

Earthworks Assessment of the Notice of Requirement Application for Wellington Airport

8 April 2021

Service Request No: 462159

Site Address: **Wellington International Airport**

Introduction:

My name is John Davies. I am the Earthworks Engineer in the Council's City Consenting and Compliance Unit. I am an engineering geologist and a Member of Engineering New Zealand. I have a BSc in Geology and a Masters in Mining Engineering majoring in geomechanics. I have been in my current role with the Council for over 5 years, following 12 years working in the mining industry.

As Earthworks Engineer my main role is to assess individual resource consent applications and provide verbal and written advice to the resource consent planner on earthworks issues. I recommend requests for further information from the applicant, and conditions to be used in the resource consent.

I confirm that I am familiar with the Code of Conduct for expert witnesses contained in section 7 of the 2014 Environment Court Practice Note and agree to abide by the principles set out therein.

The proposal is for a Notice of Requirement for the eastern extension of the Wellington City Airport which is currently the occupied by the Miramar Links Golf Course. The proposal will include significant earthworks for the excavation of the golf course area, realignment of Stewart Duff Drive and excavation of south-eastern slopes. Included in this report is an earthworks review for the proposed eastern extension and a review of the overarching earthworks conditions for the Airport Precinct Notice of Requirement.

Legislative Requirements (i.e. District Plan / Standards / RMA):

The following sections of Council's District Plan has been considered as part of the earthworks assessment.

Chapter 11A. Airport Precinct Rules:

11.1.1.3 Dust

11.1.1.3.1 Activities must not create a dust nuisance. A dust nuisance will occur if:

- there is visible evidence of suspended solids in the air beyond the site boundary; or
- there is visible evidence of suspended solids traceable from a dust source settling on the ground, building or structure on a neighbouring site, or water.

And

Chapter 30 has been considered as the majority of the earthworks will occur in the golf course area. And as such Section 11B of Chapter 11 of Council District Plan is considered applicable. It reads: “[The following rules apply in the Golf Course Area. Rules for Earthworks (Chapter 30), Contaminated Land (Chapter 32) and Heritage (Chapter 21) may also apply.”

Chapter 30 Earthworks Rules

District Plan 30.1.1 Earthworks in the:

- (i) Residential Area (except the Urban Coastal Edge shown on Map 62 and Map 63;
- (ii) Centres and Business Areas (except the Churton Park Concept Area as shown in Appendix 1 to this chapter);
- (iii) Institutional Precincts;
- (iv) Rural Area (excluding the Ridgelines and Hilltops Overlay); and
- (v) Open Space A and C Areas;

are Permitted Activities provided that they comply with the following conditions:

30.1.1.1(a)	
(i) The cut height or fill depth does not exceed 1.5m measured vertically;	30m
(ii) The cut or fill is not on an existing slope angle exceeding 34 degrees;	Will Exceed
(iii) The cut height or fill depth does not exceed the distance from the nearest site boundary, building or structure (above or below ground) measured on a horizontal plane;	May Exceed
(iv) The area to be cut or filled does not exceed 250m ²	Will Exceed
30.1.1.2	
The cut or fill is no closer than the following (measured on a horizontal plane) to a river (including streams), a wetland or the coastal marine area:	
• Rural Area 20m	
• Centres and Business Areas adjoining the Porirua Stream 10m	
• All other areas 5m	Complies
30.1.1.3	
The cut or fill is not in a Hazard (Flooding) Area;	Complies
30.1.1.4	

There is no visible evidence of settled dust beyond the boundaries of the site.	Can Comply
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30.1.1.5	
(i) The cut or fill is no closer than 12m to the closest visible edge of the foundation of a high voltage transmission line support structure;	Complies
(ii) earthworks do not reduce the clearance distance from conductor to ground to less than 10m within 12m of the centreline of an electricity transmission line (as shown on the Planning Maps).	Complies

Assessment:

Geotechnical Risk Assessment

A geotechnical assessment has been supplied as part of the application. the geotechnical assessment was supplied by BECA Ltd (dated 20 Sep 2020, reference 3324206). The assessment is at a high level but does identify the key geotechnical aspects for the proposed extension. These include, retaining of the cut slopes, softening of the visual impact of any retaining, liquefaction considerations, fault hazard and flood hazards risks. Overall, the report is considered supportive of the extension provided further geotechnical investigations and design work is undertaken as per the report's recommendations.

A requirement for further geotechnical report has been included in the recommended conditions below as well as construction monitoring by a suitably qualified geotechnical professional, and the development of an Earthworks and Construction Management Plan. The combination of the controls required in the conditions is considered to reduce the geotechnical risk to an acceptable level for both the construction phase and final earthworks design.

Erosion, Dust and Sediment Controls

Typically, the controls required to minimise the risk posed by erosion, sediment and dust loss from the site are documented in an Earthworks and/or Construction Management Plan (ECMP).

The area of earthworks will exceed the threshold under rule 30.1.1.1, which is a general indication that there may be adverse effects from the earthworks activity during construction. An ECMP is considered to be required and is included as part of

the consent conditions below. This is in line with the suggested conditions from the applicant and should be provided in advance of any earthworks commencing on site.

Typically, these management plans are developed in conjunction with the consultant engineers and earthwork contactors and are typically provided after consents are granted, but at least 10 working days prior to earthworks starting. However, given the scale of the earthworks it is recommended this lead time be extended to 20 days. The risk of erosion, sediment and dust loss is considered to be adequately addressed with development of typical industry controls required as part of the ECMP conditions below.

Visual Amenity

The proposed earthworks will exceed the of earthworks rule thresholds for area of earthworks and cut height. Therefore, an assessment on the visual impact is typically required. It is understood that the proposal is to be reviewed by landscape architect with conditions of the consent developed accordingly. No visual impact assessment is included within this report.

Transport of Material

The volume of earthworks material is expected to considerably exceed the earthworks thresholds typically applied to larger earthworks projects. A transport engineer will advise the possible construction effects of this material being relocated with conditions developed accordingly. No traffic impact assessment is included within this report.

Submitter Queries

The following are comments that submitters have raised around potential earthworks effects and responses to these concerns.

Name	No	Comment	Response
Lynn Cadenhead (WCC Environmental Reference Group)	93	<p>As depicted in the diagrams provided in the visual supplement, the Airport buffer wall and the height(30metres) and length(500metres) of cutting into the hillside will have negative and long- term visual impact. Given that the visual effects would be significant, there is no evidence that WIAL has considered strategies to minimise the effect of both the height and length or to maximise the degree of “natural” treatment. This cutting/wall is significantly out of scale with its surroundings, and violates the WCC District Plan requirements for height planes in the precinct.³</p> <p>In addition, the WIAL application does not give the volume of earthworks being considered, account for truck movements associated with this volume of earthworks or indicate where excess material is going to be deposited or stored.</p>	<p>Refer to landscape assessment and suggested conditions.</p> <p>Volume given in Geotech report, although there may be some variation once the final geotechnical design has been confirmed. Approximately 590,000m³. Traffic engineer to advise on.</p>
Guardians of the Bays (GOTB) and Tim Jones	107 & 280	<p>8.1 GOTB is concerned at the lack of information in the WIAL AEE on construction effects. Only generic information is provided from WIAL on the construction effects. There is:</p> <p>a. No calculation of the volume of earthworks being considered</p> <p>b. No account of earthwork and construction truck movements</p>	<p>8.1 a – as above 590,000m³.</p> <p>8.1b & c – Traffic engineer to advise on.</p> <p>8.1d – No information provided re-storage of material. Any temporary storage of</p>

	<p>c. No account of the time of these truck movements</p> <p>d. No account of where earthworks are going to be deposited or stored. This is in particular a concern to GOTB as in the past it has been moted that any proposed earth would be used in the extension of the airport runway south into Lyall Bay.</p> <p>8.2 It is only WIAL’s Appendix F Landscape and Visual Effects (Landscape Modification 6.3) that provides information on the 12.6ha of the southern end of the Miramar Golf Course modifications that are “significant modification in the form of earthworks and retaining walls to create a flat aircraft taxi and operational area”.</p> <p>8.3 We submit that there will be significant nuisance from earthwork noise and dust to the residents that surround the East Side Designation.</p> <p>8.4 We submit that the construction traffic requirements of this project should be assessed on the basis of a “worst case scenario” that may eventuate. Construction traffic both day and at night has been an ongoing issue with neighbouring residents of WIAL.</p> <p>8.5 We submit that WIAL has not taken into account the scope of earthworks and associated embodied energy of the taxiway, aprons and large retaining wall into its carbon emissions budgets.</p> <p>8.6 We submit that the applicant's construction traffic movements out of the WIAL East Side Designation will have significant adverse effects on matters including, but not limited to road safety, public health, amenity values, economic productivity, travel times and the predictability of travel times, the</p>	<p>material must be managed as part of the Earthworks Management Plan.</p> <p>8.2 – Landscaping Architect to advise on.</p> <p>8.3 Earthworks noise to be addressed acoustic advice. Potential dust loss from site to be controlled with mitigation methods required as part of the conditions of consent below. ECMP Conditions.</p> <p>8.5 - Outside of the scope of this assessment.</p> <p>8.6 - Outside of the scope of this assessment.</p>
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		cost of road maintenance, and the attractiveness of Wellington City as a place to live, work and visit.	
Helena Tihanyi	115	Fault line	The potential risks from a fault line rupture event and seismic ground shaking is to be considered as part of the geotechnical report required in the conditions below.
HERITAGE NEW ZEALAND	118	<p>It will be necessary to undertake an archaeological assessment of the affected area prior to any ground disturbance work in the golf course area. This should be a requirement included in the designation conditions.</p> <p>It would be most appropriate to include a condition requiring an archaeological assessment to be undertaken and a report submitted to Council as part of the Earthworks and Construction Management Plan. The Archaeological Assessment Report should include findings of archaeological research, field surveys and any other relevant information, and include recommendations to be incorporated into the Earthworks and Construction Management Plan.</p>	I am in general agreement with this recommendation; however, this condition is best developed into a standalone condition required prior to an earthworks. This has been included into the recommended conditions below.
Waka Kotahi	213	The bulk earthworks and construction activities of the East Side Area and how construction traffic effects on SH1 and the wider transport network will be managed.	Traffic engineer to advise on.
James Fraser	255	We reject the premise that more and more asphalt for more roading or aircraft parking will deliver anything but more aircraft noise, traffic congestion, disruption from construction and earthworks that will diminish the quality of life for residents of Wellington while ignoring the Climate Emergency	Traffic engineer to advise on.
Powerco Ltd	229	Correspondence 23 March 21. In	

	<p>light of your request, WIAL have amended proposed condition 5 on our NoR as follows:</p> <p>Prior to the commencement of any project which involves earthworks or construction activities the Requiring Authority shall prepare or update a Network Utilities Management Plan for the project.</p> <p>The purpose of the Plan shall be to inform the relevant network utility providers that enabling work, design, and construction of any project takes account of (and includes measures to address) the safety, integrity, protection (or where necessary) relocation of exiting network utilities.</p> <p>The Plan shall also include the location of any existing underground network utilities within the project area; a requirement to consult with any relevant network utility provider and a requirement to inform all construction personnel, including contractors of the presence and location of any existing network utilities which traverse, or are in close proximity to the project area as well as any restrictions in place in relation to those existing network utilities.</p>	<p>Condition adopted and include in the recommended main site conditions below.</p>
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Applicants Suggested Conditions for the Eastern Extension

The applicants suggested conditions have been reviewed however with the following conditions have been specifically developed from Council’s standard conditions and are recommended for controlling the risks associated with the proposed earthworks. It is also noted that the conditions recommended below are similar to those applied to the recent Notice of Requirement for the Omaroro Reservoir.

I have also reviewed the suggested conditions for the main site of the Airport Precinct and have recommended changes to these conditions so that they are more in line with Council's current District Plan thresholds for earthworks.

Conclusion:

The proposal is supported from an earthworks point of view, as it is expected that standard industry methodologies will be implemented to minimise the potential effects from the proposed earthworks.

The following conditions/advice notes are suggested to ensure that standard earthwork methodologies are implemented:

Recommended Conditions for the Eastern Extension

Geotechnical Assessment Report

1) A geotechnical assessment report of the site and proposed development must be submitted to the Council's Compliance Monitoring Officer for certification, at least 20 working days prior to any work commencing on site. The geotechnical assessment report must be undertaken by an experienced 'Geotechnical Professional' and as a minimum should contain, but not be limited to, the following;

- A review of all available geotechnical reports for the site including the geotechnical report by BECA Ltd (dated 20 Sep 2020, reference 3324206)
- A summary of the ground conditions with a proposed geological model
- An assessment of the geotechnical hazards and risks including both seismic and elevated watertable scenarios for slope stability analysis
- A geotechnical analysis of the design concept and resulting recommendations that will mitigate any potential adverse effects.

The purpose of the geotechnical assessment is to ensure that appropriate geotechnical hazards have been identified and to ensure the geotechnical soundness and resilience of the earthworks.

A 'Geotechnical Professional' is defined as a Chartered Professional Engineer (CPEng) with specialist geotechnical skills and experience in the design, construction and monitoring of excavations in similar ground conditions as the proposed development.

Archaeological Assessment Report

- 2) An Archaeological Assessment Report of the site and proposed development must be developed and submitted to the Council's Compliance Monitoring Officer for certification, at least 20 working days prior to any work commencing on site. The Archaeological Assessment Report should be undertaken by an experienced Archaeologist and as a minimum should contain, but not be limited to, the following;
 - findings of archaeological research,
 - field surveys and any other relevant information,
 - and include recommendations to be incorporated into the Earthworks and Construction Management Plan.

Geotechnical Professional

- 3) A Geotechnical Professional must be engaged for the detailed design and construction phases of the project.

A 'Geotechnical Professional' is defined as a Chartered Professional Engineer (CPEng) with specialist geotechnical skills and experience in the design and construction of earthworks and retaining works similar to those proposed and in similar ground conditions.

- 4) The name and the contact details of the Geotechnical Professional must be provided to the Council's Compliance Monitoring Officer, at least 20 working days prior to any work commencing.
- 5) The Geotechnical Professional will monitor the earthworks. The Geotechnical Professional will advise on the best methods to ensure:
 - the stability of the land

- the design and construction of the temporary and permanent earthworks, retaining structures and drainage, are consistent with the recommendations in the geotechnical assessment by BECA Ltd (dated 20 Sep 2020, reference 3324206) and the geotechnical report as part of condition (1) above.

The Consent Holder must follow all the advice of the Geotechnical Professional in a timely manner.

Construction Supervisor

- 6) A suitably experienced Construction Supervisor must be engaged during the detailed construction phase of the project.

A 'Construction Supervisor' is defined as a person with skills and experience in the construction of excavation and retaining works similar to those proposed and in similar ground conditions.

- 7) The name and the contact details of the Construction Supervisor must be provided to the Council's Compliance Monitoring Officer, at the time the person is appointed and at least 20 working days prior to any work commencing.
- 8) Daily earthworks and retaining works construction must be directed by the Construction Supervisor.

Earthworks and Construction Management Plan (ECMP)

- 9) An Earthworks and Construction Management Plan (ECMP) must be developed by the Consent Holder and submitted to the Council's Compliance Monitoring Officer for certification, at least 20 working days prior to any work commencing on site.

The ECMP must be consistent with the finding and recommendations of the geotechnical assessment by BECA Ltd (dated 20 Sep 2020, reference 3324206) and the geotechnical report required as part of conditions (10) and the

archaeological assessment report (2) above, and will include, but is not limited to, the following:

Stability Controls

- i. Measures to ensure earthworks and retaining structures are constructed incrementally to maintain stability of all the slopes
- ii. The maximum height increment of earthworks before the structural support to that earthwork is put in place
- iii. Other measures to ensure earthworks and retaining structures remain stable, including measures to limit the exposure of unretained earthworks at any one time
- iv. Maximum batter angles for both temporary and long-term cuts and fill

Erosion and Sedimentation Controls

- v. An illustrated plan that records the key features of the ECMP (including the approved earthworks plan)
- vi. Details of any sediment retention ponds, design, capacity, baffles, batter angles, monitoring, forebay design and calculations of runoff
- vii. Details of and chemical flocculation systems and discharge parameters
- viii. A description of the broad approaches to be used to prevent erosion, and minimise problems with dust and water-borne sediment
- ix. Measures to limit the area of earthworks exposed to the weather at any one time (sources of dust and sediment)
- x. Stabilisation of the site entrance(s) to minimise the tracking of earth by vehicles onto the adjoining roads
- xi. Detail of the use of diversion bunds/cut-off drains, as required, to minimise stormwater entering the site and discharging onto earthworks areas where it can pick up sediment and not discharged on to sloping ground
- xii. The type and location of silt fences to control water-borne sediment
- xiii. Methods for protecting stormwater sumps from the infiltration of water-borne sediment
- xiv. Stabilisation of soil or other material that is stockpiled on the site or transported to, or from, the site, to prevent dust nuisance or erosion by rain and stormwater (creating water-borne sediment)

Dust Suppression

- xv. Limiting the vehicle speed on site to 10 kilometres an hour
- xvi. Assessing weather and ground conditions (dryness and wind) before undertaking potentially dusty activities
- xvii. Ensuring that measures such as water carts and sprinklers are in place and ready for use at the start of the day when dry weather is expected
- xviii. Ceasing all dust generating activities if site dust is observed blowing beyond the site boundary
- xix. Stabilising exposed areas that are not being worked on, using mulch, hydroseeded grass, chemical stabilisers or other similar controls
- xx. Ensuring a 24-hour contact is available, with details posted in clear view at each main entrance
- xxi. Providing dust prevention monitoring records to the Compliance Monitoring Officer on a 3 monthly basis after commencement of earthworks to ensure on-going compliance with this

Management of Controls

- xxii. The methods for managing and monitoring the ECMP controls
- xxiii. Nomination of a site person responsible for the implementation and administration of the ECMP.

The ECMP must be reviewed by the Geotechnical Professional prior to being submitted to Council, to ensure that the methodology is in accordance with the geotechnical report by BECA Ltd (dated 20 Sep 2020, reference 3324206) and the geotechnical report as part of condition (1) above. The review must be provided to the Council's Compliance Monitoring Officer when the final ECMP is filed for certification.

- 10) No work may commence on site until the ECMP is certified by the Council's Compliance Monitoring Officer. The earthworks and associated work must be carried out in accordance with the certified ECMP.
- 11) Any amendments to the ECMP once work starts must be approved by the following:

- The Geotechnical Professional, and
And Certified by the Council's Compliance Monitoring Officer.

- 12) The erosion, dust and sediment control measures put in place must not be removed until the site is remediated to the satisfaction of the Council's Compliance Monitoring Officer. 'Remediated' means the ground surface of the areas of earthworks have been stabilised (no longer producing dust or water-borne sediment), and any problems with erosion, dust or sediment that occur during the work have been remedied.

Note:

If necessary, the Council's Compliance Monitoring Officer may require changes to the implementation of the ECMP, to address any problem that occurs during the work or before the ground surface is stabilised.

- 13) A copy of the certified ECMP must be held on site throughout the duration of the earthworks and must be made available on request.

Accidental Discovery Protocol

- 14) If during any site works involving excavation any kōiwi (human skeletal remains), ovenstones, worked stones, middens, charcoal or other Māori cultural material are unearthed, the consent holder must notify Iwi authorities to allow them to inspect the site. If as a result of this investigation there is a need for an appropriate ceremony, the iwi authorities' representative(s) will arrange for that process at the consent holder's expense. All materials discovered will be handled and removed by the Iwi authorities' representative(s) responsible for the tikanga appropriate to their removal and preservation, or re-interment.

Certification of Bulk Earthworks

- 15) The Consent Holder must provide the Council's Compliance Monitoring Officer with an As-built Plan of the completed earthworks. The plan must meet the requirements of A.7 and B.18 of the Code of Practice for Land Development 2012 and as minimum include the following:

- ii. Extent cut and fill and depth of fill in the form of lines joining all points of equal depth of fill at appropriate vertical intervals of 1 metre or as appropriate
- iii. Plans shall also show the type of fill material and any areas where buildings or foundations will require specific design together with any fill areas of low density not complying with this Code
- iv. The position, type and size of all subsoil drains and their outlets shall also be shown
- v. Full sized As-Built drawings are to be supplied in AutoCAD (*.dxf or *.dwg), Microstation (*.dgn) or other agreed electronic format of all earthworks.
- vi. All co-ordinates shall be in terms of the New Zealand map grid, NZTM (New Zealand Transverse Mercator), to $\pm 0.1\text{m}$ for all earthworked areas.

The plan must be provided within one month of the earthworks / stage of the earthworks being completed.

- 16) A Geotechnical Completion Report (GCR) must be supplied by a suitably experienced Geotechnical Professional, to the Council's Compliance Monitoring Officer within one month of the earthworks being completed. The document must:

- i. State the earthworks have been completed in accordance with the earthworks scheme plans, approved under the resource consent;
- ii. Provide evidence that the land is suitable for the intended use including its ability to support services infrastructure such as roading, drainage, water supply and energy supply;
- iii. Provide details of any changes that were necessary to address geotechnical or engineering problems encountered during the earthworks;
- iv. Confirm the completed earthworks reflect current engineering guidelines and standards including, but not limited to, NZS4431:1989;
- v. A statement of professional opinion that any unretained cuts and/or slopes are considered stable with respect to the future use, and that the risk of instability is low as reasonable practicable
- vi. A tabulated list of all test data and results that corresponds with test sites shown on the As-built plan in condition (...) above;

Note: It is expected that this data will form the basis for certification of each allotment for foundation requirements.

Producer Statements

- 17) A copy of the producer statement 'PS4 – Construction Review' and its accompanying documents for structures required for the stabilisation of earthworks and, prepared for the associated building consent process, must be provided to the Council's Compliance Monitoring Officer within one month of the structures being completed.

Grassing of Earthworks

- 18) All exposed areas of earthworks, unless otherwise built on and/or stabilised, are to be grassed or re-vegetated within 1 month of completing each stage of the earthworks, to a level of establishment satisfactory to Council's Compliance Monitoring Officer.

The Council's Compliance Monitoring Officer may agree to a longer period than 1 month, if appropriate, and will approve it in writing.

- 19) If construction works at the site cease for a period of greater than 2 months, the exposed areas of earthworks must then be stabilised to reach a level of establishment satisfactory to the Council's Compliance Monitoring Officer.

General Earthworks Conditions

- 20) Run-off must be controlled to prevent muddy water flowing, or earth slipping, onto neighbouring properties or the legal road. Sediment, earth or debris must not fall or collect on land beyond the site or enter the Council's stormwater system. Any material that falls on land beyond the site during work or transport must be cleaned up immediately (with the landowner's permission on land that isn't public road). The material must not be swept or washed into street channels or stormwater inlets or dumped on the side of the road.

Note: As a minimum, 100 mm clarity is required to allow water to be discharged offsite. If clarity is less than 100mm then the water is considered to be muddy and must be captured and treated on site.

- 21) Dust created by earthworks, transport and construction activities must be controlled to minimise nuisance and hazard. The controls must be implemented for the duration of the site works and continue until the site stops producing dust.

Recommended Conditions for the Airport Designation (Main Site)

1. An outline plan in accordance with section 176A(2) of the Resource Management Act 1991 (“**RMA**”) need not be submitted for any works within a Precinct or at a location if, where relevant, the following criteria are met:

Airport Precinct / Location and Outline Plan Criteria

Condition Sub-Reference	Precinct / Location	Activity / Criteria
A	Rongotai Ridge Precinct; or (Delete) All Precincts	Any earthworks shall achieve the following: <ol style="list-style-type: none"> i. The existing ground level shall not be altered by more than 2.5 metres measured vertically; and ii. The total area of ground surface disturbance shall be less than 250m²; and iii. The earthworks shall not be undertaken on slopes of more than 34°. (reduced from 45°)

2. Notwithstanding Condition 1, in accordance with section 176A(2) of the RMA an outline plan need not be submitted for works and activities associated with the following: ...

~~h) Earthworks, other than those which do not comply with the conditions in Table 1 in the Rongotai Ridge Precinct; or (Delete)~~

4. Within the Rongotai Ridge Precinct, where an outline plan is required under Section 176A of the RMA, the outline plan specific to this area shall include, in addition to the matters required under section 176A(3) of the RMA, a report or reports covering the following matters:
 - a) Whether any earthworks will alter the existing topography of the site and the impacts on the area’s amenity values and cultural values;

- b) The extent to which earthworks affect the stability, dust and erosion potential of the site and surrounding sites; and,
 - c) Whether any landscape treatment is necessary, and if so, whether it is in scale with the proposed development.
5. Within all Precincts, excluding the Rongotai Ridge Precinct, where an outline plan is required under Section 176A of the RMA, the outline plan specific to this area shall include, in addition to the matters required under section 176A(3) of the RMA, a report or reports covering the following matters:
- a) The extent to which earthworks affect the stability, dust and erosion potential of the site and surrounding sites; and,
 - b) Whether any landscape treatment is necessary, and if so, whether it is in scale with the proposed development.
6. Network Utilities Management Plan:

Prior to the commencement of any project which involves earthworks or construction activities the Requiring Authority shall prepare or update a Network Utilities Management Plan for the project.

The purpose of the Plan shall be to inform the relevant network utility providers that enabling work, design, and construction of any project takes account of (and includes measures to address) the safety, integrity, protection (or where necessary) relocation of exiting network utilities.

The Plan shall also include the location of any existing underground network utilities within the project area; a requirement to consult with any relevant network utility provider and a requirement to inform all construction personnel, including contractors of the presence and location of any existing network utilities which traverse, or are in close proximity to the project area as well as any restrictions in place in relation to those existing network utilities.

Author:

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Peer Reviewer:

Jonathan Anderson

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