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## Regional Plan: Sediment Control

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## 1.0 Introduction

In accordance with Section 30(1) of the Resource Management Act, the statutory responsibilities of the Auckland Regional Council (ARC) include the control of the use of land for the purpose of the maintenance and enhancement of the quality of water in waterbodies and coastal water and the control of discharges of contaminants into or onto water.

Significant quantities of sediment are discharged from bare earth surfaces where appropriate erosion and sediment control has not been implemented. Such bare surfaces are created by land development or redevelopment activities that involve vegetation clearance and/or earthworks. These include land development for forestry or agricultural use, land contouring for urban development and roadworks and quarries. Resultant sediment discharge has been identified by the ARC as the major pollutant, by volume, of the waterways of the Auckland Region.

This Regional Plan addresses the issue of sediment discharge, and defines the mechanisms the ARC has chosen for avoiding, mitigating or remedying any adverse effect on the environment due to sediment discharge from bare earth surfaces.

## 2.0 Sediment Control in the Auckland Region

The adverse effects that elevated levels of sediment, discharged from land development activities have on the waterways of the Auckland region were first addressed by the ARC in 1979. Initially, a voluntary control system was developed in conjunction with the distribution of an Urban Earthworks Guideline to encourage land developers to undertake sediment control measures. This system was only partially effective, as evidenced by the large number of sites that, in the view of the ARC, had inadequate sediment control.

In June 1988, the Auckland Regional Authority (the ARC's predecessor) introduced direct controls on urban land disturbing activities in the Auckland Region. An Urban Earthworks Notice was issued under Section 34(2) of the Soil Conservation and Rivers Control Amendment Act 1959. This Act provided for a public notice requiring prior consent for activities "likely to cause soil erosion, floods or deposits in watercourses, lakes or the sea". Thus it became a statutory requirement that people carrying out major urban earthworks seek approval from the then Auckland Regional Authority. Consents required the provision of a satisfactory erosion and sediment control plan, that complied with predetermined minimum standards. Monitoring of sediment control was carried out to ensure compliance with the plan. This new programme also involved public education, extensive liaison with the earthworks industry and latterly, research.

In 1990, a further Section 34 Notice was introduced requiring forestry operations greater than 2 hectares to apply for a consent from the ARC. An erosion and sediment control plan was also a requirement of the consent.

With the advent of the Resource Management Act 1991 in October 1991, the existing Section 34 Notices were carried over as rules in a Transitional Regional Plan. These rules expired on 30 September 1993, at which time all previous legislative requirements ceased to have effect. The activities which give rise to the discharge of sediment laden stormwater continue, however.

This Plan was formulated to continue as a Proposed Regional Plan to replace the expired rules of the Transitional Regional Plan. The controls for the discharge of sediment laden runoff have been incorporated into this Plan, along with the controls for landuse previously addressed under the Transitional Regional Plan. Under this Plan, activities will be specified as permitted, controlled or discretionary, with land use resource consents required for controlled or discretionary activities.

Quarries have previously required a discharge permit from the ARC for the discharge of sediment laden stormwater. However, under this Regional Plan, they will be required to have a land use consent as well as any necessary discharge permit.

## **3.0 Statutory and Policy Framework**

### **3.1 Statutory Framework**

#### **Resource Management Act 1991**

The Resource Management Act 1991 (RM Act) establishes the ARC's statutory responsibilities with regard to resource management.

#### **3.1.1 Part II – Purposes and Principles of the Resource Management Act**

Section 5(1) of the RM Act states the purpose of the Act is:

“to promote the sustainable management of natural and physical resources”.

Section 5(2) defines “sustainable management” to mean:

“managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety while:

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
- (b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
- (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.”

Section 6 of the RM Act states the following matters of national importance that the ARC must recognise and provide for in managing the use, development, and protection of the natural and physical resources of the region.

- “(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development;
- (b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development;

### 3.1.1 (con't)

- (c) The protection of areas of significant indigenous vegetation and significant habitats of significant fauna;
- (d) The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers;
- (e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.”

The objectives, policies, rules and other methods detailed in this Regional Plan recognise and provide for the relevant matters detailed in Section 6 of the RM Act.

Section 7 of the RM Act states the following other matters that particular regard must be given to when managing the use, development and protection of the natural and physical resources of the region.

- “(a) Kaitiakitanga;
- (b) The efficient use and development of natural and physical resources;
- (c) The maintenance and enhancement of amenity values;
- (d) Intrinsic values of ecosystems;
- (e) Recognition and protection of the heritage values of sites, buildings, places, or areas;
- (f) Maintenance and enhancement of the quality of the environment;
- (g) Any finite characteristics of natural and physical resources;
- (h) The protection of the habitat of trout and salmon.”

The objectives, policies, rules and other methods detailed in this Regional Plan also give particular regard to the relevant matters detailed in Section 7 of the RM Act.

### 3.1.1 (con't)

Section 8 of the RM Act, requires the Auckland Regional Council to take into account the principles of the Treaty of Waitangi, wherein Section 8 states:

“In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi)”

The Tangata Whenua of the Auckland Region were consulted during the development of the Plan and the effects of the discharge of sediment on matters of significance to Tangata Whenua were identified. Objectives and policies have been included in the Plan that seek to ensure that land disturbance activities regulated by the provisions in this Plan which result in the discharge of elevated levels of sediment into areas identified by Tangata Whenua as being of special significance, are taken into account in implementing the provisions of this Plan.

### 3.1.2 Scope of the Plan

Section 30(1) of the RM Act sets out the functions of the ARC including:

- (c) “The control of the use of land for the purpose of:
  - (ii) The maintenance and enhancement of the quality of waterbodies and coastal water.”
- (f) The control of discharges of contaminants into or onto land, air or water and discharges of water into water.”

Section 63 of the RM Act states that the purpose of the preparation, implementation and administration of Regional Plans is to assist a Regional Council to carry out any of its functions in order to achieve the purpose of the Act. Sections 63 to 70 of the RM Act addresses the purpose, preparation and contents of Regional Plans.

This Regional Plan addresses the issue of elevated sediment generation and discharge from areas which are cleared of vegetation, and/or subject to land disturbance. It refers to the whole of the Auckland Region. The Plan seeks to promote a sediment control programme, through the introduction of objectives, policies, methods and rules to avoid, remedy or mitigate adverse effects resulting from the discharge of elevated levels of sediment on the receiving environment.

### 3.1.2 (con't)

It is constrained to these sediment related matters, and other soil conservation issues, such as the sustainable use of the Auckland Region's soil resources, and soil degradation, are not addressed in this Plan. These issues are discussed in the Soil Conservation Chapter of the Regional Policy Statement and may be the subject of a more comprehensive Land Management Regional Plan at some later date. This Land Management Plan would include promotion of pro-active erosion control measures such as tree planting, and the development of community based groups, to achieve sustainable land management. The effects of other activities that also have significant effects on water quality may be addressed in other Regional Plans.

This Regional Plan includes a number of rules, in addition to policies and methods. These rules have the force and effect of regulation, and are enforceable under the RM Act. Such rules are introduced only where the ARC is satisfied that they are necessary for achieving the purpose of the RM Act, and are the most appropriate means of exercising the ARC's functions, having regard to both efficiency and effectiveness.

### 3.1.3 Implementation of the RM Act

Section 9(3) of the RM Act states:

“No person may use land in a manner that contravenes a rule in a Regional Plan unless that activity is:

- (a) Expressly allowed by a resource consent granted by the Regional Council responsible for the Plan; or
- (b) Allowed by Section 20 (certain existing lawful uses allowed).”

In this Regional Plan, this has the effect of allowing the use of any land provided that:

- It is not specified in the rules contained in this Plan that a resource consent is required; or
- It meets the conditions for permitted activities; or
- The use is allowed by Section 20 (Certain Existing Lawful Activities may continue) of the RM Act.

### 3.1.3 (con't)

In accordance with Section 9(4)(b) of the RM Act, the word “use” in relation to any land includes the meaning; “any excavation, drilling, tunnelling, or other disturbance of the land.”

It should be noted that a resource consent application may now be required by a rule in the Plan, within 6 months of the Plan being adopted, for some uses which were previously permitted.

Section 15 of the Act, however, does not allow any discharge of contaminants into the environment unless expressly allowed by a rule in a Regional Plan or Proposed Regional Plan, a resource consent or regulation.

“Contaminant” is defined in the RM Act as including:

“Any substance (including gases, liquids, solids and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat:

- (a) When discharged into water, changes or is likely to change the physical, chemical or biological condition of water; or
- (b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.”

Therefore “Contaminant” is defined by the RM Act in such a way as to include sediment.

## 3.2 Policy Framework

As well as providing the legislative framework for the development of the Plan, the RM Act provides for statutory Policy Statements and Plans which make up the policy framework within which the Plan is developed.

### 3.2.1 New Zealand Coastal Policy Statement (NZCPS)

The New Zealand Coastal Policy Statement 1994 was issued on 5 May 1994 by the Minister of Conservation. The purpose of the Coastal Policy Statement is defined in Section 56 of the Resource Management Act as being to “state policies in order to achieve the purpose of this Act in relation to the coastal environment of New Zealand.”

### **3.2.1 (con't)**

The NZCPS therefore provides a guide to the Regional Council in the management of the coastal environment. In accordance with Section 55 of the Act, this Plan shall not be inconsistent with the NZCPS.

### **3.2.2 Proposed Regional Policy Statement**

The RM Act requires that the ARC prepares a Regional Policy Statement.

Sections 59-62 of the Act set out the purpose of Regional Policy Statements, how they should be prepared and what they should contain.

The purpose of a Regional Policy Statement is to achieve the sustainable management of natural and physical resources of the region by providing an overview of the major resource management issues in the region. It also establishes objectives, policies and methods for achieving integrated management of the region's resources.

Thus the Regional Policy Statement is a written statement of the principles, priorities and courses of action proposed by the Regional Council to deal with the resource management issues of the region. It provides the region with certainty and clarity in its planning direction.

The Proposed Auckland Regional Policy Statement was publicly notified on 12 February 1994. The matters associated with sediment and resultant impacts on water quality are discussed in the Water Quality Chapter of the Proposed Regional Policy Statement.

In accordance with the provisions of the RM Act, this Regional Plan must not be inconsistent with the Regional Policy Statement.

### **3.2.3 Other Regional Plans**

Section 63 of the RM Act, provides for preparation, implementation and administration of Regional Plans. Other Regional Plans may be prepared in respect of any function which the ARC is responsible for and may, if appropriate, be integrated with this Plan. Section 67(2) of the RM Act requires that this Plan shall not be inconsistent with other Regional Plans of the Auckland region.

### **3.2.3.1 Proposed Auckland Regional Plan: Coastal**

Section 64(1) of the RM Act states that a Regional Coastal Plan must be prepared for the coastal marine area of a region. Section 64 (2) of the RM Act permits the incorporation of a Regional Coastal Plan within a more extensive Regional Plan “in order to promote the integrated management of a coastal marine area and any related part of the coastal environment.”

The Proposed Auckland Regional Plan: Coastal which incorporates the Auckland Regional Coastal Plan relating to the coastal marine area and related parts of the coastal environment was publicly notified on 25 February 1995.

This Plan also contains objectives, policies rules, and methods which address the discharge of contaminants including sediment into the coastal marine area.

### **3.2.4 District Plans**

Seven Territorial Authorities are contained in the Auckland Region; being the Councils of Rodney District, North Shore City, Waitakere City, Auckland City, Manukau City, Papakura District and Franklin District (however only the northern part of the Franklin District is contained within the Auckland Region.)

Section 31 of the Act sets out the functions of Territorial Local Authorities for the purpose of giving effect to the RM Act in their districts. Those functions are different from those specified in Section 30 of the RM Act for Regional Councils. (See clause 3.1.2 – Scope of Plan).

In giving effect to their functions under the RM Act, Territorial Authorities are required to produce a District Plan for the district which is ‘not inconsistent with’ any Regional Policy Statement or Plan.

This does not mean, however, that a District Plan cannot impose more restrictive controls than a Regional Plan if those controls are justified in terms of the functions of Territorial Local Authorities.

It is therefore important that any person wishing to carry out any land disturbing activity controlled by the Regional Plan also check with the relevant Territorial Local Authority to determine whether that activity is also controlled by provisions in a District Plan. It may be that a land disturbing activity which is permitted in this Plan is not permitted in a District Plan because, for example, there is a need to protect areas of significant indigenous vegetation in a particular part of the district.

### **3.2.5 Conservation Management Strategy (CMS)**

Section 66(2)(c)(i) requires that the ARC, in preparing this Plan, to have regard to any management plans and strategies prepared under other Acts. The Department of Conservation (DOC) has responsibilities under the Conservation Act 1987 to prepare a conservation management strategy for the Auckland conservancy. The purpose of the CMS is to establish objectives for the integrated management of natural and historical resources managed by DOC and to implement policies prepared under Section 17B of the Conservation Act. The CMS covers all land, marine areas and historic resources administered by DOC, as well as all aspects of the Department's work. It also indicates desired outcomes for the protection of natural and historic values not directly managed by the Department, such as lands administered by other agencies or in private ownership.

### **3.2.6 Iwi Planning Documents**

Section 66(2)(c)(ii) requires the ARC in preparing this Plan to have regard to relevant planning documents recognised by affected Iwi. Significant adverse effects on ancestral taonga can occur as a result of land disturbance activities, and such the effects of these activities on matters of significance to Tangata Whenua have been considered and provided for in this Plan.

## 4.0 Issue

Land disturbance activities that expose bare earth surfaces can significantly increase the potential for the generation and discharge of elevated levels of sediment, and consequently have an adverse effect on the quality of waterbodies and coastal water.

### 4.1 Sediment Discharge in the Auckland Region

The ARC has identified earthworks, roading, tracking, trenching, quarries, and vegetation removal as the major activities contributing to the generation of elevated sediment loadings in the waterbodies and coastal waters in the Auckland Region.

The ARC – Environment commissioned a report from the National Institute of Water and Atmospheric Research (NIWA) to quantify sediment yields from particular land use activities occurring in the Region. The report is entitled “Storm Sediment Yields from Basins with Various Land Uses in Auckland Area” dated July 1994.

The information contained in the report is summarised below.

#### ANNUAL SOIL LOSS IN AUCKLAND REGION\*

Land-Use	Measured (Tonnes/km <sup>2</sup> /year)	Predicted Average Annual Soil Loss (Predicted over 20 year period) (Tonnes/km <sup>2</sup> /year)
Pasture	49	46
Market Gardening	49	52
Developed Urban – Industrial	107	100
Developed Urban – Residential	24	24
Earthworks	6,600	16,800

\* **Reference:** “Storm Sediment Yields from Basins with Various Land Uses in Auckland Area” – National Institute of Water and Atmospheric Research (July 1994).

As summarised in the above table, the huge potential for sediment to be generated from land bared through earthwork activities is significantly greater than for the other land uses identified in the table.

#### 4.1 (Cont'd)

Various other land disturbance activities such as vegetation clearance that can result in bare earth surfaces have also been addressed in this Plan.

The “measured” sediment yields are the yields that were actually recorded in the study (the earthworks yield had to be calculated as it occupied only 28% of a pastoral catchment). The “Predicted Average Annual Soil Loss” yields are an estimate of sediment yields based on storm yield magnitude-frequency analysis and averaged over longer periods than the flow record.

The report predicts that sediment yields will increase markedly with larger storm events. The predicted levels of sediment generated during a storm event are identified in the “Predicted Average Annual Soil Loss” figures summarised in the above table. The significantly higher levels of sediment that occur as a result of land disturbance activities have been described in the Plan as “elevated” levels of sediment when defining the issue this Plan seeks to address.

Controls have been imposed through this Plan on those activities that have the potential to produce quantities of sediment that may have an adverse effect on water quality. The need for these controls is due to the huge potential for sediment to be generated from land disturbing activities. These controls apply across the Region irrespective of industry. The forestry activities controlled by this Plan are restricted to earthworks and some vegetation removal. Earthworks are perceived to be the major sediment contributor in the Auckland Region and forestry activities undertake this activity routinely (for example roading, tracking and skid formation). It is also relevant that controls only refer to the removal of vegetation. Other vegetation clearance activities generally carried out as part of a forestry operation for example, such as thinning-to-waste operations where the vegetation is left where felled are excluded from the provisions under this Plan as they do not bare soil.

**Refer to Appendix A1 and A2 of this Regional Plan for further explanation of the Issue.**

#### 4.2 The Effects of Sediment Discharge to Waterways

The quality of the Region’s streams, harbours and gulf have been identified as of importance to residents of the Region (e.g. by the Auckland City Council, in its Strategic Plan “Towards 2020”). Priority needs to be given to the maintenance or enhancement of that water quality. Human activities can lead to large quantities of sediment generation and discharge. If uncontrolled, this discharge can cause deterioration of water quality in the following ways.

## 4.2 (con't)

### (a) Effects on Ecological Values

#### (i) Biological Effects

Large amounts of sediment in a waterway are harmful to fish and other aquatic life. Aquatic life can be physically smothered by a build up of sediment in the stream bed. Animals not actually covered by deposits of silt can sustain damage to their gill and mouthparts due to the abrasive nature of the silt. The juvenile stages of many species are particularly vulnerable. Sedimentation may also significantly alter habitats, for example by destroying spawning grounds.

Algae, the major food supply for stream life, can be scoured off the rocks in the stream bed by sediment. Other links in the food chain may also be affected, and the surviving animals forced to migrate elsewhere if they can.

Turbidity (cloudiness of the water) from suspended solids in the water may stop animals feeding because they can't see their prey, and increase heat absorption and therefore the temperature of the water, affecting aquatic life. It also stops light penetrating the water, slowing down photosynthetic activity and subsequent plant and algae growth.

#### (ii) Effect on other Pollutants

Sediment transports other pollutants such as lead, hydrocarbons, agricultural nutrients and toxic substances into streams and harbours. There they accumulate and affect aquatic life. Control of the pollutants transported by sediment is achieved by controlling the generation and movement of sediment.

#### (iii) Stream Blockage

Sediment deposition can lead to the infilling of affected waterbodies. This can lead to a reduction in their hydraulic efficiency, an increase in susceptibility to flooding and restrictions to access. While such sediment deposition has environmental impacts, the removal works also have potential for serious environmental effects.

## 4.2 (con't)

As stated above, Section 6(c) of the RM Act requires that recognition and provision be made for “the protection of areas of significant indigenous vegetation and the significant habitats of indigenous fauna”.

Furthermore Section 7 of the Act requires that particular regard be had to:

- “(d) Intrinsic values of ecosystems,
- (f) Maintenance and enhancement of the quality of the environment, and
- (h) The protection of the habitat of trout and salmon.”

### (b) Effects on the Consumable Water Resources

High loadings of suspended solids affect the use of water for irrigation, stock and domestic water supplies. Sediment in irrigation water clogs pump filters and sprinkler nozzles, and in domestic and stock water supplies sediment can lead to unacceptable drinking quality. Removing sediment from drinking water can be an expensive operation. Furthermore, sediment can form a threat to the useful life of dams.

Section 7(f) of the RM Act requires that particular regard be had to “maintenance and enhancement of the quality of the environment”.

### (c) Aesthetic Values

Sediment discharges into streams, lakes or coastal waters detracts from their aesthetic qualities. Clean clear water is perceived as being much more conducive to recreation than “dirty” sediment laden water. The purely scenic value of such waterbodies as the Waitemata Harbour is enhanced by its degree of clarity.

Section 6 of the RM Act requires that provision be made for:

- “(a) the preservation of the natural character of the coastal environment, wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development;
- (b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.”

Section 7 requires that regard be had to the maintenance and enhancement of amenity values.

## 4.2 (con't)

### (d) **Damage to Property and Public Utilities**

Construction activities can inundate lower lying properties or roadways with sediment if adequate sediment control measures are not in place. There are a number of examples in the Auckland Region where sediment has damaged the grounds and houses of neighbouring properties.

### (e) **Effects of Sediment on Matters of Significance to Tangata Whenua**

In addition to meetings with various Tangata Whenua groups, (refer to Appendix B – Consultation) sediment control issues important to Tangata Whenua have been identified through consultation for the Proposed Auckland Regional Policy Statement and Regional Plan: Coastal or such matters as stated in Iwi Planning Documents. The effects of sediment on matters of significance to Tangata Whenua can be summarised as follows.

- (i) Tangata Whenua consider all taonga are inseparable and must be managed as a whole.
- (ii) Land disturbance activities which generate and discharge elevated levels of sediment into waterbodies and coastal waters have been identified as a matter of significance to Tangata Whenua. These activities include earthworks and vegetation removal including the removal of scrub, trees and other vegetation cover without replanting.
- (iii) Such activities have actual and potential adverse effects on the mauri of ancestral water and other taonga (e.g. fish spawning and feeding grounds, mahinga maataitai, taonga raranga, tauranga ika and waahi tapu) particularly in and around the Kaipara, Waitemata, and Manukau Harbours, the Tamaki Straits, Firth of Thames, Islands of the Hauraki Gulf and areas of the West Coast and all their associated waterways.
- (iv) The customary rights of Tangata Whenua confirmed by the Treaty of Waitangi may also be affected by the discharge of sediment.
- (v) The degradation of water quality may also affect kaitiaki initiatives of Tangata Whenua including taiapure and rahui.
- (vi) The direct adverse effects of land disturbance activities such as logging, roading and general earthworks on waahi tapu is also a matter of significance to Tangata Whenua.

## 4.2 (con't)

Section 6(e) of the RM Act requires recognition and provision for “the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and taonga” as a matter of national importance. Section 7(a) requires that particular regard be had to Kaitiakitanga and Section 8 that the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) be taken into account.

# **OBJECTIVES, POLICIES AND METHODS**

## **OBJECTIVES**

To maintain or enhance the quality of water in waterbodies and coastal water.

To sustain the mauri of water in waterbodies and coastal waters, ancestral lands, sites, waahi tapu and other taonga.

To reduce the exposure of land to the risk of surface erosion leading to sediment generation.

To minimise sediment discharge to the receiving environment.

## **5.0 REGULATION**

### **5.1 Objectives**

- 5.1.1** To maintain or enhance the quality of water in waterbodies and coastal water.
- 5.1.2** To sustain the mauri of water in waterbodies and coastal waters, ancestral lands, sites, waahi tapu and other taonga

### **5.2 Policies**

- 5.2.1** Land disturbance activities which may result in the generation and discharge of elevated levels of sediment will be required to employ methods which avoid, remedy or mitigate adverse effects on the quality of water in waterbodies and coastal waters.
- 5.2.2** Land disturbance activities which may result in the discharge of elevated levels of sediment into waterbodies and coastal waters shall be considered inappropriate where they will have a significant adverse effect on:-
  - (i) The qualities, elements and features which contribute to the natural character of areas of the coastal environment, (including the coastal marine area) wetlands, lakes and rivers and their margins; and which are identified in the Auckland Regional Policy Statement and the Auckland Regional Plan: Coastal as having outstanding or regionally significant ecological, landform, geological or landscape values.
  - (ii) Outstanding and regionally significant natural features and landscapes as identified in the Auckland Regional Policy Statement and the Auckland Regional Plan: Coastal.
  - (iii) Areas of significant indigenous vegetation and significant habitats of indigenous fauna as identified in the Auckland Regional Policy Statement and the Auckland Regional Plan: Coastal as having international, national and regional significance.
  - (iv) Areas of significance to Tangata Whenua as identified in the Auckland Regional Policy Statement and the Auckland Regional Plan: Coastal.
  - (v) Areas identified by Tangata Whenua in accordance with Tikanga Maori as being of special spiritual, cultural and historical significance.

Unless the adverse effects can be avoided, remedied or mitigated.

## 5.2.2 (con't)

### **Explanation**

*Operations that expose the soil or bare earth may also make that surface vulnerable to erosion and subsequent sediment discharge. While controls can be implemented for some of these operations, many take place without any specialist sediment control input. Depending on the location of these works, they can have a direct influence on the receiving environment, an effect that is compounded by the cumulative impact of many such operations. In almost all cases, this impact can be reduced or avoided by adherence to a number of common sense principles and design considerations which are easy to adhere to and inexpensive to implement.*

## 5.3 Methods

**5.3.1** In this Plan, land use activities are considered as permitted, controlled or restricted discretionary activities.

### **5.3.2 Sediment Control Protection Areas**

This Plan recognises that land disturbing activities occurring in areas surrounding waterbodies, wetlands and coastal waters have a higher potential of generating and discharging levels of sediment which may have an adverse effect on the quality of the receiving waters.

These areas are described and identified as “Sediment Control Protection Areas” and are defined as follows:

- (a) 100 metres either side of a foredune or 100m landward of the coastal marine area (whatever is the more landward of mean high water springs);  
or
- (b) 50 metres landward of the edge of a watercourse, or wetland of 1000m<sup>2</sup> or more.

### **Explanation**

*The waterbodies and coastal waters in the Region have been identified as being as particularly vulnerable to the impacts of the discharge of sediment.*

*As a method to avoid the discharge of sediment into these receiving environments, this Plan has identified areas around waterbodies, wetlands and coastal waters in the Region as Sediment Control Protection Areas (SCPA's). Land use activities which disturb the soil in these areas are likely to have a higher potential to generate an adverse effect. This is because of their closer proximity to the receiving environment with reduced ability to mitigate any*

### **5.3.2 (con't)**

*adverse effects and physically provide natural defences against sediment entering the receiving environments.*

*The Council considers that a higher level of control is required in these areas as there is a greater risk of land disturbance activities discharging sediment into adjoining receiving waters that will have an adverse effect on water quality.*

## **5.4 Rules Relating To Section 9 Of The RM Act**

### **Land Uses**

This Plan provides rules for land disturbing activities. No person may use land for the land disturbing activities specified in Section 5.4 –Tables A, B and C of this Plan unless a resource consent is obtained, or it is specified under the Permitted Activities that a resource consent is not required.

Section 9 of the Act provides that other land use activities are not controlled by this Plan.

The rules for land disturbing activities specify permitted, controlled and restricted discretionary activities.

Areas specified in the rules refer to the larger of:

- (i) contiguous areas of land; or
- (ii) land held within the same Certificate of Title.

### **5.4.1 Permitted Activities**

- 5.4.1.1** The use of land for the land disturbing activities specified in Table A - Permitted Activities is permitted only where the activity is carried out in accordance with the Conditions specified in Rule 5.4.1.2 below.

5.4.1.1 (Cont'd)

**TABLE A Permitted Activities**

Type of Activity	Within the Sediment Control Protection Area	Outside the Sediment Control Protection Area
<b>Vegetation Removal</b> On all Soils	All Vegetation Removal	All Vegetation Removal
<b>Earthworks</b> <ul style="list-style-type: none"> <li>on all Soils</li> </ul>	Area less than 0.25 ha	Area less than 1.0ha where the land has a slope less than 15°.  Area less than 0.25 ha where the land has a slope equal to or greater than 15°.
<b>Roading/Tracking/Trenching</b> on Sand Soils  on Soils other than Sand Soils	Length less than 100m.  Length less than 100m.	All Roothing, Tracking and Trenching.  Area less than 1.0 ha where the land has a slope less than 15°.  Area less than 0.25 ha where the land has a slope equal to or greater than 15°.
<b>Quarries</b> Where no runoff leaves the site and no wash process on site.  <ul style="list-style-type: none"> <li>Remainder where runoff leaves the site <u>and/or</u> there are wash processes on site.</li> </ul>	All Quarries  Quarry area less than 1000m <sup>2</sup> <u>and/or</u> less than 1.0ha catchment.	All Quarries  Quarry area less than 1000m <sup>2</sup> <u>and/or</u> less than 1.0ha catchment.

**Note:** Sediment Control Protection Area is defined as

- (a) 100 metres either side of a foredune or 100m landward of the coastal marine area (whatever is the more landward of mean high water springs);  
or
- (b) 50 metres landward of the edge of a watercourse, or wetland of 1000m<sup>2</sup> or more.

### 5.4.1.2 Conditions for Permitted Activities

#### Permitted Activity Conditions for Vegetation Removal

- 1 The Auckland Regional Council shall be notified in writing at least 14 days prior to Vegetation Removal operations of one hectare or more being undertaken. This notification shall include details of the site location, area to be harvested, timing of the operation and the proposed methodologies to be utilised.
- 2 Effective erosion and sediment control measures shall be implemented to minimise erosion and sediment discharge from the operation. These measures shall be implemented on any disturbed areas where sediment is likely to wash to watercourses and/or channels which contain stable pools, and shall remain in place until the area of operation is stabilised in accordance with Condition 3.

Any sediment control measures shall be monitored on a weekly basis during operations within the area draining to it and cleaned out when it is observed to be greater than 50% full of sediment. Materials extracted from the sediment control measures shall be deposited in a position from which they cannot wash to any watercourse and/or channels which contain stable pools.

#### **Explanation**

*One or more erosion and sediment controls may be implemented to assist in ensuring the activity is carried out in accordance with Condition 2 above.*

*Such examples include:*

- (i) *Sediment Retention Ponds*
- (ii) *Silt Fences*
- (iii) *Contour Drains*
- (iv) *Runoff Diversion Channels*
- (v) *Slash Bunds*

*These measures should be implemented in accordance with “Erosion and Sediment Control Guidelines for Land Disturbing Activities for the Auckland Region”, Auckland Regional Council Technical Publication Number 90, available from Auckland Regional Council. These Guidelines also contain further erosion and sediment control measures, which may also be implemented.*

### 5.4.1.2 (Cont'd)

3 The following shall be stabilised against surface erosion following the vegetation removal operation:

- (i) All margins of watercourses and channels containing stable pools, and all areas with an average slope of greater than 15 degrees.
- (ii) All areas associated with ground based operations where the vegetation removal operation does not include limbing at the “stump” (point of felling).

Stabilisation shall be achieved as soon as practicable, but no later than 12 months from the date of commencement of the operation and is defined as achieving a 75% ground cover.

4 No vegetation shall be felled directly into or over any watercourse and/or channels containing stable pools unless the tree cannot be felled safely by any other means and/or the environmental consequences of leaving the tree standing exceed those of felling into or across any watercourse and/or channels containing stable pools.

No less than 24 hours notice shall be given to Auckland Regional Council prior to the implementation of such works unless exceptional circumstances exist, or the event cannot reasonably have been foreseen.

5 Only excavator based or purpose built felling machinery (excluding tractors and wheeled skidders) may operate within 10 metres of any watercourse and/or channels containing stable pools, provided that such machinery shall:

- (i) not be turned or screwed; and
- (ii) exit the ten metre zone along the same line used to enter the zone by either reversing out along the line of entry or continuing forward along the line of entry.

6 Harvesting debris shall not be placed or left where it will divert or dam any watercourse, prevent fish passage or destroy significant habitat in a watercourse.

#### 5.4.1.2 (Cont'd)

- 7 Sediment originating from the site of a vegetation removal operation shall be managed in such a way to ensure that after reasonable mixing it does not give rise to any of the following effects to receiving waters:
- (i) The production of any conspicuous scums or foams or floatable suspended materials;
  - (ii) Any conspicuous change in the colour or visual clarity;
  - (iii) Any emission of objectionable odour;
  - (iv) The rendering of freshwater unsuitable for consumption by farm animals;
  - (v) Any significant adverse effect on aquatic life.

#### **Explanation**

*Principles or standards for the control of water quality are defined in Sections 70 (Rules about Discharges) and 107 (Restrictions on grant of certain discharge permits) of the RM Act 1991. These Sections of the RM Act contain standards specified in Condition 7 above.*

- 8 A financial contribution shall be paid to the Auckland Regional Council before 30 June each year. This amount shall be \$40.00 per hectare and shall be used solely for such of the purposes specified below as they relate to the particular activity by the particular owner. Where vegetation clearance of less than one hectare per year occurs, no financial contribution is payable.
- (i) Monitoring and inspecting vegetation removal operations;
  - (ii) Response to minor non-compliance issues by means of correspondence;
  - (iii) Specific scientific investigation undertaken by or on behalf of the Auckland Regional Council into the effects of sediment discharge from vegetation removal operations.

A proposal for vegetation removal that otherwise fully complies, but where the applicant seeks to pay a lesser sum as a, or no, financial contribution, should be considered as a controlled activity where the Council restricts the exercise of its discretion to the quantum of financial contribution only.

### 5.4.1.2 (Cont'd)

#### **Explanation**

*The Auckland Regional Council is required to gather information, monitor and keep records as necessary to carry out its functions under Section 35 of the RM Act. Section 108 of the RM Act authorises consent authorities to impose conditions requiring financial contributions for any purpose specified in the Plan.*

### **Conditions for Permitted Activities (Excluding Vegetation Removal)**

#### **Sediment Control**

1. Sediment originating from the site of a land disturbance activity shall be managed in such a way to ensure that after reasonable mixing it does not give rise to any of the following effects to the receiving waters:
  - (i) The production of any conspicuous scums or foams or floatable suspended materials;
  - (ii) Any conspicuous change in the colour or visual clarity;
  - (iii) Any emission of objectionable odour;
  - (iv) The rendering of freshwater unsuitable for consumption by farm animals;
  - (v) Any significant adverse effect on aquatic life.

#### **Explanation**

*Principles or standards for the control of water quality are defined in Sections 70 (Rules about Discharges) and 107 (Restrictions on grant of certain discharge permits) of the RM Act 1991. These Sections of the RM Act contain the standards specified in Condition 5.4.1.2.1 above.*

*The document "Water Quality Guidelines No.2: Guidelines for the Management of Water Colour and Clarity" published by the Ministry for the Environment, dated June 1994 provide guidance in applying the water quality standards specified in the RM Act.*

*One or more sediment retention or filtering facilities may be implemented to assist in ensuring the activity is carried out in accordance with Condition 5.4.1.2.1 above.*

### 5.4.1.2 (Cont'd)

*Such examples include:*

- (i) *Sediment retention pond with a minimum capacity of 1m<sup>3</sup> per 100m<sup>2</sup> of contributing catchment, and with an erosion-proof outfall and spillway.*
- (ii) *Silt fences constructed of geotextile filter fabric, dug in 250mm at the bottom to avoid undercutting, supported at no more than 2 metre intervals, a catchment of less than 0.25 hectares, and constructed so that the fence cannot be outflanked by flow.*
- (iii) *Rows of haybales sufficiently tightly abutted to retain flow, anchored with a stake at either end, dug in 100mm, serving a catchment of less than 0.25 hectares, and constructed so as to avoid being outflanked by runoff.*
- (iv) *Measures to filter sediment from runoff draining bare worked areas, such as from single site residential/ commercial/ industrial development to stormwater systems, may include filter fabric, gravel and securely staked haybales.*
- (v) *Vegetative buffer strips can be used to filter sediment from overland runoff. They should be at least 10 metres wide with a thick grass cover. The maximum length of bare ground between these strips (commencing from the bottom of the slope) is dependent on the slope of the site. The following is a guideline to the appropriate distance between widths.*

<b>Site Slope Angle (%) or (O°)</b>	<b>Maximum Distance Between Rows (m)</b>
<i>5 or 3°</i>	<i>75</i>
<i>10 or 6°</i>	<i>50</i>
<i>15 or 9°</i>	<i>35</i>

*Vegetative buffer strips can be used in Riparian Management Programmes which seek to maintain and enhance the water quality of receiving environments.*

#### 5.4.1.2 (Cont'd)

*The use of and appropriate width of vegetative buffer strips in riparian margin areas will depend on a number of factors including, but not limited to:*

- *slope;*
- *soil type;*
- *vegetation type;*
- *rate of sediment discharge; and*
- *sensitivity of the receiving environment with reference to the areas which are identified in Policy 5.2.2 of this Plan.*

*Further examples of methods to control the discharge of sediment are outlined in the “Erosions and Sediment Control Guidelines for Earthworks”, ARC Technical Publication No.2, March 1992 available from ARC Environment.*

2. Any sediment retention measure installed shall be cleaned out before it is 50% full of sediment, and this removed material shall be deposited in a manner that ensures that it can not wash to any waterbodies or coastal waters.

#### **Runoff Control**

3. Earthworks, roading, tracking and trenching activities shall be isolated from the path of any runoff from the surrounding land to prevent it from washing across the site and eroding sediment from the bared earth.
4. Any measures used to control the path of any runoff from surrounding land shall:
  - (i) Be capable of containing the flow from the critical 20 year return period rainfall event;
  - (ii) Be constructed on a grade to avoid erosion of the runoff control measure where for bare unlined surfaces this grade shall be no greater than 1%;
  - (iii) Have an erosion-proof outfall.

### 5.4.1.2 (Cont'd)

#### **Implementation**

5. All measures to mitigate against the discharge of sediment from a site shall:
  - (i) Be implemented prior to the commencement of any land disturbing activity;
  - (ii) Be retained until the land disturbing activity has been completed.

On completion of the land disturbing activity, the site shall be secured to prevent the generation and discharge of any further sediment from the activity to any receiving waters.

#### **Existing Authorisations prior to the notification of this Regional Plan**

6. Where an activity has obtained the necessary water rights to discharge under the Water and Soil Conservation Act 1967 or a discharge consent granted under the RM Act 1991, prior to the notification of this Regional Plan, or a discharge consent has been applied for prior to notification of this and subsequently granted, and is complying with the conditions on those authorisations, the land use activity will be permitted activity under this plan until the expiry of those authorisations.

### 5.4.2 Controlled Activities

- 5.4.2.1 The use of land for the land disturbing activities specified in Table B – Controlled Activities.

**TABLE B**                      **Controlled Activities**

Type of Activity	Outside the Sediment Control Protection Area
<b>Earthworks</b> <ul style="list-style-type: none"><li>● On all Soils including Sand Soils</li></ul>	Area between 1.0 and 5.0 hectares where the land has a slope less than 15°
<b>Roading/Tracking/Trenching</b> <ul style="list-style-type: none"><li>● On Soils other than Sand Soils</li></ul>	Area between 1.0 and 5.0 hectares where the land has a slope less than 15°

#### 5.4.2.1 (Cont'd)

**Note:** Sediment Control Protection Area is defined as:

- (a) 100 metres either side of a foredune or 100m landward of the coastal marine area (whatever is the more landward of mean high water springs); or
- (b) 50 metres landward of the edge of a watercourse, or wetland of 1000m<sup>2</sup> or more.

#### 5.4.2.2 Matters Over Which The ARC Will Exercise Control

The ARC will exercise control over the following matters:

- (i) Measures used to restrict or control sediment being transported from the site and the effects or impacts of sediment on water quality from the measures chosen, including the practicality and efficiency of the proposed control measures.
- (ii) The proportion of the catchment which is exposed;
- (iii) The proximity of the operation to the receiving environment;
- (iv) The concentration and volume of any sediment that may be discharged;
- (v) The length of time during which the bare earth surface is exposed;
- (vi) The time of year when the activity is undertaken;
- (vii) The duration of the consent;
- (viii) Monitoring the volume and concentration of any sediment that may be discharged;
- (ix) Administration charges under Section 36 of the RM Act;
- (x) Bonds under Section 108(1)[A] (b) of the RM Act;
- (xi) Provisions for obtaining Environmental Benefits (Financial Contributions – Refer to Section 5.7 of this Plan).

### 5.4.2.3 Notification

Application for controlled activities will be considered without notification or the need to obtain the written approval of affected parties, in accordance with Section 94(1)(b) of the RM Act, unless in the opinion of the ARC there are special circumstances justifying notification or the need to obtain the written approval of any other affected persons in accordance with Section 94(5) of the RM Act.

### 5.4.3 Restricted Discretionary Activities

5.4.3.1 The use of land for the land disturbing activities specified in Table C – Restricted Discretionary Activities.

**TABLE C                      Restricted Discretionary Activities**

Type of Activity	Within the Sediment Control Protection Area	Outside the Sediment Control Protection Area
<b>Earthworks</b> <ul style="list-style-type: none"> <li>on all Soils including Sand Soils</li> </ul>	Area greater than or equal to 0.25 hectares	Area greater than or equal to 5.0 hectares on land with a slope less than 15°.  Area greater than or equal to 0.25 hectares on land with a slope greater than or equal to 15°.
<b>Roading/Tracking/Trenching</b> <ul style="list-style-type: none"> <li>on Sand Soils</li> <li>on all Soils except Sand Soils</li> </ul>	Length of 100m or more.  Length of 100m or more.	(Refer to Table A – Permitted Activities)  Area greater than or equal to 5.0 hectares where the land has a slope less than 15°.  Area greater than or equal to 0.25 hectares where the land has a slope greater than or equal to 15°.
<b>Quarries</b> <ul style="list-style-type: none"> <li>Where no runoff leaves the site <u>and/ or</u> there are wash processes on site.</li> </ul>	Quarry area of 1000m <sup>2</sup> or more <u>and/or</u> with a catchment of 1.0ha or more.	Quarry area of 1000m <sup>2</sup> or more <u>and/or</u> with a catchment of 1.0 ha or more.

#### 5.4.3.1 (Cont'd)

**Note:** Sediment Control Protection Area is defined as:

- (a) 100 metres either side of a foredune or 100m landward of the coastal marine area (whatever is the more landward of mean high water springs); or
- (b) 50 metres landward of the edge of a watercourse, or wetland of 1000m<sup>2</sup> or more.

#### 5.4.3.2 Matters Over Which The ARC Will Exercise Discretion

The ARC will restrict the exercise of its discretion to the following matters to the extent which they are relevant in each case:

- (i) Techniques used to restrict or control sediment being transported from the site and the effects or impacts of sediment on water quality from the techniques chosen, including the practicality and efficiency of the proposed control measures;
- (ii) The proportion of the catchment which is exposed;
- (iii) The proximity of the operation to the receiving environment;
- (iv) The concentration and volume of any sediment that may be discharged;
- (v) The time during which the bare earth surface is exposed;
- (vi) The time of year when the activity is undertaken;
- (vii) The duration of the consent;
- (viii) Monitoring the volume and concentration of any sediment that may be discharged;
- (ix) Administrative charges under Section 36 of the RM Act;
- (x) Bonds under Section 108(1)[A](b) of the RM Act;
- (xi) Provisions for obtaining Environmental Benefits (Financial Contributions – Refer to Section 5.7 of this Plan).

### **5.4.3.3 Notification**

Pursuant to Sections 93 and 94 of the RM Act, applications for restricted discretionary activities will be publicly notified for submissions, unless the ARC is satisfied that the adverse effect on the environment of the activity for which consent is sought would be minor and written approval has been obtained from every person who, in the opinion of the ARC, may be adversely affected by the granting of the resource consent.

## **5.5 Rules relating to Sections 14 and 15 of the RM Act**

### **Discharges of Contaminants into the Environment**

#### **Permitted Activities**

**5.5.1** The discharge of sediment laden runoff from any disturbance of the land is allowed provided the disturbance of land is:

- (i) A land disturbing activity not listed in Tables A, B and C and therefore not the subject of this Plan;
- (ii) A permitted activity under Rule 5.4.1 and is carried out in accordance with the conditions detailed in Rule 5.4.1.2; or
- (iii) Allowed by a land use resource consent given under this Plan and is carried out in compliance with all conditions that may have been imposed on that consent.

#### **Discretionary Activities**

**5.5.2** Any discharge of sediment laden runoff not allowed by a rule in this Plan shall be a discretionary activity and require a discharge permit from the ARC.

### **Restrictions relating to Water**

#### **Permitted Activities**

**5.5.3** The damming or diversion of water in respect of the control of sediment laden runoff provided that the following conditions are met:

- (i) The land use activity is a permitted activity under this Plan; or
- (ii) A resource consent given under this Plan is obtained and complied with.

### 5.5.3 (Cont'd)

#### **Explanation**

##### ***Discharges of Contaminants into the Environment***

*Section 15(1) of the Resource Management Act provides that no person may discharge any contaminant into water, or onto or into land, which may result in the contaminant entering water, unless the discharge is:-*

- (i) Expressly allowed by a rule in a Regional Plan or a Proposed Regional Plan;*
- (ii) Expressly allowed by a resource consent;*
- (iii) Allowed by regulations.*

##### ***Restrictions Relating to Water***

*Section 14 of the Resource Management Act provides that no person may use, dam or divert any water (other than open coastal water) unless the taking, damming, or diversion is:*

- (i) Expressly allowed by a rule in a Regional Plan and in any relevant Proposed Regional Plan;*
- (ii) Expressly allowed by a resource consent;*
- (iii) Allowed by Section 20 (certain existing lawful activities allowed).*

*This Regional Plan contains rules relating to land use, discharges and the damming and diversion of water.*

*The rules relating to land use are in Section 5.4 of the Plan and the rules relating to discharges and the damming and diversion of water are in this Section 5.5.*

*This Regional Plan controls sediment discharges or damming and diversion activities associated land disturbing activities listed in Tables A, B and C into water. It does not seek to control natural sediment discharges or sediment from other land disturbing activities not listed in Tables A, B and C.*

### 5.5.3 (Cont'd)

#### *Making Applications*

*In the first instance a person about to commence a land disturbing activity should refer to the land use rules in Section 5.4 of this Plan.*

*If the proposed activity is a land disturbance activity which is not in Tables A, B or C then it is not a land use controlled by this Regional Plan and no land use resource consent is required.*

*In respect of discharges, land disturbance activities not listed in Tables A, B or C are expressly allowed to discharge as Permitted Activities which are provided for in Rule 5.5.1(a). Thus these will not require a discharge permit.*

*If the activity is in one of the Tables and will meet the Permitted Activity conditions, the Regional Council is satisfied that it will also meet the requirements of Section 70(1) of the Resource Management Act. It will thereby be expressly allowed to discharge in accordance with Rule 5.5.1(ii). This rule provides that any discharge of sediment from a permitted land use activity, is expressly allowed.*

*If the land use activity is a Controlled or Discretionary Activity, details about the discharge should be included as part of the Fourth Schedule Assessment of Effects on the Environment that is required to accompany any resource consent application. The proposal will be assessed as a whole and a decision made and/or conditions imposed accordingly. Where consent is granted to the land use the discharge would then be a Permitted Activity under Rule 5.5.1(ii) of the Plan. If the proposal is not for a land disturbing activity but is an activity which discharges sediment, then it is a Discretionary Activity and a Discharge Permit is required under Rule 5.5.2*

## **5.6 Rule Relating to Other Regional Plans**

- 5.6.1** This Plan does not authorise any land use activity, the discharge of sediment or the damming or diversion of water which is controlled in any way by other Regional Plans and pursuant to which a resource consent is required.

## **5.7 Provisions for Obtaining Environmental Benefits where there are Unavoidable Adverse Effects on the Environment from Use and Development**

### **Explanation**

*In accordance with Section 108(1)(a) of the Resource Management Act 1991, the Auckland Regional Council may attach a condition to any resource consent, requiring a financial contribution for purposes specified in the Plan in accordance with Section 108(9) of the RM Act.*

*The term “financial contribution” is defined in Section 108(9) of the RM Act as a contribution of:*

- (a) Money; or*
- (b) Land, including an esplanade reserve or esplanade strip (other than in relation to a subdivision consent) but excluding Maori land within the meaning of the Maori Land Act 1993 unless the Act otherwise provides; or*
- (c) Works, including (but without limitation) the protection planting or replanting of any tree or other vegetation, or the protection restoration or enhancement of any natural or physical resource; or*
- (d) Services*

*Or any combination thereof made for the purpose specified in the Plan (including the purpose of ensuring the positive effects on the environment to offset any adverse effect) and which does not exceed in value the maximum amount specified in or determined in accordance with the Plan*

*Where the Regional Council receives money as a financial contribution the RM Act requires, in Section 111, that it must be used in “reasonable accordance” with the purpose for which the money was received. Money as a contribution will only be required where it is not possible, practicable, or desirable for the contribution to be made by way of works, services or land.*

*Financial contributions will be required to remedy or mitigate as far as practicable, any actual adverse effects of an activity controlled by the provisions of this Plan. Where this is not practicable, consideration should be given to contributions that will offset any adverse effects by compensating the environment or the public for the adverse effects in the same general locality as the proposed activity.*

*Notwithstanding the above, financial contributions will not be used as a method to “buy off” the adverse effects of any proposal.*

### **5.7.1 The Purpose for which Financial Contributions may be Required and Used**

To remedy, mitigate or offset any adverse effects of any land use activity regulated under this Plan by protecting, restoring or enhancing the water quality of the waterbody into which sediment generated from the land use activity is discharged.

### **5.7.2 Circumstance When Financial Contributions may be Required**

Where the activity will cause or contribute to any adverse effects from the discharge of sediment on the quality of the waterbody being discharged into, which cannot otherwise be remedied or mitigated by the consent holder.

### **5.7.3 The Maximum Amount of any Financial Contribution Shall Not Exceed**

The full actual cost to remedy or mitigate or offset the adverse effects on the environment of any land use activity controlled by the provisions of this Plan.

**Note:** The maximum amount set is the upper limit that may be imposed however this may not necessarily be imposed in all cases.

### **5.7.4 Assessment Guidelines**

The Council will use the following assessment guidelines to determine whether or not to impose a financial contribution on a sediment control consent. These guidelines will also be used to determine the type and value of the contribution.

- (i) The extent to which the activity results in positive effects and benefits that may in themselves offset any or all of the adverse effects;
- (ii) The extent of adverse effects and the extent to which such effects can be mitigated or offset by a financial contribution;
- (iii) The extent to which adverse effects are not avoided, remedied or mitigated by any other conditions imposed on the consent;
- (iv) The extent to which a contribution is required to achieve the objectives and policies of the Plan;
- (v) The extent to which any potential adverse effects have been avoided, remedied or mitigated in the design of the proposal.

## **6.0 INFORMATION REQUIREMENTS**

### **6.1 Information to be Submitted with Applications**

An application for a resource consent shall be made on the appropriate ARC resource consent application form, which is available from the ARC. It shall be accompanied by:

- (1) A Sediment Control Management Plan which clearly shows the control measures intended to prevent erosion and the movement of sediment off sites. The level of design should be appropriate to the scale and potential impact of the proposed activity.

The Sediment Control Management Plan should include:

- (i) A locality map.
- (ii) For sites that are being used for any industrial activity identified in the Australia and New Zealand Environment & Conservation Council Guidelines (1992), or identified as contaminated in the relevant operative or proposed District Plan, a preliminary assessment should be carried out to demonstrate that the site is free from contamination.

Should a site be found to be contaminated then sediment control measures which can control the discharge of contaminants absorbed onto sediments may be required to be implemented. Such controls are not provided for in the provisions of this Plan and a separate resource consent will be required from the ARC for the Discharge of Contaminants.

- (iii) Detailed drawings showing the site type and location of sediment control measures, onsite catchment boundaries and offsite sources of runoff.
- (iv) Drawings, specifications and localities of designated practices with supporting calculations.
- (v) A programme of works.
- (vi) If specific sediment control measures are not anticipated, then a management plan for the activities detailing how operations are to be carried out to minimise sediment generation.

## 6.1 (Cont'd)

- (2) An assessment of effects on the environment, as detailed in the Fourth Schedule of the RM Act 1991, appropriate to the scale and potential impact of the proposed activity. A copy of the Fourth Schedule of the RM Act is attached as Appendix C to this Plan.

In particular, specific reference should be made, where relevant, to the actual or potential effect of the proposed activity and to mitigation measures to be undertaken to help prevent or reduce that effect on the elements of the environment identified in Policy 5.2.2.

Further information may be requested under Section 92 of the Act, where in the opinion of the ARC insufficient information is provided to adequately understand the nature of proposed activity, assess the impact of the activity on the receiving environment, or determine ways in which any adverse effects on the environment may be mitigated. Additional information may also be required where there are alternatives which have not been addressed, or where there are particularly sensitive offsite environments to consider.

## **7.0 MINIMUM EARTHWORKS STRATEGIES**

### **7.1 Objectives**

- 7.1.1** To reduce the exposure of land to the risk of surface erosion leading to sediment generation.
- 7.1.2** To minimise sediment discharge to the receiving environment.

### **7.2 Policies**

- 7.2.1** The extent and duration of vegetation removal and earthworks will be minimised.
- 7.2.2** Strategies and initiatives which prevent and limit sediment generation from earthworks will be developed and implemented.

### **7.3 Methods**

- 7.3.1** The ARC will continue to develop and review, on an ongoing basis, minimum earthworks strategies and initiatives which will include practices and techniques to minimise sediment generation associated with earthworks.
- 7.3.2** These minimum earthworks strategies and initiatives will be developed by the ARC in consultation with all interested parties.
- 7.3.3** The ARC will encourage Territorial Authorities to consider and provide for minimum earthworks strategies and initiatives to minimise sediment generation associated with earthworks in the development and implementation of District Plans.

#### **Explanation**

*Minimum Earthworks strategies and initiatives are intended to be implemented in the early planning stages prior to urban development being undertaken.*

*This could include during the advance planning process of identifying land for future urban development (including the development of structure plans), and in deciding requirements for subdivision design undertaken in the development or review of District Plans.*

### 7.3.3 (Cont'd)

*The type of Strategies and Initiatives envisaged are:*

- (i) *The identification of environmental constraints to urbanisation so that the proposed land use is matched to the suitability of land for urban development prior to rezoning or other such identification; for example:*
  - *steepness,*
  - *instability,*
  - *the potential for sediment generation,*
  - *sensitivity to the receiving environments, and*
  - *proximity to waterbodies.*
- (ii) *A critical assessment of minimum grade requirements for services, in order to encourage flexibility thereby minimising the need for land contouring; for example:*
  - *roading standards, and*
  - *site geometry requirements by TLAs.*
- (iii) *Identification of environmentally sound locations for sites and services at the early planning stage, in order to restrict earthworks to the most suitable locations and minimise impacts on vulnerable features; for example, by fingerprinting. Fingerprinting is a method used whereby development patterns are tailored to protect naturally occurring landscape features in that the development disturbs only the land areas necessary to undertake the proposed land use and the remainder of the land (including vegetation and landscape features) is left in a naturally occurring state.*
- (iv) *Retention of natural areas providing a protective vegetative cover on the more vulnerable hillsides and riparian areas, in order to minimise adverse impacts on natural landforms such as steep hillsides and riparian areas; for example, esplanade reserves and strips which form a buffer between waterbodies and land use activities such as vegetation clearance and earthworks.*

## 8.0 INFORMATION GATHERING

### 8.1 Policy

- 8.1.1** Information from research and consultation will be gathered to provide further knowledge of the processes of sediment generation, movement, effects and on-site controls.

#### **Explanation**

*Applied and focused management of sediment generation and discharge requires good understanding of sediment related processes. The Auckland Regional Council commits considerable resources to this area but there are many areas where understanding is, at best, incomplete. The ARC proposes an active programme of research to address information gaps to achieve a greater understanding of sediment and sediment related processes. This information, together with that received from other sources, will be incorporated into the sediment control programme to ensure that management directions are appropriate, directed and effective. The ARC will publicise all such information gained and work through changes in sediment control methodology with appropriate parties to achieve full and informed understanding.*

*However, the ARC cannot hope to address all gaps in understanding and must necessarily aim at areas where the acquired information can be of most benefit to the Auckland Region. As such there will be areas where other organisations may require certain information to promote particular objectives and the ARC will encourage initiatives to undertake this.*

### 8.2 Methods

- 8.2.1** The ARC will prepare and implement a programme of its research into sediment related issues to improve present understanding. This programme will be incorporated into the Annual Plan of the ARC. Results will be used in support of management initiatives.
- 8.2.2** Initiatives by industry or other organisations to undertake research to achieve their own sediment oriented objectives will be encouraged. This could take the form of advice, technical or logistical assistance, or cost-sharing. Industry will not be required to undertake such research but will be required to meet all monitoring conditions attached to current resource consents.
- 8.2.3** The findings of research and monitoring programmes, together with the information gathered through consultation with TLAs, Tangata Whenua, landowners, and interested parties, will be used to identify environments at particular risk from sediment. Specific methods of control may then be adopted.

## **9.0 INFORMATION TRANSFER**

### **9.1 Policy**

- 9.1.1** A publicity and education programme will be implemented to increase community understanding of sediment and its effects on the receiving environment.

#### **Explanation**

*The ARC has found that better adherence to sediment control methods occurs when those involved understand the issue and appreciate the need for the required methods of control. Operations that expose soil to surface erosion processes and consequent sediment discharges are continually occurring around the Auckland Region. In many instances a problem may not be recognised or the knowledge be present to implement remedial measures. Therefore it is important to enhance the level of awareness by operators, industries, and the public. The ARC has produced guidelines and other publications to promote standards and methods of attaining them, information sheets (e.g. Sediment Control News-sheets, Regional Rock (Quarry Newsletter), and convened workshops and seminars. The ARC intends to maintain an active continuation of this strategy to build both specific and general understanding of sediment and related issues.*

### **9.2 Methods**

- 9.2.1** The ARC will update ARC Publication No. 2 “Erosion and Sediment Control Guidelines for Earthworks” within one year following the adoption of this Plan. This Guideline will be reviewed annually.
- 9.2.2** The ARC will prepare new guidelines to assist industry and operators achieve given standards.
- 9.2.3** The ARC will prepare information publications such as newsletters for distribution to appropriate parties.
- 9.2.4** The ARC will convene special purpose liaison groups to facilitate understanding within the appropriate industries and greater community.
- 9.2.5** The ARC will convene and run workshops and seminars on sediment related issues as appropriate.
- 9.2.6** The ARC will prepare and distribute educational material regarding the benefits of retaining, establishing and enhancing riparian vegetation in appropriate circumstances as a sediment control measure.

## **10.0 PRINCIPAL REASONS FOR ADOPTING OBJECTIVES, POLICIES AND METHODS**

The level of controls on sediment discharge in the Auckland Region has varied from nil control, to voluntary adherence to guidelines, and more recently to legislative controls. An explanation of the policies is contained within the Plan.

## **11.0 ANTICIPATED ENVIRONMENTAL RESULTS**

It is anticipated that the implementation of this Regional Plan will avoid, remedy or mitigate the adverse effects of sediment discharge from vegetation removal and earthworks on the environment. Improvements in water quality in waterbodies and coastal water are expected due to the following.

- (i) A reduction in the area of bareground through the implementation of minimum earthworks initiatives;
- (ii) A reduction in sediment entering water bodies and coastal waters;
- (iii) Increased efficiency and effectiveness of sediment control measures on bareground areas, as a result of the implementation of the rules contained in this Plan and from the application of the appropriate results from the research programme;
- (iv) Increased efficiency and effectiveness of the Sediment Control Programme;
- (v) Increased “ownership” of the problem of sediment discharge by other groups such as TLAs and industry/operators. This should achieve a greater desire to achieve desirable environmental outcomes. This will also provide greater certainty to those involved.

## **12.0 PROCESSES TO DEAL WITH OTHER LOCAL GOVERNMENT BODIES**

There are seven Territorial Local Authorities which the ARC deals with in its Region. In addition there are two neighbouring Regional Councils where the boundaries are defined by property boundaries and do not follow water catchment boundaries. Addressing the issue of the discharge of sediment adversely affecting water quality may involve the ARC with any of these Councils.

**12.1** Processes to be used to deal with the Issues where it crosses Local Authority boundaries will be as follows:

1. Ongoing consultation and liaison will be undertaken with the Region's Local Authorities at both staff and Council levels.
2. The ARC will make its statutory and non-statutory documents available to other Local Authorities for comment in order to share up-to-date information.
3. The ARC will make comments and/or submissions on statutory and non-statutory documents produced by other local authorities.
4. The ARC will monitor the state of the environment of the Region and the effectiveness of this Plan. This information will be publicly available. Pollution abatement and enforcement will also be carried out.
5. The ARC will use education programmes, non-statutory guidelines, industry codes of practice, give advice to applicants and generally advocate for the benefit of the environment in respect of this Issue.
6. Surveys, research and modelling are carried out for the purpose of the Auckland Regional Policy Statement, the Auckland Regional Coastal Plan and any other Regional Plan on a regional basis and any information concerning this Issue will be made available to the relevant Local Authorities.
7. The ARC will make use of the powers given under Section 108 of the RM Act for joint resource consent Hearings. If found to be appropriate, the transfer of powers under Section 33 or the creation of joint bodies and plans under Section 80 may also be used.
8. The ARC will liaise with other Local Authorities on legislative matters that could affect this issue.

- 12.2 These Processes together with ongoing consultation and liaison will be used to deal with issues between Territorial Authorities and between Regions.

## **13.0 PROCESS TO MONITOR AND REVIEW THE PLAN**

### **13.1 Procedures to Monitor and Review the Plan**

In accordance with Section 79 of the RM Act, a full review of this Regional Plan is required to commence no later than 10 years after the Plan becomes operative. There is also provision for review of the Plan within this 10 year period if required, either by the Regional Council or by any other person. Section 35 of the RM Act requires that the Regional Council gather such information as is required to carry out this Plan.

A proactive research programme is anticipated along with a programme to publish the results of the research initiatives. This will help formulate future management decisions. Such a research programme will also consider the appropriateness of the current methods to manage the cumulative effects of development and activity within catchment areas. In addition, there will be a programme of monitoring and possible review of the progress of this Regional Plan in achieving its objective of minimising the effect of sediment discharge.

In order to ensure that the objectives and policies of this Plan are being achieved, it is important that the effectiveness of the methods and rules are monitored. It is expected that this will be achieved in part by the research programme, as this will enable the ARC to further understand the extent and effects of sediment discharge in the Regions, and determine the appropriateness of current methods. In addition, information will be forthcoming through consent monitoring and compliance programmes. The basis for consent conditions will be updated and changed as appropriate.

The progress of achieving the objectives of the Regional Plan will be reported on each year within the Council's Annual Plan. If the monitoring programme shows provisions of the Plan are not adequately achieving the objectives, the appropriate parts of the Plan will be reassessed and may be reviewed through the relevant procedures of the RM Act.

## **13.2 Monitoring and Enforcement of Resource Consents**

Monitoring to ensure compliance with permitted activity status and, more particularly, consent conditions, will be an integral part of the implementation of this Plan. The ARC will undertake its own independent inspections and evaluations of both the performance of any resource consent granted under this Plan and compliance with any conditions of the consent. A record will be kept of complaints about non-compliance. Information from this compliance monitoring programme will be linked with new research data as it becomes available to update conditions of consent and, where appropriate, initiate variations of this Plan.

## 14.0 DEFINITIONS

Many of the definitions detailed below are from Section 2 of the RM Act. Where terms are defined in the RM Act, they shall have the same meaning in this Plan.

If the RM Act is amended and any definitions detailed in Section 2 of the RM Act are amended then the new definitions in the RM Act will override those listed below.

The following additional terms are defined for the purposes of this Plan.

### **Coastal Marine Area**

That area of the foreshore, seabed and coastal water, and the air space above the water of which the seaward boundary is the outer limits of the territorial sea; of which the landward boundary is the line of mean high water springs; except that where that line crosses a river, the landward boundary at that point shall be whatever is the lesser of-

- (a) One kilometre upstream from the mouth of the river; or
- (b) The point upstream that is calculated by multiplying the width of the river mouth by 5.

### **Contaminant**

Includes any substance (including gases, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy or heat:

- (a) when discharged into water, changes or is likely to change, the physical, chemical or biological condition of the water, or;
- (b) when discharged onto or into land or into the air, changes or is likely to change the physical, chemical or biological condition of the land or air onto or into which it is discharged.

### **Coastal Water**

Seawater within the outer limits of the territorial sea and includes:

- (a) Seawater with a substantial fresh water component; and
- (b) Seawater in estuaries, fiords, inlets, harbours or embayments.

## **14.0 (Cont'd)**

### **Critical rainfall event**

The critical event shall be equal to the rainfall event for a twenty year return period, whose duration is equal to the time of concentration for the catchment. That is, the time taken for runoff to travel from the furthest point of the contributing catchment where the land has been stripped of all vegetative cover to the point of measurement.

### **Earthworks**

The disturbance of land surfaces by blading, contouring, ripping, moving, removing, placing or replacing soil or earth, or by excavation, or by cutting or filling operations.

### **Foredune**

The larger and more mature dune lying between the incipient dune and the hind dune area. Foredune vegetation is characterised by grasses and shrubs. Incipient dune means the most seaward and immature dune of the dune system with vegetation characterised by grasses. The hind dune means the sand dunes located to the rear of the foredune and is generally characterised by more mature vegetation including trees and shrubs.

## **14.0 (Cont'd)**

### **Hapu**

Sub tribe which usually consists of a number of whanau with a common ancestor.

### **Iwi**

Maori tribe which usually consists of a number of hapu with a common ancestor.

### **Kaitiaki**

The Tangata Whenua guardian who exercises the ancestral responsibilities of Kaitiakitanga.

### **Kaitiakitanga**

The exercise of guardianship; and in relation to a resource, includes the ethic of stewardship based on the nature of the resource itself.

### **Maataita**

Food resources from the sea.

### **Mahinga Maataitai**

Food resource reserves developed in accordance with regulations arising from the Treaty of Waitangi (Fisheries Claim) Settlement Act 1992.

### **Mana Whenua**

The customary authority exercised by an iwi or hapu in an identified area.

### **Maori**

A person of the Maori race in New Zealand and includes a descendent of any such person.

### **Mauri**

Life force. Life essence.

### **Operation**

Any activity that is likely to generate elevated levels of sediment.

## 14.0 (Cont'd)

### **Rahui**

A form of temporary restriction on the use of, and access to, particular areas of food resources for a special purpose or function, including conservation, restoration and respect for the dead.

### **Roading and Tracking**

Earthworks of 3m or more in width carried out in order to form, construct or reconstruct a road or track, but excludes normal maintenance operations.

### **Sand Soil**

A soil derived from sand with little or no soil profile development. It is comprised of non-plastic non-cohesive material with less than 5 percent of that material being less than 0.06 mm in diameter and with less than 60 percent of that material being larger than 2 mm in diameter. Soil types included in this definition include Marsden sand, Pinaki sand, Whananaki sand, unnamed sands, and related hill soils. (Reference: "Maps Volume of the approved Auckland Regional Planning Scheme 1988").

### **Sediment Control Protection Area**

Comprises the following areas:

- (a) 100 metres either side of a foredune or 100m landward of the coastal marine area (whatever is the more landward of mean high water springs); or
- (b) 50 metres landward of the edge of a watercourse, or wetland of 1000m<sup>2</sup> or more.

### **Site**

Any land covered by an operation.

### **Slope**

The natural slope of the site to which the proposed land disturbance activity relates where that slope exceeds the angle specified in the rules in this Regional Plan for more than 10%.

Note: With respect to the slope angle detailed in Tables, A, B and C in Section 5.0 Regulation of this Regional Plan; 15° slope angle = 27% slope angle.

### **Stable Pools**

Stable pool is one which does not dry out more than once in a one in five year return period.

## **14.0 (Cont'd)**

### **Taiapure**

Local Fisheries management areas subject to the provisions of Section 54A to 54K of the Fisheries Act 1983.

### **Tangata Whenua**

In relation to a particular area, means the iwi, or hapu that holds mana whenua over that area.

### **Taonga**

That which is highly prized or treasured, tangible or intangible, that contributes to Maori well-being. The term equates roughly to the concept of a resource, but incorporates a range of social, economic and cultural associations. Included for example are waahi tapu, waterways, fishing grounds, mountains and place names.

### **Taonga raranga**

Plants that produce material highly prized for use in weaving.

### **Tauranga ika**

Offshore fishing grounds developed in accordance with regulations arising from the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.

### **Tikanga Maori**

Maori customary values and practices.

### **Tracking**

The definition of “tracking” is included within the definition of roading above.

### **Trenching**

A land disturbing operation with a cross-sectional dimension, being equal to or greater than 1.0 metres in depth and 0.6 metres in width, where the operation involves the laying of main line services including gas, water, and drainage services.

Areas of trenching specified in the rules in this Regional Plan will be calculated as the sum of the depth, width and length of the bare surface area exposed.

### **Vegetation**

All forms of shrub and tree vegetation including indigenous and exotic plants. It excludes pasture.

## **14.0 (Cont'd)**

### **Vegetation Removal**

The removal from the site of all forms of shrub and tree vegetation including indigenous and exotic plants including by mechanisms such as blading, burning, root raking, tree harvesting, and spraying with residual chemicals. It does not include that relating to normal cropping or pasture activities; or to mowing, crushing, slashing, hand felling, pruning or waste thinning operations, where the vegetation is left as felled on the ground and not removed from the site, vegetation being controlled by spraying with non-residual chemicals or the removal of turf and grass.

### **Waahi tapu**

A place sacred to Maori in the traditional, spiritual, religious, ritual or mythological sense.

### **Whakatupu**

A form of temporary restriction on the use of and access to particular areas or food resources for conservation purposes.

### **Waterbody**

Fresh water or geothermal water in a river, lake, stream, pond, or aquifer, or any part thereof that is not located within the coastal marine area.

### **Watercourse**

A waterbody which ceases to flow not more than once in a one-in-five year return period.

### **Whanau**

An extended Maori family including the nuclear family.

### **Wetland**

Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.

## **APPENDIX A The Surface Erosion Process and Activities Contributing to Elevated Sediment Levels**

A number of land development activities such as vegetation clearance and earthworks activities leave the exposed earth vulnerable to surface erosion processes.

### **A.1 The Erosion Process**

Erosion is a natural process during which bareground is gradually eroded by water or wind from the earth's surface.

Sediment is produced by this process and natural levels will vary with factors such as storm intensity and duration, antecedent rainfall conditions, catchment condition, soil type, slope length and angle.

Slope angle is a significant factor in the determination of the amount of sediment generated from bare earth. The steeper the slope angle of the land, the greater the quantities of sediment likely to be generated. In addition, steep catchments can deliver sediment to the receiving environment more readily, resulting in higher potential for adverse impacts on the receiving waters.

The effect on receiving waters will also vary as different receiving waters have differing capacity to cope with suspended sediment. Large storms can generate and transport large sediment loads, and receiving environments can occasionally be overwhelmed and obliterated by the sheer quantity of sediment produced.

The natural production of sediment is therefore an ongoing process and is typified by varying concentrations of sediment, with the occasional devastating incident. It is not possible to accurately define the levels of sediment that might occur naturally because at any one time naturally occurring levels of sediment will vary in response to a wide array of unpredictable influences operating within the catchment. The effects of the sediment will also vary depending on the particular characteristics of the receiving environment.

The influence of human development has accelerated the process of sediment production.

## **A.1 (Cont'd)**

A number of terms are used in this Plan to describe the levels of sediment which occur naturally (“natural”); and those that are the result of development processes. The terms “elevated” “accelerated” and “rapid” have been used to describe the significantly higher levels of sediment that can be generated as a result of some land disturbance activities. It is difficult to compare “natural” and “elevated” sediment levels in absolute terms as they continually vary, however, it is possible to compare annual sediment yields to obtain a comparative indication of sediment yields. This has been done in Section 5.0 of the Plan where an Annual Soil Loss table is presented. This table presents information collected from the Auckland Region and indicates that the potential for sediment to be generated from bare earthworks is significantly greater than for the other land uses identified in the table.

In general, larger well structured soil particles tend to be less mobile than smaller clay particles, and they tend to settle out of suspension more easily. In addition to being smaller, clay particles tend to become electrically charged in solution, which shows their settling out of suspension. These smaller sediments therefore are more likely to be distributed through the receiving environment, including streams, rivers, estuaries, beaches and harbours.

## **A.2 Land Disturbance Activities**

Land disturbance activities identified as contributing to elevated sediment loadings include earthworks, roading, tracking, trenching, quarries and vegetation removal. Although traditionally land development for agricultural purposes would be a major source of vegetation removal, most land suitable for this use has now been developed. There is the perception in the community that market gardening operations on the sloping volcanic soils of South Auckland are also a source of sediment discharge. However, while extensive sheet-wash and rill erosion may occur when these soils are cultivated, ARC research to date indicates that there is very little sediment leaving the catchments. The soils strong structural stability is causing the eroded soil to be deposited out of suspension before the runoff reaches the waterbodies. Further work is being undertaken in this area.

The issue of the sustainability of the soil resource in the Auckland Region is being addressed in a joint study currently being carried out by the ARC and Environment Waikato. This forms part of the ARC’s Sustainable Land Management Programme.

## **A.2 (Cont'd)**

### **(i) Earthworks**

The ARC research programme has shown that the largest source of sediment discharge in the Auckland Region is from earthworks. Such work usually involves removal of the vegetation, then removal of the topsoil (which is usually respread at a later date) and recontouring of the site by cut and fill operations. Due to the length of time an area is left unvegetated, a site is prone to the erosive effects of any rainfall occurring during that time. Earthworks commonly involve the building and upgrading of roads and stream channels. Major highway reconstruction is also a significant source of sediment discharge. Fills that are used to dispose of surplus earth are also potential sources of sediment discharge.

### **(ii) Quarries**

Quarries are also a potential source of sediment discharge, and the sediment generated is often fine in size and difficult to retain on the site. Considerable sediment can be generated from bare areas of overburden stripping and from any washing or crushing process which uses water.

### **(iii) Forestry**

Vegetation removal is generally associated with forest establishment and timber harvesting. Forestry occurs predominantly on the hill country to the north and east of Auckland City, and on sand country along the coasts. The main source of sediment generation during forestry operations is thought to be from activities associated with earthworks (roading, tracking, skid formation etc). Large areas are often felled at any one time, and these areas can remain vulnerable to sediment wash for 2 to 3 years following the operations. The land can remain prone to land instability until the replanted trees are of sufficient size to stabilise the soil.

## **APPENDIX B - Consultation**

In November of 1992, a draft document on the Regional Plan (including proposed Regional Rules) was prepared and a number of agencies invited to attend a series of workshops. These included government departments, Territorial Local Authorities of the Auckland Region, neighbouring Regional Councils, Tangata Whenua of the Auckland Region, and representatives of affected industries including Federated Farmers, earthwork developers, foresters, environmentalists and quarry operators.

Subsequent meetings with a number of these groups have taken place.

A further combined workshop was held in August 1993 on a second draft of the Plan to allow input from representatives of the groups prior to notification. The ARC has also encouraged input through special purpose liaison groups, newsletters and informal comment. This consultation has continued throughout the remaining phases of the development of this Regional Plan.

## **APPENDIX C - Fourth Schedule**

### **Resource Management Act 1991**

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#### **ASSESSMENT OF EFFECTS ON THE ENVIRONMENT**

- 1. Matters that should be included in an assessment of effects on the environment –**  
Subject to the provisions of any policy statement or plan, an assessment of effects on the environment for the purposes of section 88(6)(b) should include –
- (a) A description of the proposal:
  - (b) Where it is likely that an activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:
  - (c) Where an application is made for a discharge permit, a demonstration of how the proposed option is the best practicable option:
  - (d) An assessment of the actual or potential effect on the environment of the proposed activity:
  - (e) Where the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment which are likely to arise from such use:
  - (f) Where the activity includes the discharge of any contaminant, a description of –
    - (i) The nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects; and
    - (ii) Any possible alternative methods of discharge, including discharge into any other receiving environment:
  - (g) A description of the mitigation measures (safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:
  - (h) An identification of those persons interested in or affected by the proposal, the consultation undertaken, and any response to the views of those consulted:
  - (i) Where the scale or significance of the activity's effect are such that monitoring is required, a description of how, once the proposal is approved, effects will be monitored and by whom.

## Appendix C (Cont'd)

- 2. Matters that should be considered when preparing an assessment of effects on the environment** – Subject to the provisions of any policy statement or plan, any person preparing an assessment of the effects on the environment should consider the following matters:
- (a) Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects:
  - (b) Any physical effect on the locality, including any landscape and visual effects:
  - (c) Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:
  - (d) Any effect on natural and physical resources on plants or animals and any physical disturbance of habitats in the vicinity:
  - (e) Any discharge of contaminants into the environment, including any unreasonable emission of noise and options for the treatment and disposal of contaminants:
  - (f) Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.