

## **APPENDIX ONE**

# **19A Earthworks**

## **19A.1 Introduction**

Earthworks are essential to the development of the City. They create the areas of level land used for living, business and recreation, and the even gradients for paths and roads that enable people to get from place to place. They are integral to the construction of foundations and buildings. For all these reasons, and more, earthworks are part of many development projects in the City.

Earthworks and the structures associated with them can have adverse effects on the environment, which have the potential to extend well beyond the site of the earthworks. These effects may be short-lived or they can last for many years.

Poorly engineered excavations or areas of earthworks fill can cause landslips, on the site, on neighbouring properties and on the publicly owned legal road.

Sediment from the construction phase of projects, or from later erosion of exposed ground, can cause problems with the stormwater infrastructure, and affect water quality and the biological health of streams, wetlands and the sea. The Council is concerned to address the cumulative effect of many small projects on the sediment levels in natural waters.

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Earthworks, landslips and the structures associated with earthworks, can cause marked changes to the appearance and character of the neighbourhoods in which they are located. In areas along coastal roads, poorly designed and executed earthworks and structures can impact on people's experience of the suburban coastal environment.

Modification of landforms and vegetation, piping of streams and the addition of new structures all have the potential to cause long lasting changes to landscapes and natural systems. The loss of sections of stream affects not only the landscape but the stream's ability to support indigenous biodiversity.

The objectives, policies and rules have been developed to achieve the sustainable management of earthworks. They concentrate on both, the type of earthworks that are environmentally acceptable, and the detail of how the adverse effects of earthworks and associated structures can be acceptably avoided, remedied or mitigated.

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## 19A.2 Earthworks Objectives and Policies

### OBJECTIVE

**19A.2.1 To provide for earthworks for the use development and protection of land throughout the city while avoiding, remedying or mitigating any adverse effects of earthworks, landslips and associated structures on the environment.**

### POLICIES

To achieve this objective, Council will:

**19A.2.1.1 Ensure earthworks and associated structures are designed to reflect appropriate land development and subdivision by considering future development of the land.**

#### METHODS

- Rules
- Design Guide (Subdivision, Residential, Rural Area)

*Earthworks are a component of most developments of land. They are necessary for the construction of roads, driveways and building foundations and the modification of gradients associated with greenfield subdivisions.*

*On occasions applications are made for earthworks in advance of infill or greenfield subdivisions that do not fully describe the nature of the proposed land use. Depending on the of scale and type of the future development Council may require further information, or an additional application under section 91 of the Act, to allow it to better understand the nature of the whole proposal. Council is concerned that the design of the earthworks and associated structures does not predetermine the sustainability or urban form of the later subdivision. Council will use relevant*

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*objectives, policies, rules and guidelines to assess whether further information or applications are required.*

*The environmental result will be the coordinated design and assessment of earthworks and associated structures, land development and subdivision.*

**19A.2.1.2 Require earthworks to be designed to minimise the risk of instability.**

**METHOD**

- Rules
- Advocacy

*Earthworks are an integral part of the development of land. They are associated with the design of subdivisions and the construction of buildings.*

*Poorly constructed earthworks are a threat to people and property. Instability may affect both the site of the development work and neighbouring properties. The District Plan controls earthworks to minimise the risk of instability.*

*The permitted activity conditions provide for minor landscape projects, the building of fences and low decks and the levelling of sites on easier slopes that have a low risk of instability.*

*Some aspects of earthworks projects will require a building consent under the Building Act 2004. In most cases, retaining and stabilising structures associated with earthworks will require building consent.*

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*Matters to consider in assessing applications that do not comply with the permitted activity conditions include:*

- *Whether the earthworks have been designed by an appropriately qualified and experienced person, for example, a chartered engineer practicing in the field of civil / geotechnical engineering. Whether this person will supervise the work and certify it upon completion.*
- *Whether the nature of the proposal requires a geotechnical assessment of the geology of the site and the surrounding land. This type of assessment would include:*
  - *a sub-surface investigation including ground and groundwater conditions*
  - *details of any stormwater diversion or subsoil drainage of the site or other sites that could cause instability. Examples are surface drains and soakaways*
  - *an assessment of the current stability of the site including, if necessary, the stability of slopes uphill and downhill of the proposed earthworks*
  - *an assessment of the temporary stability during earthworks (during construction) including details of proposed temporary cut batters, temporary support or staging of the cutting or filling*
  - *an assessment of the permanent stability of the earthworks (after construction is complete) including details of the static and seismic stability of the unsupported cut or fill batter or a supported batter*
- *Whether a retaining or stabilising structure or building will be used to support or stabilise the earthworks: whether its design can be assessed at a later date under the building consent process. This decision will depend on the nature of the proposal, the site and the surrounding land, and the extent that the situation is straightforward with little risk of instability.*

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- *Whether the earthworks are designed in accordance with “NZS 4404:2004 Land Development and Subdivision Engineering” and “NZS 4431 Code of Practice for Residential Earthworks”.*

*The environmental result will be earthworks that are designed to minimise the risk of instability.*

**19A.2.1.3 Require earthworks to be designed and managed to minimise erosion, and the movement of dust and sediment beyond the area of the work, particularly to streams, wetlands and coastal waters.**

**METHODS**

- Rules
- Design Guides (Subdivision, Residential, Rural Area)
- Technical Guides (*Erosion and sediment control guidelines for the Wellington Region 2003, Erosion and sediment control for small sites 2006*)
- Code of Practice for Land Development

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*Erosion can take place on exposed or excavated soils. Dust and dirt carried by wind or water or vehicles from an area of earthworks can cause a nuisance to neighbouring properties, on roads and footpaths, in drainage channels and sumps, and in the stormwater system. Sediment carried into streams, wetlands and the harbour and other coastal waters (the coastal marine area) can reduce water quality and interfere with the functioning of aquatic ecosystems. Council is particularly concerned about the cumulative effect of many earthworks projects on sediment levels within a stream system, the harbour or other coastal waters.*

*The District Plan seeks to minimise the potential effects of dust and sediment by requiring people undertaking earthworks for subdivision, construction or other activities, to use the best practical options as recognised by the Council and the Greater Wellington Regional Council. These options include forward planning, preventing water running onto the site, the control of erosion, managing dust, and installing sediment control structures and maintaining these structures to ensure their ongoing effectiveness.*

*Earthworks are restricted close to streams, wetlands and the seashore to prevent direct contamination and to protect vegetation cover. Vegetation has an important role in capturing sediment and associated nutrients, which are carried across the ground by rainwater. The effectiveness of streamside areas (particularly in the Rural Area where earthworks are restricted within 20 metres) is dependant on a range of factors. They include the type of vegetation beside the stream, the slope of surrounding land and amount of pasture or disturbed ground draining to the stream. Twenty metres is considered to be a generally effective distance for a range of situations in the rural environment.*

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*Erosion, dust and sediment control in relation to streams, wetlands and coastal waters is regulated by rules in both the District Plan and the regional plans administered by Greater Wellington Regional Council. The issue is addressed in the District Plan because erosion, dust and sediment are all matters that are a direct effect of the many types of earthworks that the city council controls. In addition, it is effective for the City Council to regulate these effects because it has direct knowledge of the earthworks and control over them for other purposes, for example, earthworks stability. The Regional Council does not have this type of day to day knowledge and control.*

*The rules have been designed to avoid duplication between the rules in the District Plan and the rules in the regional plans, so applicants, as far as possible, do not have to gain resource consent from both the City Council and the Regional Council. In situations where resource consents are required from both authorities, the Council will work with the Regional Council to ensure a coordinated approach to consent issues.*

*Matters to consider in assessing applications that do not comply with the permitted activity standards include:*

- The extent that indigenous or other vegetation, natural soil structure and natural drainage patterns are retained, to intercept dust or precipitation, filter sediment and to reduce the volume and speed of runoff from the site. Particular consideration will be given to the protection or restoration of vegetation, soils and drainage patterns, adjacent to streams, wetlands and the seashore*
- The extent that the work will be designed and managed to address the principles and methods in Greater Wellington Regional Council's "Erosion and sediment control guidelines for the Wellington Region" 2003, or its "Erosion and sediment control for small sites" 2006*
- Whether any special measures are necessary to prevent dust and sediment entering and clogging street channels (gutters), drainage sumps or stormwater pipes*

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- *For large scale earthworks, such as greenfield subdivisions, the extent that the work or subsequent erosion will cumulatively add to existing or expected sediment levels in the relevant stream system, the harbour or other coastal waters*
  - *The extent that the proposal uses ‘soft engineering’ practices to control erosion, dust and sediment, to prevent short term and long term effects beyond the area of the work, particularly to streams, wetlands and coastal waters. The aim is use practices that are more attractive, and have fewer adverse ecological effects, than traditional engineering practices*
  - *The extent that dust or sediment will be a nuisance to residents of other properties or affect the amenities of streets or public places*
  - *The need for an earthworks and construction plan to define acceptable performance standards for environmental and amenity protection and public safety during the construction process.*

*The environmental result will be earthworks that are designed and managed to minimise the effects of erosion, and the movement of dust and sediment beyond the area of the work, particularly to streams, wetlands and coastal waters.*

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**19A.2.1.4 Ensure that earthworks and associated structures do not exacerbate flood events in Hazard (Flooding) Areas.**

**METHODS**

- Rules
- Code of Practice for Land Development

*Developments involving earthworks will be controlled to ensure that they do not increase the risk of flooding by blocking flood water flow paths and culverts, and diverting flood water to other sites.*

*Matters to consider in assessing applications include:*

- *Whether the earthworks and any associated structures will impede the flow of flood waters*
- *Whether the earthworks and any associated structures will accelerate, worsen or result in the erosion or inundation of the site, or any other site or buildings*
- *The extent that the proposed earthworks and associated structures will be designed to use 'soft engineering' practices, which are visually unobtrusive and minimise or enhance the ecology of the stream and the flood-prone area.*

*The environmental result will be earthworks and associated structures that are designed to minimise the hazard risks on flood plains or other flood-prone areas.*

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**19A2.1.5 Protect and enhance the character and amenity of streams and wetlands by:**

- **discouraging earthworks and associated structures, which are part of developments that pipe, drain or otherwise modify, streams or wetlands**
- **encouraging earthworks and associated structures, which are part of developments that minimise changes to the flow of water in streams or wetlands**
- **encouraging earthworks and associated structures, which are part of developments that restore streams or wetlands to a more natural state.**

**METHODS**

- Design Guides (Subdivision, Residential, Rural Area)
- Code of Practice for Land Development
- Advocacy

*People value areas of water for their physical qualities of movement, reflection and sound and their characteristics of greater naturalness in an urban or rural environment. They appreciate them because they are pleasant, they are attractive, they have cultural significance and they are associated with people's recreation. With increasing understanding and knowledge people also value streams and wetlands for fish, birds, insects and the other life connected with them.*

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*Many streams that survive in urban areas are in Council parks and reserves. Others, especially smaller streams, flow through private property. While they may not be visible to the general public (or even neighbours) and they are not associated with walking tracks, they are still of value to other people because they are part of a larger stream system and affect the qualities of that system.*

*Where streams have been piped, surviving sections of open stream provide evidence of a place's past. They are an important link for people to an area's history and its natural environment.*

*Changes to the flow of water in streams is an important factor affecting the character and amenity of streams. Changes to flows may increase flooding, lower dry-weather flows, change the stream substrate, cause bank erosion (with the release of sediments into the stream) and cause channel widening. These changes can lead to a loss of streamside vegetation and increase the need for engineering structures to protect the banks and to control flooding. They also have a major effect on the life in streams.*

*The Council seeks to discourage earthworks and associated structures that facilitate the piping or modification of streams and the drainage of wetlands. It also encourages earthworks proposals that minimise changes to the flow of streams at different times in the year. This would be through such measures as conserving natural soils and mature vegetation, increasing soil permeability and minimising hard surfaced areas. 'Soft engineering' practices to capture and slow stormwater runoff from a site, are another approach and they will be viewed as a positive effect of a development proposal.*

*The Council will also view positively proposals that would restore streams or wetlands to a more natural state. This could be through such things as planting the riparian margins, restoring fish passage by removing barriers or installing fish ladders, or even 'day-lighting' previously piped sections of stream.*

*The policy will be implemented by using related policies (for example, 4.2.3.1A, 4.2.3.1B and 4.2.3.1C) and the guidelines of the Subdivision, Residential and Rural Area design guides, to assess earthworks applications. The Council will continue to*

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*explore methods that can be used to protect and enhance the quality of streams and may introduce further changes to the District Plan.*

*The loss or modification of streams and wetlands and their flow characteristics is regulated by both the District Plan and regional plans administered by Greater Wellington Regional Council. The issues are addressed in the District Plan because they are matters that are a direct effect of earthworks for the development of land, which the City Council controls under its building consent, resource consent and bylaw processes.*

*The environmental result will be the protection of the character and amenity of streams and wetlands.*

**19A.2.1.6 Ensure that the design of earthworks and associated structures reflect the character and visual amenity of the local area.**

**METHODS**

- Rules
- Design Guides (Residential, Subdivision, Rural Area)

*Earthworks and associated structures can be visually prominent and unattractive. Large scale earthworks should be engineered to reflect natural landforms. The Subdivision and Rural Area design guides provide guidelines. On a smaller scale, careful consideration is needed of how visible earthworks and any associated structures will be once a building is constructed on a site. The policy is concerned with measures that can be used to soften and reduce the visual impact, which include the design of retaining and stabilising structures and landscape planting.*

*Matters to consider in assessing applications include:*

- *Where the earthworks are associated with an application for subdivision or a future application for subdivision, the extent that the proposed earthworks and any associated structures meet the relevant guidelines of the Residential, Subdivision or Rural Area design guides*

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- *Where the earthworks are associated with an infill or multi-unit housing in the Residential Area or a residential or rural activity in the Rural Area, the extent that the proposed earthworks and any associated structures meet the relevant guidelines of the Residential or Rural Area design guides*
  - *The extent that the earthworks are designed and engineered to reflect natural landforms and natural features such as cliffs, escarpments, streams and wetlands. Council seeks to avoid unnatural scar faces that detract from the amenity of the area. However, in situations where bare rock is common, untreated cut faces may be favoured over artificial finishes. In more urban settings well designed retaining walls, which reflect existing older structures, may be an appropriate model for design*
  - *The extent that existing vegetation can be retained above, below and at the sides of the earthworks and any associated structures*
  - *The extent that proposed buildings will block the view of the earthworks and any associated structures from the street, other public places and other properties. Consideration will be given to how much of the work will be visible at the sides of buildings, above or below the buildings*
  - *The extent that the design and finishing of any retaining or stabilising structure reflects the building or buildings it is associated with*
  - *Whether the design of any retaining or stabilising structure reduces its apparent size, by using features that break up the surface area of the structure and create patterns of light and shadow*
  - *Whether the placement of pipes above the surface of the earthworks or structures will visually detract from the appearance of the overall development. Pipes should be buried underground or integrated into the design of a structure as a deliberate and positive part of the design*
  - *Whether the use of sprayed concrete can be avoided by the use of alternative methods, such as anchored netting. Where sprayed concrete or similar surfacing*

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*is essential for engineering reasons (rather than cost), whether the surface is better left to weather or finished in an appropriate colour*

- *Whether the use of landscape planting is a realistic method to hide or soften the earthworks or associated structures. The plants must be capable of achieving their purpose, in the growing conditions of the site, within three to five years of planting. Any proposal for planting must be supported with a professionally prepared planting plan and specifications at the time of application.*

*The environmental result will be earthworks and associated structures that reflect the visual character of the local area.*

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**19A.2.1.7 Protect the character and visual amenity of suburban coastal areas by controlling the effects of earthworks and associated structures, particularly where they are located on steep coastal escarpments and headlands.**

**METHODS**

- Rules

*Suburban coastal roads and the residential properties, commercial properties and open space areas along these roads are a distinctive component of Wellington City's landscape character. These areas are a "cultural landscape"; the character resulting from a combination of natural landforms and patterns of building and development. A strong and defining element is the coastal escarpments and headlands that provide a natural backdrop to the houses and other buildings on the coastal terraces. Apart from Oriental Bay there has been very little development of these steep slopes but recent examples demonstrate that such development has a considerable visual impact.*

*Earthworks and associated structures to provide for garages and cable cars on legal road can also detract from the character of the coastal landscape. The Council will consider the effects of the earthworks and associated structures under the earthworks rules and the accessory buildings and other structures under Rule 5.3.5 and the encroachment licence process.*

*The criteria for assessment are designed to rigorously control earthworks and associated structures in the coastal environment. The Plan requires strong justification for earthworks and any associated structures.*

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*Matters to consider in assessing applications include:*

- *Whether the proposed earthworks and any associated structures will have a negative visual impact on the appearance and character of areas along coastal roads*
- *Whether mitigation will be effective in addressing the visual effects of the earthworks and associated structures*
- *Whether the design of the project and the materials used for retaining and stabilising structures and landscape planting are of a high quality compared to similar projects in other parts of the city*
- *The extent that indigenous or naturalised species are used in landscape planting. Thin soils, wind and salt spray can make revegetation difficult. Local native plants or wild growing non-native plants offer the advantage of being adapted to the local conditions and help to blend planted areas with existing wild vegetation on coastal cliffs*
- *All relevant matters listed for assessment under Policy 19A.2.1.7*
- *Where the proposed earthworks and associated structures will facilitate the location of a building on a steep coastal escarpment or headland; an existing slope that is steeper than 1.5 horizontal to 1 vertical (approximately 34°); whether the earthworks and associated structures should be declined consent (the building itself cannot be declined under this policy but the earthworks and any associated structures that make its construction possible can be).*

*The environmental result will be the protection of the character and visual amenity along suburban coastal roads.*

**19A.2.1.8 Ensure the design of structures used to retain or stabilise landslips (where earthworks are not required after the event), reflect the character and visual amenity of the local area.**

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## **METHODS**

- Rules
- Design Guides (Residential, Subdivision, Rural Area)

*Landslips are considered ‘acts of God’ (unless they happen during development work or as a result of other human activities). They are unexpected events, generally beyond human control, and cannot be considered as deliberate work or ‘earthworks’, unless earthworks are required to reshape or clean up the slip.*

*The future stability of land affected by a landslip and the safety of existing buildings and structures are addressed by remedial and retaining work that is likely to require a building consent under the Building Act 2004.*

*A rule has been provided to control the appearance of structures designed to retain or stabilise landslips, by linking these structures to the policies for the visual amenity of earthworks.*

*The environmental result will be that the structures used to retain or stabilise landslips will reflect the character and visual amenity of the local area.*

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**19A.2.1.9 Require the transport of earth or construction fill material, to and from a site, to be along a safe and does not detract from amenity.**

**METHODS**

- Rules

*Larger earthwork projects can cause problems with transport on city streets. Taking material from a site, or bringing it to a site from elsewhere, can reduce safety on footpaths and roads and cause congestion. Noise from trucks can also affect the amenity of residential and other Areas. The permitted activity condition sets a volume of material above which a project requires resource consent.*

*In some instances material will be removed from one site and transported as fill to another site. In these situations it may be necessary to assess the transport effects for both sites, either together or under separate resource consent applications.*

*The Council's general approach is to minimise the adverse effects of moving material by defining the route, hours of trucking and other matters through conditions of resource consent. There will however be situations where there is no acceptable solution to moving material and Council may decline resource consent.*

*Matters to consider in assessing applications include:*

- *The extent to which the transport of material will affect residential and other Areas that trucks will travel through. Council will consider:*
  - *the type of truck being used*
  - *the frequency, timing and duration of truck movements*
  - *the proposed route. Council will favour the use of Collector, Principal and Arterial Roads and the Motorway, over local roads*
  - *the width, sightlines and other characteristics of the streets along the route*

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- *the presence of sensitive land uses along the route, such as schools*
  - *whether the proposal requires the closure of any streets*
  - *Whether the location of the access to the site under consideration can be sited safely. Measures may be necessary to allow traffic, cyclists and pedestrians to move safely past the site*
  - *The adequacy of a traffic management plan (as part of a wider earthworks and construction plan) detailing the above matters and how they will be managed, including any procedures for receiving and responding to complaints.*

*The environmental result will be that earthwork material is transported in a way that is safe and does not detract from amenity.*

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**19A.2.1.10 Protect koiwi (human remains), taonga and Maori and Non-Maori material and archaeological sites, dated from before 1900, by advising applicants of their obligations under legislation and using enforcement powers where appropriate.**

**METHODS**

- Archaeological authority process under the Historic Places Act 1993, administered by the New Zealand Historic Places Trust
- Chapter 20: Heritage Objectives and Policies
- Section 17 of the Resource Management Act 1991 - Abatement Notices, Enforcement Orders

*Maori and non-Maori archaeological sites from before 1900 are protected by the Historic Places Act 1993. An Archaeological Authority may be required from the New Zealand Historic Places Trust to disturb these sites. The Council will work with the New Zealand Historic Places Trust, Wellington Tenth's Trust and Ngati Toa Rangatira, to make information available to ensure that property owners / applicants are aware of their statutory and cultural obligations.*

*Chapter 20, the Heritage Objectives and Policies, identifies the importance of archaeological values and sites and the requirement under the Resource Management Act to protect them from inappropriate subdivision, use and development. The council has not at this stage identified in sufficient detail particular archaeological sites to enable consideration of whether the district plan should control the effects on such sites using rules (similar to the heritage rules for buildings, objects and areas). This work will be taken in the future.*

*This does not mean that there is no RMA controls on the effects of earthworks on archaeological values. Every person undertaking earthworks has a general duty under Section 17 of the Resource Management Act 1991 to avoid, remedy or mitigate any adverse effects of activities. Where significant archaeological sites are known or discovered during earthworks Council can use its enforcement powers to protect them.*

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*The environmental result will be greater protection of Maori and non-Maori archaeological values from inappropriate subdivision, use or development.*

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## **19B.1 Permitted Activities**

The permitted activity rules for earthworks cover a range of issues. The stability conditions are designed to minimise the risk of instability: to avoid situations that could result in injury or death or significant damage to property. Because they provide for a range of possible geology and landforms they are the most restrictive of the earthwork rules.

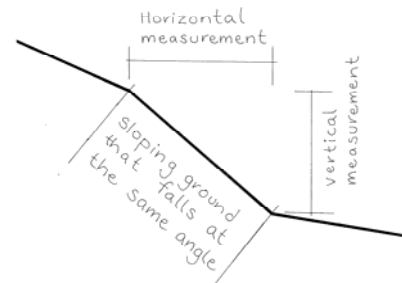
As a general guide the permitted activities allow for small scale earthworks projects, such as levelling, ground contouring and other landscape work. The majority of building projects, including driveways, require a resource consent.

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## Definitions

For the purpose of Chapters 19A and 19B:

**Existing slope:** is a section of sloping ground that falls at the same angle. It is measured horizontally and vertically, from where the slope of the same angle starts to where it finishes. It does not include any existing bank or wall less than 0.6 metres high measured vertically, where the bank or wall will be removed by an earthworks cut or covered by an earthworks fill.



**Associated structure:** is a structure for stabilising or retaining ground (whether cut, filled or unworked) that is associated with the carrying out of earthworks.

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**19B.1.1 Earthworks and associated structures in all Areas (except the Rural Area), are Permitted Activities provided that they comply with the following conditions:**

*Earthworks may expose koiwi (human remains), taonga or Maori or Non-Maori archaeological material. Archaeological sites are protected by the Historic Places Act 1993 and an Archaeological Authority may be required from the New Zealand Historic Places Trust. Owners / applicants should contact the Historic Places Trust, Wellington Tenth's Trust and Ngati Toa Rangatira, about the location of archaeological sites, or in the event that a site is discovered.*

**19B.1.1.1 Earthworks stability**

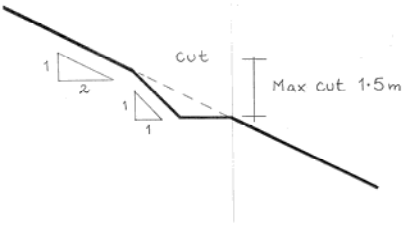
Earthworks must be constructed in accordance with the following conditions for earthworks stability:

**19B.1.1.1.1 *Permitted earthworks cuts***

**Gentler slopes -**

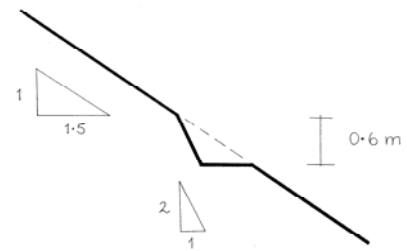
<b>Slope</b>	<b>Maximum depth of cut</b>	<b>Treatment of cut face</b>
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<p>The <b>existing slope</b> of the area of earthworks cut must be no steeper, than 2 horizontal to 1 vertical (approximately <math>26^{\circ}</math>)</p>	<p>1.5 metres, measured vertically</p>	<p>The cut face must be angled back to be no steeper than 1 horizontal to 1 vertical (<math>45^{\circ}</math>)</p>
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## Steeper slopes -

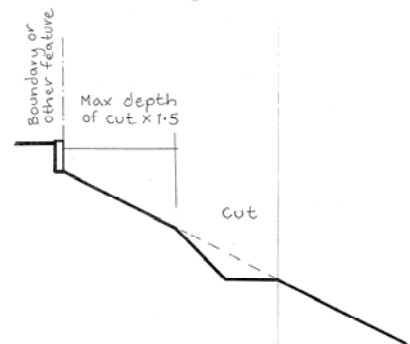
Slope	Maximum depth of cut	Treatment of cut face
The <b>existing slope</b> of the area of earthworks cut must be no steeper, than 1.5 horizontal to 1 vertical (approximately $34^{\circ}$ )	0.6 metres, measured vertically	The cut face must be angled back to be no steeper than 1 horizontal to 2 vertical (approximately $64^{\circ}$ )



### 19B.1.1.1.2 *Minimum distances for earthworks cuts*

The top of the earthworks cut must be a **minimum distance** downhill from:

- a boundary
- an existing slope steeper than 2 horizontal to 1 vertical (approximately  $26^{\circ}$ )
- a driveway
- a building or other structure
- an existing bank or wall, of any height (where it will not be removed by the earthworks cut or covered by an earthworks fill).



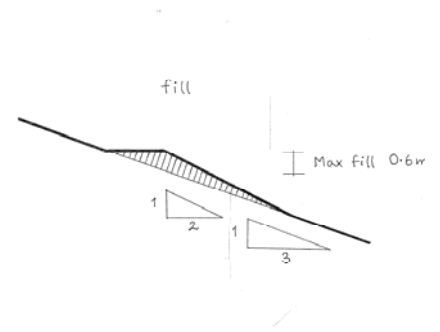
A **minimum distance** is calculated as:

$$\begin{array}{l} \text{minimum distance} \\ \text{(measured} \\ \text{horizontally)} \end{array} = \begin{array}{l} \text{maximum depth of the} \\ \text{proposed cut, measured} \\ \text{vertically} \end{array} \times 1.5$$

19B.1.1.1.3 *Permitted earthworks fills*

**Gentler slopes -**

Slope	Maximum depth of fill	Treatment of fill batter	Other condition
The <b>existing slope</b> of the area to be filled over must be no steeper than 3 horizontal to 1 vertical (approximately 18°)	0.6 metres, measured vertically	The fill batter must be no steeper than 2 horizontal to 1 vertical (approximately 26°)	The fill must not be used to support buildings, driveways or other structures

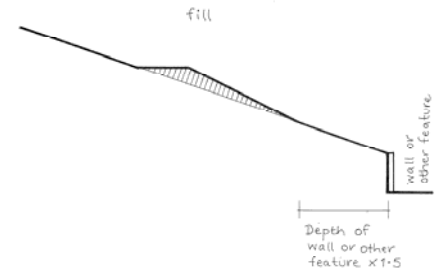


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#### 19B.1.1.1.4 *Minimum distances for earthworks fills*

The bottom of the earthworks fill must be a **minimum distance** uphill from:

- a foundation or wall of a building or other structure
- an existing bank or wall, of any height (where it will not be removed by an earthworks cut or covered by the earthworks fill).



A **minimum distance** is calculated as:

$$\begin{array}{l} \text{minimum distance} \\ \text{(measured} \\ \text{horizontally)} \end{array} = \begin{array}{l} \text{maximum depth of the} \\ \text{proposed fill, measured} \\ \text{vertically} \end{array} \times 1.5$$

#### *Legal road boundaries*

19B.1.1.1.5 Earthworks cuts and/or fills and associated structures may extend over a boundary with the legal road where the activity associated with the earthworks has been granted an encroachment licence, or vehicle access permission or other approval from Council as owner of the legal road.

#### **19B.1.1.2 Erosion, dust and sediment control**

19B.1.1.2.1 Earthworks must be no closer than 5 metres from a stream (excluding any existing section

*Resource consents may be required from Greater Wellington Regional Council for*

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of stream that is piped) or wetland or the edge of the sea (the coastal marine area).

*large scale earthworks or for work in streams or other waterbodies, or the coastal marine area)*

19B.1.1.2.2 The total area of earthworks on a site must be no more than 250m<sup>2</sup>.

19B.1.1.2.3 There must be no visible evidence of settled dust beyond the boundaries of the site.

*Additional conditions for dust apply to activities, other than earthworks, that are permitted in Suburban Centres, Institutional Precincts, the Airport & Golf Course Precinct, the Central Area and Open Space Areas*

### **19B.1.1.3 Earthworks and structures associated with streams and wetlands**

Earthworks and associated structures must be no closer than 5 metres from a stream (excluding any existing section of stream that is piped) or wetland.

*Council will discourage earthworks and associated structures that enable proposals that pipe, drain or otherwise modify, streams or wetlands. It will encourage earthworks and structures that enable proposals that minimise changes to the flow of water in streams or wetlands. It will also look favourably on proposals that restore streams or wetlands to a more natural state.*

### **19B.1.1.4 Flooding hazard**

Earthworks and associated structures must not be in a Hazard (Flooding) Area.

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### **19B.1.1.5 Earthworks and structures for tracks**

19B.1.1.5.1 In Open Space Areas and Conservation Sites, earthworks and any associated structures for the construction and maintenance of pedestrian and /or cycle tracks are permitted, provided the track surface is no more than 1.5 metres wide.

19B.1.1.5.2 The Parks and Gardens Unit or other land owner must have a written contract with all volunteers, contractors and staff working on the tracks that establishes the principles and guidelines to keep vegetation and ground disturbance to a minimum, ensure stability and avoid ongoing erosion, and puts in place effective methods to control erosion and sediment generally based on Greater Wellington Regional Council's *Erosion and sediment control for small sites 2006*.

*No other conditions under Rule 19B.1.1 apply to earthworks and associated structures for tracks.*

### **19B.1.1.6 Visual amenity – general**

The existing ground must not be altered by more than 2.5 metres vertically, unless the earthworks and any associated structures are underneath an existing building, or an addition to that building, and the earthworks and any associated structures are not visible from the outside of the building.

This condition does apply in the Central Area or Suburban Coastal Area identified on Map 55 or 56.

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### **19B.1.1.7 Visual amenity – suburban coastal area**

Within the Suburban Coastal Area identified on Map 55 or 56:

- the existing ground must not be altered by more than 1.5 metres vertically
- the earthworks and any associated structures must not be on an existing slope that is steeper than 1.5 horizontal to 1 vertical (approximately 34<sup>0</sup>).

This condition does apply if the earthworks and any associated structures are underneath an existing building, or an addition to that building, and the earthworks and any associated structures are not visible from the outside of the building.

### **19B.1.1.8 Transport of material**

The volume of earth and / or construction fill material transported to or from a site must not exceed the following figure, over the duration of the project:

- |  |                    |
|--|--------------------|
| • Suburban Centres   | 2000m <sup>3</sup> |
| - Where the Centre adjoins the Motorway, an Arterial or Principal Road on Map 33 | 200m <sup>3</sup>  |
| - Where the Centre does not adjoin such a road                                   |                    |
| • Airport and Golf Course Precinct   | 2000m <sup>3</sup> |
| • all other Areas  | 200m <sup>3</sup>  |

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**19B.1.2 Earthworks and associated structures in the Rural Area, are Permitted Activities provided that they comply with the following conditions:**

*Earthworks may expose koiwi (human remains), taonga or Maori or Non-Maori archaeological material. Archaeological sites are protected by the Historic Places Act 1993 and an Archaeological Authority may be required from the New Zealand Historic Places Trust. Owners / applicants should contact the Historic Places Trust, Wellington Tenth's Trust and Ngati Toa Rangatira, about the location of archaeological sites, or in the event that a site is discovered.*

**19B.1.2.1 Earthworks stability**

19B.1.2.1.1 In the Rural Area the earthworks stability conditions applies to:

- allotments under 1200m<sup>2</sup>, in Makara Village and Makara Beach settlements, as identified in Appendix 1
- earthworks for residential buildings, accessory buildings for residential or rural activities, or structures associated with the buildings (excluding fences)
- earthworks associated with a subdivision.

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*Other than earthworks associated with residential and rural buildings and related structures, and subdivisions, the District Plan does not control the stability of earthworks in the Rural Area.*

19B.1.2.1.2 For the earthworks stability conditions refer to Rule 19B.1.1.1.

### **19B.1.2.2 Erosion, dust and sediment control**

19B.1.2.2.1 For allotments under 1200m<sup>2</sup>, in Makara Village and Makara Beach settlements, as identified in Appendix 1:

- The total area of earthworks on a site must be no more than 250m<sup>2</sup>
- There must be no visible evidence of settled dust beyond the boundaries of the site.

19B.1.2.2.2 Earthworks must be no closer than 20 metres from a stream (excluding any section of stream that is piped) or wetland, or the edge of the sea (the coastal marine area), except for earthworks that require resource consent under a regional plan, in which case this condition does not apply.

*Resource consents may also be required from Greater Wellington for earthworks on erosion prone land*

*Resource consent may be required from Greater Wellington for earthworks within 20m of a stream, such as work in the bed of streams or the maintenance, upgrading or construction of access roads and farm tracks, or the construction of small dams*

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This condition does not apply to allotments under 1200m<sup>2</sup>, in Makara Village and Makara Beach settlements, as identified in Appendix 1.

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### **19B.1.2.3 Earthworks and structures associated with streams and wetlands**

Earthworks and associated structures must be no closer than 20 metres from a stream (excluding any existing section of stream that is piped) or wetland.

This condition does not apply to allotments under 1200m<sup>2</sup>, in Makara Village and Makara Beach settlements, as identified in Appendix 1.

*Council will discourage earthworks and associated structures that enable proposals that pipe, drain or otherwise modify, streams or wetlands. It will encourage earthworks and structures that enable proposals that minimise changes to the flow of water in streams or wetlands. It will also look favourably on proposals that restore streams or wetlands to a more natural state.*

### **19B.1.2.4 Flooding hazard**

Earthworks and associated structures must not be in a Hazard (Flooding) Area.

### **19B.1.2.5 Visual amenity – general**

The existing ground must not be altered by more than 2.5 metres vertically, unless the earthworks and any associated structures are underneath an existing building, or an addition to that building, and the earthworks and any associated structures will not be visible from the outside of the building.

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### **19B1.2.6 Transport of material**

The volume of earth and / or construction fill material transported to or from a site must not exceed 100 m<sup>3</sup>, over the duration of the project.

**19B.1.3 In all Areas, structures to retain or stabilise landslips (including sprayed concrete), are Permitted Activities provided that they comply with the following condition:**

*Landslips that are not caused by excavation or other human activities are not 'earthworks' However, work to clean up or reshape ground after a landslip are 'earthworks' and Rule 19B1.1 or Rule 19B1.2 apply. This rule applies where no earthworks are needed to retain or stabilise a landslip*

19B.1.3.1 The retaining or stabilising structure must be no higher than 2.5 metres measured vertically.

*This rule has been included in the Plan to permit certain smaller scale structures designed to retain or stabilise landslips.*

*Permitted structures to retain or stabilise landslips may require a building consent*

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## 19B.2 Discretionary Activities (Restricted)

### 19B.2.1 In all Areas, including the Rural Area:

- earthworks and associated structures that do not comply with the conditions for Permitted Activities under Rule 3B.1.1 or Rule 3B.1.2
- structures to retain or stabilise landslips that do not comply with the condition for Permitted Activities under Rule 3B.1.3

are a Discretionary Activity (Restricted) in respect of the following items:

#### 19B.2.1.1 earthworks stability

#### 19B.2.1.2 erosion, dust and sediment control

#### 19B.2.1.3 earthworks and structures associated with streams and wetlands

#### 19B.2.1.4 flooding hazard (except for Suburban Centres)

*All applications for resource consent within Maori Precincts, or sites of significance to tangata whenua or other Maori, must include a description of consultation with tangata whenua and other Maori*

*Some of the chapter appendices for Residential, Rural and Open Space have separate or additional rules for earthworks*

*An additional rule applies for earthworks on ridgelines and hilltops in the Rural Area - refer to Rule 15.4.2*

*In Suburban Centres earthworks within a Hazard (Flooding) Area are assessed under Policy 6.2.6.4 and the rules in Chapter 7*

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**19B.2.1.5 earthworks and structures for tracks**

**19B.2.1.6 visual amenity - general**

*This item does not apply to the Chest Hospital Heritage Area (Lot DP 316137) - Rule 17.2.5 applies*

**19B.2.1.7 visual amenity– suburban coastal area**

**19B.2.1.8 transport of material**

**Only the items for the permitted activity conditions that are not met, will be considered in assessing the application (except for earthworks stability, where the additional item of erosion, dust and sediment control, will also be considered).**

***Non-notification / service***

In respect of items 19B.2.1.1 to 19B.2.1.8, applications do not need to be publicly notified and do not need to be served on affected persons.

***Relevant policies for preparing resource consent applications***

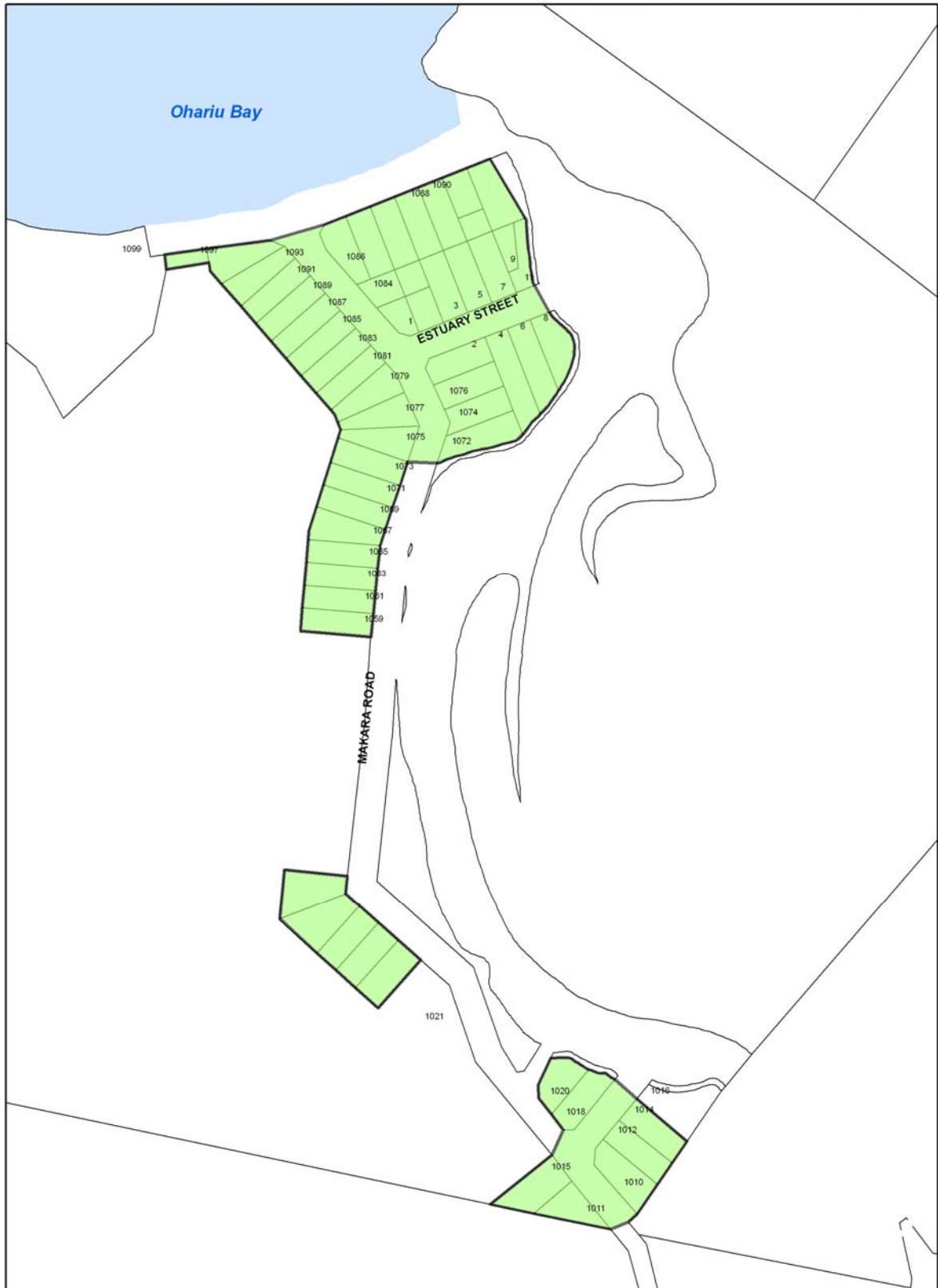
Refer to Policies 19A.2.1.1 to 19A.2.1.10


Note that this is an indicative guide to the relevant policies; applicants should check all policies that may be relevant to a particular consent application.

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*In assessing applications for earthworks under Chapter 19A, Council will only consider the matters, e.g. flooding hazard, earthworks / structures for tracks etc, that 'trigger' the resource consent, rather than all the listed items, when it assesses the application. The exception is earthworks stability, where council will also consider the control of erosion, dust and sediment, on the site of the earthworks.*


**Appendix 2 - Makara Beach - Areas where Rules 19B.1.2.1.1 and 19B.1.2.2.1 apply**



 Area where Rules 19B.1.2.1.1 and 19B.1.2.2.1 apply for earthworks stability & erosion, dust, and sediment control

**Appendix 2 - Makara Village - Areas where Rules 19B.1.2.1.1 and 19B.1.2.2.1 apply**



 Area where Rules 19B.1.2.1.1 and 19B.1.2.2.1 apply for earthworks stability & erosion, dust, and sediment control