

## Earthworks Assessment - Wellington City Council

25.1.24

Service Request No: 517439

Site Address: **26 Ganges Rd, Khandallah, Wellington.**

### **Introduction:**

My name is John Davies. I am the team leader of Earthworks Engineering and Subdivision Certification 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 with Council for around eight years, following 12 years working in the mining industry.

When working as an 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.

This proposal is for additions and alterations to an existing supermarket at 26 Ganges Rd with associated earthworks.

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

#### **Operative 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:

|  |          |
|--|----------|
| <b>30.1.1.1(b)</b>   |          |
| (i) The cut height or fill depth does not exceed 2.5m measured vertically; and   | 3.5m     |
| (ii) The cut or fill is retained by a building or structure authorised by a building consent (which must be obtained prior to any earthworks commencing); and                                    | Complies |
| (iii) The area to be cut and/or filled does not exceed 250m <sup>2</sup>   | Exceeds  |
| <b>30.1.1.2</b>  |          |
| 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:   |          |
| <ul style="list-style-type: none"> <li>• Rural Area 20m</li> </ul>   |          |
| <ul style="list-style-type: none"> <li>• Centres and Business Areas adjoining the Porirua Stream 10m</li> </ul>  |          |
| <ul style="list-style-type: none"> <li>• All other areas 5m</li> </ul>   | Complies |
| <b>30.1.1.3</b>  |          |
| The cut or fill is not in a Hazard (Flooding) Area;  | Complies |
| <b>30.1.1.4</b>  |          |
| There is no visible evidence of settled dust beyond the boundaries of the site.  | Complies |
| <b>30.1.1.5</b>  |          |
| 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 |

### **Proposed District Plan (PDP) Earthworks Rules**

|   |          |
|---|----------|
| EW R7 (EW - P10)<br>Earthworks within a significant natural area  | Complies |
| EW R8<br>Earthworks on the site of scheduled heritage buildings and structures, and within heritage areas | Complies |
| EW-R21<br>Earthworks within Sites and Areas of Significance Category A and Category B                     | Complies |
| HH-R18<br>Modification of a scheduled archaeological site, including earthworks within the mapped extent  | Complies |

## **ODP Earthworks Assessment:**

### Stability Assessment

No geotechnical assessment has been supplied as part of the application. The new development is considered to adequately address the long-term stability risks through redevelopment of the site with specific engineered retaining walls. Certification of the walls stability is required as part of the conditions of consent. In order to minimise the risk of instability during the construction phase it is recommended that monitoring by a chartered professional engineer be undertaken.

Provided the following conditions of consent are adhered to the application is supported from an earthworks stability viewpoint.

### 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 Erosion and Sediment Control Plan (ESCP).

The area of earthworks does exceed the threshold of the district plan, which is a general indication that there may be adverse effects from the earthworks activity during the construction phase. As such an ESCP is considered to be required and is included as part of the conditions below. It is noted that an infrastructure report by Calibre Ltd (dated 29 April 2022) has been developed and includes an ESCP. The report is supported but requires more detail around dust and management of the ESCP controls, this has been reflected in the recommended conditions below.

### Visual Amenity

The proposed area of earthworks exceeds the threshold triggering an assessment on the visual impact.

### Transport Management Plan (TMP)

The volume of earthworks is expected to exceed the threshold of the district plan. Therefore, advice from a transport engineer is expected to be required.

**Submitter Review:**

| Name                          | Address              | Concern  | EWs Comment  |
|-------------------------------|----------------------|--|--|
| Janet Preston<br>Submitter 51 | 35 Nicholson<br>Road | Dust triggering breathing<br>related health issues.  | Additional detail<br>around dust controls<br>have been highlighted<br>as needed in the ESCP<br>which will need to be<br>approved prior to<br>works starting. |
| Jlie Brown<br>Submitter 60    | 8 Malda Grove        | Ongoing Earthworks will<br>create dust dangerous to<br>residents with bronchial<br>issues. | As above.  |

**Conclusion:**

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

The following conditions/advice notes are suggested to ensure that standard earthwork and contaminated land approaches are implemented:

**Recommended Earthwork Conditions**

**Chartered Professional Engineer:**

(...) A suitably experienced and qualified Chartered Professional Engineer (CPEng) must be engaged by the consent holder for the monitoring earthworks, detailed design and construction phase of the project.

The CPEng must advise on:

- The methods to ensure the stability of the site and surrounding land

- The construction of cut faces, fill batters, staging, shoring, and benching as required for stability of the earthworks,
- The earthworks methodology to ensure consistency with engineering best practice and the infrastructure report by Calibre Ltd (dated 29 April 2022).

The consent holder must follow all the advice of the CPEng in a timely manner. If necessary, the Council's Compliance Monitoring Officer may require information regarding the engineer's monitoring and/or specific assessments to address any potential or actual instability issues in relation to earthworks.

Erosion and Sediment Control Plan:

- (...) At least 10 working days prior to any work commencing on site, an Erosion and Sediment Control Plan (ESCP) or infrastructure report is to be submitted to the Council's Compliance Monitoring Officer for certification.

Note: The ESCP controls submitted within the infrastructure report by Calibre Ltd (dated 29 April 2022) the application has been assessed and is supported. It is expected that it will form the basis of the final report submitted for certification.

- (...) The ESCP or infrastructure report will include additional detail around the following:

*Dust Controls*

- Measures to ensure that the discharge of dust created by earthworks, construction and transport activities are suitably controlled to minimise dust hazard or nuisance.

*Management of Controls*

- The methods for managing and monitoring the ESCP or infrastructure report controls.
- Nomination of a site person responsible for the implementation and administration of the ESCP or infrastructure report.

- (...) Work must not commence on site until the ESCP or infrastructure report is certified by the Council's Compliance Monitoring Officer. The earthworks and

associated work must be carried out in accordance with the certified ESCP or infrastructure report.

- (...) 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 Compliance Monitoring Officer may require changes to the implementation of the ESCP or infrastructure report, to address any problem that occurs during the work or before the ground surface is stabilised.

#### Producer Statements:

- (...) A copy of the producer statement 'PS4 – Construction Review' and its accompanying documents for structures/buildings 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/buildings being completed.

#### Grassing of Earthworks:

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

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

#### General Earthworks Conditions:

- (...) All sediment laden run-off must be managed and contained within the site. Any sediment that is deposited onto neighbouring properties or the public road must be cleaned up immediately (with the landowner's permission on land that isn't

public road). The deposited sediment must not be swept or washed into street channels or stormwater inlets or dumped on the side of the road.

Note: As a minimum, 100mm of clarity is required to allow run-off to be discharged offsite. If clarity is less than 100mm then the run-off is considered to be sediment laden and must be contained and/or treated on site.

(...) 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.

**Author:**

John Davies

Team Leader Earthworks Engineer and Subdivision Certification