is not unusual given the complexity of the project and given that design changes often require amendments to a given ESCP. Further, by requiring provision of a final ESCP or ESCPs ahead of earthworks commencing, it allows or additional ESC input by the nominated earthworks contractor, who can account for factors such as equipment and staff availability or ground conditions within a particular catchment. As such, the recommendations below include a requirement for a final ESCP or ESCPs, to be provided ahead of earthworks commencing.

Utilising SRPs as the main method of sediment control is considered industry best practice for an earthworks operation of this size and will help ensure that sediment removal efficiencies are maximised within each respective device. Further, the applicant has confirmed in their comments to Auckland Council, that all SRPs will be designed and constructed based on 3% criteria ($3m^3$ of impoundment for every $100m^2$ of contributing catchment), which is in accordance with the guidance recommended in GD05.

The applicant has also proposed that all SRPs are to be chemically treated in accordance with the guidance contained in GD05. A plan in this regard has not, however, been provided. This is not unusual as earthworks contractors are typically best placed to provide chemical treatment plans based on the availability of chemical treatment equipment. As such, a recommendation for a chemical treatment management plan (ChTMP) to be provided ahead of earthworks commencing, has been recommended below.

The remaining sediment controls proposed include the installation of SSF to manage a number of catchments which are less than 0.5ha each. Given the existing versus proposed contours in these areas, SSF is considered appropriate. SSF has also been proposed below areas where SRPs are to be constructed, thereby managing runoff during construction of these devices.

Remaining erosion controls include the establishment of clean water diversion bunds/channels to divert clean water around the respective earthworks areas, and the construction of appropriately located dirty water diversions to direct runoff towards a

respective SRP. These measures represent industry best practice and are in accordance with the guidance contained in GD05.

I note that only one stabilised construction entrance has been shown on the ESCPs, at the entry point to the stage 1 earthworks area. Based on the location and nature of the earthworks, it is likely that multiple entry and exit points will be utilised throughout the earthworks, and the applicant has confirmed in their comments to Auckland Council, that all stabilised construction entrances will be identified on the final ESCP(s) which are to be provided to Council, ahead of earthworks commencing.

Lastly, the applicant has proposed progressive stabilisation of earthworks areas as they reach the desired gradients, and regular monitoring and maintenance of all controls in accordance with the guidance contained in GD05. Monitoring and maintenance of all controls throughout earthworks is considered industry best practice and is in accordance with the guidance contained in GD05, however, with regard to progressive stabilisation of areas as they are complete, no actual open area staging plans have been provided.

As noted above, the earthworks area is significant and the applicant has confirmed in their comments to Auckland Council, that a condition which limits the total open area on site at any one time to no more than 30ha, will be included in the final set of proposed conditions. This is considered appropriate as it will help minimise the potential effects of sediment discharges from large, open areas, particularly during significant rain events. I note that 30ha limit applies to bulk earthworks only and excludes exposed areas associated with civil or subdivision land disturbance and is similar to area restrictions applied to other significant earthworks proposals across Auckland.

4.4 Adaptive Management

The application documents are silent on whether an adaptive management plan (AMP) will be developed and implemented throughout the duration of earthworks, and the applicant has confirmed in their comments to Auckland Council, that they do not consider implementation of an AMP is required. 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 60ha of earthworks which are likely to take up to 5-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 number of natural inland wetlands, I consider that the proposal is indeed significant and should therefore be subject to adaptive management practices.

The applicant has stated that as the proposal already includes ESC measures in accordance with GD05, no further measures are required. I do not agree with the applicant in this regard as the purpose of an AMP is to supplement a project's existing ESCP, not replace it. An AMP does not replace day-to-day ESC management, 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 the consent is maintained in order to avoid or minimise adverse effects on the receiving environment.

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 erosion and sediment control devices and/or earthworks methodology to keep any potential adverse effects within a given range anticipated by a given consent. 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 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. Provision and implementation of an AMP addresses this as project staff must regularly inspect their ESC measures and as a result, they develop a much better understanding of the ESC process. Put simply, adherence to an AMP results in better erosion and sediment control and better environmental outcomes.

A typical AMP would include:

- 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 15mm of rainfall over a 1-hour period, or where more than 25mm of rainfall over a 24-hour period, as measured by on-site rain gauges, occur.

- 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 must be undertaken.

- 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.

- Baseline monitoring of an appropriately located reach of stream that is subject to discharges from the site's sediment retention and treatment devices, and baseline monitoring of a reach of stream upgradient of the earthworks area as a "control" site.

- 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.

- Identification of appropriate responses to rainfall trigger events, and SRP efficiency thresholds, including but not limited to:

    - turbidity measurements at the inlet and outlet of SRPs in operation during earthworks to determine device efficiencies,
    - completing a full audit of all ESC measures within the earthworks area,
    - 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,
    - Auckland Council notification of any trigger level exceedances, and
    - ongoing monitoring of all ESC measure until baseline conditions have returned to normal.

As I consider the proposal represents a significant earthworks operation, I have included a recommendation 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.

4.5 Post-Bulk Earthworks ESCPs

The application proposes not only “bulk” earthworks to re-shape the land and prepare it for development, but also the civil earthworks and land disturbance necessary to prepare specific areas of the site for dwelling construction. Earthworks of this nature typically commence once all areas of the site have been stabilised against erosion and development of the site into staged subdivision commences. Subdivision earthworks typically involve the installation of civil infrastructure such as stormwater, wastewater and water supply lines, the construction of roads, footpaths and berm areas, and the installation of communication services and lighting. Smaller equipment is utilised, and ESC measures are often relocated to areas where they can remain until the majority of the subdivision’s earthworks have been completed. They also include provisions for managing clean water from areas where no additional land disturbance is required, or where a newly formed road or accessway prevents ongoing construction water management.

Based on this, I have included a recommendation that Civil ESCPs be provided for each stage of subdivision after bulk earthworks have been completed. These ESCPs must include the details of ESC measures in accordance with GD05 that are specific to that particular stage of works. Provision of these post-bulk earthworks ESCPs is imperative for ensuring appropriate and ongoing erosion and sediment control, as the controls proposed for bulk earthworks, which are predominantly SRPs as noted above, are unlikely to be appropriate during the civil earthworks associated with subdivision. Further, it is also likely that multiple stages of subdivision development will occur at the same time and with different contractors, therefore including a requirement for a post-bulk earthworks site specific or stage specific ESCP is

considered appropriate.

Regarding the above, I note that in the applicant's response to Auckland Council, they have stated that the requirement to provide Civil ESCPs once bulk earthworks have been completed, will be addressed in the final version of their proposed consent conditions. As I have not sighted the final version of these proposed conditions, I consider it appropriate to include this recommendation below.

4.6 Streamworks / Wetland Reclamation / Earthworks Within 10m of Wetlands

As noted above, the potential effects on the streams themselves which are associated with the installation of structures within them, and the potential effects associated with any reclamation of any natural inland wetlands or farm ponds on site, have been assessed by others under separate cover. The physical works associated with any wetland or farm pond reclamation will not involve any earthworks which are out of the ordinary and as such, no further assessment, other than what has been completed above, is considered necessary. However, the installation of culverts and other erosion protection structures within streams will require the implementation of erosion and sediment controls which are specific to the streamworks to help manage construction related effects. Controls such as stream diversions, dewatering procedures, and stream-structure related construction water management will be required.

In the applicant's response to Auckland Council, they have acknowledged the requirement for a Streamworks Management Plan to be provided ahead of any streamworks commencing and have stated that this plan will address these matters. Provided this plan includes identification of the specific ESC measures which are required prior to installation of in-stream structures, I consider that the streamworks associated with their installation will be managed appropriately.

I also note the likely requirement for native fish management ahead of any streamworks commencing, however, I defer to Council's Freshwater Ecology specialist in that regard.

4.7 Timing / Seasonal Restriction

The applicant has not stated when the earthworks are to commence, nor how long they are expected to take. The AEE does state that the works will take more than 24 months to complete, however, that reference is related to a rule, rather than an indicative timeframe for the earthworks. Regardless, based on my experience, I consider that the earthworks, including the civil earthworks associated with subdivision, will likely take up to 8-years to complete. As such, and to provide a contingency against unforeseen delays, a 10-year duration has been recommended below. However, I also consider it appropriate to include a condition allowing review of the consent, should it be deemed necessary at any point throughout the 10-year duration.

Further, due to the proximity of the site to freshwater streams, a seasonal restriction

has also been recommended to help manage the potential effects of the earthworks that may be proposed during the wetter, winter months. This recommendation is consistent with other significant earthworks projects granted consent in the Auckland region.

4.8 Conclusion

The AEE implies that the proposed ESC measures will ensure the proper management of any potential sediment related effects and that any resulting effects will be less than minor.

An assessment of the technical aspects of the earthworks and sediment control methodology has been undertaken and provided the earthworks are completed in accordance with the application documents, all supporting information, and on any additional recommendations as noted above, I concur with the applicant's assessment and consider that the potential effects associated with sediment discharge will be appropriately managed.

However, if the applicant does not adopt my recommendations as noted above, and in particular, the recommendation for provision and implementation of an Adaptive Management Plan, 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 Adaptive Management Plan.

5.0 RECOMMENDATION AND CONDITIONS

5.1 Recommendation

The assessment in this memo identifies that the proposal is not supported in its current form, however, provided the applicant adopts the recommendations noted above, in particular the recommendation for preparation and implementation of an adaptive management plan (AMP), I can support the proposal. The applicant has largely acknowledged and accepted the remaining recommendations and intends to amend their proposed conditions accordingly. Provided this is the case, the remaining aspects of the proposal considered by this memo could be granted consent, subject to recommended conditions, for the following reasons:

1. Subject to the imposition of consent conditions, it is considered that the potential sediment related effects on the receiving environment will be appropriately managed.

2. The sensitivity of the receiving environment to the adverse effects of potential sediment discharges will not be compromised given the expected level of the discharge and the application of suitable control technologies.

5.2 Duration of Consent

As noted above, I have recommended a standard duration of 10-years for the permit to allow a contingency against any unforeseen delays in the commencement of works.

5.3 Conditions

The conditions below include a standard suite of conditions relating to maintenance and monitoring of erosion and sediment controls and the wider site, the protection of the surrounding environment and progressive stabilisation of the site. Where appropriate, I have also incorporated the applicant's proposed conditions into the set below. The inclusion of these conditions is consistent with similar large scale earthworks projects granted consent for in the Auckland Region and will ensure that the effects of the proposed works will be appropriately managed.

The following general conditions are recommended:

X1 Prior to the commencement of earthworks activity for each stage, a finalised Erosion and Sediment Control Plan (ESCP) prepared in accordance with Auckland Council Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 2 (GD05), must be submitted to the Council for written certification. No earthworks activity on the subject site must commence until the Council has certified that that the ESCP for each stage satisfactorily meets the requirements of GD05. The plan must contain sufficient details to address the following matters:

a. Specific erosion and sediment control measures for the earthworks (location, dimensions, capacity), including the location of any sediment retention ponds (SRPs), decanting earth bunds, super silt fences, silt fence, clean and dirty water diversion bunds and stabilised construction entrances;
b. supporting calculations and design drawings, as necessary, including confirmation that all SRPs will be designed and constructed based on a 3% criteria ($3m^3$ of volume / $100m^2$ of contributing catchment);
c. details of construction methods;
d. monitoring and maintenance requirements;
e. catchment boundaries and contour information as necessary; and,
f. details relating to the management of exposed areas (e.g. aggregate stabilisation, mulching).

Advice Note: In the event that minor amendments to the ESCP are required, any such amendments must be limited to the scope of this consent. Any amendments which affect the performance of the ESCP may require an application to be made in accordance with section 127 of the RMA. Any minor amendments must be provided to the Council prior to implementation to confirm that they are within the scope of this consent.

Duration

X2 Resource consents LUC604##### must expire 10-years from the date of issue unless it has been surrendered or cancelled at an earlier date pursuant to the RMA.

Pre-commencement

X3 Prior to the commencement of earthworks activity on the subject site, a Chemical Treatment Management Plan (ChTMP) must be prepared in general accordance with Auckland Council Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 2 (GD05) and submitted to the Council for certification. No earthwork activities must commence until certification is provided by the Council that the ChMP meets the requirements of GD05, and the measures referred to in that plan for the sediment retention ponds have been put in place. The plan must include as a minimum:

a) Specific design details of a chemical treatment system based on a rainfall activated methodology for the site's sediment retention ponds, decanting earth bunds, or any other approved impoundment devices;
b) Monitoring, maintenance (including post storm) and contingency programme (including a record sheet);
c) Details of optimum dosage (including assumptions);
d) Results of initial chemical treatment trial;
e) A spill contingency plan; and
f) Details of the person or bodies that will hold responsibility for long term operation and maintenance of the chemical treatment system and the organisational structure which will support this system.

Advice Note: In the event that minor amendments to the ChTMP are required, any such amendments must be limited to the scope of this consent. Any amendments which affect the performance of the ChTMP may require an application to be made in accordance with section 127 of the RMA. Any minor amendments should be provided to the Council prior to implementation to confirm that they are within the scope of this consent.

X4 The sediment retention ponds, decanting earth bunds and any other approved impoundment devices utilised as part of the earthworks must be chemically treated in accordance with the certified Chemical Treatment Management Plan (ChTMP).

X5 Prior to the commencement of bulk earthworks activities on the subject site, and again, prior to the commencement of "post-construction" earthworks activities for subdivision, the consent holder must hold a pre-start meeting that:

- is located on the subject site;
- is scheduled not less than five days before the anticipated commencement of earthworks;
- includes representation from Auckland Council compliance monitoring officer[s]; and

- includes representation from the contractor who will undertake the works.

The meeting must discuss the erosion and sediment control measures and must ensure all relevant parties are aware of and familiar with the necessary conditions of this consent.

The following information must be made available at the pre-start meeting:

- Timeframes for key stages of the works authorised under this consent;
- Resource consent conditions;
- The finalised Erosion and Sediment Control Plan required by condition **X1**;
- In the case of Civil-Construction earthworks for Subdivision, the final ESCP specific to that stage of earthworks, as required by condition **X12**; and
- The Chemical Treatment Management Plan required by condition **X3**.

*Advice Note: To arrange the pre-start meeting required by Condition (**X5**) please contact the Council on monitoring@aucklandcouncilgovt.nz, or 09 301 01 01. The conditions of consent should be discussed at this meeting. All additional information required by the Council should be provided 2 days prior to the meeting.*

X6 Within ten (10) working days following implementation and completion of the specific erosion and sediment control works required by the ESCPs under condition **X1 or X12**, and prior to the commencement of earthworks activity on the subject site, or within the specific post-construction subdivision stage, a suitably qualified and experienced person must provide written certification to the Council that the erosion and sediment control measures have been constructed and completed in accordance with the erosion and sediment control plans required by condition **X1** or **X12**. Written certification must be in the form of a report or any other form acceptable to the Council.

Advice Note: Suitable documentation for certification of erosion and sediment control devices, can be obtained in Appendix C of Auckland Council Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 2 (GD05): Erosion and Sediment Control construction quality checklists.

X7 The maximum area of exposed earth at any one time throughout the duration of the project when exercising this consent must be no greater than 30 hectares.

Advice note: The 30ha limit applies to "bulk" earthworks only and not to "post-construction" subdivision earthworks.

X8 Earthworks at the site must be progressively stabilised against erosion throughout the earthworks phases of the project and must be sequenced to minimise the discharge of contaminants to surface water in accordance with the certified Erosion and Sediment Control Plan(s).

Advice Note: Stabilisation measures may include:

- *the use of waterproof covers, geotextiles, or mulching*
- *top-soiling and grassing of otherwise bare areas of earth*
- *aggregate or vegetative cover that has obtained a density of more than 80% of a normal pasture sward*

It is recommended that you discuss any potential measures with the Council's monitoring officer who may be able to provide further guidance on the most appropriate approach to take. Alternatively, please refer to Auckland Council Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 2 (GD05).

X9 The operational effectiveness and efficiency of all erosion and sediment control measures shown on the Erosion and Sediment Control Plans required under conditions **X1** and **X12**, must be maintained throughout the duration of earthworks activity, or until the site is permanently stabilised against erosion. A record of any maintenance work must be kept and be supplied to the Council on request.

X10 Earthworks must be managed to avoid deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the subject site. In the event that such deposition does occur, it must immediately be removed. In no instance must roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.

Advice Note: In order to prevent sediment laden water entering waterways from the road, the following methods may be adopted to prevent or address discharges should they occur:

- *provision of a stabilised entry and exit(s) point for vehicles*
- *provision of wheel wash facilities*
- *ceasing of vehicle movement until materials are removed*
- *cleaning of road surfaces using street-sweepers*
- *silt and sediment traps*
- *catchpit protection*

In no circumstances should the washing of deposited materials into drains be advised or otherwise condoned. It is recommended that you discuss any potential measures with the Council's monitoring officer who may be able to provide further guidance on the most appropriate approach to take. Alternatively, please refer to Auckland Council Guideline Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 2 (GD05).

X11 Immediately upon abandonment or completion of earthworks on the subject site all areas of bare earth associated with the works must be permanently stabilised against erosion to the satisfaction of the Council.

Advice Note: Should the any earthworks be completed or abandoned, bare areas of

earth associated with the works must be permanently stabilised against erosion. Measures may include:

- *The use of mulching or natural fibre matting.*
- *Top-soiling, grassing and mulching of otherwise bare areas of earth.*
- *Aggregate or vegetative cover that has obtained a density of more than 80% of a normal pasture sward.*

The on-going monitoring of these measures is the responsibility of the consent holder. It is recommended that you discuss any potential measures with the Council's monitoring officer who will guide you on the most appropriate approach to take. Alternatively, please refer to Auckland Council Guidance Document 005, Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 2 (GD05).

X12 Prior to the commencement of any Civil-Construction or Subdivision earthworks at the site, an Erosion and Sediment Control Plan, specific to that stage of subdivision, must be prepared in accordance with Auckland Council Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 3 (GD05), and submitted to the Council for written certification. Earthworks activity on that stage of the site must not commence until the Council has certified that that the ESCP satisfactorily meets the requirements of GD05. The plan must contain sufficient details to address the following matters:

a. Specific erosion and sediment control measures for the earthworks (location, dimensions, capacity) including the location of any sediment retention ponds, decanting earth bunds, super silt fences, silt fences, clean and dirty water diversion bunds and stabilised construction entrances, in accordance with GD05;
b. supporting calculations and design drawings, as necessary;
c. details of construction methods;
d. monitoring and maintenance requirements;
e. catchment boundaries and contour information as necessary; and,
f. details relating to the management of exposed areas (e.g. grassing, mulching).

Advice Note: In the event that minor amendments to the ESCP are required, any such amendments must be limited to the scope of this consent. Any amendments which affect the performance of the ESCP may require an application to be made in accordance with section 127 of the RMA. Any minor amendments must be provided to the Council prior to implementation to confirm that they are within the scope of this consent.

Adaptive Management

X13 No less than 20 working days prior to the commencement of any earthworks at the subject site, an Adaptive Management Plan (AMP) must be prepared in general accordance with Auckland Council's guideline document "Erosion and Sediment Control Adaptive Management Plan Discussion Document", July 2020, and provided

to the Council for written certification. The AMP must address monitoring requirements and changes to management procedures in response to the results of monitoring, and must include but is not limited to, the following details:

(a) Preparation and provision of a Freshwater Baseline Report prepared by a suitably qualified and experienced Ecologist and/or Water Quality Scientist and provided to the Council for written certification, no less than 20 working days prior to any earthworks or streamworks commencing. The purpose of the Freshwater Baseline Report is to confirm pre-construction baseline environmental conditions of the receiving environment and include pre-construction in stream monitoring results.

The Freshwater Baseline Report must include as a minimum, information on the following matters:

i. sediment quality such as description of sediment inputs, transport, substrate composition and embeddedness.

j. water quality measurements such as total suspended solids (TSS) and turbidity.

k. actual and potential inanga (Galaxias maculatus) spawning habitat.

l. identify the pre-construction condition of any Erosion Prone Streams against which to measure construction effects and possible mitigation measures.

m. The presence of any threatened aquatic species or habitat, susceptible to sediment discharge.

(b) Details of weather forecasting and monitoring, including implementation of an onsite rain gauge with a telemetered system that provides text and email notifications;

(d) Trigger levels for water quality and rainfall events (actual and forecasted events);

(e) Details of an ongoing monitoring and sampling regime for the receiving environment, including turbidity and / or TSS monitoring downstream within the receiving environment;

(f) An automated monitoring regime (inlet and outlet TSS and / or turbidity) on at least one sediment retention pond throughout the duration of earthworks at the site, and a manual sampling regime for all remaining sediment retention ponds and decanting earth bunds;

(h) Management responses when a trigger level is exceeded, including the ability to reduce exposed area; and

(i) Reporting to Council.

Advice Note: Turbidity results can be substituted providing a correlation between TSS and turbidity has been established.

Any proposed revisions to the AMP must be submitted to the Council for written certification prior to formalising and implementing the revised Plan.

X14 An appropriate efficiency of sediment retention ponds and/or decanting earth bunds should be established where efficiency measurements are only activated when inlet samples indicate high sediment loadings. i.e., the efficiency of a pond need not be scrutinised when both inlet and outlet samples show low TSS / NTU.

Advice Note: Further guidance on preparation of an Adaptive Management Plan can be found in Auckland Council guidance document - Erosion and Sediment Control Adaptive Management Plan Guidance Document, Report to support preparation of Adaptive Management Plans, RC 3.2.22, July 2020.

X15 All monitoring and management procedures as detailed within the certified Adaptive Management Plan required by condition **X13**, and any subsequent revisions, must be implemented on an ongoing basis throughout the duration of all earthworks activities on site.

Advice Note: The AMP is a live document, and updates are expected to address unforeseen circumstances or changes in the earthworks methodology as the site responds though its adaptive monitoring regime, to ensure sediment discharges are minimised and the potential for significant adverse effects are avoided.

X16 An earthworks area which has been stabilised as a result of a trigger level exceedance or a management response as defined and required by the certified Adaptive Management Plan (required under condition **X13**) and any subsequent revisions approved by the Council, can only be re-opened for earthworks on the written approval of the Council.

X17 As a result of observed inefficiencies upon site inspection or identified within the site reporting, Council may request that the Adaptive Management Plan be updated to address those inefficiencies. If such a request is made by the Council, the revised plan must be submitted to the Council within 5 working days of the request. The updated AMP must not be implemented without the Council's approval.

Seasonal Restriction

X18 No earthworks on the subject site must be undertaken between 01 May and 30 September in any year, without the submission of a 'Request for winter works' for approval by the Council. All requests must be renewed prior to the approval expiring and no works must occur until written approval has been received from the Council. All winter works will be re-assessed monthly or as required to ensure that adverse effects are not occurring in the receiving environment and approval may be revoked by Council upon written notice to the consent holder.

Streamworks & Wetland Management

X19 Prior to the commencement of any earthworks within a specific stage on site, the consent holder must delineate and establish an exclusion fence, setback 10m from any natural inland wetlands within that stage. The purpose of the exclusion fence is to

exclude construction machinery or spoil from accidental incursion to the natural wetland areas and to help protect them from the effects of earthworks.

Advice Note: A 'day-glow' barrier mesh or 'pigtail' fence/wire or rope would be sufficient for this purpose.

X20 The conditions of this consent may be reviewed every two years from the date of granting pursuant to section 128 of the RMA, by giving notice pursuant to section 129 of the RMA, for the following purposes:

a. To deal with any significant adverse effect on the environment arising or potentially arising from the exercise of the consent and which was not apparent at the time of granting the consent.

b. In the case of contamination, to require the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment.

c. In the case of earthworks, to alter monitoring requirements as a result of previous monitoring outcomes, and/or in response to changes to the environment and/or hydro-geological knowledge.

d. To deal with any adverse effect on the environment arising or potentially arising from the exercise of this consent and in particular effects on: water quality; sediment transport; and functioning of natural ecosystems; through altering or providing specific performance standards.

6.0 REVIEW

Memo prepared by:

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Specialist Unit, Resource Consents

Date: 19 June 2025

Technical memo reviewed and approved for release by:

Fiona Harte

Team Leader, Earth, Streams and Trees Team
Specialist Unit, Resource Consents

Date: 19 June 2025