

25 Earthworks

25.1 Purpose

Earthworks are often a necessary component of the use and development of rural and urban land, and are often an integral part of the development, operation, maintenance and upgrading of infrastructure. Within urban areas, some modification of the landscape is inevitable in order to provide for development, including creating functional, safe and stable building sites, as well as roads and access ways with appropriate gradients. Within rural areas, some smaller scale earthworks are required to ensure the ongoing viability of rural land uses.

Within both rural and urban locations earthworks have the potential for adverse effects on landscape and visual amenity values and require management to ensure the District's Outstanding Natural Features, Landscapes, amenity values, cultural values, waterbodies and their margins are protected from inappropriate development.

Earthworks associated with construction, subdivision, land use and development can cause erosion of land and sedimentation of stormwater. Unless appropriately managed this could affect stormwater networks, or result in sediment entering wetlands, rivers and lakes. Earthworks can also create temporary nuisance effects from dust, noise and vibration that require management. The focus of Chapter 25 is therefore on ensuring the adverse effects of earthworks are appropriately managed and minimised. It does not seek to discourage or avoid earthworks in the District.

The volume, cut and fill limits in the Earthworks Chapter do not apply to earthworks associated subdivisions. All other rules in the Earthworks Chapter apply to subdivisions to manage potential adverse effects from for instance, earthworks near water bodies or cut and fill adjacent to neighbouring properties. Applications for subdivisions involving earthworks shall also be considered against the matters of discretion and assessment matters in this chapter.

Earthworks in this plan encompass the defined activities of earthworks but exclude cultivation, mineral prospecting, exploration and mining activity.

25.2 Objectives and Policies

25.2.1 Objective – Earthworks are undertaken in a manner that minimises adverse effects on the environment, protects people and communities, and maintains landscape and visual amenity values.

Policies

- 25.2.1.1 Ensure earthworks minimise erosion, land instability, and sediment generation and off-site discharge during construction activities associated with subdivision and development.
- 25.2.1.2 Manage the adverse effects of earthworks to avoid inappropriate adverse effects and minimise other adverse effects, in a way that:

- a. Protects the values of Outstanding Natural Features and Landscapes;
- b. Maintains the amenity values of Rural Character Landscapes
- c. Protects the values of Significant Natural Areas and the margins of lakes, rivers and wetlands;
- d. Minimises the exposure of aquifers, in particular the Wakatipu Basin, Hāwea Basin, Wanaka Basin and Cardrona alluvial ribbon aquifers;

Note: These aquifers are identified in the Otago Regional Plan: Water for Otago 2004.

- e. Protects Māori cultural values, including wāhi tapu and wāhi tūpuna and other sites of significance to Māori;
 - f. Protects the values of heritage sites, precincts and landscape overlays from inappropriate subdivision, use and development; and
 - g. Maintains public access to and along lakes and rivers.
- 25.2.1.3 Avoid, where practicable, or remedy or mitigate adverse visual effects of earthworks on visually prominent slopes, natural landforms and ridgelines.
 - 25.2.1.4 Manage the scale and extent of earthworks to maintain the amenity values and quality of rural and urban areas.
 - 25.2.1.5 Design earthworks to recognise the constraints and opportunities of the site and environment.
 - 25.2.1.6 Ensure that earthworks are designed and undertaken in a manner that does not adversely affect infrastructure, buildings and the stability of adjoining sites.
 - 25.2.1.7 Encourage limiting the area and volume of earthworks being undertaken on a site at any one time to minimise adverse effects on water bodies and nuisance effects of adverse construction noise, vibration, odour, dust and traffic effects.
 - 25.2.1.8 Undertake processes to avoid adverse effects on cultural heritage, including wāhi tapu, wāhi tūpuna and other taonga, and archaeological sites, or where these cannot be avoided, effects are remedied or mitigated.
 - 25.2.1.9 Manage the potential adverse effects arising from exposing or disturbing accidentally discovered material by following the Accidental Discovery Protocol in Schedule 25.10.
 - 25.2.1.10 Ensure that earthworks that generate traffic movements maintain the safety of roads and accesses, and do not degrade the amenity and quality of surrounding land.
 - 25.2.1.11 Ensure that earthworks minimise natural hazard risk to people, communities and property, in particular earthworks undertaken to facilitate land development or natural hazard mitigation.

25.2.2 Objective – The social, cultural and economic wellbeing of people and communities benefits from earthworks

Policies

- 25.2.2.1 Enable earthworks that are necessary to provide for people and communities wellbeing, having particular regard to the importance of:
- Nationally and Regionally Significant Infrastructure;
 - tourism infrastructure and activities, including the continued operation, and provision for future sensitive development of recreation and tourism activities within the Ski Area Sub Zones and the vehicle testing facility within the Waiorau Ski Area Sub Zone;
 - minimising the risk of natural hazards;
 - enhancing the operational efficiency of farming including maintenance and improvement of track access and fencing; and
 - the use and enjoyment of land for recreation, including public walkways and trails.

25.3 Other Provisions and Rules

25.3.1 District Wide

Attention is drawn to the following District Wide chapters.

1 Introduction	2 Definitions	3 Strategic Direction
4 Urban Development	5 Tangata Whenua	6 Landscapes
26 Historic Heritage	27 Subdivision	28 Natural Hazards
29 Transport	30 Energy and Utilities	31 Signs
32 Protected Trees	33 Indigenous Vegetation and Biodiversity	34 Wilding Exotic Trees
35 Temporary Activities and Relocated Buildings	36 Noise	37 Designations
Planning Maps		

- 25.3.1.1 Refer to Chapter 33 Indigenous Vegetation and Biodiversity for earthworks within Significant Natural Areas. The provisions of this chapter apply in addition to the provisions in Chapter 33 Indigenous Vegetation and Biodiversity.
- 25.3.1.2 Earthworks are also managed as part of development activities and modifications to Historic Heritage items and settings identified on the Planning Maps and in Chapter 26 Historic Heritage. The provisions of this chapter apply in addition to the provisions in Chapter 26 Historic Heritage.

- 25.3.1.3 The rules relating to construction noise and vibration are managed in Chapter 36: Noise. Consideration of construction noise and vibration associated with earthworks are included as matters of discretion in Part 25.7 and assessment matters in Part 25.8 as a component of the management of the potential adverse effects of earthworks.

25.3.2 Interpreting and Applying the Rules

- 25.3.2.1 A permitted activity must comply with all the rules listed in the Activity and Standards tables, and any relevant district wide rules, otherwise a resource consent will be required.

- 25.3.2.2 Where an activity does not comply with a Standard listed in the Standards table, the activity status identified by the Non-Compliance Status column shall apply. Where an activity breaches more than one Standard, the most restrictive status shall apply to the Activity.

- 25.3.2.3 For restricted discretionary activities, the Council shall restrict the exercise of its discretion to the matters listed in 25.7 Matters of Discretion.

- 25.3.2.4 The rules for any zone include any subzone or overlay applicable to that zone, except where otherwise specified.

- 25.3.2.5 Earthworks associated with subdivisions under Chapter 27 are exempt from the following Rules:

- a. Table 25.2 Maximum Volume;
- b. Rule 25.5.15 Cut Standard; and
- c. Rule 25.5.16 Fill Standard.

All other rules in the Earthworks Chapter apply to earthworks associated with a subdivision. Applications for earthworks that are associated with subdivision shall be considered against the matters of discretion for earthworks in Part 25.7 and assessment matters in Part 25.8.

Applications for subdivision involving any earthworks shall be considered against the matters of discretion for earthworks in Part 25.7 and assessment matters in Part 25.8.

- 25.3.2.6 Earthworks within the Ski Area Sub Zones and vehicle testing facilities within the Waorau Ski Area Sub Zone are exempt from the earthworks rules, with the exception of the following rules that apply:

- a. Rules 25.5.12 and 25.5.13 that control erosion and sediment and dust;
- b. Rule 25.5.19 setbacks from waterbodies; and
- c. Rule 25.5.20 exposing groundwater.

- 25.3.2.7 Earthworks within the Rural Zone, Gibbston Character Zone and Rural Lifestyle Zone to facilitate the construction of a building and landscaping authorised by resource consent within an approved building platform are exempt from the following rules:

- a. Table 25.2 Maximum Volume;
- b. Rule 25.5.15 Cut Standard; and
- c. Rule 25.5.16 Fill Standard.

25.3.2.8 The provisions in this chapter do not apply to the following activities in Chapter 30 Energy and Utilities:

- a. Earthworks, buildings, structures and National Grid sensitive activities undertaken within the National Grid Yard;
- b. Earthworks for the placement of underground electricity cables or lines.
- c. Earthworks for the construction, alteration, or addition to underground lines.

25.3.2.9 Earthworks shall be calculated as follows:

- a. The maximum volume and area of earthworks shall be calculated per site, within any consecutive 12 month period.
- b. Volume shall mean the sum of all earth that is moved within a site and includes the total of any combined cut and fill. Refer to Interpretive Diagrams 25.1 to 25.3 located within Schedule 25.9.

25.3.2.10 Earthworks for the following shall be exempt from the rules in Tables 25.1 to 25.3:

- a. Erosion and sediment control except where subject to Rule 25.5.19 setback from waterbodies.
- b. The digging of holes for offal pits
- c. Fence posts.
- d. Drilling bores.
- e. Mining Activity, Mineral Exploration or Mineral Prospecting.
- f. Planting riparian vegetation.
- g. Internments within legally established burial grounds.
- h. Maintenance of existing vehicle and recreational accesses and tracks, excluding their expansion.
- i. Deposition of spoil from drain clearance work within the site the drain crosses.
- j. Test pits or boreholes necessary as part of a geotechnical assessment or contaminated land assessment where the ground is reinstated to existing levels within 48 hours.
- k. Firebreaks not exceeding 10 metres width.

- l. Cultivation and cropping.
- m. Fencing in the Rural Zone, Wakatipu Basin Rural Amenity Zone (excluding the Precinct), Rural Lifestyle Zone and Gibbston Character Zone where any cut or fill does not exceed 1 metre in height or any earthworks does not exceed 1 metre in width.
- n. Earthworks where the following National Environmental Standards have regulations that prevail over the District Plan:
 - (i) Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009.
 - (ii) Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.
 - (iii) Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2016.
 - (iv) Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2016.

25.3.2.11 The following abbreviations are used within this Chapter.

P	Permitted	C	Controlled
RD	Restricted Discretionary	D	Discretionary
NC	Non Complying	PR	Prohibited

25.3.3 Advice Notes - Regional Council Provisions

25.3.3.1 Some earthworks activities including those that:

- a. involve the diversion of water; including any earthworks structures used for flood hazard mitigation; or
- b. discharge of stormwater with sediment; or
- c. modification to water bodies including wetlands; or
- d. result in the exposure of groundwater aquifers:
are subject to the Otago Regional Council Regional Plan: Water for Otago 2004.

25.3.3.2 Cleanfill and Landfill activities are also subject to the Otago Regional Council Regional Plan: Waste for Otago 1997.

25.3.4 Advice Notes - General

25.3.4.1 Those who wish to undertake earthworks in the vicinity of Queenstown Airport or Wanaka Airport are referred to Figures 1 to 4 of the Planning Maps which identify the Airport Approach and Protection Measures, and Airport Protection Inner Horizontal and Conical Surfaces for Queenstown Airport and Wanaka Airport. Land use restrictions within these areas are further described in Chapter 37: Designations, Parts D.3 and E.2. Persons who wish to undertake earthworks are advised to consult with the relevant requiring authority and the Civil Aviation Authority.

- 25.3.4.2 Part I of the Heritage New Zealand Pouhere Taonga Act 2014 states that no work may be undertaken on an archaeological site (whether recorded or unrecorded) until an archaeological authority to destroy, damage or modify a site has been granted by Heritage New Zealand Pouhere Taonga in accordance with that Act. Note: A recorded site is an archaeological site recorded via the New Zealand Archaeological Association's Site Recording Scheme and information is available at www.archsite.org.nz.
- 25.3.4.3 Attention is drawn to the following iwi management plans that should be taken into account of and given regard to when assessing resource consent applications:
- Te Tangi a Tauira: The Cry of the People, the Ngāi Tahu ki Murihiku Iwi Management Plan for Natural Resources 2008.
 - Kāi Tahu ki Otago Natural Resource Management Plans 1995 and 2005.
- 25.3.4.4 Resource consent may be required for earthworks under the following National Environmental Standards:
- Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011. In particular for earthworks associated with the removal or replacement of fuel storage tanks, earthworks associated with sampling or disturbance of land identified in the Listed Land Use Register held by the Otago Regional Council. In these instances, the NES applies instead of the District Plan provisions.
 - The Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2016. In particular for earthworks associated with antennas and cabinets. Refer to Chapter 30 Energy and Utilities for clarification as to whether the NES applies instead of the District Plan provisions.
 - The Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009. Refer to Chapter 30 Energy and Utilities for clarification as to whether the NES applies instead of the District Plan provisions.
 - The Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017.

25.4 Rules – Activities

	Table 25.1 - Earthworks Activities	Activity Status
25.4.1	Earthworks that comply with all of the standards in Tables 25.2 and 25.3, except where listed in Table 25.1 as a restricted discretionary or discretionary activity.	P
25.4.2	Earthworks that do not comply with the standards for the maximum total volume of earthworks in Table 25.2.	RD
25.4.3	Earthworks for the construction or operation of a Cleanfill Facility.	RD

	Table 25.1 - Earthworks Activities	Activity Status
25.4.4	Earthworks for the construction or operation of a Landfill.	D
25.4.5	Earthworks 25.4.5.1 that modify, damage or destroy a wāhi tapu, wāhi tūpuna or other site of significance to Māori whether identified on the Planning Maps or not; or 25.4.5.2 that modify, damage or destroy a listed heritage feature, in Chapter 26.8 Historic Heritage; or 25.4.5.3 within the setting or extent of place of a listed heritage feature in Chapter 26.8 – Historic Heritage.	D
25.4.6	Earthworks within a Statutory Acknowledgment Area, Tōpuni or Nohoanga identified on Planning Map 40.	D

25.5 Rules – Standards

	Table 25.2 - Maximum Volume	Maximum Total Volume
25.5.1	Arrowtown Residential Historic Management Zone Arrowtown Town Centre Zone Open Space and Recreation Zones	100m ³
25.5.2	Heritage Landscape Overlay Area Heritage Precinct Outstanding Natural Feature	10m ³
25.5.3	Low Density Residential Zone Medium Density Residential Zone High Density Residential Zone Waterfall Park Zone	300m ³
25.5.4	Large Lot Residential Zone Rural Residential Zone Rural Lifestyle Zone	400m ³

	Table 25.2 - Maximum Volume	Maximum Total Volume
	Wakatipu Basin Rural Amenity Zone and Precinct	
25.5.5	Queenstown Town Centre Zone Wanaka Town Centre Zone Local Shopping Centre Zone Business Mixed Use Zone Airport Zone (Queenstown) Millbrook Resort Zone	500m ³
25.5.6	Rural Zone Gibbston Character Zone Airport Zone (Wanaka)	1000m ³
25.5.7	25.5.7.1 Roads 25.5.7.2 Roads located within an Outstanding Natural Feature identified on the Planning Maps	a. No limit b. 10m ³
	Jacks Point Zone	
25.5.8	Residential Activity Areas Open Space Horticulture Open Space Residential Open Space Foreshore Farm Buildings and Craft Activity Area Boating Facilities Area	500m ³
25.5.9	Open Space Landscape Open Space Amenity Homesite	1000m ³
25.5.10	Open Space Golf Education Lodge	No maximum

	Table 25.2 - Maximum Volume	Maximum Total Volume
	Village	
	Village Homestead Bay	

	Table 25.3 - Standards	Non-Compliance
	Nuisance effects, erosion, sediment generation and run-off	
25.5.11	<p>Earthworks over a contiguous area of land shall not exceed the following area:</p> <p>25.5.11.1 2,500m² where the slope is 10° or greater.</p> <p>25.5.11.2 10,000m² where the slope is less than 10°.</p>	RD
25.5.12	<p>Erosion and sediment control measures must be implemented and maintained during earthworks to minimise the amount of sediment exiting the site, entering water bodies, and stormwater networks.</p> <p>Note:</p> <p>Compliance with this standard is generally deemed to be compliance with Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland region. Auckland Council Guideline Document GD2016/005.</p>	RD
25.5.13	<p>Dust from earthworks shall be managed through appropriate dust control measures so that dust it does not cause nuisance effects beyond the boundary of the site</p> <p>Note:</p> <p>Compliance with this standard is generally deemed to be compliance with section 9 of Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland region. Auckland Council Guideline Document GD2016/005.</p>	RD
25.5.14	<p>Earthworks that discovers any of the following:</p> <p>25.5.14.1 kōiwi tangata (human skeletal remains), wāhi taoka (resources of importance), wāhi tapu (places or features of special significance) or other Māori artefact material, or</p> <p>25.5.14.2 any feature or archaeological material that predates 1900, or</p>	RD

	Table 25.3 - Standards	Non-Compliance
	<p>25.5.14.3 evidence of contaminated land (such as discolouration, vapours, landfill material, significant odours),</p> <p>that is not provided for by the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011, any resource consent or other statutory authority, shall comply with the standards and procedures in Schedule 25.10 'Accidental Discovery Protocol'.</p>	
	Height of cut and fill and slope	
25.5.15	<p>The maximum depth of any cut shall not exceed 2.4 metres.</p> <p>25.5.15.1 This rule shall not apply to roads.</p>	RD
25.5.16	<p>The maximum height of any fill shall not exceed 2 metres.</p> <p>25.5.16.1 This rule shall not apply to roads and to the backfilling of excavations.</p>	RD
25.5.17	<p>Earthworks for farm tracks and access ways in the following Zones and Activity Areas shall comply with standards 25.5.17.1 to 25.5.17.3:</p> <ul style="list-style-type: none"> • Rural Zone • Wakatipu Basin Rural Amenity Zone • Gibbston Character Zone • Jacks Point Zone Activity Areas: <ul style="list-style-type: none"> - Open Space Landscape - Open Space Golf - Open Space Amenity - Homesite - Education - Lodge <p>25.5.17.1 No farm track or access way shall have an upslope cut or batter greater than 1 metre in height.</p> <p>25.5.17.2 All cuts and batters shall not be greater than 65 degrees.</p>	RD

	Table 25.3 - Standards	Non-Compliance
	<p>25.5.17.3 The maximum height of any fill shall not exceed 2 metres.</p> <p>This standard shall not apply to roads.</p>	
	Setbacks from boundaries	
25.5.18	<p>Earthworks greater than 0.3 metres in height or depth shall be set back from the site boundary the following minimum distances:</p> <p>25.5.18.1 Earthworks not supported by retaining walls:</p> <ul style="list-style-type: none"> a. a distance at least equal to the maximum height of the fill, as measured from the toe of the fill, with a maximum batter slope angle of 1:3 (vertical: horizontal); or b. 300mm plus a batter slope angle of a maximum of 1:3 (vertical: horizontal), as measured from the crest of the cut. <p>Refer to Interpretive Diagrams 25.4 and 25.5 located within Schedule 25.9.</p> <p>25.5.18.2 Earthworks supported by retaining walls:</p> <ul style="list-style-type: none"> a. Cut or fill supported by a retaining wall must be setback a distance at least equal to the height of the retaining wall; b. Cut and fill equal to or less than 0.5m in height is exempt from this rule. <p>Refer to Interpretive Diagrams 25.6 and 25.7 located within Schedule 25.9.</p>	RD
	Water bodies	
25.5.19	<p>Earthworks within 10m of the bed of any water body, or any drain or water race that flows to a lake or river, shall not exceed 5m³ in total volume, within any consecutive 12-month period.</p> <p>This rule shall not apply to:</p> <p>25.5.19.1 any artificial water body (watercourse, lake, pond or wetland) that does not flow to a lake or river, including Lake Tewa within the Jacks Point Zone; or</p>	RD

	Table 25.3 - Standards	Non-Compliance
	25.5.19.2 Maintenance and repairing of existing hazard protection structures in and around a water body.	
25.5.20	Earthworks shall not be undertaken below the water table of any groundwater aquifer, or cause artificial drainage of any groundwater aquifer.	RD
	Cleanfill	
25.5.21	No more than 300m ³ of Cleanfill shall be transported by road to or from an area subject to Earthworks.	RD

25.6 Non-Notification of Applications

All applications for resource consent for the following matters shall not require the written consent of other persons and shall not be notified or limited-notified:

25.6.1 Rule 25.5.11 for restricted discretionary activities that exceed the area (m²) standard.

25.7 Matters of Discretion

25.7.1 For all restricted discretionary activities discretion shall be restricted to the following matters. These matters may also be applicable to any discretionary or non-complying activity.

25.7.1.1 Soil erosion, generation and run-off of sediment.

25.7.1.2 Landscape and visual amenity.

25.7.1.3 Effects on infrastructure, adjacent sites and public roads.

25.7.1.4 Land stability.

25.7.1.5 Effects on water bodies, ecosystem services and biodiversity.

25.7.1.6 Cultural, heritage and archaeological sites.

25.7.1.7 Nuisance effects.

25.7.1.8 Natural Hazards.

25.7.1.9 Functional aspects and positive effects.

25.8 Assessment Matters

25.8.1 In considering whether or not to grant consent or impose conditions on a resource consent, regard shall be had, but not be limited by the following assessment matters which are listed in the order of the matters of discretion.

25.8.2 Soil erosion and generation of sediments

25.8.2.1 The extent to which the proposal achieves effective erosion and sediment management.

25.8.2.2 Whether earthworks will be completed within a short period, reducing the risk of actual and potential adverse effects.

25.8.2.3 Whether the extent or impacts of adverse effects from the earthworks can be mitigated by managing the season or staging of when such works occur.

25.8.2.4 Whether the proposal is supported with erosion and sediment management design that corresponds to the scale, area, duration of the works and the sensitivity of receiving environment. In particular where resource consent is required for non-compliance with Rule 25.5.11, this design is prepared by a suitably qualified person.

25.8.3 Landscape and visual amenity

25.8.3.1 Whether the design of the earthworks is sympathetic to natural topography.

25.8.3.2 Whether any rehabilitation is proposed and to what extent rehabilitation, revegetation or future buildings would mitigate adverse effects, including any re-vegetation or landscaping.

25.8.3.3 The duration of earthworks and any timeframes proposed for remedial works and revegetation.

25.8.3.4 Within Outstanding Natural Features and Landscapes and the Rural Character Landscapes, whether and to what extent earthworks avoid, remedy or mitigate adverse effects or improve landscape quality and character, taking into account:

- a. physical attributes including geological, topographical features, waterbodies and formative processes of the landscape;
- b. visual attributes including legibility, existing land management patterns, vegetation patterns, ridgelines or visually prominent areas; and
- c. cultural attributes including Tangata whenua values, historic and heritage associations.

- 25.8.3.5 The sensitivity of the landscape to absorb change, and whether the earthworks will change the character or quality of the landscape.
- 25.8.3.6 The potential for cumulative effects on the natural form of the landscape.
- 25.8.3.7 Whether the design or location of any new tracks or roads can be modified in order to decrease the effects on the stability, visual quality and amenity values of the landscape.
- 25.8.3.8 The extent earthworks will affect visual amenity values including public or private views and whether the earthworks will be remediated, and the final form of the area affected is consistent with natural topography and land use patterns.

25.8.4 Effects on infrastructure, adjacent sites and public roads

- 25.8.4.1 Whether the earthworks will affect stormwater and overland flows, and the extent to which this creates adverse effects off-site and increases stormwater flows onto other properties, including whether this will exceed existing stormwater design or stormwater management of those properties.
- 25.8.4.2 Whether the earthworks or final ground levels will adversely affect existing infrastructure, utility services and assets.
- 25.8.4.3 Where there will need to be off-site disposal of excess material or cleanfill, traffic generation effects limited to access, road network performance and safety, damage to the carriageway and amenity effects.
- 25.8.4.4 Whether the use of legal instruments are necessary, such as a bond to ensure works are completed, the earthworks area is rehabilitated, or for damage to roads.
- 25.8.4.5 Any other measures employed to reduce the impact on other sensitive receivers such as aircraft operating in the Airport Protection Inner and Conical Surfaces for Queenstown and Wanaka Airports.

25.8.5 Land stability

- 25.8.5.1 The extent to which any proposal demonstrates that fill associated with buildings, retaining, accesses and parking areas comply with the QLDC Land Development and Subdivision Code of Practice, where these matters have not already been addressed through a subdivision consent or building consent pursuant to Building Act 2004.
- 25.8.5.2 Where earthworks are proposed on a site gradient greater than 18.5 degrees (1 in 3), whether advice from a suitably qualified person has been provided to address the stability of the earthworks.
- 25.8.5.3 Whether cut, fill and retaining are designed and undertaken in accordance with the QLDC Land Development and Subdivision Code of Practice.

- 25.8.5.4 Whether the earthworks and any associated retaining structures are designed and located to avoid adverse effects on the stability and safety of surrounding land, buildings, and structures.

25.8.6 Effects on water bodies, ecosystem services and biodiversity

- 25.8.6.1 The effectiveness of sediment control techniques to ensure sediment run-off does not leave the development site or enter water bodies.
- 25.8.6.2 Whether and to what extent any groundwater is likely to be affected, and mitigation measures are proposed to address likely effects.
- 25.8.6.3 The effects of earthworks on the natural character, ecosystem services and biodiversity values of wetlands, lakes and rivers and their margins.
- 25.8.6.4 The effects on significant natural areas.

25.8.7 Cultural, heritage and archaeological values

- 25.8.7.1 The extent to which the activity modifies or damages wāhi tapu or wāhi taonga, whether tangata whenua have been notified and the outcomes of any consultation.
- 25.8.7.2 The extent to which the activity affects Ngāi Tahu's cultural, spiritual, historic and traditional association with a Statutory Acknowledgment Area having regard to the relevant provisions of the iwi management plans identified in Advice Note 25.3.4.3.
- 25.8.7.3 The extent to which a protocol for the accidental discovery of kōiwi, archaeology and artefacts of Māori origin or other archaeological items has been provided and the effectiveness of the protocol in managing the impact on Mana Whenua cultural heritage if a discovery is made. Using the Accidental Discovery Protocol in Schedule 25.10 as a guide.
- 25.8.7.4 Whether the proposal protects the relationship of Mana Whenua with their cultural heritage.
- 25.8.7.5 Whether the area subject to earthworks contains a recorded archaeological site, and if so the extent to which the proposal would affect any such site and whether any necessary archaeological authority has been obtained from Heritage New Zealand Pouhere Taonga.
- 25.8.7.6 The extent to which earthworks and vibration adversely affect heritage items.

25.8.8 Nuisance effects

- 25.8.8.1 The extent to which earthworks will generate adverse noise, vibration, odour, dust, lighting and traffic effects on the surrounding environment and the effectiveness of proposed mitigation measures, including whether a management plan has been submitted as part of the application.

- 25.8.8.2 Duration and hours of operation, including whether the activity will generate noise and vibration effects, which detract from the amenity values of the surrounding area to an extent greater than anticipated to accommodate development otherwise provided for by the District Plan.

25.8.9 Natural Hazards

- 25.8.9.1 Whether the earthworks are necessary to avoid, remedy or mitigate the risk of any natural hazard.
- 25.8.9.2 Where the proposal is affected by, or potentially affected by, natural hazards as identified in the Council's natural hazards database, particular regard shall be had to the Natural Hazards Chapter 28, in particular Policies 28.3.2.1, 28.3.2.2, 28.3.2.3.
- 25.8.9.3 Whether the earthworks and final ground levels will adversely affect an aquifer or an overland flow path or increase the potential risk of flooding within the site or surrounding sites.
- 25.8.9.4 The extent earthworks affect the risk of natural hazards and whether the risk is reduced or not increased.

25.8.10 Functional aspects and positive effects

- 25.8.10.1 Whether the earthworks are necessary for the functional or operational requirements of infrastructure, including network utility installation, repair or maintenance.
- 25.8.10.2 The extent to which the earthworks are necessary to accommodate development otherwise provided for by the District Plan.
- 25.8.10.3 Whether the earthworks are associated with farming activities and will enhance operational efficiency including maintenance and improvement of track access, safety and fencing.
- 25.8.10.4 Whether the earthworks are for the purposes of a fire break and the extent of the fire break is necessary.
- 25.8.10.5 Whether the earthworks are for the purposes of public recreation trails that enhance recreational opportunities and access.
- 25.8.10.6 Whether the earthworks are necessary for the remediation of contaminated land and facilitate the efficient use of the land resource.

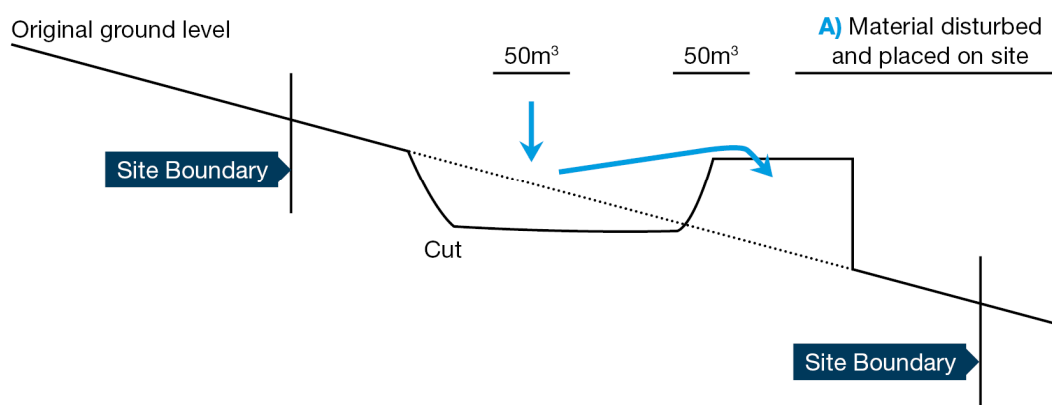
25.9 Schedule 25.9 Interpretive Diagrams

25.1

Interpretative Diagram: Volume scenario A
Elevation View

The total volume of earthworks means 'the total volume of all material that is moved within a site'

$$\text{A) Total Volume} = 50\text{m}^3 (\text{Cut}) + 50\text{m}^3 (\text{Fill}) \\ = 100\text{m}^3$$

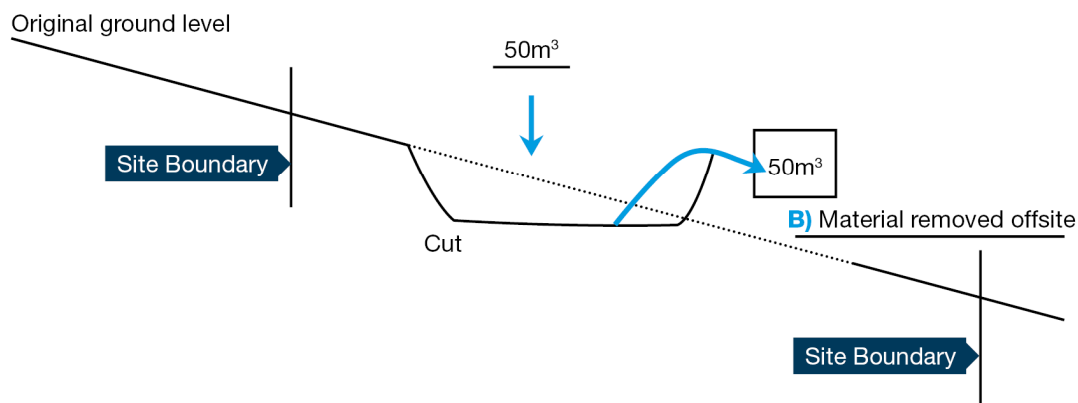


25.2

Interpretative Diagram: Volume scenario B
Elevation View

The total volume of earthworks means 'the total volume of all material that is moved within a site'

$$\text{B) Total Volume} = 50\text{m}^3 (\text{Cut}) \text{ removed off-site} \\ = 50\text{m}^3$$



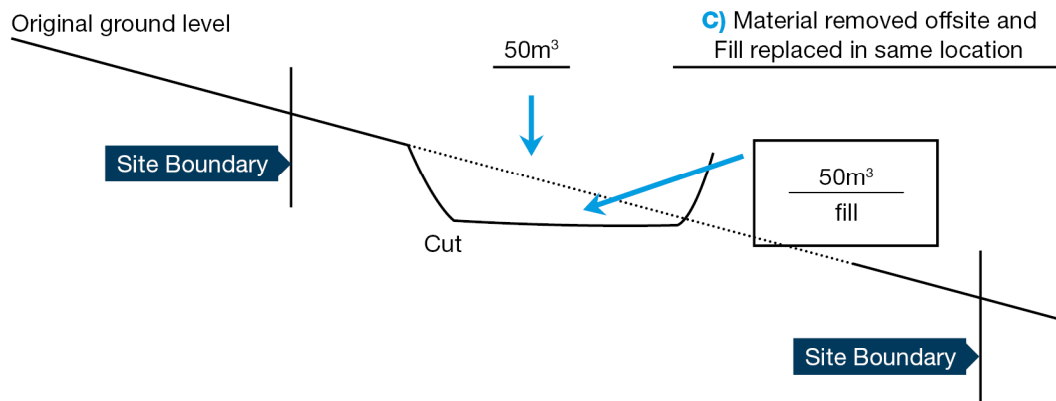
25.3

Interpretative Diagram: Volume scenario C

Elevation View

The total volume of earthworks means 'the total volume of all material that is moved within a site'

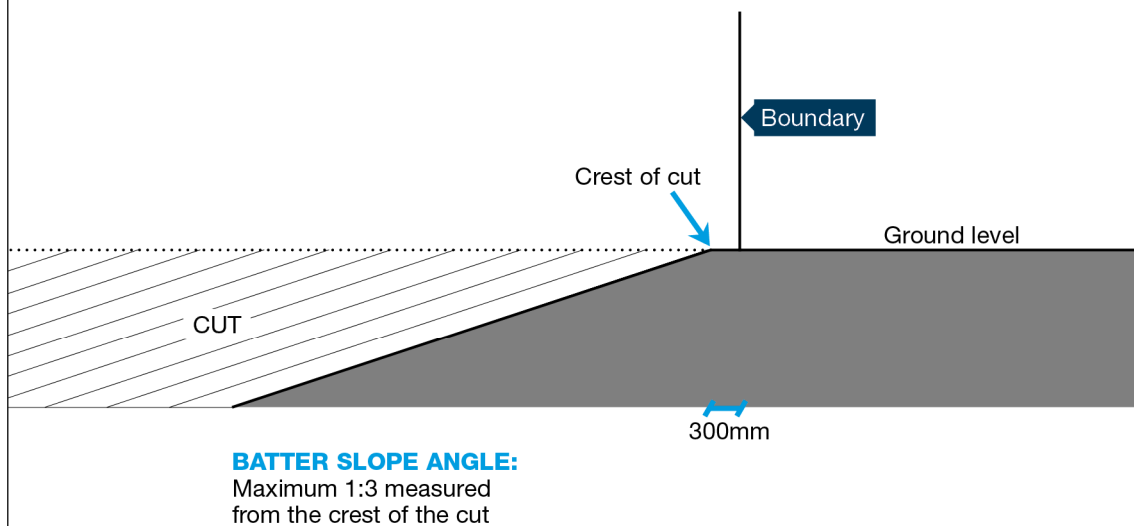
C) Total Volume = 50m³ (Cut) removed from site
 = 50m³ material placed in same location (i.e. compacted fill)
 = 100m³



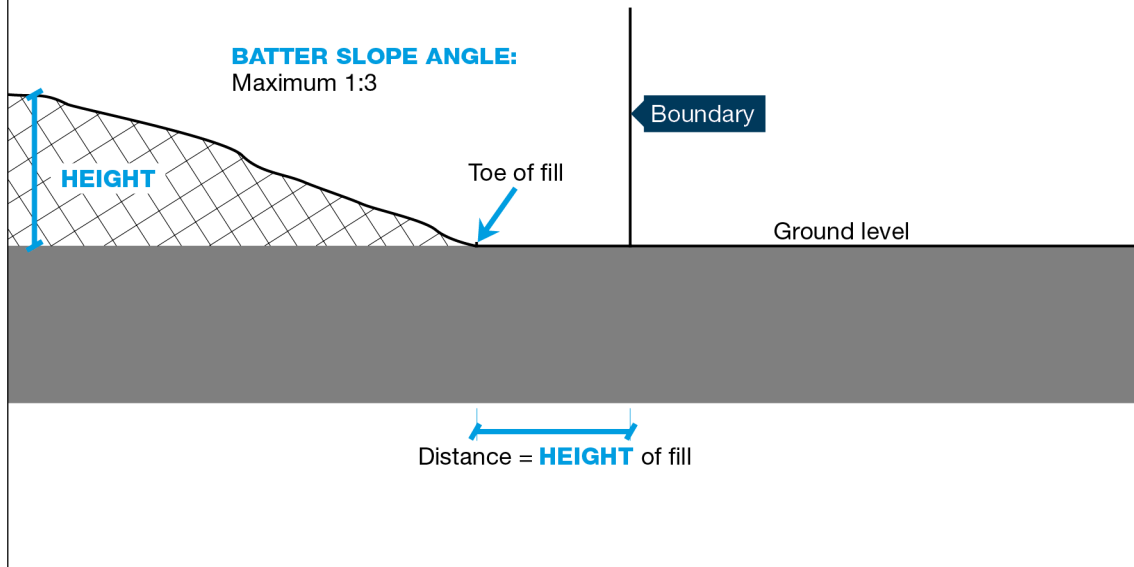
25.4

Interpretative Diagram: Unsupported Cut

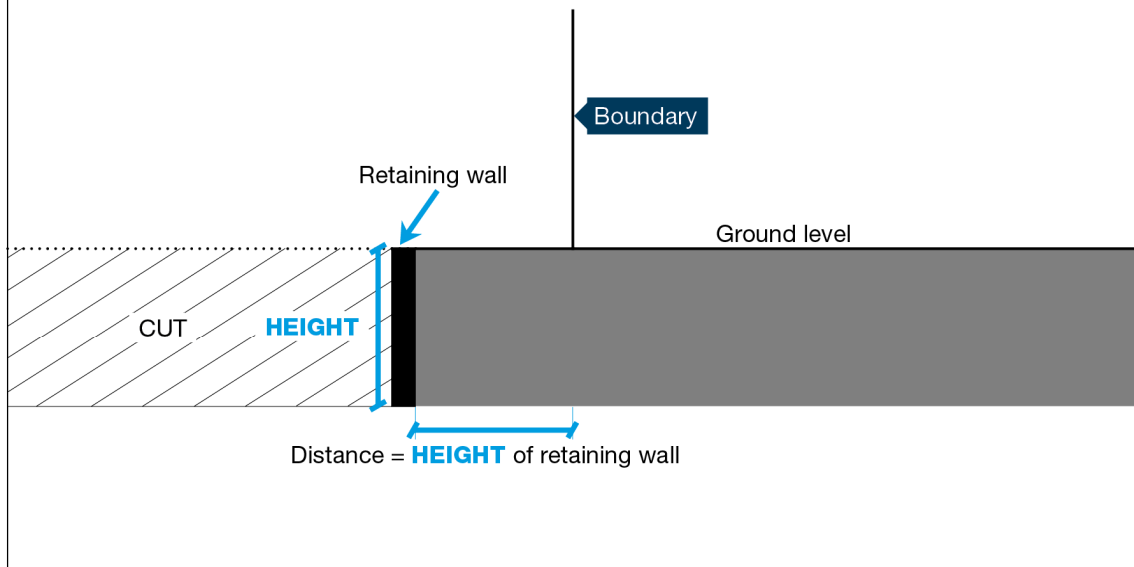
Elevation View

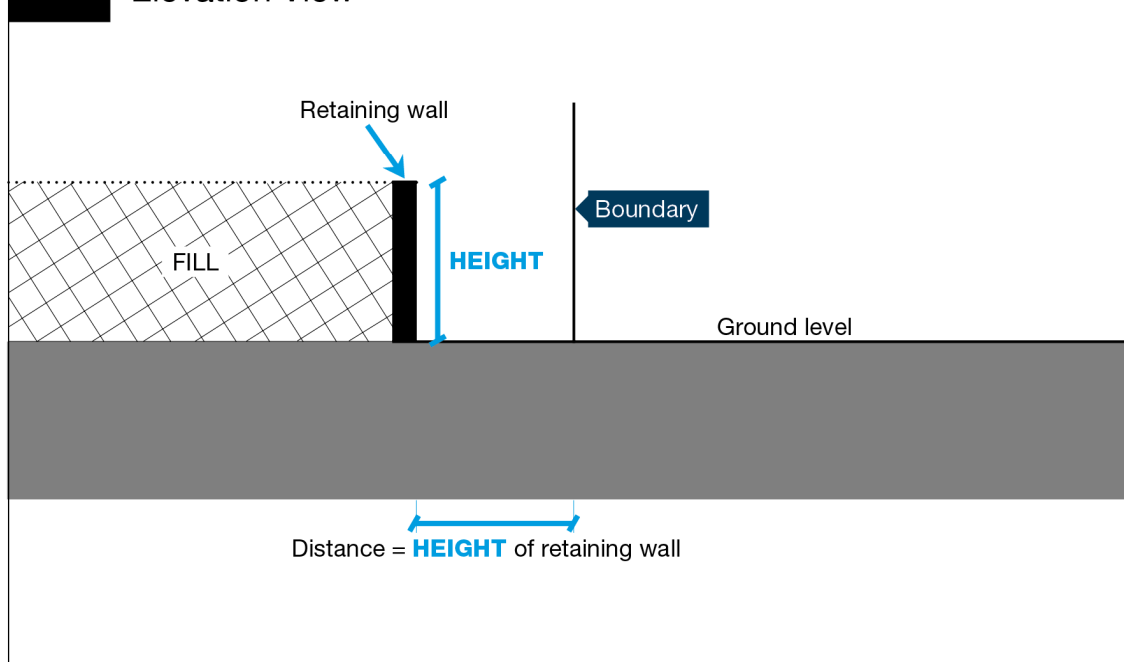


25.5

Interpretative Diagram: Unsupported Fill
Elevation View

25.6

Interpretative Diagram: Cut Supported by Retaining
Elevation View

25.7**Interpretative Diagram: Fill Supported by Retaining Elevation View****25.10 Schedule 25.10 Accidental Discovery Protocol**

Earthworks shall be undertaken as follows:

Upon discovery of any material listed in Rule 25.5.14, the following steps shall be taken:

25.10.1 Cease works and secure the area

25.10.1.1 All works shall immediately cease within 20m of any part of the discovery, including shutting down all earth disturbing machinery and stopping all earth moving activities, and in the case of evidence of contaminated land applying controls to minimise discharge of contaminants into the environment.

25.10.1.2 The area of the discovery shall be secured, including a sufficient buffer area to ensure that all discovered material remains undisturbed.

25.10.2 Inform relevant authorities and agencies

25.10.2.1 The following parties shall be immediately informed of the discovery:

- a. the New Zealand Police if the discovery is of human remains or kōiwi;
- b. the Council in all cases;
- c. Heritage New Zealand Pouhere Taonga if the discovery is an archaeological site, Māori cultural artefact, human remains or kōiwi;

- d. Mana Whenua if the discovery is an archaeological site, Māori cultural artefact, or kōiwi.

25.10.3 Wait for and enable inspection of the site

25.10.3.1 All works shall cease and provision shall be made to enable the site to be inspected by the relevant authority or agency:

- a. if the discovery is human remains or kōiwi, the New Zealand Police are required to investigate the human remains to determine whether they are those of a missing person or are a crime scene. The remainder of this process shall not apply until the New Zealand Police confirm that they have no further interest in the discovery; or
- b. if the discovery is of other than evidence of contaminants, a site inspection for the purpose of initial assessment and response shall be arranged by the Council in consultation with Heritage New Zealand Pouhere Taonga and appropriate Mana Whenua representatives; or
- c. if the discovery is evidence of contaminants, a suitably qualified person shall complete an initial assessment and provide information to the Council on the assessment and response.

Following site inspection and consultation with all relevant parties, the directions of the Council, as to the area within which work must cease and any changes to controls on discharges of contaminants, shall be complied with, until the requirements of 25.10.4 are met.

25.10.4 Recommencement of work

25.10.4.1 Work within the area determined by the Council at e. shall only recommence when all of the following requirements, so far as relevant to the discovery, have been met:

- a. Heritage New Zealand has confirmed that an archaeological authority has been approved for the work or that none is required;
- b. any required notification under the Protected Objects Act 1975 has been made to the Ministry for Culture and Heritage;
- c. the requirements of the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 have been met;
- d. any material of scientific or educational importance must be recorded and if appropriate recovered and preserved;
- e. where the site is of Māori origin and an authority from Heritage New Zealand Pouhere Taonga is not required the Council will confirm, in consultation with Mana Whenua, that:
 - (i) any kōiwi have either been retained where discovered or removed in accordance with the appropriate tikanga; and

- (ii) any agreed revisions to the planned works to be/have been made in order to address adverse effects on Māori cultural values.
- f. any necessary resource consent has been granted to any alteration or amendment to the earthworks or land disturbance that may be necessary to avoid the sensitive materials and that is not otherwise permitted under the Plan or allowed by any existing resource consent.
- g. there are no requirements in the case of archaeological sites that are not of Māori origin and are not covered by Heritage New Zealand Pouhere Taonga Act 2014.