



# Section 32 Report

## Soils and Minerals

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February 2009  
GW/EP-G-09/14



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## 1. Introduction

This report presents the Resource Management Act 1991 Section 32 evaluation “Consideration of alternatives benefits and costs” for the proposed Regional Policy Statement on soils and minerals. Section 32 states:

32 *Consideration of alternatives, benefits, and costs*

*(1) In achieving the purpose of this Act, before a proposed plan, proposed policy statement, change, or variation is publicly notified, a national policy statement or New Zealand coastal policy statement is notified under section 48, or a regulation is made, an evaluation must be carried out by—*

.....

*(c) the local authority, for a policy statement or a plan (except for plan changes that have been requested and the request accepted under clause 25(2)(b) of Part 2 of Schedule 1); or*

*(3) An evaluation must examine—*

*(a) the extent to which each objective is the most appropriate way to achieve the purpose of this Act; and*

*(b) whether, having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives.*

....

*(4) For the purposes of [[the examinations referred to in subsections (3) and (3A)]], an evaluation must take into account—*

*(a) the benefits and costs of policies, rules, or other methods; and*

*(b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.*

*(5) The person required to carry out an evaluation under subsection (1) must prepare a report summarising the evaluation and giving reasons for that evaluation.*

*(6) The report must be available for public inspection at the same time as the document to which the report relates is publicly notified or the regulation is made.*

## 1.1 Structure of this report

Section 2 of this report outlines the regionally significant issues identified and the process of identification.

Section 3 outlines the objectives proposed in response to each issue and evaluates the appropriateness of each objective in accordance with the Resource Management Act.

Sections 4 to 6 evaluate the appropriateness of the policy and method options proposed to achieve each objective. When evaluating the policy and method options, the range of options available is outlined first, and then each option is evaluated. There are four types of options discussed in each instance. These are:

(a) Regulatory direction to district and/or regional plans

This is where a regional policy directs matters that must be provided for within district and/or regional plans. The method sets out when the provisions are to be included.

(b) Regulatory direction as to matters to be given particular regard in resource management decision making

This is where a regional policy sets out specific matters that are to be given “particular regard” when making resource management decisions. The method sets out when these matters are to be considered. This may include resource consent decisions, decisions on notices of requirements or when making decisions about reviewing, varying, replacing or otherwise changing district and/or regional plans.

(c) Non-regulatory options

This is where a regional policy and a method specify non-regulatory programmes or action that will be put in place. The non regulatory methods include:

- provision of information or guidance
- integrating management
- identification or investigation
- providing support.

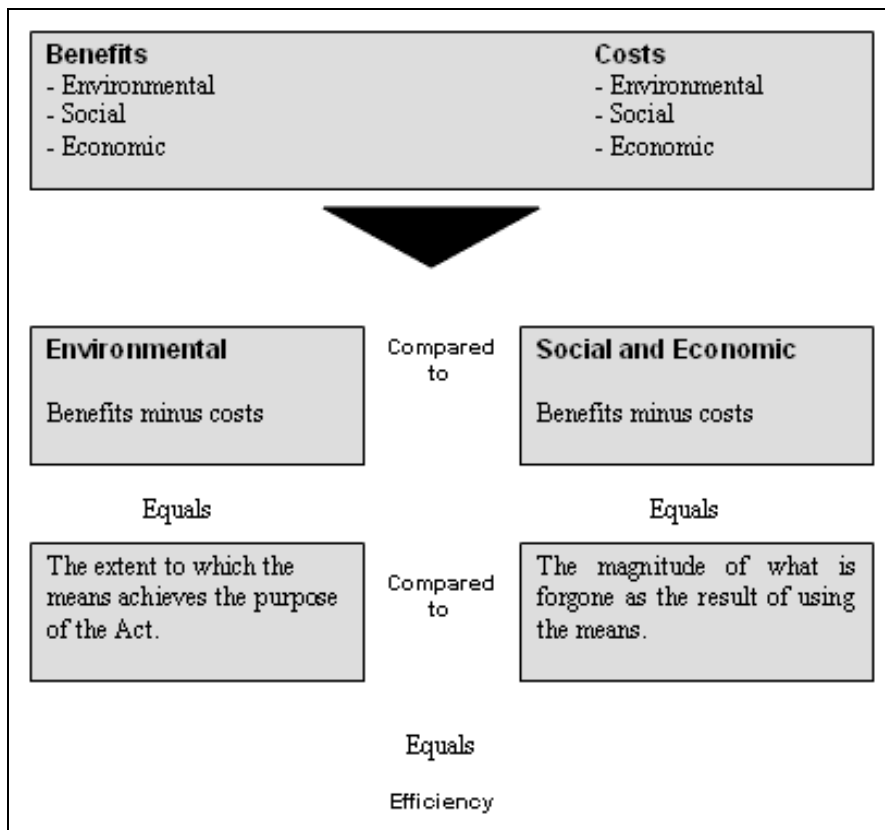
(d) Doing nothing

This is where no intervention, either regulatory or non-regulatory will occur.

Determining the most appropriate policies and methods is based on an assessment of the *effectiveness* and *efficiency* of the policy and method options, and the risks of acting or not acting when there is uncertain or insufficient information.

*Effectiveness* is a measure of how much influence a resource management intervention has or how successful it is in addressing the issues, in terms of achieving the desired environmental outcome. When evaluating the *efficiency* of the policy and method options both the benefits (social, economic and environmental) and costs (social, economic and environmental) are outlined. Each option is then deemed to be either efficient or inefficient. The following diagram outlines how this assessment is undertaken.

Effectiveness is a cumulative value, derived from the range of types and scope of influences or impacts of an intervention, towards achieving intended results and environmental outcomes. The effectiveness of an option is not able to be assessed as an absolute value. Rather, options are appraised as to whether they exhibit the qualities which contribute to ‘effectiveness’ and to what degree, and a determination is made as to the cumulative effect of the pertinent attributes in terms of high, medium or low ‘effectiveness’.



**Figure 1: Deriving efficiency from benefits and costs**

The evaluation of ‘efficiency’ will result in either a positive or negative result in terms of efficiency. Alternatively, if efficiency is expressed as a cost/benefit ratio, it will be either greater than or less than 1. In the event the ratio is considered to be less than 1, the option can be considered efficient, in that the sum of the benefits outweigh the sum of the costs. In the event the ratio is deemed to be greater than 1, the option can be considered to be inefficient, in that the sum of the costs outweigh the sum of the benefits. It is important to

note that in this evaluation of 'efficiency', absolute values for each of the variables considered pertinent (i.e. identified as either a cost or a benefit within the evaluation of the options) are not available. Rather, the analysis has endeavoured to present an accurate appraisal of the relative costs and benefits between the options, in order to determine which are efficient and which are not. A simple yes or no is used to differentiate the options as efficient or inefficient.



## 2. Regionally significant issues

As part of the review of the natural hazards chapter, in the Regional Policy Statement for the Wellington Region 1995, the issues were evaluated and reviewed using:

- Measuring up: The state of the environment report for the Wellington region (2005), the Soil quality monitoring technical report (2005) and the Soils and minerals background report (2005)
- Regional Policy Statement Evaluation Report for Soils and Minerals (2006)
- Our region – their future: A discussion document on the review of the Regional Policy Statement for the Wellington Region (2006)
- Criteria to ensure the issues were regionally significant, were ‘resource management’ matters and appropriate for inclusion in the Regional Policy Statement (see Appendix 1 for a copy of the criteria).

The resulting issues recommended for inclusion in the proposed Regional Policy Statement on soils and minerals are:

### Issue 1: Accelerated soil erosion

Some land management practices accelerate soil erosion and reduce soil quality. Soil loss can lead to increased sedimentation of waterways and subsequent effects on the coastal marine area. Soil loss can also decrease farm production, soil biodiversity and ecosystem function.

### Issue 2: Reduction of soil health

Some land use practices are reducing the health and productive capability of soil, leading to the loss of its life-supporting capacity.

### Issue 3: Highly productive agricultural land under threat from development

The Wellington region has a small total area of highly productive agricultural land (Class I and II land). This land is under threat from development, including residential development and the construction of roads.

### Issue 4: Contaminated land

Some land where hazardous substances have been manufactured, used or stored – such as gas works, petrol stations, landfills, and sheep dips – have contaminated soils. Development of that land for new uses may not be safe if soils are contaminated.

### Issue 5: Limited mineral resources

There are limited mineral resources in the region and demand for these will increase. The benefits of extracting mineral resources locally are greater than sourcing from outside the region. If the extraction of mineral resources within the region is constrained, demand will have to be met from outside the region, with higher social, economic and environmental costs.

### **3. Extent to which the objectives are the most appropriate**

The proposed soils and minerals objectives are:

Objective 28: Land management practices do not accelerate soil erosion.

Objective 29: Soils maintain those desirable physical, chemical and biological characteristics that enable them to retain their ecosystem function and range of uses.

Objective 30: The demand for mineral resources is met from local sources as much as possible.

To follow is an outline of the extent to which each of the soil and mineral objectives are the most appropriate way to achieve the purpose of the Resource Management Act.

#### **3.1 Objective 28**

*Objective 28: Land management practices do not accelerate soil erosion.*

- Measuring up (2005) reports that the effects of accelerated soil erosion results in a loss of soil productivity, capability and versatility. About one third of the region is erosion prone land, which is more susceptible to accelerated soil erosion if the land is inappropriately managed. Accelerated soil erosion has occurred where there is pastoral grazing on erosion-prone land (predominantly in the eastern Wairarapa hills), wind erosion (as a result of the cultivation of arable soils in the Wairarapa Valley), large scale earthworks associated with subdivisions and roading, removal of native vegetation, and harvesting of plantation forestry on erosion prone land, where the harvesting practices are poorly executed. Off site effects of soil erosion include reduction in water clarity in rivers and streams, degradation of aquatic habitat from sediment deposition on stream beds, downstream flooding, and aggradation of river beds. Early predictions of changing weather patterns from climate change also suggest that there could be more frequent and intense rainstorm events, which may cause more widespread damage to erosion prone land.
- This objective addresses Issue 1 (Accelerated soil erosion) and Part II of the Resource Management Act by safeguarding the life-supporting capacity of soil and avoiding, remedying and mitigating any adverse effects on the environment.
- Objective 28 by seeking improved land management practices to prevent soil erosion achieves sustainable management, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety.
- Particular principles (within Part II of the Resource Management Act) of relevance include:

*7(d) – intrinsic value of ecosystems*

*7(f) – maintenance and enhancement of the quality of the environment*

*7(i) – the effects of climate change*

- Relevant sub sections to Section 30 “Function of regional councils” for Objective 28 include:

*30(1)(a) the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region.*

*30(1)(c) the control of the use of land for the purpose of –*

*(i) soil conservation:*

- Without this objective Greater Wellington would not be able to encourage (through policies and methods) improvements in land management practices to prevent accelerated soil erosion. The alternative is a region of increasing soil erosion and land degradation which is against the purpose of the Resource Management Act.

On the basis of the above, objective 28 is the most appropriate for achieving the purpose of the Resource Management Act.

### **3.2 Objective 29**

*Objective 29: Soils maintain those desirable physical, chemical and biological characteristics that enable them to retain their ecosystem function and range of uses.*

- Soil health refers to the biological, chemical and physical state of the soil that supports the soil’s ecosystems. Measuring up (2005) states that unlike soil erosion problems, which are generally obvious, soil health problems, are less evident, but are no less important. Soil health can be compromised or degraded through contamination, compaction, and the loss of nutrients. Intensive land use and the desire to increase productivity of arable land have led to the addition of phosphate-based fertilisers. Most of the cropping and horticultural land has elevated levels of available phosphate (known as Olsen-P). Phosphate attaches to soil particles and if washed off into rivers can promote nuisance aquatic weed or algae growth. Some areas and land uses are more prone to these problems than others.
- Measuring up (2005) states that of the land used for dairying, and to a lesser extent in the horticultural soils, there is evidence of soil compaction and elevated nitrogen concentrations. Soil compaction reduces soil pore spaces, which reduces water infiltration and increases run-off. Soils contain the necessary minerals and nutrients to enable plants and animals to grow. A consequence of intensive farming is that soils are unable to sustain high levels of growth unless those minerals and nutrients are replaced. Soil

monitoring to date shows that soil organic matter is slowly declining in arable soils in the region.

- The Regional Policy Statement (1995) and Regional Policy Statement Evaluation Report for Soil and Minerals (2006) reports that the region has a small amount of land that could be described as highly productive in an agricultural sense. This highly versatile land is described under the Land Use Capability Classification system as Classes I and II land. The classification is based on an assessment of five physical factors that sustain agricultural production: rock type, soil type, slope, erosion degree and type, and vegetation. It also takes into account climate, effects of past land use and potential for erosion. Class I and II land in the region is in the river valleys of the Otaki and Ruamahanga rivers, and around the townships of Otaki, Featherston, Greytown, Carterton, and Masterton. There is a growing pressure to subdivide some of this land, especially around Otaki and Greytown, and it is also vulnerable to roading projects. The total area of Class I land in the region is about 0.6 per cent of the total land area (4800 hectares). Class II land is about 1.7 per cent (13,800 hectares).
- Measuring up (2005) reports that contaminated land is the legacy of poor waste management. There are more than 1,600 sites in the region that have a history of using, storing or manufacturing hazardous substances, including closed landfills. Contaminated land can make land unsuitable or unsafe for future land uses.
- Objective 29 seeks to maintain the region’s soil characteristics that enable them to retain their ecosystem function and a range of uses. This objective addresses Issues 2 (Reduction of soil health), 3 (Highly productive agricultural land) and 4 (Contaminated land) and Part II of the Act by safeguarding the life-supporting capacity of soil and avoiding, remedying and mitigating any adverse effects on the environment. This objective, by seeking to maintain soil characteristics from the effects of unsustainable land use practices, development and use of high quality soils and soil contamination, achieves sustainable management, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety.
- Particular principles (within Part II of the Resource Management Act) of relevance include:
  - 7(d) – intrinsic values of ecosystems*
  - 7(f) – maintenance and enhancement of the quality of the environment*
- Relevant sub sections to Section 30 “Function of regional councils” for objective 29 include:
  - 30(1)(a) the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region.*

*30(1)(ca) the investigation of land for the purpose of identifying and monitoring contaminated land.*

*30(1)(f) the control of discharges of contaminants into or onto land, air, or water and discharges of water into water.*

- Without this objective Greater Wellington would not be able to maintain soil ecosystem function and a range of uses from soils (through policies and methods). The alternative is a region of increasing deterioration in soil quality and soil contamination, which will not fulfil the purpose of the Resource Management Act.

On the basis of the above, objective 29 is the most appropriate for achieving the purpose of the Resource Management Act.

### **3.3 Objective 30**

*Objective 30: The demand for mineral resources is met from local sources as much as possible.*

- The Regional Policy Statement Evaluation Report for Soils and Minerals (2006) and the Regional Policy Statement (1995) reports that in the Wellington region, sand, rock, gravel and limestone are mined from rivers, beaches, coastal cliffs and inland quarries. Oil and gas exploration are also ongoing in the Wairarapa and Kapiti areas. As the region's population continues to grow, the demand for mineral resources, and particularly aggregate (crushed rock used in building, roading and other construction), will increase. Mineral resources are fixed in location, unevenly distributed and finite. The region's mineral resources currently meet the demand from the building and construction industries. It is anticipated that demand may increase as a result of large infrastructure roading projects - such as the proposed Transmission Gully project. The region has suitable geology to indicate that future demand for crushed rock and aggregate can be met from within the region. However the source of some forms of rock such as rip rap is not that numerous and may have to be sourced from outside the region. The principle, to ensure that the demand for aggregate is met (supplied) from within the region as much as possible makes sense from a sustainability standpoint, as doing so helps to minimise the economic and environmental costs associated with extraction and transportation.
- Objective 30 seeks to make sure the region's demand for mineral resources will be met from within the Wellington region as much as possible. This objective addresses Issue 5 (Limited mineral resources) and Part II of the Act by avoiding, remedying and mitigating any adverse effects from mineral extraction on the environment. This objective, by seeking to maintain mineral extraction from within the region as much as possible and by ensuring the effects of extraction are avoided, remedied or mitigated achieves sustainable management, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety.

- Particular principles (within Part II of the Resource Management Act) of relevance include:

*7(b) – the efficient use and development of natural and physical resources*

- Relevant sub sections to Section 30 “Function of regional councils” for objective 30 include:

*30(1)(a) the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region.*

- Without this objective Greater Wellington would not be able to meet the mineral resource needs of the region (through policies and methods). The alternative is a region where there is no provision for mineral resources, which would not fulfil the purposes of the Resource Management Act.

On the basis of the above, objective 30 is appropriate for achieving the purpose of the Resource Management Act.

### 3.4 Analysis of which are the most appropriate objectives

Final chosen objective	Other alternatives?	Why <u>not</u> the most appropriate to achieve the Resource Management Act
<p>Objective 28: Land management practices do not accelerate soil erosion.</p>	<p>Alternative 1. No objective in regional Policy Statement on land management practices to prevent soil erosion. Land management objectives are left to individual city and district councils to develop</p> <p>Alternative 2. Retain objective 2 in the existing 1995 Regional Policy Statement which seeks that:</p> <p><i>Land degradation is limited to that for which there is no feasible remedy</i></p> <p>Alternative 3. An objective that seeks to control all land management practices that cause soil erosion</p>	<p>Alternative 1 is not the most appropriate as the regional Policy Statement would not play a role in providing regional direction on preventing soil erosion form land management practices.</p> <p>Alternative 2 is not the most appropriate option as this objective was assessed as part of the review of the Regional Policy Statement to be unspesific to effectively reduce soil erosion.</p> <p>Alternative 3 is not the most appropriate option as it is unlikely that all land management practices could be controlled to prevent soil erosion. Furthermore, the matter outlined in the alternative objective is better considered as a policy or a method which can be developed to achieve the chosen objective, by targeting activities with a potential to contribute to accelerated soil erosion.</p>
<p>Objective 29: Soils maintain those desirable physical, chemical and biological characteristics that enable them to retain their ecosystem function and range of uses.</p>	<p>Alternative 1. No objective in regional Policy Statement on maintaining soil ecosystem function. Soil ecosystem functions are left to individual land owners to maintain and improve.</p> <p>Alternative 2. Retain objective 1 in the existing 1995 Regional Policy Statement which seeks that:</p> <p><i>The soils of the Wellington region maintain those desirable physical, chemical and biological characteristics which enable them to retain their life supporting capacity and to sustain plant growth</i></p> <p>Alternative 3. An objective that seeks to control land</p>	<p>Alternative 1 is not the most appropriate option as the regional Policy Statement would not play a role in providing regional direction on preventing deterioration in soil ecosystem function.</p> <p>Alternative 2 is not the most appropriate option as this objective was assessed as part of the review of the Regional Policy Statement to have a narrow focus that only satisfies plant growth. There are other soil factors that need to be taken into account.</p> <p>Alternative 3 is not the most appropriate option as it would be not feasible to control all land management practices that may</p>



Final chosen objective	Other alternatives?	Why <u>not</u> the most appropriate to achieve the Resource Management Act
Objective 30: The demand for mineral resources is met from local sources as much as possible.	<p>management practices that cause a reduction in soil quality</p> <p>Alternative 1. No objective in regional Policy Statement on maintaining supply of mineral resources for the region. All management of mineral areas and extraction from these areas would be left to individual city and district councils.</p> <p>Alternative 2. Retain objective 7 in the existing 1995 Regional Policy Statement which seeks that:</p> <p><i>The Region's needs for rock material continue to be met and are not unnecessarily disadvantaged by restrictions on the availability of, or access to and operation of, extraction sites.</i></p> <p>Alternative 3. An objective that seeks to ensure demand for mineral resources will always be met from within the region and access is not denied</p>	<p>lead to a reduction in soil quality. Furthermore, the matter outlined in the alternative objective is better considered as a policy or a method which can be developed to achieve the chosen objective, by targeting activities with a potential to reduce soil quality.</p> <p>Alternative 1 is not the most appropriate option as the regional Policy Statement would not play a role in providing regional direction to city and district councils on mineral resources in the region</p> <p>Alternative 2 is not the most appropriate option as this objective was assessed as part of the review of the Regional Policy Statement to provide specific aspects such as access which is not entirely achievable for extraction sites</p> <p>Alternative 3 is not the most appropriate option as it would not be possible or feasible to always meet the demand for mineral resources from within this region and it is not always possible to ensure that access to mineral deposits can be guaranteed.</p>

**Table 1: Analysis of which are the most appropriate objectives**

## 4. Evaluation of policies and methods to achieve Objective 28

The appropriateness of the policies and methods to achieve Objective 28 are evaluated by looking at the effectiveness and the efficiency of the policy and method options and the risks of acting or not acting if there is uncertain or insufficient information.

### 4.1 The range of policy and methods options considered

Objective 28 seeks to minimise soil erosion in the region. In particular, the objective requires that land management practices do not accelerate soil erosion. Accelerated erosion occurs from poor land management practices that can lead to a higher rates of erosion than would otherwise have occurred.

In addressing this objective the primary focus is to determine the most appropriate way(s) the objective should be achieved. That is, whether it can be best achieved through regulatory direction to plans, or through regulatory direction as to matters to be considered when making resource management decisions, or through non-regulatory programs, or by doing nothing. The following is a list of options for the each of the ways the objective could be implemented. Each option is assessed in Table 2 below.

#### 4.1.1 Regulatory direction to district and/or regional plans

##### **Option 1 – Direction to district and regional plans to control land management practices**

This option requires regional and district plans to control land management practices that would lead to soil erosion and sediment loss to waterways.

##### **Option 2 – Direction to district and regional plans to control erosion, sediment loss and vegetation disturbance**

This option requires regional and district plans to control erosion, sediment loss to waterways, and vegetation disturbance.

#### 4.1.2 Regulatory direction as to matters to be given particular regard in resource management decision making

##### **Option 3 – Consider minimising the effects of erosion, sediment runoff and vegetation disturbance**

This option requires local authorities to have particular regard to minimising the effects of erosion and sediment runoff to waterways from earthworks and vegetation disturbance activities.

#### 4.1.3 Non-regulatory options

##### **Option 4 – Information about minimising soil erosion**

This option is to provide guidance to landowners and others working the land about best practice techniques to minimise erosion and prevent sedimentation of water bodies.

**Option 5 – Information about sustainable land management practices**

This option is to provide information and advice, and the promotion of best practice techniques to key land management practitioners and others that are involved in earthworks and vegetation disturbance activities in the region.

**Option 6 – Integrated management – a protocol for the management of earthworks and vegetation disturbance**

This option is to develop a protocol to integrate the way regional and city and district councils control erosion and silt from earthworks and vegetation disturbance.

**Option 7 – Support industry accords and codes**

This option recognises the importance of promoting and/or supporting industry accords, codes of practice and other voluntary land management initiatives by landowners, land managers and others working the land.

**Option 8 – Support landowners to protect erosion prone land**

This option recognises the need to support landowners experiencing landslips, earthslides and other mass movement on their land. This support can be in the form of advice or conservation plantings to arrest the erosion of land.

**Option 9 – Integrated management – take a whole of catchment approach**

This option is to work with agencies that undertake works and operations, to ensure that a whole of catchment approach to land is taken into account.

4.1.4 Do nothing

**Option 10 – No intervention**

This option offers no intervention for the protection of land to prevent soil erosion from inappropriate land practices.

## 4.2 Evaluation as to the effectiveness and efficiency of the policy and method options to achieve objective 28

Policy and method options		Analysis of effectiveness		Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<b>Regulatory direction to district and/or regional plans</b>							
<b>Option 1</b> Direction to district and regional plans to control land management practices	Establishes a consistent policy framework within which to develop provisions within plans  The scale of influence is high and far reaching  The directive may not be easy to interpret and thus to implement. This limits the ability to reinterpret what it intends to achieve  Possible delays through plan changes requiring some time to be developed.	Low	Resource management decisions are made on a case by case basis at the local level but within a consistent regional policy framework  Influence all areas and activities within the region to which the issue applies  More conflict, debate or contesting of the advantages or disadvantages of particular planning responses or proposals  Provides some certainty for some interested parties  Changes are applied district wide and therefore less information is required for individual consent applications  Provides consistency in the way some land management practices are managed and controlled in the region	There will be human and economic resource costs for councils and communities associated with research, consultation, governance and decision making process to achieve the regional policy framework  Increased costs for regional and district plans to implement policy through new district wide studies and other investigations for the proposed plan change.  High cost in engaging the community on particular issues for land management practices  There may be a potential opportunity cost attributed to affected landowners by not allowing innovation to new ideas and new ways to solve environmental problems	No		
<b>Option 2</b>	Provides a consistent framework for development of policies, rules and	High	Increased clarity and certainty for all	There will be costs for regional and district plans to implement policy through	Yes		

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<p>Direction to district and regional plans to control erosion, sediment loss and vegetation disturbance</p>	<p>methods across the region.</p> <p>Sets clear direction for the policies to be applied, but specific decisions would still be determined at the local level.</p> <p>Provides certainty and clarity for individual applicants, community or interested parties</p> <p>Plan changes will have far reaching consequences for improving the way erosion and sediment control is managed</p> <p>There may be delays through plan changes requiring some time to be developed.</p>	<p>interested parties</p> <p>Reduces resources required by applicants to interpret what is required</p> <p>Provides information for the community about what are the important considerations when developing proposals for use and development</p> <p>All parties must work to achieve the objective, which aims to improve environmental outcomes for both land and water quality</p> <p>Less conflict, debate or contesting of the advantages of particular planning responses or proposals</p> <p>Covers many areas and activities within the region</p>	<p>new district wide studies and other investigations for the proposed plan change.</p> <p>On-going implementation costs for councils to monitor compliance, take enforcement action and to monitor delivery of environmental outcomes</p> <p>Not requirement for site specific mapping or identification. Changes based on research elsewhere.</p> <p>There may be certain opportunity costs incurred with providing certainty and not allowing innovation of new ideas to develop</p>	<p>Regulatory direction as to matters to be given particular regard in resource management decision making</p>	
<p><b>Option 3</b> Consider minimising the effects of erosion, sediment runoff and vegetation disturbance</p>	<p>Is only effective in association with controls developed and adopted by district councils and the regional council, through the use of option 2 (above)</p> <p>Clarifies matters that must be given particular regard can only be given where 'activity status' and/or discretion for a</p>	<p>Med</p>	<p>When considering matters at the resource consent stage – the response is able to be very targeted to the particular proposal in its context.</p> <p>Increased clarity and consistency for all interested parties in the region, as to the pertinent matters for consideration,</p>	<p>Cost may be borne by some proposals as a result of their activity status as an application for resource consent</p> <p>Costs associated with investigations to deliver sufficient information to the decision making process</p> <p>A lot of information may be produced for</p>	<p>Yes</p>

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
	<p>proposal relates to relevant topic</p> <p>Sets out matters that must be considered for erosion and sediment control and promotes consistency and clarity in terms of the information that is required</p> <p>Sets out the principles to be applied, but specific decisions would still be determined at the local level.</p> <p>Directive is easy to be interpreted and implemented and limits the ability to reinterpret what is intended to be achieved</p> <p>Effective because the considerations are for a particular proposal with specific effects on a specified site, rather than broader generalisations considerations.</p>	<p>triggered by certain prompts.</p> <p>Provides a consistent framework for assessing proposals for use and development across the region</p> <p>Allows some discretion and thus variation in interpretation and implementation</p> <p>Less conflict and debate about what are the important considerations</p> <p>Principles able to be advocated immediately within resource consent processes</p> <p>Clarifying the matters for consideration may not lead to simplicity or certainty in some cases</p> <p>As the focus is on a particular site it is more efficient to examine many specific values for that site. This allows more values to be protected.</p>	<p>the consent process and the resulting resource management decision hinges on a small amount of information</p> <p>Costs lie with the applicant as the applications have to address specific matters.</p> <p>Possible high costs if resource consent is challenged in some districts</p> <p>Social cost in requiring the community to be extra vigilant with new applications for development.</p>		
<b>Non-regulatory options</b>					
<b>Option 4</b> Information about minimising soil	<p>Providing guidance does inform and is useful to clarify matters which may not be well understood.</p> <p>Providing information and guidance can</p>	Med	<p>Information and guidance does inform and thus assist to clarify matters which might otherwise be contestable or open to variable interpretation. This can assist in explaining the resource</p>	<p>Guidance and information does not compel any particular individual, group, sector or the community to take up better practices to prevent soil erosion, so in</p>	Yes

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<p>erosion</p>	<p>raise expectations that land managers will improve their performance, but as the follow up actions are voluntary, there is a limited ability to monitor the use and uptake of the information</p> <p>No certainty that the actions will be achieved and can be appropriately resourced.</p> <p>This non regulatory approaches set out the information considered relevant and pertinent, and can provide guidance for interpretation and implementation of the policy framework or the method, or more simply 'good practice', to achieve the objective and to address the issue. However, the response to this information is entirely discretionary and voluntary by the recipient, so there is considerable variance as to what it will mean in practice. There is an inference that when information is targeting councils (to assist in developing plans policies, rules and/or methods) that there is demand for such assistance and that it will be used – it wouldn't be good form for the later planning processes to ignore any information or guidance provided to achieve a regional objective.</p>		<p>management response to an issue</p> <p>Guidance can be easily disseminated to a both targeted audiences or to a wider audience at large. It can provide a large amount of information and promote the beneficial actions for positive environmental outcomes.</p> <p>Guidance over a long period of time can improve understanding of those working in the rural and earthworks sectors about sustainability principles.</p>	<p>some instances they may not act.</p> <p>There is an inability to monitor whether the guidance has been completely taken into account</p> <p>The cost of guidance is borne by councils and the community.</p>	
<b>Option 5</b>	This non regulatory approaches set out the information considered relevant and	Med	Providing or disseminating information and guidance can raise an expectation	Information does not compel the individual or the community to act to take	Yes

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<p>Information about sustainable land management practices</p> <p>pertinent, and can provide guidance for interpretation and implementation of the policy framework or the method, or more simply 'good practice', to achieve the objective and to address the issue. However, the response to this information is entirely discretionary and voluntary by the recipient, so there is considerable variance as to what it will mean in practice. There is an inference that when information is targeting councils (to assist in developing plans policies, rules and/or methods) that there is demand for such assistance and that it will be used – it wouldn't be good form for the later planning processes to ignore any information or guidance provided to achieve a regional objective..</p> <p>Information and guidance does inform and thus assists to clarify matters which might otherwise be contestable or open to variable interpretation</p> <p>Response to information is entirely discretionary and voluntary by the recipient so there is considerable variance about what this will mean in practice</p> <p>Providing information and guidance can raise an expectation of improved performance but there is an inability to monitor the use and uptake of the</p>		<p>of improved performance and prompt and encourage the uptake of more sustainable land management practices</p> <p>Relative ease of dissemination to either a targeted or a wide audience. Information can promote the beneficial actions for positive environmental outcomes, and advocate for change in the community</p> <p>Information can be quickly and relatively cheaply produced without the long timeframes and contestability associated with establishing a regulatory response. Once developed the information is able to redistributed and in circulation for a long period of time.</p> <p>Information provided over a long period of time can improve understanding of those working in the rural and earthworks sectors about sustainable principles.</p>	<p>up more sustainable land management practices, and they may choose not to do so.</p> <p>There is an inability to monitor use of the information. There is a lack of certainty as to whether the provision of information is effective, in term of its influence on activities (responses).</p> <p>Information is passive it may be accepted totally by one part of society and completely ignored by another. The cost of the information is borne by councils and the community.</p> <p>Information on its own will not guarantee any environmental change, or behavioural change in the community.</p>		



Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
	<p>information</p> <p>No certainty that the actions will be achieved and can be appropriately resourced.</p> <p>Effective in providing key information to industry, and other stakeholders</p>				
<p><b>Option 6</b></p> <p>Integrated management – a protocol for the management of earthworks and vegetation disturbance</p>	<p>A non regulatory approach to agree upon and manage – particularly when dealing with inter-relationships between actors and/or activities</p> <p>Seeks to provide clarity when there are contentious or confusing matters at play – could address duplication, overlaps, or gaps that need to be managed.</p> <p>Increases understanding as to what, who, when, where and how (to act) in relation to matters that would otherwise be contentious, complicated or confusing</p> <p>No certainty that the actions will be achieved and can be appropriately resourced.</p> <p>Effective in joining together councils, stakeholders and other agencies to work on erosion and sediment control in the region</p>	<p>Med</p>	<p>Increases understanding as to what, who, when, where and how (to act) in relation to matters that could otherwise be contentious, complicated or confusing.</p> <p>Allows for a flexibility of approach between organisation and stakeholders</p> <p>Economically efficient as it can act to stimulate development and effort.</p> <p>People and institutions working together to solve common issues and having a common document to work from.</p> <p>Efficient to work on issues collaboratively and have the ability to develop unique solutions relevant to the region.</p> <p>Benefit in promoting integration of agencies functions and processes to</p>	<p>Some suggested actions could lead to protracted negotiations and potentially poor results.</p> <p>Potential higher environmental costs as lesser commitment to get things done.</p> <p>Cost efficient in bringing together various agencies and councils together to solve problems.</p>	<p>Yes</p>

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
	<p>Approach is able to be interpreted and its application for use able to be understood</p>		<p>the wider community</p>		
<p><b>Option 7</b> Support industry accords and codes</p>	<p>This approach is able to be purpose built for a particular task or cause. Providing support can raise an expectation of access to support and to improved performance by those who are supported Could be effective if all relevant local authorities commit to doing them. No certainty that the option will be appropriately resourced and implemented Provides support for industry codes of practice on erosion and sediment principles and operation methods.</p>	<p>Med</p>	<p>No certainty as to where the benefits will fall and whether the activity is having an influence Support if broad, may be less easy to attribute benefits Particular support provides benefits where there is liaison between the agencies and other organisations that promote common objectives</p>	<p>Relatively low cost to provide support over long periods, compared to the development of a regulatory response.</p>	<p>Yes</p>
<p><b>Option 8</b> Support landowners to protect erosion prone land</p>	<p>Financial support through subsidies or other schemes provides an incentive to rural landowners that have erosion prone land on their properties managed effectively Assistance may improve soil condition and long term pasture productivity</p>	<p>Med</p>	<p>Benefits are real and tangible to improving soil erosion sites Environmental benefit for at risk catchments with reduced rates of erosion and less sedimentation of water bodies Economically efficient as assistance can stimulate further development and effort by assisted landowners</p>	<p>Cost to council in providing assistance schemes that are competing against other schemes for similar environmental benefits High staff demands with initial start-up work and various follow-up visits to individual land holdings Assistance available at an individual needs only basis, is unlikely to be able to</p>	<p>Yes</p>

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<b>Option 9</b> Integrated management – take a whole of catchment approach	<p>Could be effective if all relevant local authorities commit to taking this approach</p> <p>However, not certain that it will be appropriately resourced and implemented</p> <p>Effective in promoting the principles of whole of catchment approach to works undertaken by agencies and councils during works operations.</p> <p>Publicises the principles of catchment management to both a targeted and a wider audience</p>	Med	<p>Promotes a continuing strong relationship between landowners and with the regional council</p> <p>Beneficial in promoting an integrated approach to works operations in the region.</p> <p>Ability to work on new or innovative methods for works operations to reduce soil erosion, sedimentation and other impacts on water bodies</p> <p>Able to promote principles quickly to a large number of people.</p>	<p>assist all landowners in the region</p> <p>Actions could lead to protracted negotiations and potentially poor results.</p> <p>Potential higher environmental costs than could be achieved with a regulatory response, as less compulsion and commitment to get things done.</p>	Yes
<b>Doing Nothing</b>					
<b>Option 10</b> No intervention	This is when no resource management action is taken, either regulatory or non-regulatory to address the regionally significant issue of deterioration in soil quality.	Low	<p>No resources allocated and expended on addressing this issue</p> <p>Local authorities are able to work with their communities to identify on a case-by-case basis what types of intervention is required – without a predetermined regional policy direction.</p>	It is anticipated that the issue will continue unabated and that the objective will not be met over the long term. Doing nothing will not achieve the purpose of the Act with regards to soil erosion	No

**Table 2: Evaluation as to the effectiveness and efficiency of policy and method options to achieve Objective 28**

### 4.3 Results of evaluation as to the most appropriate policy and method options to achieve objective 28

Policy and method options	Effectiveness	Efficient?	Selected option(s)	Proposed policies and methods
<b>Regulatory direction to district and/or regional plans</b>				
<b>Option 1</b> Direction to district and regional plans to control land management practices	Low	No	X	
<b>Option 2</b> Direction to district and regional plans to control of erosion and sediment	High	Yes	✓	Policy 14 and methods 1, 2
<b>Regulatory direction as to matters to be given particular regard in resource management decision making</b>				
<b>Option 3</b> Consider minimising the effects of erosion, sediment runoff and vegetation disturbance	Med	Yes	✓	Policy 40 and method 4
<b>Non-regulatory options</b>				
<b>Option 4</b> Information about minimising soil erosion	Med	Yes	✓	Policy 68
<b>Option 5</b> Information about sustainable land management practices	Med	Yes	✓	Method 15
<b>Option 6</b> Integrated management – a protocol for the management of earthworks and vegetation disturbance	Med	Yes	✓	Method 30
<b>Option 7</b> Support industry accords and codes	Med	Yes	✓	Method 35
<b>Option 8</b>	Med	Yes	✓	Method 54

Policy and method options	Effectiveness	Efficient?	Selected option(s)	Proposed policies and methods
Support landowners to protect erosion prone land				
<b>Option 9</b> Integrated management – take a whole of catchment approach	Med	Yes	✓	Method 29
<b>Doing Nothing</b>				
<b>Option 10</b> No intervention	Low	No	X	

**Table 3: Results of evaluation as to the most appropriate policy and method options to achieve objective 28**

#### **4.4 Discussion of options**

Two regulatory options were considered to achieve objective 28, the control of land management practices and erosion and sediment control from earthworks and vegetation disturbances. Option 1 would require land management practices to be specifically controlled if they are known to cause erosion and sedimentation. This would prove to be a directive form of control for certain activities, which for the some sectors within the region have continued for a long period of time without any intervention.

An alternative is option 2, to place controls on earthworks and vegetation clearance through regional and district plans. Some council's in the region have experience in dealing with these matters and have moved to apply comprehensive controls directly to earthworks within their districts. This option provides councils with the direction needed to improve erosion and sediment control practices and to establish conditions to prevent soil losses and sedimentation of water bodies in the region. Option 2 is preferred over option 1, as it is considered to be the more effective and efficient option.

Option 3 is assessed to be an effective and efficient interim option prior to regional and district plans being established to control earthworks and vegetation disturbance activities. This option will provide that relevant matters will be assessed as part of resource consent applications, while councils develop appropriate provisions for their respective plans. Option 3 would not, however, be efficient if it was required to continue past the relevant revised plan provisions becoming operative. Therefore, option 3 is only preferred as an interim provision.

Several non-regulatory options are assessed as being effective and efficient means to promote the principles of sustainable land management in the region.

Particularly, options 4 to 9 have the ability to provide both a targeted and a wider audience with the principles of sustainable land management, and also best practice techniques to reduce erosion and promote better sediment control techniques through industry groups.

Option 5 – will provide information and advice to the potential parties to a protocol to work with stakeholders and councils to manage earthworks and vegetation disturbance within the region. It is important to share information, expertise and ways districts plans can accommodate changes to take account of earthwork and vegetation disturbance controls, prior to the protocol being agreed (option 6). The preparation and dissemination of such information in advance of the protocol being agreed, and the protocol itself can be initiated and given effect relatively quickly, in comparison with establishing a regulatory response. Option 5 will provide all the necessary information requirements of councils and other stakeholders that may be involved in the protocol development. This option therefore, supports and compliments the regulatory options 2 and 3 (above), and also the other non-regulatory options 5, 6, 7 and 8. These options are assessed as being most effective and efficient when utilised together, in tandem as they are able to be developed to support and compliment each other.

Option 8 will provide support for those land managers who wish to apply to the regional council for assistance to improve erosion prone soils on their land.

Doing nothing is assessed as an ineffective and inefficient way to address the objective and is therefore dismissed. Soils are important to the future productivity of the region. If soils are lost through erosion this productivity is therefore also lost, with off-site effects of sedimentation to water bodies and the coastal marine area. The do nothing option has implications for the economic, social and environmental well being of the region.

Overall the package of options selected is considered to appropriate to achieve Objective 28.

#### **4.5 Risk of acting or not acting if information is uncertain or insufficient**

Section 32(4)(b) of the Resource Management Act requires the evaluation of appropriateness to take into account the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules or other methods.

With regards to accelerated soil erosion, there is neither uncertain nor insufficient information about the causes of soil erosion and the adverse effects associated with activities that lead to soil erosion, (particularly when soil erosion leads to sediment entering water bodies), upon which to base analysis as to the appropriateness of acting or not acting.

The risk of acting in the way proposed is that some costs will be imposed on local authorities and on applicants for resource consents.

The risk of not acting in the way proposed is that soil erosion in the region will continue, with a consequent decline in soil productivity and water quality and a loss of economic prosperity in some areas.

## **5. Evaluation of policies and methods to achieve Objective 29**

The appropriateness of the policies and methods to achieve Objective 29 are evaluated by looking at the effectiveness and the efficiency of the policy and method options, and the risks of acting or not acting if there is uncertain or insufficient information.

### **5.1 The range of policy and methods options considered**

Objective 29 seeks to maintain soils desirable physical, chemical and biological characteristics that enable them to retain their ecosystem function and range of uses.

In addressing this objective the primary focus is to determine the most appropriate way(s) the objective should be achieved. That is, whether it can be best achieved through regulatory direction to plans, or through regulatory direction as to matters to be considered when making resource management decisions, or through non-regulatory programs, or by doing nothing. The following is a list of options for the each of the ways the objective could be implemented. Each option is assessed in Table 4 below.

#### **5.1.1 Regulatory direction to district and/or regional plans**

##### **Option 1 – Direction to district plans to control activities on contaminated land**

This option requires district plans to include policies, rules and/or methods to control activities on contaminated land if the activity could be adversely affected by the contamination.

##### **Option 2 – Direction to district plan to control land uses on Class I and II land**

This option requires district plans to include policies rules and/or methods to control land use activities on Class I and II land in their districts.

#### **5.1.2 Regulatory direction as to matters to be given particular regard in resource management decision making**

##### **Option 3 – Consider retention of Class I and II land**

This option requires local authorities to have particular regard to retaining Class 1 and II land in parts of their district when processing resource consents and/or notices of requirement for land use change.

#### **5.1.3 Non-regulatory options**

##### **Option 4 – Information about sites at risk of soil contamination**

This option is to collect and hold information about sites or land that is at risk of soil contamination.



**Option 5 – Information about sustainable land management practices**

This option is to provide information about the best practices techniques to prevent soil deterioration in the region.

**Option 6 – Integrating management, by taking a whole of catchment approach**

This option requires agencies that undertake works and operations to ensure that a whole of catchment approach to land and soil quality is taken into account.

5.1.4 Doing nothing

**Option 7 – No intervention**

This option offers no intervention to protect soil ecosystem function and the potential range of uses that soil can provide.

## 5.2 Evaluation as to the effectiveness and efficiency of the policy and method options to achieve objective 29

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<b>Regulatory direction to district and/or regional plans</b>					
<b>Option 1</b> Direction to district plans to control activities on contaminated land	Establishes a consistent framework to develop regulatory provisions that prevent certain activities on contaminated land  Sets out a clear direction to local authorities on the way contaminated land is to be managed in the region  Sets out the policy to be applied, but specific decisions would still be determined at the local level  There could be delays through plan changes requiring some time to be developed	High	Provides certainty for all interested parties  Reduces resources required by the applicant to interpret what is required and why to achieve compliance  Provides a consistent framework for assessing uses and developments across the region  Decision are still made on a case by case basis at the local level  Increases the consistency, as it acts as an artificial standard allowing proposals to be measured or benchmarked against each other  Benefits from less potential adverse health affects from contaminated land if the land is correctly identified and appropriate management options are maintained  Reduces the total amount of contaminated land in the region	Increased costs to implement policy through new district wide studies and other investigations necessary to inform the proposed plan change  Potential cost imposition for some landowners on affected land.  Could act as a disincentive to further investment in land and land development  Ongoing implementation costs for councils to implement, monitor compliance, and to take enforcement action	Yes

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<p><b>Option 2</b></p> <p>Direction to district plan to control land uses on Class I and II land</p>	<p>Establishes a consistent framework to develop regulatory provisions that prevent high class land from being developed</p> <p>Sets out a clear direction to local authorities on the way high quality land is to be managed in the region</p> <p>Sets out the policy to be applied, but specific decisions would still be determined at the local level</p> <p>There could be delays through plan changes requiring some time to be developed</p>	<p>Low</p>	<p>Increased clarity and certainty for all parties</p> <p>Discourages ad-hoc development.</p> <p>Provides a consistent framework for assessing uses and developments across the region</p> <p>Efficient because plan changes are applied district wide and less information is required for individual consent applications</p> <p>High quality soils are able to remain productive for the agricultural sector to maintain the region's sustainability</p> <p>Will become increasingly economically efficient, as there are less transportation and other transaction costs from sourcing produce locally from highly productive soils, compared to sourcing primary products needed by the region's communities from outside the region.</p>	<p>Increased costs for regional and district plans to implement policy through new district wide studies and other investigations for the proposed plan change.</p> <p>Costs do not need to be incurred until the next plan review</p> <p>Opportunity cost associated with potential 'land banking' of high quality soils for future productive uses that are not yet realised</p> <p>Could contribute to a rise in land prices, for neighbouring residential and rural residential areas</p> <p>May change the 'town limit' for future urban expansion or location of roading projects</p>	<p>Yes</p>
<p><b>Regulatory direction as to matters to be given particular regard in resource management decision making</b></p>					
<p><b>Option 3</b></p> <p>Consider retention</p>	<p>Matters would be given particular regard when considering resource consents and notices of requirement.</p>	<p>Med</p>	<p>Increased clarity and consistency for interested parties</p>	<p>Marked difference in costs depending on consents applied.</p>	<p>Yes</p>

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<p>of Class I and II land</p>	<p>Particular regard can only be given where 'activity status' and/or discretion for a proposal relates to relevant topic.</p> <p>Provides direction on how the region wants to manage its resources, so the intent is clear</p> <p>Specific decision making is still made at the local level</p> <p>Provides interim direction prior to plan changes being made operative</p> <p>Sets out the principles to be applied, but specific decisions would still be determined at the local level.</p> <p>The considerations are able to apply to a particular proposal with specific effects on a specified site, rather than broader generalisations having to be applied</p> <p>Requires all councils to process consents or notices of requirement in a consistent manner</p>	<p>Provides a consistent framework for assessing uses and developments across the region.</p> <p>Principles are able to be advocated immediately within resource consent processes</p> <p>The effects to be considered are specified, leading to more certainty.</p> <p>Potential to create ad-hoc changes through the consent process.</p> <p>As the focus is on a particular site it is more efficient to examine many specific values for that site. This allows more values to be protected.</p>	<p>Investigations, studies and work for the resource consent are borne by the applicant.</p> <p>Costs lie with the applicant as the applications have to address specific matters.</p> <p>Possible high costs if resource consent applications are challenged in some districts</p> <p>Environmental downside protecting some values, potentially over others.</p> <p>Social cost in requiring the community to be extra vigilant with new applications for development</p>		
<b>Non-regulatory options</b>					
<b>Option 4</b> Collecting and	Creating and holding important land use information in one place and providing support to manage the information in an	Med	Less cost to district councils region wide, and provides a degree of assurance that important information is	There is some organisational cost to both collecting and holding the information, although this does avoid duplication as	Yes

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<p>holding information about sites at risk of contamination</p>	<p>effective manner</p> <p>Reduced likelihood of error in collecting and storing information and less likelihood of risk to escalate through land management decisions</p>		<p>safeguarded</p> <p>Stores all pertinent information in one location, where access to the information can be tightly controlled</p> <p>Monitoring and reporting of i about the issue is made easier and is likely to contain less errors</p> <p>Reduces the risk of catastrophic errors to occur, that could affect entire ecosystems or large spatial areas.</p>	<p>other councils would otherwise need to collect and hold information in a similar format</p> <p>Increased cost requirement to ensure data is well managed, accessible and portable</p>	
<p><b>Option 5</b> Information about sustainable land management practices</p>	<p>Information and guidance does inform and thus assists to clarify matters which might otherwise be contestable or open to variable interpretation</p> <p>Response to information is entirely discretionary and voluntary by the recipient so there is considerable variance about what this will mean in practice</p> <p>Providing information and guidance can raise an expectation of improved performance, but there is an inability to monitor the use and uptake of the information</p> <p>No certainty that the actions will be appropriately resourced and</p>	<p>Med</p>	<p>Relative ease of producing and disseminating to both a targeted and a wider audience.</p> <p>Promotes beneficial actions for positive environmental outcomes, and advocates for change</p> <p>Information can be quickly and cheaply produced without timeframes and potential contestability associated with establishing a regulatory response.</p> <p>Information provided over a long period can improve understanding of sustainable principles.</p>	<p>Information does not place any onus on the individual or the community for change.</p> <p>Providing information is a relatively passive response. It may be accepted totally by one part of society and completely ignored by another. The cost of the information is borne by councils and the community.</p> <p>Information on its own will not guarantee any environmental change or different outcomes, or behavioural change in the community.</p> <p>Relatively economically cheap to produce with a high rate of distribution and</p>	<p>Yes</p>

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
	<p>implemented.</p> <p>Provides key information to industry, and other stakeholders</p>			<p>longevity.</p>	
<p><b>Option 6</b></p> <p>Whole of catchment management approach</p>	<p>Could be effective if all relevant local authorities commit to taking this approach.</p> <p>However it is not certain that the actions will be appropriately resourced and implemented</p> <p>Promotes the principles of whole of catchment approach to works undertaken by agencies and councils during works operations.</p> <p>Publicises the principles of integrated catchment management to target and a wider audience, potentially including outside of the region.</p>	<p>Med</p>	<p>Promotes a similar approach to work operations within the region</p> <p>Ability to work on new or innovative methods for works operations to reduce impacts on water bodies</p> <p>Economically efficient as can stimulate further development and effort to promote sustainability and improved environmental outcomes</p>	<p>Actions could lead to protracted negotiations and potentially poor results.</p> <p>Potential higher environmental costs if this option is perceived as being a lesser commitment to get things done.</p> <p>Economically efficient in being able to promote principles quickly to a large number of people.</p>	<p>Yes</p>
<p><b>Doing Nothing</b></p>					
<p><b>Option 7</b></p> <p>No intervention</p>	<p>This is when no resource management action is taken, either regulatory or non-regulatory to address the regionally significant issue of deterioration in soil quality.</p>	<p>Low</p>	<p>No resources allocated and expended on addressing this issue</p> <p>Local authorities are able to work with their communities to identify on a case-by-case basis what types of intervention is required – without a</p>	<p>It is anticipated that the issue will continue unabated and that the objective will not be met over the long term. Doing nothing will not achieve the purpose of the Act with regards to soil quality</p>	<p>No</p>

Policy and method options	Analysis of effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
			predetermined regional policy direction.		

**Table 4: Evaluation as to the effectiveness and efficiency of the policy and method options to achieve Objective 29**

### 5.3 Results of evaluation as to the most appropriate policy and method options to achieve objective 29

Policy and method options	Effectiveness	Efficient?	Selected option(s)	Proposed policies and methods
<b>Regulatory direction to district and/or regional plans</b>				
<b>Option 1</b> Direction to district plans to control activities on contaminated land	High	Yes	✓	Policy 33 and method 1
<b>Option 2</b> Direction to district plan to control land uses on Class I and II land	Low	Yes	X	
<b>Regulatory direction as to matters to be given particular regard in resource management decision making</b>				
<b>Option 3</b> Consider retention of Class I and II land	Med	Yes	✓	Policy 59 and method 4
<b>Non-regulatory options</b>				
<b>Option 4</b> Information about sites at risk of contamination	Med	Yes	✓	Method 24
<b>Option 5</b> Information about sustainable land management practices	Med	Yes	✓	Method 15
<b>Option 6</b> Whole of catchment management approach	Med	Yes	✓	Method 29
<b>Doing Nothing</b>				
<b>Option 7</b> No intervention	Low	No	X	

**Table 5: Results of evaluation as to the most appropriate policy and method options to achieve objective 29**



## **5.4 Discussion of options**

Two regulatory options (1 and 2) were considered for objective 29, they are territorial authorities to control contaminated land in their districts and territorial authorities to control land use on Class I and class II land in their districts where applicable.

Option 1 is assessed as an effective and efficient option for controlling activities on contaminated land by territorial authorities to achieve objective 29. Option 1 would require territorial authorities to make assessments of known contaminated land areas before there is a land use change. This would safeguard known contaminated areas from land uses or developments that could affect people's health or continue to have effects to the soil quality of the site or nearby water bodies. Option 5 – collecting and holding information about potentially contaminated sites can support the implementation of option 1.

Option 2 is assessed as having low effectiveness, but as an efficient way of achieving objective 29. Overall the option is not an appropriate option for retaining high quality land in the region, particularly when considered against option 3, (consideration) is deemed the most appropriate option.

The resource management consideration option 3 is assessed to be effective and efficient for controlling land use activities that may affect high quality soils. This option requires territorial authorities to consider the nature of their known high quality soils areas before they make land use decisions that may irreversibly remove the productive capacity of these soils from the region.

Several non-regulatory options are assessed as being effective and efficient ways to promote and provide information about maintaining soil quality in the region. Options 4, 5, and 6 will work together to prevent further deterioration in soil quality with option 6 ensuring the prevention mechanisms will take a whole of catchment approach.

Doing nothing option 7 is assessed as an ineffective and inefficient way to address the objective and is therefore dismissed. Soils provide life supporting capacity for a range of uses, not only for food production but for the provision of ecosystems services and functions of all plant life. Doing nothing to protect and ensure soils maintain their life supporting capacity compromises all terrestrial ecosystems that people and other organisms depend upon.

Overall the package of options selected is considered to be the most appropriate way to achieve Objective 29.

## **5.5 Risk of acting or not acting if information is uncertain or insufficient**

Section 32(4)(b) of the Resource Management Act requires the evaluation of appropriateness to take into account the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules or other methods.

With regards to soil quality, there is neither uncertain nor insufficient information about the causes of poor soil quality or of the adverse effects associated with the activities that lead to poor soil quality, particularly for contaminated land, upon which to base analysis as to the appropriateness of acting or not acting.

The risk of acting in the way proposed is that some costs will be imposed on local authorities and on applicants for resource consents.

The risk of not acting in the way proposed is that soil quality in the region will continue to be degraded, with a consequent decline in soil productivity and economic prosperity in some areas.

## **6. Evaluation of policies and methods to achieve Objective 30**

The appropriateness of the policies and methods to achieve Objective 30 are evaluated by looking at the effectiveness and the efficiency of the policy and method options, and the risks of acting or not acting if there is uncertain or insufficient information.

### **6.1 The range of policy and methods options considered**

Objective 30 seeks to achieve that the demand for mineral resources is met from local sources as much as possible.

In addressing this objective the primary focus is to determine the most appropriate way(s) the objective should be achieved. That is, whether it can be best achieved through regulatory direction to plans, or through regulatory direction as to matters to be considered when making resource management decisions, or through non-regulatory programs, or by doing nothing. The following is a list of options for each of the ways the objective could be implemented. Each option is assessed in Table 6 below.

#### **6.1.1 Regulatory direction to district and/or regional plans**

##### **Option 1 – Direction to city and district plans to protect mineral extraction sites**

This option requires city and district plans to recognise and provide for the utilisation of sites for mineral extraction.

##### **Option 2 – Direction to city and district plans to ensure access is not compromised by reverse sensitivity effects**

This option requires city and district plans to ensure access to mineral extraction sites is not compromised by other sensitive land use activities.

#### **6.1.2 Regulatory direction as to matters to be given particular regard in resource management decision making**

##### **Option 3 – Consider the protection of mineral extraction sites from reverse sensitivity effects**

This option requires local authorities to have particular regard to the social, economic and environmental benefits from mineral extraction and that significant deposits are protected from incompatible land uses.

#### **6.1.3 Non-regulatory options**

##### **Option 4 – Identification of significant mineral resources**

This option requires the identification of significant mineral deposits in the region.

#### 6.1.4 Do nothing

##### **Option 5 – No intervention**

This option offers no intervention to protect mineral sites or the extraction of mineral deposits from adverse effects.

## 6.2 Evaluation as to the effectiveness and efficiency of the policy and method options to achieve objective 30

Policy and method options	Analysis of Effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<b>Regulatory direction to district and/or regional plans</b>					
<b>Option 1</b> Direction to district plans to protect mineral extraction sites	<p>Provides a consistent framework for development of policies, rules and methods across the region.</p> <p>Sets out the policy to be applied, but specific decisions would still be determined at the local level.</p> <p>Provides certainty and clarity to district plans and the community about the changes that are required to secure mineral deposits in the region.</p> <p>Effectiveness would be delayed through plan changes requiring time to be developed.</p> <p>Lacks specific guidance by requiring district plans to 'recognise and provide' for mineral extraction sites in their districts. It's not clear how they recognise for mineral extraction or what level it should be provided for.</p>	Low	<p>Discourages ad-hoc development.</p> <p>Provides a consistent framework for assessing extraction and associated developments across the region.</p> <p>Efficient because plan changes are applied district wide and less information is required for individual consent applications.</p> <p>Provides some clarity and certainty for mineral extraction sites.</p> <p>May lead to environmental and economically efficient utilisation of mineral resources.</p>	<p>Increased costs for regional and district plans to implement policy through new district wide studies and other investigations for the proposed plan change.</p> <p>Costs do not need to be incurred until the next plan review.</p> <p>High social cost for the community to engage on particular mineral sites.</p> <p>High costs for companies doing the mapping and investigation.</p> <p>Potential cost to some landowners on affected land.</p>	No
<b>Option 2</b> Direction to district plans to ensure	<p>Provides a consistent framework for development of policies, rules and methods across the region.</p>	Low	<p>Increased clarity and certainty for all parties.</p>	<p>Increased costs for regional and district plans to implement policy through new district wide studies and other investigations for the proposed plan</p>	No

Policy and method options	Analysis of Effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
<p>access is not compromised by reverse sensitivity effects</p> <p>Sets out the policy to be applied, but specific decisions would still be determined at the local level.</p> <p>Provides a level of certainty and clarity for landowners and others affected by proximity to mineral extraction sites.</p> <p>Effectiveness would be delayed though plan changes requiring some time to be developed.</p> <p>High level of uncertainty providing for access to sites from a reverse sensitivity perspective.</p>	<p>Discourages ad-hoc development.</p> <p>Provides a consistent framework for assessing developments across the region.</p> <p>Efficient because plan changes are applied district wide and less information is required for individual consent applications.</p> <p>Economically efficient, as the mineral extraction sites would have to be identified and addressed on a case by case basis.</p> <p>Lower social benefit if sites are close to sensitive activities like residential areas.</p>	<p>change.</p> <p>Costs do not need to be incurred until the next plan review.</p> <p>Opportunity cost for 'land banking' extraction sites that are not developed for some time.</p> <p>Lower land prices and property values for areas located close to known mineral extraction sites.</p> <p>May affect the urban boundary or the limit of residential development.</p> <p>Access may not be provided even if reserve sensitivity effects have been met.</p>			
<b>Regulatory direction as to the matters to be given particular regard in resource management decision making</b>					
<p><b>Option 3</b></p> <p>Consider the protection of mineral extraction sites from reverse sensitivity effects</p>	<p>Matters to be given particular regard when considering resource consents and this provides clarity and greater certainty</p> <p>Provides an ability to critique what is to be considered and is relevant within the decision making process</p> <p>Setting out the matters to be considered promotes consistency and clarity in terms</p>	<p>Med</p>	<p>Increased clarity and consistency for all interested parties in the region.</p> <p>Provides a consistent framework for assessing development of extraction sites across the region.</p> <p>Principles can be advocated immediately within resource consent processes</p>	<p>Investigations, studies and work for the resource consent are borne by the applicant.</p> <p>Costs lie with the applicant as the applications have to address specific matters.</p> <p>Possible high costs if resource consent applications are challenged in some districts</p>	<p>Yes</p>

Policy and method options	Analysis of Effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
	<p>of information required to inform the decision making process</p> <p>The directive is easily interpreted and implemented and limits the ability to contest or reinterpret</p> <p>Sets out the principles to be applied, but specific decisions would still be determined at the local level.</p> <p>Considerations are for a particular proposal with specific effects on a specified site, rather than broader generalisations considerations.</p> <p>Requiring all councils to process consents or notices of requirement in a consistent manner</p>		<p>The effects are considered leading to more certainty.</p> <p>Potential to create ad-hoc responses through the consent process.</p> <p>As the focus is on a particular site it is more efficient to examine many specific values for that site. This allows more values to be protected.</p>	<p>Environmental downside in potential to protect some values over others.</p> <p>Social cost in requiring the community to be extra vigilant with new applications for development.</p>	
<b>Non regulatory options</b>					
<p><b>Option 4</b></p> <p>Identification of significant mineral resources</p>	<p>Establishes a common or standardised methodology for collecting information about sites and their relative importance</p> <p>This option could highlight where more information is required which improves transparency and will inform future resource management activity</p> <p>Agreement to investigate provides for increased certainty and clarity and risk</p>	High	<p>Investigations provide for common resource findings that have multiple benefits across industry and councils in the region</p> <p>Reduce conflict about potential areas for extraction if independent research and investigation is sourced</p> <p>Reduces costs to individuals, industry and other stakeholders from further</p>	<p>Some cost to gathering information, and making assessments about the viability of mineral deposits</p>	Yes

Policy and method options	Analysis of Effectiveness	Effectiveness Rating	BENEFITS (social, economic and environmental)	COSTS (social, economic and environmental)	Efficient?
	reduction for future development.		contestability of sites for mineral extraction		
<b>Doing Nothing</b>					
<b>Option 5</b> No intervention	No resource management action is taken, either regulatory or non-regulatory to address significant mineral deposits in the region.	Low	No resources allocated and expended on addressing this issue  Local authorities are able to work with their communities to identify on a case-by-case basis what types of intervention is required – without a predetermined regional policy direction.	It is anticipated that the issue will continue unabated and that the objective will not be met over the long term. Doing nothing will not achieve the purpose of the Act with regards to mineral resources in the region	No

**Table 6: Evaluation as to the effectiveness and efficiency of policy and method options to achieve Objective 30**



### 6.3 Results of evaluation as to the most appropriate policy and method options to achieve objective 30

Policy and method options	Effectiveness	Efficient?	Selected option(s)	Proposed policies and methods
<b>Regulatory direction to district and/or regional plans</b>				
<b>Option 1</b> Direction to district plans to protect mineral extraction sites	Low	No	X	
<b>Option 2</b> Direction to district plans to manage reverse sensitivity effects	Low	No	X	
<b>Regulatory direction as to the matters to be given particular regard in resource management decision making</b>				
<b>Option 3</b> Consider the protection of mineral extraction sites from reverse sensitivity effects	Med	Yes	✓	Policy 60, method 4
<b>Non regulatory options</b>				
<b>Option 4</b> Identification of significant mineral resources	High	Yes	✓	Method 51
<b>Doing Nothing</b>				
<b>Option 5</b> No intervention	Low	Yes	X	

**Table 7: Results of evaluation as to the most appropriate policy and method options to achieve objective 30**

### 6.4 Discussion of options

Two regulatory options were considered to achieve objective 30, that district plans recognise and provide for mineral sites in their districts and that access to mineral sites is not compromised by reverse sensitivity effects. Option 1 would require city and district councils to recognise and provide for mineral extraction sites in their district. This option does not provide sufficient guidance for district plans to formulate responses to protect mineral deposits. Option 1 is considered ineffective for achieving objective 30. An alternative

option is Option 2, which requires district plans to ensure access is not compromised by reverse sensitivity effects. Option 2 is also assessed as an ineffective option for district councils to achieve objective 30.

The resource management consideration, option 3, is assessed to be the most effective and efficient to meet objective 30. Option 3 enables district and regional councils the ability to have immediate regard for the social, economic, and environmental benefits from utilising significant mineral resources, and protecting these resources from incompatible land uses. This will provide some certainty for the community, stakeholders and the minerals industry. This option is also efficient as it does not require plan changes to be invoked immediately, thereby providing more time for information to be collected about mineral resources in the region.

Non-regulatory option 4, the identification of new information about mineral resources in the region is assessed as efficient and effective in meeting objective 30, as it can provide necessary information and advice to the industry, stakeholders, and district councils.

Doing nothing is assessed as an ineffective and inefficient way to address the objective and was therefore dismissed. Mineral sites are important for the future development of the region and are integral to the efficient economic functioning of society. Not providing for mineral extraction sites in the region means potential higher costs of extraction and transportation which is a higher cost to society.

Overall the package of options selected is considered the most appropriate to achieve Objective 30.

## **6.5 Risk of acting or not acting if information is uncertain or insufficient**

Section 32(4)(b) of the Resource Management Act requires the evaluation of appropriateness to take into account the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules or other methods.

With regards to mineral resources in the region, there is neither uncertain nor insufficient information about why there are limited mineral resources or about the adverse effects associated with activities associated with mineral extraction, upon which to base analysis as to the appropriateness of acting or not acting.

The risk of acting in the way proposed is that some costs will be imposed on local authorities and on applicants for resource consents.

The risk of not acting in the way proposed is that mineral resources in the region will continue to be limited in their extraction and future demand will lead to mineral resources having to be sourced from outside the region with higher environmental, social and economic costs.

It is clear to Greater Wellington that the risk of acting is much less than the risk of not acting.

## **Appendix 1: Criteria used to determine regionally significant issues**

The criteria used for determining whether an issue was a resource management issue of regional significance were:

- The issue was a natural or physical resource management problem.
- The issue was to be of regional significance (see further criteria below).
- The issue was about achieving the purpose of the Resource Management Act.
- The issue did not “repeat” the Resource Management Act, the New Zealand Coastal Policy Statement, any other national policy, or another issue in the Regional Policy Statement.
- The issue was explained in the context of the Wellington region.

Regional significance was determined using the following criteria:

- The issue concerns a resource which is regionally significant, and the issue requires integrated management at a regional level ; and
- There is a potential shortage of the resource and resultant allocation issues; or
- There is a significant level of conflict over the resource which is either occurring or is foreseeable over the next 10 years; or
- The resource is potentially subject to significant adverse effects at a regional level; or
- There are significant issues in terms of Part 2 of the Resource Management Act which are, or are likely to, arise at a regional scale (eg maintenance and enhancement of access along waterways); or
- The community has signalled that it regards a particular issue as being of regional significance; or
- The issue is one of national significance (eg preservation of natural character) and requires regional intervention; or
- The issue is one of district significance but requires regional intervention; or
- The matter is one which a National Policy Statement or National Water Conservation Order requires to be addressed.

## **Appendix 2: References**

Croucher, Bruce (2005). Soil quality monitoring technical report. Wellington. Publication No: GW/RINV-T-05/85

Denton, Paul (2005) Soils and minerals – background report. Wellington. Publication No. GW/RP-T-05/308

Greater Wellington Regional Council (2005) Measuring up: the state of the environment report for the Wellington region 2005. Wellington. Publication No. GW/ENV-G-05-278

Greater Wellington Regional Council (2006) Our region – their future: A discussion document on the review of the Regional Policy Statement for the Wellington Region. Wellington. Publication No. GW/RP-G-06/83

Greater Wellington Regional Council (2006). Regional Policy Statement Evaluation Report for Soils and Minerals. Wellington. Publication No. GW/EP-G-09/24

Greater Wellington Regional Council (2006). Regional Policy Statement Evaluation Report for Freshwater. Wellington. Publication No. GW/EP-G-09/25