BEFORE THE ENVIRONMENT COURT

In the matter of	appeals under clause 14 of the First Schedule to the Resource Management Act 1991 concerning proposed One Plan for the Manawatu-Wanganui region.
between	**FEDERATED FARMERS OF NEW ZEALAND ENV-2010-WLG-000148**
and	**MERIDIAN ENERGY LTD** **ENV-2010-WLG-000149**
and	**MINISTER OF CONSERVATION** **ENV-2010-WLG-000150**
and	**PROPERTY RIGHTS IN NEW ZEALAND** **ENV-2010-WLG-000152**
and	**HORTICULTURE NEW ZEALAND** **ENV-2010-WLG-000155**
and	**WELLINGTON FISH & GAME COUNCIL** **ENV-2010-WLG-000157**
	Appellants
and	**MANAWATU-WANGANUI REGIONAL COUNCIL** *Respondent*

STATEMENT OF PLANNING EVIDENCE BY PHILLIP HARRY PERCY ON THE TOPIC OF SUSTAINABLE LAND USE AND ACCELERATED EROSION ON BEHALF OF WELLINGTON FISH & GAME COUNCIL

Dated: 20 February 2012

EXPERIENCE AND EXPERTISE

1. My full name is Phillip Harry Percy. I hold the degree of Bachelor of Resource and Environmental Planning with honours from Massey University. During my degree I completed a specialisation in physical geography which included papers in general and fluvial geomorphology and coastal dune processes.

2. I have been practicing as a planner for 11 years. This has included working as a policy planner for Greater Wellington Regional Council as well as a range of senior planning positions in multidisciplinary consultancies in New Zealand. I have previously worked as a Senior Planner for Eliot Sinclair and Partners in Christchurch and as a Senior Planner for Beca in Wellington. I am currently a Director of Perception Planning Limited, a resource management planning consultancy that I established in 2007.

3. I have been involved in a professional capacity in a wide range of planning matters including applications for large-scale subdivision consents, land use consents for dwellings, commercial buildings, earthworks and infrastructure projects. I have experience in assessing proposals against both regional and district planning provisions and in both urban and rural environments. I have also been involved in resource consent applications for discharges to land, water and air.

4. My experience specifically relevant to the issue of erodible land includes providing planning services during the construction phase of the $70 million Dowse to Petone SH2 Upgrade Project for Land Transport New Zealand. This project involved large-scale earthworks activities and required comprehensive erosion and sediment control measures to be implemented and managed. I have provide planning advice in relation to earthworks activities on fine loess hillside soils on Banks Peninsula, and was involved in enforcement responses to significant sediment discharges from subdivision earthworks on hilly sites in the Wairarapa. I also provided planning advice for large-scale earthworks activities in sand country on the Kapiti Coast where wind erosion was a significant risk factor. More recently I prepared a plan change application and acted as s42A officer for a plan change to the Palmerston North City

Plan that related to managing the hazard associated with development on highly erodible river-side cliffs near Palmerston North.

5. I have also worked as a Planner in the United Kingdom including in consent processing, enforcement and monitoring roles. This included working as a planning officer dealing with heritage buildings, changes of use and new developments throughout the Lake District National Park, in Devon and in London.

PREVIOUS INVOLVEMENT IN THE ONE PLAN

6. I have been involved in the POP development and hearings process since 2007 in various capacities. I was engaged as a consultant by Horizons to assist with initial development work on the FARM Strategy method (which relates to the water quality chapters of the POP). I was later engaged by Horizons to prepare the s32 evaluation summary report. I was the s42A planning officer for the Council-level hearings for erodible land (Chapters 5 and 12) and natural hazards (Chapter 10).

7. I am now engaged by Wellington Fish & Game to provide planning advice on the Environment Court appeals on the erodible land issue.

EXPERT WITNESS CODE OF PRACTICE

8. I am familiar with the evidence of those witnesses which are contained in the "Technical Evidence Bundle" lodged with the Court by the respondent, on the topic of sustainable land use and accelerated erosion, and the additional evidence of Mr P Hindrup, Dr J Quinn and Mr A Kirk dated 31 January 2012

9. I have read the Environment Court's Code of Conduct for Expert Witnesses, and I agree to comply with it. I confirm that the issues addressed in this brief of evidence are within my area of expertise.

10. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed. I have specified where my opinion is based on limited or partial information and identified any assumptions I have made in forming my opinions.

ABBREVIATIONS USED

POP Proposed One Plan
RPS Section 1 of the POP which is the proposed Regional Policy Statement
RP Section 2 of the POP which is the proposed Regional Plan
NV the notified version of the POP
DV the decisions version of the POP
SLUI Sustainable Land Use Initiative
WFP Whole Farm Business Plan (sometimes referred to in technical evidence as Whole Farm Business Plan)

SCOPE OF EVIDENCE

11. This brief of evidence is focussed on the matters in contention that have arisen out of appeals on Chapters 5 and 12 as they relate to erodible land management. Many of the appeal points relate to the details of provisions. In general, the overall framework and high-level approaches to addressing the resource management issue do not appear to be in contention.

12. The approach I have adopted in my evidence is to evaluate the relevant provisions of the RPS first, on the basis that the RPS provisions strongly influence the RP provisions. I consider that this approach assists with addressing the statutory tests for RMA policy development (as set out later in my evidence), in particular the requirements of s32 which requires evaluation of the degree to which the policies and methods are the most appropriate in achieving the objectives. The explicit relationship between the objectives and policies of the RPS and the RP means that any evaluation of the lower order provisions in the RP must be informed by the RPS provisions.

13. Where there are not specific provisions under appeal, I have not analysed those provisions in my evidence.

14. I have not evaluated the rules as they relate to forestry as I understand that these are to be addressed by the Court separately.

BACKGROUND TO THE ERODIBLE LAND ISSUE

15. Both the Notified Version of the One Plan and the Decisions Version of the One Plan, set out in the introductory section of Chapter 5 what the issue associated with erosion is for the Manawatu Whanganui Region. That section of the POP summarises the issue and background and my understanding is that this is not in contention. Given the body of evidence from the Council-level hearing provided to the Court by the Respondent which sets out the details underpinning the issues associated with erodible land, I will not repeat that material here other than to cover key points. I also acknowledge the background to the POP that Mr Hindrup (Planner for Horizons) has included in his evidence that provides a useful summary.

16. The One Plan's focus is on 'accelerated erosion', which the Decisions Version defines as 'erosion that is caused or accelerated by human activity'[1]. In particular, the One Plan is concerned with activities undertaken by people that have the potential to increase the risk of erosion. The premise of the One Plan is that some human activities increase the risk of erosion with resultant adverse effects and that this should be managed either through regulatory or non-regulatory measures. The technical evidence of Mr Eyles and Mr Ngapo sets out the relationship between accelerated and natural erosion. That evidence concludes that accelerated erosion exists and needs to be managed but because it is difficult to differentiate between the two types of erosion, the management response should focus on erosion full stop.

17. The impact of historic clearance of native bush from the land to make way for pastoral farming was a precursor to the issue of accelerated erosion in the Region. Removal of mature vegetation has significantly reduced the land's resilience to erosion events, with land with a higher risk profile (land of specific rock types and slopes) being particularly vulnerable. Unless these higher risk areas are either actively managed or allowed to revert to woody vegetation cover, they will continue to erode at a significantly higher rate than would naturally occur, and will consequentially continue to contribute disproportionally more to effects on water quality and impacts on downstream values than would occur naturally. The focus of the One Plan as notified was on the higher risk areas where human activities are either maintaining or significantly increasing the high erosion risk.

[1] Glossary term in DV

18. Management of the legacy of land use that has increased erosion risk raises some complicated social and economic issues. Areas of land that has a high erosion risk was often cleared with the support of the governments of the time, promoted by subsidies and other assistance. Clearing the land was encouraged and supported, and it was the right thing to do at the time. Some farming families have owned and farmed the cleared land for generations and those people have a strong connection to the land, both personally, socially and economically.

19. People's farms provide for their economic well-being and any reduction in the earning capacity of that land can have a significant impact on individuals and communities. This legacy of land use that was established legitimately but, given current knowledge, perhaps shouldn't have been, creates a challenging sustainable management dilemma. To completely resolve the accelerated erosion issue would probably mean large parts of the Region should be allowed to revert to native bush. However because people have established farming businesses and rely on the use of this land for their well-being, the complete resolution of the issue is not possible. So the alternative is some form of 'middle ground' where the erosion risk can be significantly reduced but without causing significant impacts on peoples' livelihoods and well-being.

20. The One Plan approaches this dilemma using two approaches. One is to work with landowners to improve the resilience of their land - readjusting land use practices to ones more suited to the land constraints, planting, and, in some cases retirement of land to revert. The other approach is to put in place regulation to actively manage new activities that might increase the risk of erosion further - land disturbance and vegetation clearance activities are the primary focus. There is a subtle difference between the two approaches. The non-regulatory approach is about working with farmers to improve what they have. The regulatory approach is about not going backwards from the current state. Unfortunately, for whatever reason, this subtle difference between the two approaches was not recognised by many landowner submitters, and there appeared to be strong concern that the regulatory approach was an attempt to direct landowners towards certain practices - to change the way they do things. This was perhaps because the relationship between the non-regulatory and regulatory approaches was very close in the Notified Version, with reference to the non-regulatory approach (Whole Farm Business Plans) included in the rule stream. Landowners appeared to see the 'improvement' tool being converted

into a regulatory tool and that they were being required to change the way they farmed their land.

21. Despite the misconceptions by submitters around the non-regulatory/regulatory framework in the Notified Version, there now appears to be strong support in the farming community for the non-regulatory SLUI programme and its associated Whole Farm Business Plans. Allan Kirk's evidence highlights that there has been a rapid uptake of WFPs and over 3 million dollars spent within the region on the Sustainable Land Use Initiative (SLUI) works and programmes. The significant contention amongst the parties appears to be how the regulatory regime works, and to a lesser degree how it now interacts with the non-regulatory method in the Decisions Version.

KEY MATTERS TO DETERMINE

22. In my view, the issue of erosion management can be broken down into four overarching questions. The answers to these questions set out the framework for the management approaches in the POP:

    (a) Do human activities cause or exacerbate erosion?

    (b) Do human activities cause additional effects associated with erosion on receiving environments?

    (c) If the answer to the above questions is 'yes', what specific activities should be considered and are those activities contributing significantly to the issue?

    (d) Of the activities that are significantly contributing to the issue, what is the most appropriate approach for managing those activities to minimise their contribution to the issue?

23. I have developed this brief of evidence around these core questions, drawing on technical expert evidence to inform a more detailed analysis of them.

MATTERS IN CONTENTION

24. Based on appeal points, there appears to be little in contention in relation to the issue being addressed, or the basic facts that underpin the issue of erosion and its associated effects.

25. The RPS (chapter 5) objectives remain outstanding insofar as there remains some disagreement as to the precise wording of the objectives and whether the objectives should revert to the notified version (or something similar) to provide greater specificity around the role that whole farm business plans should play as a non-regulatory tool. Wellington Fish & Game (WF&G) also seeks to reinstate the explicit cross-reference to the objectives and policies of Chapters 6 and 13 (water quality and quantity) within the Chapter 5 framework. Despite these relatively isolated matters, the majority of the objectives do not appear to be in contention.

26. There is little disagreement between parties on the Chapter 5 policies that implement the objectives. Depending upon the outcomes of resolutions on the objectives, there may need to be some consequential changes to the policies to cascade those changes through the One Plan.

27. There remain some outstanding points in relation to the objectives and policies of Chapter 12, however these are largely minor wording changes and there appears to be no contention around the nature and intent of the objectives and policies.

28. The primary areas in contention appear to be around which land use activities are to be regulated and how that occurs through the rules in Chapter 12. In particular, there remains significant disagreement on:

VEGETATION CLEARANCE RULES

29. This issue relates to how to describe activities to be captured by the vegetation clearance rules. In particular, there is significant disagreement about whether to use a slope threshold, a map, a combination of a map and slope threshold, or to adopt a non-targeted approach for regulating vegetation clearance. There is also contention around how to identify the vegetation to be captured by the rules - there is generally agreement that the rules should only capture vegetation that is of a certain maturity (in the region of 7 years old), however there has been no agreement on how that vegetation can be described. Suggestions include a reference to 70 % canopy cover, simply a reference to vegetation clearance, and a trunk diameter at a certain height. There appears to be no disagreement that there should be regulatory control on the clearance of mature woody vegetation from hill country that is at an increased risk of erosion.

LAND DISTURBANCE IN HILL COUNTRY RULES

30. Similar to the vegetation clearance, there remains disagreement as to how to identify land disturbance activities that should be captured by resource consent. This is primarily in relation to land disturbance on hill country at higher risk of erosion. Options include reference to a slope, use of a map, use of a map in combination with a slope threshold, and the use of Land Use Capability map units. There remains some disagreement that there should be regulatory controls on land disturbance activities in hill-country areas.

LAND DISTURBANCE OUTSIDE OF HILL COUNTRY RULES

31. There remains some contention around both the appropriate activity classification for land disturbance and the appropriate standards for permitted and controlled activity land disturbance activities. Contention around the appropriateness of standards particularly relates to ancillary discharges of sediment to water. The options currently on the table are to rely on erosion and sediment control plans, 'appropriate' erosion and sediment control measures, riparian setbacks, or/and water quality standards. Contention around the appropriate activity status relates to whether large-scale earthworks should be controlled or permitted.

CULTIVATION

32. Regulation of cultivation activities remains in contention. There is disagreement between parties as to whether cultivation should be regulated outside of riparian areas, and also what standards should be applied to cultivation activities. Similar to disagreement around the standards relating to land disturbance activities, options that have been put forward include use of industry codes of practice (erosion and sediment control measures), riparian setbacks, and water quality standards relating to sediment discharges.

RIPARIAN AREAS

33. The regulation of activities within riparian areas appears to be largely agreed, except for the width of the riparian zone in which activities are to be consented, and the size of ephemeral water ways that are to be included. In relation to riparian zone widths, the options on the table include either 5m or 10m setback from water bodies and/or whether a variable setback width based on slope. In relation to ephemeral water way

sizes, the alternatives are currently either a 1m or 2m active bed width. No alternative widths have been proposed.

OTHER MATTERS

34. There are several other discrete issues that are either consequential to the above matters or relate to details of anticipated environmental results or non-regulatory methods.

35. The appeal points relating to the regulation of forestry activities (Rule 12-2) are not a part of the current hearing. Parties are currently working towards resolution of these appeals.

TECHNICAL EVIDENCE RELIED UPON

36. Technical evidence that I have relied on in preparing this evidence is:

For WF&G:

- Garth Eyles - Land Use Capability and related matters.
- Norm Ngapo - WFPs, soil conservation practice and related matters.
- Associate Professor Russell Death - Riparian setbacks and the impacts of sediment on water bodies.

Technical evidence of Horizons presented at the Council level hearing including from:

- Allan Kirk - soil conservation and sustainable land management
- Lachie Grant - WFPs and erosion management
- Dr Alec McKay - SLUI programme and effects of erosion on production
- Dr Jon Roygard - Mapping of at-risk erosion areas
- Greg Carlyon - SLUI programme
- Dr John Dymond - Erodible land identification

Additional technical evidence provided by Horizons for the Environment Court hearing:

- Allan Kirk - Riparian management, cultivation
- Dr John Quinn - Riparian management

Technical Expert Conferencing

37. A conferencing statement has been provided that has resulted from conferencing between the relevant technical experts for the Chapters 5 and 12. The conferencing that has occurred has been limited to matters that were in contention between the technical experts based on the technical evidence provided by Horizons at the Council-level hearing. The conferencing statement that has been provided includes only limited direction in terms of technical matters, and many points set out in the statement have not been agreed by all of the technical experts.

FACTS AND ASSUMPTIONS

38. As a foundation for my planning evidence, I set out the facts and assumptions that I have relied on. These have been derived from technical evidence and from the technical expert conferencing that has been completed to date.

FACTS

(a) Land in the Region is subject to erosion.

(b) Erosion occurs by a number of mechanisms including mass movement (slipping and slumping), sheet erosion (water entraining soil particles as it moves across the land surface), rill and gully erosion (water focusing into flows and eroding channels into the land surface), and bank erosion (river banks eroded laterally by river flows).

(c) Erosion risk is influenced by a combination of factors including rainfall, rock type, slope, vegetation cover and soil moisture levels.

(d) Human activities, including land disturbance and vegetation clearance can increase the risk of erosion.

(e) Land that is in pasture has greater erosion over time than land in woody vegetation.

(f) Sediment material entering water ways (rivers) is transported by water and deposited either on the bed or on the floodplain. Some sediment is ultimately carried to the end of the river system and ends up either in a lake or the sea.

(g) Sediment deposited on the bed or floodplain of rivers can go through multiple erosion and deposition cycles.

(h) Increased erosion exacerbated by human activities can result in increased sediment material entering the river systems.

(i) Avoiding or mitigating erosion risk will limit the amount of erosion and therefore limit the amount of sediment entering river systems.

(j) Methods for minimising erosion risk will vary depending on the type of erosion involved and the factors that contribute to the erosion risk (rock type, slope, etc).

(k) Additional sediment material in water bodies, both suspended and deposited adversely affects aquatic and riparian species and their habitats.

(l) Additional sediment material deposited on floodplains affects the flood hazard, in particular it reduces the effectiveness of flood hazard mitigation measures such as stopbanks.

(m) Erosion removes soil from the land on which the erosion is occurring, which reduces the productive potential of the land.

(n) Sediment entrains nutrients such as phosphorus, which results in those nutrients entering the river systems and becoming available for plant growth (including periphyton).

(o) Land disturbance and cultivation activities, even if they are a significant distance from a water body, have the potential to discharge sediment to water as a result of overland flow and/or via ephemeral or artificial water courses. This is particularly the case where soils are not well drained, are compacted, or where the activity occurs on sloping land.

ASSUMPTIONS

39. Woody vegetation begins playing a significant slope-holding role from about 7 years of age. This is an assumption because there has not been exhaustive research into the slope holding ability v age of native species (such as manuka) and the 7 years is based on studies of poplars and pinus radiata.

40. Farmers have sufficient knowledge and experience of their properties to be able to identify slope angles, at least approximately, by eye and they will be able to determine slope using other means such as with an inclinometer or an abney level.

STATUTORY TESTS

41. In *Long Bay–Okura Great Park Society* v *North Shore City Council* ENV C A078/08[2] the Environment Court set out a comprehensive summary of the mandatory requirements for the assessment of district plans according to the RMA's statutory requirements. The list has been subsequently amended to reflect the changes made by the Resource Management Amendment Act 2005.[3] These requirements have been held to be equally applicable to the evaluation of regional plans[4] (subject to required amendments).

42. When evaluating the provisions of the POP, I have adopted the modified *Long Bay-Okura* tests. I note that Mr Hindrup identifies a set of statutory tests in Appendix 3 of his evidence, many of which correspond with the *Long Bay-Okura* tests. I also note my understanding that the version of the RMA that applies here is the Act as amended by the 2005 amendments but that existed prior to the Resource Management (Simplifying and Streamlining) Amendment Act 2009.[5]

GENERAL REQUIREMENTS

(a) A regional plan and regional policy statement should be designed to accord with and assist the regional council to carry out its functions so as to achieve the purpose of the Act (sections 30, 59, 61, 63 and 66(1)).

(b) When preparing a regional plan or regional policy statement the regional council must give effect to any national policy statement, New Zealand Coastal Policy Statement and when preparing a regional plan must also give effect to the operative regional policy statement (sections 62(3) and 67(3)).

(c) When preparing its regional plan the regional council shall have regard to any proposed regional policy statement (section 66(2)(a)).

(d) When preparing a regional plan or regional policy statement the regional council must also

[2] ENV C A078/08, at para 34 (following *Eldamos Investments Ltd v Gisborne District Council* ENV C W047/2005).
[3] *High Country Rosehip Orchards Ltd v MacKenzie District Council* [2011] NZ EnvC 387 (paragraphs 18 and 19).
[4] See *Geotherm Group Ltd v Waikato Regional Council* A047/06 (paragraph 68) & Final Decision of the Board of Inquiry into the New Zealand Transport Agency's Transmission Gully Plan Change Request dated 5 October 2011 (paragraph 159).
[5] Refer section 161 of the Resource Management (Simplifying and Streamlining) Amendment Act 2009.

i. Have regard to any relevant management plans and strategies prepared under other Acts, and, in the case of a regional plan, to consistency with plans, policy statements and proposed plans and proposed policy statements of adjacent regional councils (sections 61(1) and 66(2)(d));

ii. Take into account any relevant planning document recognised by an iwi authority (s61(2A));

iii. Not have regard to trade competition or the effects of trade competition (section 61(3) and 66(3)).

(e) The formal requirement that a regional policy statement must state matters including the following (sections 59 and 62):

i. An overview of the resource management issues of the region and state the significant resource management issues for the region;

ii. The objectives sought to be achieved by the statement, the policies for the issues and objectives and an explanation of those policies, and methods (excluding rules) to be used to implement that policies (s62(1)(c), (d) and (e);

iii. The policies and methods to achieve integrated management of the natural and physical resources of the region (s59);

iv. The processes to be used to deal with cross-boundary issues; and

v. The local authority responsible for specifying objectives, policies and methods for the control of the use of land relating to natural hazards, hazardous substances, and indigenous biological diversity.

The regional plan must also state objectives, policies and rules (if any) and may state other matters (section 67(1) and (2)).

OBJECTIVES [the section 32 test for objectives]

(a) Each proposed objective in a regional plan or regional policy statement is to be evaluated by the extent to which it is the most appropriate way to achieve the purpose of the Act (section 32(3)(a)).

POLICIES AND METHODS (including rules) [the section 32 test for policies and rules]

(a) For regional plans, the policies are to implement the objectives, and the rules (if any) are to implement and achieve the policies (sections 67(1) and 68(1)).

(b) Each proposed policy or method (including each rule) is to be examined, having regard to its efficiency and effectiveness, as to whether it is the most appropriate method for achieving the objectives (section 32(3)(b)) of the regional policy statement or regional plan taking into account:

i. the benefits and costs of the proposed policies and methods (including rules); and

ii. 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 (section 32(4)).

RULES

(a) In making a rule the regional council must have regard to the actual or potential effect of activities on the environment (section 68(3)).

ON APPEAL

(a) On appeal the Environment Court must **have regard to** one additional matter – the decision of the regional council (section 290A).

43. I provide an evaluation of the relevant higher-level statutory tests as they relate to the POP at the end of my evidence. Where appropriate I provide evaluation in regards to s32 throughout my evidence where I deal with specific provisions.

RELEVANT NATIONAL POLICY STATEMENTS

44. There are four operative National Policy Statements in effect.

(a) NPS Freshwater Management

(b) NPS Renewable Energy Generation

(c) NPS Electricity Transmission

(d) New Zealand Coastal Policy Statement

45. Of the NPSs, the MPS Freshwater is of particular relevance to the management of erodible land and its consequential discharges of sediment to water bodies. The objectives and policies of the NPS Freshwater that should inform the POP are:

Objective A1

To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the use and development of land, and of discharges of contaminants.

Objective A2

The overall quality of fresh water within a region is maintained or improved while:

a) protecting the quality of outstanding freshwater bodies

b) protecting the significant values of wetlands and

c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.

46. In implementing the objectives the NPS includes a set of policies that are directive to regional councils to develop limits and targets within their plans, and to manage activities through plan provisions and resource consents to achieve those limits and targets. The NV of the POP, while notified before the NPS became operative, established a framework that was broadly consistent with the NPS approach. This is particularly evident in the objectives and policies in Chapter 6 as they relate to the management of water quality.

47. For the POP to give effect to the NPS Freshwater, management of activities that result in discharges of sediment to water bodies will be an integral component of achieving the necessary outcomes. The POP's objectives and policies in relation to erodible land, in my view, should work in tandem with the water quality objectives and policies to achieve a set of limits and targets. Currently, the POP includes Schedule D which sets out numeric values that appear to perform a similar role to what the NPS

intends for limits. Even if this is not the case, Schedule D sets out the water quality aspirations for the Region and they therefore form a reference point for managing activities.

48. The New Zealand Coastal Policy Statement includes specific direction for the management of activities on the land that have an impact on the coastal environment. Of particular relevance is Policy 22:

Policy 22: Sedimentation

1. Assess and monitor sedimentation levels and impacts on the coastal environment.
2. Require that subdivision, use, or development will not result in a significant increase in sedimentation in the coastal marine area, or other coastal water.
3. Control the impacts of vegetation removal on sedimentation including the impacts of harvesting plantation forestry.
4. Reduce sediment loadings in runoff and in stormwater systems through controls on land use activities.

PROVISIONS OF THE REGIONAL POLICY STATEMENT

RPS OBJECTIVES

NOTIFIED VERSION

*Objective 5-1: accelerated erosion**

Land is used in a manner that ensures:

a) 50% of farms with Highly Erodible Land (see Schedule A) are either being sustainably managed, or have a whole farm business plan* in place by 2017.*

b) sediment loads entering waterways as a result of accelerated erosion are reduced to the extent required to be consistent with the water management objectives and policies set out in Chapter 6 of this Plan and the targets established in Schedule D for those water management zones with elevated sediment levels

c) accelerated erosion caused by vegetation clearance and land disturbance* is minimised*

d) the damage to roads and other infrastructure caused by landslides and sediment run-off from hill country is minimised*

e) *the damage to property, infrastructure* and significant habitat areas caused by accelerated wind erosion of coastal sand is minimised.*

DECISIONS VERSION

Objective 5-1: Managing accelerated erosion*

By the year 2017, 50% of farms within hill country land^ subject to an elevated risk of accelerated erosion* will have in place or be in the process of putting in place, farm-wide sustainable land^ management practices to minimise accelerated erosion*.

Objective 5-2: Regulating potential causes of accelerated erosion*

Land^ is used in a manner that ensures accelerated erosion* and increased sedimentation in water bodies^ (with resultant adverse effects^ on people, buildings and infrastructure^) caused by vegetation clearance*, land disturbance*, forestry*, or cultivation* are avoided as far as reasonably practicable, or otherwise remedied or mitigated.

ANALYSIS OF RPS OBJECTIVES

49. I provide here an evaluation of the objectives in Chapter 5 in some detail. Mr Hindrup in his evidence has proposed some wording for the objectives and policies in Chapter 5 but provides only incidental evaluation of their appropriateness for achieving the purpose of the Act.

50. The changes between the NV and DV of the objectives in Chapter 5 are:

(a) Splitting a single objective (5-1 in the NV) into two objectives (5-1 and 5-2 in the DV). Objective 5-1 in the DV focuses on the non-regulatory approaches while Objective 5-2 focuses on the regulatory approach. In the NV, both regulatory and non-regulatory approaches were managed under the single objective.

(b) The DV removes the cross-reference to the objectives and policies of Chapter 6

(c) The DV removes a direct reference to coastal wind erosion, however there is perhaps an implicit reference to all erosion (wind and water) in Objective 5-2.

(d) Removal from the NV of a direct reference to Whole Farm Business Plans. The DV refers to 'farm wide sustainable land management practices' being put in place.

SPLITTING THE OBJECTIVES AND RELATIONSHIP TO CHAPTER 6

51. Having a single objective in the NV dealing with both regulatory and non-regulatory approaches to addressing the issue had the benefit of linking both approaches to the same outcomes. In particular, the NV Objective 5-1 has a clear linkage between Chapter 5 and the water quality objectives and policies in Chapter 6 in recognition that minimising discharges from erosion would contribute to achieving the Chapter 6 objectives. The DV objectives do not provide this cross-reference so the objectives of Chapter 5 sit largely in isolation from Chapter 6. There is reference in Objective 5-2 of the DV to 'accelerated erosion and increased sedimentation in water bodies ….. are avoided as far as reasonably practicable, or otherwise remedied or mitigated'. While this approach suggests that avoiding the effects is the priority, I have reservations about the use of the term 'as far as reasonably practicable'. The subjectivity created by the reference to reasonably practicable will make it difficult to determine whether the objective has been achieved. It will also make it unclear how the objective should be applied during decision-making. The NV objective provided the certainty around the effects of sediment discharges by referring to the outcomes sought by the water management objectives and policies in Chapter 6. The water management objectives and policies in Chapter 6 provide a clear set of outcomes and a course of action for addressing water quality issues (or maintaining good water quality).

52. The regulatory and non-regulatory approaches to managing the issue that are set out in the POP need to work cohesively. I therefore support a direct reference from Chapter 5 to Chapter 6 that applies to both management streams. In my opinion, to provide certainty in the objectives and to maintain the relationship between the Chapters of the POP, the objectives should be amended to:

(a) Have outcomes linked to the water quality outcomes in Chapter 6

(b) Recognise that both regulatory and non-regulatory approaches are seeking to achieve the same outcomes in terms of reducing accelerate erosion and sediment discharges.

53. I provide amended wording of the Chapter 5 objectives in Appendix 1

REFERENCE TO WHOLE FARM BUSINESS PLANS

54. The removal of the direct reference to WFPs and its replacement with a more generic 'farm wide sustainable land management practices' removes from the objectives any direct reference to the SLUI programme and the targeted tools that it establishes for addressing the accelerated erosion issue. The Hearing Panel, in its decision, removed the direct reference because it considered that there are other initiatives, current or future, that promote similar outcomes. Those other programmes, while complimentary, do not have the comprehensive approach enshrined within them in the same way that the SLUI programme does. Of particular note with the WFPs is the consideration of farm economics[6] in the recommended land management approach, which is considered to be an essential component if the management practices recommended are going to be adopted by farmers.

55. As set out in the Horizons hearing-level evidence (see s42A reports of McKay, Carlyon, Kirk, Grant, Dymond and Roygard), the SLUI programme and the associated WFPs was comprehensively developed to address the erosion and sediment discharge issues associated with land use in areas at high risk of erosion. The SLUI programme, as described in that evidence, is a comprehensive, region-wide approach which was established partly in recognition that other erosion management programmes were having limited success in addressing such a large-scale issue. The SLUI programme is standalone in one sense but has a large part to play in the achievement of the objectives of the POP (in particular Chapters 5 and 6). The regulatory measures in the POP also support the SLUI programme. To ensure that there is consistency between two region-wide management tools (the POP and SLUI) a close linkage is important.

56. I am however comfortable that the Objectives in Chapter 5 relax their direct reference to the SLUI programme as set out in the DV, however I am supportive of retaining the direct reference to it further down the policy cascade. I will discuss my recommendations for inclusion in the POP later in my evidence.

6. See Section 42A Report of Lachie Grant, 15 May 2008, para 45, pg 9.

DIRECT REFERENCE TO COASTAL WIND EROSION

57. The DV has removed direct reference to wind erosion from (Objective 5-1 (e) in the NV). However the wording of DV objective 5-2 perhaps includes it implicitly in that it refers to accelerated erosion, which could be interpreted to capture all types of erosion (including wind). I am comfortable that the objectives as worded in the DV anticipate the management of all accelerated erosion, including wind erosion.

MR HINDRUPS RECOMMENDED OBJECTIVES

58. Mr Hindrup has recommended in his evidence one amendment to Objective 5-1 of the DV. While Mr Hindrup does not give reasons for his recommended change, it appears that he has recommended the change for similar reasons as I have discussed above - to improve the objective's relationship with the water quality outcomes intended. While I support the intent of Mr Hindrup's amendment, I consider that the objective should be clearer about what the intended outcome is. 'Reduced sedimentation in the water bodies' could be interpreted to mean a significant reduction or a minimal reduction. Assuming the most conservative interpretation, all that would be required to achieve the objective would be a net reduction in sedimentation - say for example a 1% reduction. That outcome would not be consistent with the water management strategy set out in the objectives and policies of Chapter 6 and it also would not reflect the intentions of the SLUI programme (which is a significant reduction in sediment in water ways). To provide greater certainty in the objective, I recommend that this, and Objective 5-2, directly refer to the Chapter 6 objectives and polices.

MATTERAL UNDERPINNING IMPLEMENTATION OF OBJECTIVES

59. As a starting point for evaluating the policies and methods which are required to implement the objectives, I set out below a summary of the basis for those provisions. The objectives set out the outcomes required, and so it is necessary to identify the particular actions that are required, and in which parts of the Region those actions are required to achieve the outcomes.

(a) Where are the areas of the Region where there is an elevated risk of erosion?

(b) Do human activities within those areas influence erosion risk?

(c) What are the options for managing those activities?

WHERE ARE THE AREAS OF THE REGION THAT HAVE ELEVATED EROSION RISK?

60. The technical evidence[7] shows that land is at significant risk of erosion in the hill country areas. Increased erosion risk is present on flatter land where land disturbance occurs (large-scale earthworks and cultivation), in riparian areas (bank erosion), and in coastal foredunes. More specifically:

(a) Technical experts have identified the LUC units within the Region that are at significant risk of erosion (Dymond and Sheppard (2006))[8]. Mr Eyles describes the LUC system in his evidence, including the influence of erosion potential on LUC mapping.

(b) Technical expert evidence states that WFP LUC mapping provides an accurate way to identify areas at a property scale that require particular consideration to manage erosion risk[9]. Only some properties have been mapped for LUC at property scale.

(c) LUC mapping at the regional scale (1:50 000) is not accurate enough to be applied at the property scale.

(d) Technical expert evidence states that the majority of hill country mass movement (slips, earthflows, landslide etc) erosion occurs on slopes above 20 degrees. The amount and type of erosion and the slope at which erosion will occur is dependent on the underlying rock type as well as rainfall, vegetative cover and other factors. The 28 degree slope specified in the DV does not account for the erosion risk on certain geology present within the Region, as is discussed in the evidence of Mr Eyles[10].

DO HUMAN ACTIVITIES INCREASE THE RISK OF EROSION?

61. The evidence of the technical experts concludes that human activities can increase the risk of erosion over that of natural processes[11]. Activities that reduce the land's resilience to rainfall events increase the potential for erosion. This can be an increase in the scale of erosion derived from a particular event (more land erodes during a

[7]See evidence of Eyles, Ngapo, and Kirk, and the technical evidence from the Council-level hearing
[8]See s42A Report of John Dymond
[9]See evidence of Garth Eyles, para 44-52, pg 21
[10] See evidence of Garth Eyles, para 35-37, pg 18
[11]See evidence of Eyles, Ngapo, Kirk and the technical evidence presented on this topic at the Council-level hearing.

particular event than would naturally), or it can be a reduction in the thresholds for erosion to occur (a smaller rainfall event triggers erosion that would otherwise have occurred during a larger event).

62. The degree to which human activities influence erosion risk is variable, depending on the type of activity, the land on which it occurs and whether any remedial measures are implemented. However technical evidence states that there are certain activities that significantly increase the risk of erosion where other natural risk factors (such as slope and underlying rock type) are present.

63. Based on the technical evidence the following activities have the potential to significantly increase the risk of erosion in specific parts of the Region.

Activity	Description
Pastoral farming and other activities that require land to be de-vegetated.	Any activity that relies on hill country land being unvegetated has the potential to increase the risk of erosion. The erosion risk increase is variable depending upon the geology, slope, etc but the experts agree that removal of vegetation and maintenance of the devegetated state has reduced the erosion resilience of the land.
Land disturbance **and** cultivation **involving greater than** 100 cubic metres of 100 square metres **on land within hill country areas on the basis that underlying rock type, slope, vegetation cover and other factors influence risk.**	Land disturbance activities increase the risk of erosion and sediment discharge both on hill country and on flatter land. On hill country land disturbance can also increase the risk of mass movement through slope destabilisation or poorly designed stormwater discharges. They agree that a relatively small amount of land disturbance on steeper land creates a significant erosion risk and therefore recommend a conservative trigger for consideration of this activity through the resource consent process. On flatter land, the experts agree that there is a
Land disturbance **and** cultivation **on flatter land where the area**	

of land disturbance is less than 2500 square metres **but noting that the risks associated with this scale of activity are relatively low and can be managed.**	lower risk of erosion such that a larger trigger area can be used for regulatory purposes. The experts agree that all land disturbance activities on flatter land should have in place erosion and sediment control measures to minimise erosion and sediment discharge.
Land disturbance **and** cultivation **on flatter land where the area of land disturbance is** greater than 2500 square metres**.**	
Land disturbance **and** cultivation **on land that is within or near** the bed of a river, lake, wetland, significant trout habitat, and sites of significance aquatic or wetlands identified in Schedule E.	
Vegetation clearance (woody vegetation) **on land within hill country areas.**	Mature woody vegetation on hill slopes reduces the risk of erosion, with native bush and plantation forestry being particularly effective. Regenerating scrub provides a higher erosion protection value than pasture, but mature bush provides the best protection. For regenerating scrub to contribute to reducing the risk of erosion it needs to be allowed to mature. A decision needs to be made as to whether regenerating scrub in a particular area can be cleared or should be allowed to mature and this decision needs to be informed by the erosion risk and productive potential of that area of land. The point at which this assessment should be

	made is when [scrub age, coverage, height?]
Vegetation clearance **on land that is within or near** the bed of a river, lake, wetland, significant trout habitat, and sites of significance aquatic or wetlands identified in Schedule E.	Vegetation in riparian areas (woody and ground cover) performs various roles, including capturing sediment from sheet flow, reducing bank erosion risk and providing habitat benefits.
Vegetation clearance, land disturbance, cultivation and forestry within a coastal foredune	There appears to be no contention that activities within the coastal foredune have significant potential to exacerbate erosion as these areas comprise unconsolidated sands and are easily destabilised.

WHAT ARE THE OPTIONS FOR MANAGING THE IDENTIFIED ACTIVITIES?

64. The option for managing the land use activities identified in order to achieve the objective/s does not appear to be in contention. The selected option in both the NV, DV and in the evidence of Mr Hindrup, is a combination of regulatory and non-regulatory approaches. The non-regulatory approach, which primarily involves the use of WFPs and, in the DV, similar documents, focused on improving the resilience of land used for pastoral farming activities to erosion. It promotes proactive measures to improve the current situation. The regulatory approach adopted addresses only new activities that have the potential to exacerbate erosion. Regulation does not require changes in day-to-day land use practices. As there appears to be no contention between the parties in relation to this overall approach to achieving the objectives in the Plan, I will not evaluate alternatives to that approach.

65. I do note that there is some disagreement about the intricacies of how the non-regulatory and regulatory approaches interact, however I will address those issues when dealing with the plan provisions specifically.

66. One point that I consider is important to note is the benefit of regulation as a support tool for the SLUI programme. The SLUI programme involves the investment of millions of dollars (3.5 million to date)[12] contributed by landowners, regional rates, and the government. That investment has included money for works, land retirements, forestry and other planting. Regulation provides a 'backstop' so that there is an opportunity for consideration by the Council should activities be proposed that might remove or undermine that investment. For example, regulation around vegetation clearance in hill country areas should minimise the likelihood of land that has been previously retired as a result of the SLUI programme being cleared in the future because of a change in landowner or landowner attitude, or the clearance of land that undermines the gains made by land retirement or selected planting programs.

67. The total area of highly erodible land is estimated to be 661,359 hectares. The total amount of highly erodible land currently protected by vegetation cover is estimated to be 387,832 hectares. The total amount of highly erodible land not protected is estimated to be 273,527 hectares[13].

68. Removal of vegetation from highly erodible land will increase the risk of erosion and this would negate any reduction in erosion achieved from retiring / planting erosion prone areas, and implementation of WFBPs.

69. Therefore, regulation supports the outcomes achieved by the non-regulatory measures, so that the combination of the two approaches is effective in achieving the objective.

REGULATION

70. Regulation of land use activities to achieve the objective. This would involve rules controlling the land use activities previously identified in my evidence that have the potential to exacerbate erosion and sediment discharge. Those are vegetation clearance, land disturbance and cultivation. Forestry is also included in this list but this topic has not as yet been set down for hearing as the parties are committed to

12. Evidence of Allan Kirk, para 55, pg 11
13 s42A report of Jon Roygard

resolving appeal points through further mediation, I therefore do not propose to address that activity here.

71. Regulation is appropriate where there is significant risk associated with the activity and where other methods to address that risk will not be effective (or will be partially effective). Due to the range of knowledge about the issue and attitudes among land users, non-regulatory methods are only likely to have limited effectiveness in achieving the objective. The same argument can be made for regulation - some land users will not be aware of rules, or will choose not to comply with them. However regulation coupled with non-regulatory methods is likely to achieve an effective outcome from the majority of land users as it covers more bases. It also recognises that different individuals respond better to some approaches than others.

72. Submissions from farmers at the Council-level hearings and the evidence of technical land management experts familiar with relationship building in the rural community, show that there is a strong resistance to non-regulatory methods being effectively imposed on land users via regulation. A significant issue among submitters at the Council-level hearing was the relationship between Whole Farm Business Plans and the rules in the Plan. The perception of submitters was that Rule 13-1 as notified effectively forced farmers into preparing WFPs. This response to the linking of non-regulatory and regulatory methods within the Plan emphasises the sensitivity of the different approaches.

73. Evidence of land management experts[14], who are involved in providing technical expertise to land users, and who must be successful at understanding people and building relationships, strongly supports non-regulatory methods such as WFPs being promoted in the Plan. In the case of WFPs and rules controlling land use activities in the Plan, minimisation of erosion and soil conservation are core outcomes intended.

74. The two methods also have similar goals in relation to sediment discharge minimisation, however with the WFP approach this is perhaps more a consequential result rather than a specific focus (by minimising erosion potential and good management of stormwater from sites, sediment discharge will be minimised). The focus of WFPs is on land management to increase resilience[15] so there is not a dedicated water quality outcome component to that process. Mr Ngapo considers[16]

[14] Evidence of Norm Ngapo and Allan Kirk, and s42A Report of Allan Kirk
[15] See section 42A Report by Lachie Grant
[16] See evidence of Norm Ngapo, para 48, pg 17

that, where land users are preparing and implementing non-regulatory WFPs there should not be the need for rules to be applied. I agree that this approach is efficient where the resource management aspects necessary to achieve the Objectives of the Plan are achieved by the WFP (erosion minimisation) however the WFP does not address the effects of ancillary discharges sufficiently robustly and therefore some regulatory control is necessary around that aspect of the activity. Rules setting out necessary water quality standards to which discharges need to be measured are likely to be a more effective method for addressing ancillary discharges in that they trigger a resource consent process which enables a technical expert to become involved in the evaluation process.

75. One other aspect of WFP development that makes them less robust than rules with regards to managing environmental effects is that a major emphasis of WFP development is achieving 'buy-in' from the landowner. This appears to allow for compromises in some environmental outcomes where there is not the willingness of the landowner to address particular issues. For landowners to adopt the WFP and begin a progressive improvement in practice over time, the initial farm plan may not comprehensively address all significant issues. In my view, this weakens the WFPs as a surrogate for regulation of higher-risk land use activities, albeit that many of the outcomes are consistent with the RMA focussed outcomes of the POP.

76. In terms of efficiency of a 'double-pronged' approach around WFPs coupled with rules (non-reg for erosion and reg for discharge parameters), land management experts have noted that,[17] as part of preparing a WFP, the provisions of the Plan are checked to identify whether there are any resource consents that are triggered by proposed works and whether the proposed works will comply with permitted activity standards in the Plan. Therefore, a rule that sets out conditions/standards/terms in relation to specific activities will be considered at the time of WFP preparation. Land management officers preparing the WFP can either specify methods that will avoid the need for resource consent, or advise the land user that resource consent will have to be sought from the Council prior to undertaking the works.

77. Where potentially significant discharges of sediment are likely to be involved, it is appropriate that the activity is given scrutiny through a resource consent process, as it may be that the LMO preparing the WFP is not sufficiently skilled or experienced in sediment control measures for large-scale activities.

[17] See evidence of Norm Ngapo, para 68, pg 23

78. In practice, and based on evidence presented at the Council hearing (and in discussion in the Hearing Panel's decision)[18] land disturbance activities associated with farming in the hill country areas are likely to be restricted to tracking and fenceline establishment. There may be occasional cultivation for the purposes of pasture replacement, and potentially some activities associated with vegetation clearance (root raking and stump removal). There are unlikely to be other farming-related activities that occur in hill country areas that involve significant soil disturbance and therefore it is unlikely that regulation around these activities will have a significant influence on farming land uses. For example, a new track that is a significant distance from a water body, and with appropriately designed erosion and sediment control measures in place, is likely to meet the discharge standards in a permitted activity rule (assuming those standards are reflective of s70 RMA requirements) because distances of overland water flow are likely to be a significant mitigating factor in terms of sediment removal. The erosion management aspect of the new track is likely to be effectively dealt with through the WFP process in terms of its location, design and associated mitigation measures (such as tree planting above and/or below relevant cuts). Where a new track is proposed that has not been considered as part of a WFP, there has not been the opportunity for expert consideration of the activity and therefore it is appropriate that resource consent is required. As noted above, where significant land disturbance is proposed on sloping land, technical expertise is required to review and, where necessary, specify appropriate avoidance or mitigation measures.

79. In hill country areas, consideration also has to be given to non-farming activities that may occur in these areas. These may include construction works associated with energy generation or electricity transmission infrastructure, which may involve significant areas and volumes of land disturbance where complex erosion and sediment management is involved. These activities are also unlikely to have WFPs prepared for them and therefore it is appropriate that some form of regulation is in place to ensure proposals are scrutinised and potential adverse effects are avoided or mitigated. The evidence of Mr Ngapo[19] suggests that there can be a high degree of complexity involved in managing erosion and sediment control measures for earthworks on sloping sites and large sites. There is a need for scrutiny of erosion and sediment control plans, and it is appropriate that the Council is able to provide that scrutiny through the resource consent process. In some circumstances, it may be

18. See Hearing Panel Decision, Land Hearing, Volume 1, Part 4, pg 4-19
19. See evidence of Norm Ngapo, para 70, pg 24

appropriate to provide some additional controls on earth working periods, erosion and sediment control plan review intervals, and to provide specific opportunities for monitoring and compliance checking of the activity.

80. As an example of a significant land disturbance activity in the Region, the resource consent application[20] for the Castle Hill Wind Farm proposal (a large windfarm proposal east of Eketahuna proposed by Genesis Energy) described 16.26 ha of exposed earthwork area in 'high risk areas' with a total anticipated annual sediment load (assuming 60% sediment removal using decanting earth bunds) of 1097 tonnes (compared with an anticipated pre-construction load of 171 tonnes). The application notes that, in some areas there is 'no room available for sediment control ponds - internal road and batters within a steep gully adjacent to watercourse', which suggests that the topography of the area limits the availability of erosion and sediment control measures and it may therefore be necessary to remedy or mitigate potential adverse effects in other ways. Development of this scale and complexity should trigger a resource consent to enable effective consideration and management of actual and potential effects.

NON REGULATORY MEASURES

81. Non regulatory measures on their own are unlikely to be effective in achieving the objectives. The non-regulatory measures available to the Council currently include WFPs under the SLUI programme, farm plans under other initiatives (the Whanganui Catchment Strategy), education and financial support (provision of poplar poles or land management advice).

82. In considering the non-regulatory approach to achieving the objective, it is important to note that programmes such as SLUI, which is highly subsidised by central and local government, are vulnerable to budgetary cuts, which can reduce their long-term effectiveness. Where the roll-out of WFPs is not achieved as desired because of influences beyond the Council's control, the overall effectiveness of the method would be jeopardised.

[20] Genesis Energy - Castle Hill Wind Farm Assessment of Environmental Effects, Section 5 - page 235

POLICIES OF THE RPS

83. For the purposes of my evidence, I have used the DV version of the policies as a starting point for evaluation on the basis that it is those provisions that have been appealed.

84. Rather than repeat the relevant policies in my evidence, I instead set out the key changes between the NV and DV policies of the RPS:

(a) Policies 5-1 and 5-2 of the NV have been combined into a single policy (Policy 5-1)

(b) The target of 50% of farms having a WFP in place by 2017 has been removed from Policy 5-1 and has been replaced by a more generic approach of 'working with relevant owners and occupiers of farms within hill country land subject to an elevated risk of accelerated erosion to prepare voluntary management plans….'

(c) A reference to consideration of other methods should the non-regulatory approach not be successful has been removed from Policy 5-1.

(d) Policy 5-3 of the NV, which specified that land disturbance and vegetation clearance in high risk hill country should not be allowed except in specific circumstances has been replaced with a permissive Policy 5-2A that says that land disturbance and vegetation clearance will generally be allowed but resource consent will be required for some activities.

(e) Policy 5-2A of the DV includes new policy directing territorial authorities in relation to managing land disturbance and vegetation clearance activities. In particular that territorial authorities 'must not have rules that are contradictory to the rules in the Plan that control the use of land'.

(f) Policy 5-4 of the NV which related to significant land disturbance outside of highly erodible land has been deleted, with the matters that it covered incorporated into the new Policy 5-2A.

(g) Policy 5-5 which relates to codes of practice, guidelines and provision of information has been slightly reworded.

EVALUATION OF RPS POLICIES

85. On the basis that the policies in Chapter 5 need to achieve the objectives, there should be two identifiable policy streams. One stream should relate to the non-regulatory approach to land management set out in Objective 5-1 and the second stream should support the regulatory approach set out in Objective 5-2.

NON REGULARORY POLICY STREAM

86. Objective 5-1 relates to non-regulatory methods. I am comfortable that the DV Policy 5-1 is appropriate in achieving the objective. While more specificity could be introduced to the policy to reflect the 50% target set out in the Objective, this is unnecessary given the cascade of the policy framework (policies can provide greater specificity in relation to how the objective will be achieved). I also note that the implementation of the SLUI and other programmes sits outside of the POP and therefore the primary mechanism for achieving Objective 5-1 is the successful implementation of those separate programmes.

87. The DV removed the explicit statement that if the non-regulatory methods were found to not be effective, 'other methods to achieve the outcome will need to be considered'[21]. This change was made in response to a submission[22] from a submitter who perceived that this policy was a threat to pressure landowners into putting in place WFPs.

88. In my view, the policy stated what is a basic presumption around monitoring and reviewing the effectiveness of resource management planning documents - if a particular approach is found not to be effective or efficient, it is likely to be reviewed and other methods considered as alternatives. While the Act already provides for this approach, on consideration I am of the view that DV Policy 5-1 should include reference to the review of the effectiveness of the non-regulatory methods. DV Policy 5-2 (b) already specifies that monitoring and reporting of sustainable land use practices will be undertaken but does not explicitly state what will be done with that data. It seems appropriate therefore that the Policy also states what the data will be used for, which is to review the effectiveness of the approach. I therefore support the change to the wording of Policy 5-2 (b) as proposed by Mr Hindrup in his evidence (subject to some minor drafting changes).

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21. NV Policy 5-1 (c)
22. Federated Farmers of New Zealand Inc (submission ref 426/30)

REGULATORY POLICY STREAM

89. To achieve Objective 5-2, there must be a policy stream that establishes the framework for regulatory management of the relevant land use activities. The most significant amendment to the policies that give effect to what is now Objective 5-2 is the change from a restrictive approach to target activities, to a permissive approach in the DV. I do not consider that the DV policy approach accurately translates the intentions of the objective. The objective is focussed on addressing a significant erosion and sediment discharge problem within a defined part of the Region or involving specific activities, and that requires careful oversight and management of those activities. The policy as currently worded in the DV does not reflect that, and instead suggests that only on rare occasions will regulatory scrutiny be required. Even then, the Policy is silent on the way in which activities requiring resource consent should be treated. While the precise guidance for resource consent assessment should be included in policies in the RP, I am of the view that Policy 5-2A should be directive in how the objective is to be achieved through regulation, particularly given the integral relationship between the policies of the RPS and the RP in the POP.

90. I therefore propose that Policy 5-2A is amended to reflect the focus on managing activities in higher-risk areas or activities that pose a significant risk. Where activities are proposed in higher-risk areas, the following requirements through the rules or resource consent processes need to be met:

(a) There must be no significant increase in the risk of erosion caused by the activity

(b) The activity must be managed to minimise discharges of sediment

(c) Activities must minimise land disturbance or vegetation clearance in riparian areas to maintain the benefits those areas provide, and to minimise the discharge of sediment to water bodies.

91. For areas outside of the higher-risk areas, I agree that there should be few controls on activities except where they are of a scale where there is significant potential for adverse effects to occur. The requirements set out above in relation to high risk areas are also applicable to higher-risk activities in other areas.

92. In terms of considering the DV approach and my recommended approach to guiding regulation of activities against the s32 requirements of effectiveness and efficiency,

there are agreements both ways. A more permissive regulatory approach is perhaps more efficient from a landowner's perspective in terms of administrative costs as there is less likely to be the cost of a resource consent application involved. However these savings are likely to be lost where there is a heavy reliance on the Council incurring the cost of compliance monitoring around permitted activities. This is particularly the case where there are complex conditions associated with permitted activities that must be complied with - the more complex or onerous the conditions of a permitted activity rule are, in my experience, the less likely those conditions will be complied with and therefore a potentially increased burden on the Council resolving breaches of permitted activity conditions.

93. In terms of effectiveness, my comments above in relation to the likelihood of compliance with permitted activity conditions may result in reduced effectiveness of a permissive approach, with consequential costs to the community through environmental impacts, increased costs associated with flood hazard mitigation, and loss of amenity and recreational values. There is also a potential loss of effectiveness where the regulatory approach is not targeted at the issue or the areas of the Region where the issue is present. If the regulatory response to the issue is softened, the message that activities in higher-risk areas are of particular concern is perhaps diluted.

94. As discussed elsewhere in my evidence, because the land use activities of relevance to this issue are closely associated with discharges of sediment to water, consideration needs to be given to the presumptions in s13 of the Act - that a discharge cannot occur if it breaches a rule in a regional plan unless it is allowed by a resource consent. Of course the land use activities in question fall under s9 of the Act, which has a permissive presumption, but if the land use and discharges are 'bundled', as is the case in the DV, the policies that establish the regulatory framework need to acknowledge that. Permissive policies create a difficult situation where there may be a conflict where the policies in Chapter 5 are permissive but the policies in Chapter 6 (which would logically be considered when determining a resource consent involving a discharge) are less permissive. While this is not a major dilemma and decision-makers would navigate the situation with pragmatism, it would create some 'tension' in the Plan.

95. Overall, I consider that a policy framework targeted at the activities and areas of interest is more appropriate than the generally permissive policy framework that is in the DV.

96. I have included recommended wording for the Chapter 5 policies in Appendix 1 of my evidence.

RPS METHODS

97. The set of methods included in the DV of the POP do not appear to be under appeal, other than through consequential changes. Therefore I will not provide evidence on the methods.

ANTICIPATED ENVIRONMENTAL RESULTS

98. The POP includes a set of Anticipated Environmental Results (AER) which are intended to indicate the success or otherwise of the objectives, policies and methods. There is only one AER in Chapter 5, which sets out the expectation in reducing accelerated erosion and sediment discharges.

99. WF&G sought in their appeal that:

(a) Reference is made to a deposited sediment standard or other appropriate standard in either in the AER itself or by cross-reference to Schedule D

(b) Establish a timeline in the AER for meeting the standard and measuring progress towards it.

100. My understanding of the intent of the WF&G appeal points is to introduce a higher degree of certainty into the AER and to make it more measurable. I agree with this approach - in my view and AER should be clearly measurable and there should be a time limit on when the environment results are expected to be achieved.

101. Through this appeal process WF&G are seeking to include a deposited sediment standard in Schedule D (this matter is to be addressed in evidence for the water quality topic). This deposited sediment standard would be used as a basis for an AER as it indicates an acceptable deposited sediment limit within each water management zone. The deposited sediment standard recommended for inclusion in Schedule D is a % cover, so that the actual sediment cover can be measured against the target

(compared with a % change numeric which would be more relevant to an individual discharge).

102. Associate Professor Russell Death explains the relevance of deposited sediment and its effects on aquatic ecosystems. Sedimentation is critically important for maintaining many of the values and objectives in the POP such as protecting trout spawning values and the protection of native fish communities. Increased deposited sediment levels have significant adverse effects on aquatic ecosystems, by adversely impacting on fish communities, macro invertebrate communities and changing natural chemical and physical processes[23]. Associate Professor Death also explains the relationship between visual clarity (a measure of suspended sediments) and deposited sediment and concludes that imposing a limit on the allowable water clarity reduction caused by a discharge is necessary to reduce the risk of increasing deposited sediment levels as suspended sediment eventually settles out. Establishing limits for both suspended and deposited sediment are important in order to protect the recreational, aesthetic, trout fishery, and native fish, values associated with surface water bodies.[24]

103. Associate Professor Death's evidence also addresses the effects of nutrients, including phosphorus which binds to sediment particles and thereby makes its way into water bodies. The evidence of Associate Professor Death, Mr Ngapo and others sets out the relationship of erosion, sediment discharge and phosphorus levels in water bodies.

104. Maintaining deposited sediment at current levels where the Schedule D targets are already met, or reducing the sediment discharges to achieve the Schedule D targets, is consistent with the water quality framework set out on Chapter 6 of the POP and which has a direct relationship with the effective management of erosion and sediment discharges.

105. Having reviewed the evidence of Dr Roygard[25] in relation to the anticipated outcomes for the SLUI project, the following indicators would also be appropriate to include in the AER:

(a) WFP monitoring and reporting results including effectiveness of all conservation works in a WFP in terms of sediment discharge off farm.

[23] See evidence of Russell Death, para 33-36
[24.] Evidence of Russell Death, para 29, 31, 33-36 and 40-41.
[25.] s42A Report of Dr Jon Roygard on behalf of Horizons Regional Council, paras 44-70, pp 14-24

(b) Modelled total sediment discharge results from catchments.

(c) Monitoring results of Phosphorus concentrations in waterways.

106. In my view, the following amendments should be made to the AER for Chapter 5 to improve its relationship with the objectives of Chapter 5 and Chapter 6 and to reflect the framework of the POP.

(a) Add a new indicator - Achievement of Schedule D targets for deposited sediment, visual clarity and P.

(b) Add a new indicator - Changes to long-term mean sediment discharge of rivers to the sea.

(c) Add new indicator - % of farms within SLUI priority catchments that have WFPs in place and being implemented.

(d) Include references to the water quality strategy and land use management policies in Chapter 6 (Policies 6-1 to 6-5 and 6-7)

107. I also agree with Mr Hindrup's recommendation to include an advice note in the AER which alerts Plan users to the interconnectedness of the AER in Chapter 5 with the AERs for Chapter 6. While not essential, this reinforces the linkage between managing erosion and sediment loss with the water quality outcomes.

SIGNIFICANT RESOURCE MANAGEMENT ISSUES

Issue 5-1: Accelerated Erosion

108. The DV of Issue 5-1 removes reference to erosion on sandy soils outside of the coastal foredune. The NV of Issue 5-1 (b) addressed erosion of sandy costal soils more widely than just within the foredune, recognising that, particularly on the Region's east coast, there are large areas of sandy soils that are prone to wind erosion where the vegetation cover is removed as a result of vegetation clearance or land disturbance activities. Mr Kirk states in his evidence[26] that 'that potential for accelerated erosion on sand country or other similar eolian deposited soils can be

[26.] See evidence of Allan Kirk, paras 30, pg 6

extreme'. Mr Eyles states in his evidence[27] that development, particularly urban development, within or close to the foredunes is at increased risk of the effects of wind erosion, but that beyond that area there is not a significant increase in wind erosion provided minimum tillage practices are used and wind breaks are maintained.[28]

109. In my view, the two pieces of evidence are complementary in that Mr Eyles indicates that maintaining good practices and mitigation measures in the sand country minimises the risk of accelerated erosion, while Mr Kirk's evidence indicates that if those practices are not maintained or mitigation measures are removed, the risk of erosion is high. There is a significant risk of erosion on sandy soils where those soils are exposed to the wind, and this is most likely to occur as a result of land disturbance activities. It therefore is appropriate that there is some reference to land disturbance being an activity that significantly increases the risk of erosion on sandy soils, and I recommend making reference to wind erosion in Issue 5-1 (c), which relates to large-scale land disturbance (being land disturbance over 2500 square metres in area).

110. The DV made some changes to Issue 5-1, including adding specific reference to forestry and cultivation. The separate reference to cultivation has arisen by the separation of cultivation from land disturbance generally. The Hearing Panel heard a small amount of evidence in relation to the issue of erosion associated with cultivation activities, including from Allan Kirk[29]. Mr Barber also presented technical evidence at the Council level hearing however this evidence was not accepted as technical evidence by the Hearing Panel due to it being provided late. However Mr Barber's evidence[30] provides useful explanation of erosion and soil loss as a result of cultivation, in particular that it is usually in amounts that are not readily observable by landowners. This is consistent with Mr Kirk's latest evidence[31] on cultivation where he explains that soils suitable for cultivation are usually formed from loess or water-borne deposits so they are easily mobilised by water or wind if their structural integrity is damaged by cultivation. Mr Ngapo's evidence[32], he states that cultivation, like other land disturbance activities, close to water bodies and on sloping land has the potential to cause erosion and sediment discharges.

27. See evidence of Garth Eyles, para 18, pg 10
28. See evidence of Garth Eyles, para 18, pg 10.
29. s42A Report of Allan Kirk dated 4 November 2008, pp 5-6.
30. Paras 15 and 16
31. Statement of Technical Evidence by Allan Norman Kirk, 31 January 2012, paras 20026, pg 4-5
32. See Norm Ngapo evidence, para 80-84, pg 29

111. Based on this evidence, it is inaccurate that the DV should state at Issue 5-1 (e) that 'cultivation does not generally cause soil erosion problems within the region'. Mr Ngapo states that industry best practice guidelines, should be applied, but that cultivation adjacent to water bodies and on slopes steeper than 20 degrees should be given particular consideration through the resource consent process. Mr Kirk considers this to be the case also in his evidence[33], but goes further by stating that '*cultivation on slopes grater than 20 degrees has the potential for extreme or very severe soil loss or sediment movement*'. Based on the technical evidence relating to cultivation, it is my view that Issue 5-1 (e) should be amended to acknowledge the increased risks of undertaking erosion on sloping land and in riparian areas, and to recognise that industry best practice may not always be appropriate for minimising the effects of the activity. I propose amended wording in Appendix 1 to give effect to my recommendations.

SCOPE AND BACKGROUND SECTION

112. Federated Farmers of New Zealand Inc have sought in their appeal to include reference to natural erosion in 5.1 Scope and Background. I note that Mr Hindrup has included wording to that effect in his recommended changes to the provisions, however he has also added that the focus of the POP is on managing the impacts of human activity. I do not support the change recommended by Mr Hindrup.

113. The evidence of Mr Ngapo and Mr Eyles[34] support the notion that it is difficult to differentiate between natural and induced erosion but that the focus of managing land use activities should be increasing the erosion resilience of the land being used. There has been a significant change in the vulnerability of land being used by people to erosion because of past and present actions. The rates of erosion are significantly higher on certain land types under agricultural land uses compared with natural vegetation cover. While the evidence is clear that natural erosion would be occurring had the land not been modified by human activities, it is also clear that the high erosion rates experienced in relatively recent history are largely as a result of human activities. I therefore consider that reference to natural erosion in the context of the POP is misleading and suggests that the issue to be addressed is derived from something other than human activity. I consider that the DV of the Scope and Background section of Chapter 5 should remain unchanged.

[33.] Statement of Technical Evidence by Allan Norman Kirk, 31 January 2012, paras 26, pg 5
[34.] See evidence Norm Ngapo para 18, pg 9

EXPLANATORY TEXT AND REASONS

114. Due to the changes I have recommended be made to the objectives and policies in Chapter 5, one minor consequential amendment is necessary in 5.7 Explanations and Principal Reasons. Because Policy 5-2A refers to the management of activities close to water bodies and also cultivation, this should be reflected in the explanation and reasons associated with that policy. I therefore recommend including additional wording (set out in Appendix 1) to the paragraph that relates to Policy 5-2A.

PROVISIONS OF THE REGIONAL PLAN

OBJECTIVES OF THE RP

115. When considering the provisions of the RP, the Court needs to 'have regard' to a proposed RPS[35]. In having regard to the RPS, I consider that, in the POP context where the two planning layers are so closely bound together, the RP provisions should strongly reflect the RPS direction and should give effect to it. While the legislative requirements do not necessitate the RP giving effect to the RPS, there are provisions within both the RPS and RP that support this occurring:

(a) Chapter 10A of the RPS which states in Method 10A-2: "Regional plans (except for Part II of this Plan which already gives effect to Part 1) and district plans must be changed to give effect to Part I- Regional Policy Statement of the Plan on the first review or change or variation to the regional plan or district plan or within five years, whichever is the earliest" (my emphasis).

(b) Objective11A-1 which specifies that the RP must regulate activities '*in a manner which gives effect to*' the provisions of the RPS. While this objective specifically refers to regulation, that, by necessity, has implications for the RP objectives (and policies) underpinning the regulatory approach.

116. I have considered the provisions of Chapter 5 of the RPS of the POP previously in my evidence, and base my evaluation of the objectives, policies and methods of the RP on the amended RPS provisions that I have recommended.

[35] s66 (2) (a) RMA

117. My evidence relates only to the provisions of Chapter 12 that relate to the management of erodible land. The provisions that relate directly to biological diversity are dealt with in the evidence of others to be heard as a separate topic.

118. In the NV there were no objectives in Chapter 12. Horizons notified the POP on the basis that the objectives in the RPS also formed the objectives in the RP, and therefore there was no need to repeat them. As a result of submissions, the Hearing Panel decided to introduce an objective into Chapter 12 to '*deal with the regulation of land use*'[36]. Regardless of the Hearing Panel's purpose for including Objective 12-1, it does not appear to be in contention between appeal parties.

ANALYSIS OF THE RP OBJECTIVES

119. As there are no appeals concerning Objective 12-1 directly, I provide no analysis of the appropriateness of that objective.

POLICIES AND METHODS OF THE RP

POLICIES

120. For the purposes of my evidence, I have used the DV version of the policies as a starting point for evaluation on the basis that it is those provisions that have been appealed.

121. The key changes between the NV and DV policies of the RP are as follows:

(a) Policy 12-1A has been introduced which sets out the basis of regulation of land use activities (to be in accordance with the objectives and policies of Chapter 11 and Objective 12-1). This policy also specifies the types of activities for which resource consent must be obtained.

(b) Policy 12-1 has been amended to:

i. Refer specifically to rules that trigger resource consent in the DV

ii. Provide a linkage to the whole RPS rather than just Chapter 5

[36] Decision of the Hearing Panel, para 4.7.20, pg 4-31

iii. Make more specific reference to industry standards, activities associated with important infrastructure.

iv. Removal of the reference to numerical standards relating to water quality

v. Include reference to generally allowing a range of land use activities subject to some standards

vi. Include some of the matters that were previously in Policies 12-2 to 12-4 of the NV

(c) Policies 12-2 to 12-4 have been deleted.

ANALYSIS OF RP POLICIES

POLICY 12-1A

122. Policy 12-1A(a) has not been appealed and I do not consider that there are any consequential changes to it necessary as a result of appeal points.

123. Policy 12-1A(b) provides a summary of the activities that must be subject to obtaining a resource consent before proceeding. Based on my analysis of the resource management issues, the provisions of the RPS, and the technical evidence, the list of land use activities should be amended to reflect the activities that should be managed through the resource consent process due to their potential effects on the environment or the complexity of avoiding or mitigating potential effects. Those activities should be:

(a) Land disturbance, vegetation clearance and cultivation on land within Hill Country Erosion Management Areas

(b) Large-scale land disturbance on land that is not within Hill Country Erosion Management Areas.

(c) Land disturbance, vegetation clearance and cultivation and forestry on land adjacent to some water bodies.

(d) Vegetation clearance, land disturbance, cultivation or forestry within a coastal foredune area.

124. Regulation of these activities is, in my view, the most appropriate management approach based on the technical evidence. Land disturbance and cultivation on higher-risk hill country areas has significant potential to increase the risk of erosion and should be considered by a land management expert through a resource consent process. Large-scale land disturbance activities on flatter land also require a degree of scrutiny, particularly around erosion and sediment control measures as large sites and sloping sites can be complex to manage and require the input of experienced practitioners. Clearance of woody vegetation from higher-risk hill country areas has significant potential to destabilise hill slopes and exacerbate erosion risk. Consideration of the appropriateness of vegetation clearance should be done by a land management expert who understands the complex inter-relationships of rock type, topography, slope, climate, etc. Land disturbance and vegetation clearance within riparian margins increases the potential for sediment discharges and also for reduction in the benefits that riparian vegetation plays in water body functioning.

125. Further evaluation on the particular activities is included in the section of my evidence that deals with the rules.

126. I note that Mr Hindrup's proposed amendments to Policy 12-1 appended to his evidence show Policy 12-1 (b) deleted, however, he does not explain the purpose for this deletion in his evidence nor the appeal to which the change relates.

127. The changes that I recommend to Policy 12-1A are set out in Appendix 1.

POLICY 12-1

128. The decision of the Hearing Panel resulted in the DV no longer having a cross-reference to the water quality objectives and policies (and their associated targets in Schedule D) in Chapter 6 on the basis that it considered that numerical discharge standards for land use rules were not appropriate.

> *We also deleted (e) and (g) from Policy 12-1. Clause (e) referred to the use of turbidity standards which are no longer included in Schedule D. Clause (g) referred to the use of the best practicable option (BPO) if numerical standards were difficult to establish. The Chapter 12 rules do not necessitate that degree of specificity. The rules simply restrict certain land uses and ancillary diversions and discharges. The permitted activity conditions in the rules relate to the application of best management land use practices rather than the application of BPO or numerical discharge standards. Even if a consent were required for the primary land*

use activity due to its not meeting the permitted activity conditions, it is unlikely that a BPO or numerical standards approach would ever be used to set conditions on the ancillary diversion and discharge activities.[37]

129. In my view, the rules in Chapter 12 (and the policies informing decision making on resource consents) do need to include a high degree of specificity both to provide certainty and also to provide for consistent management of discharges across the POP. While discharges associated with land use activities regulated under Chapter 12 are termed 'ancillary', this does not mean that those discharges will be minor in their effect. For example, sediment discharges from a large earthworks site could be significant and therefore have significant adverse effects on water quality and aquatic ecosystems.

130. Based on the evidence of Mr Ngapo and Mr Kirk, land disturbance activities and cultivation can result in significant discharges of sediment to water and, in some settings, these discharges are difficult to manage using best practicable options (BPOs) or industry good practice approaches. I also have some difficulty with the reference to effective BPOs in the rules where there is no scrutiny of the adequacy of the erosion and sediment control measures and whether they have been designed to minimise erosion and soil loss or simply to meet the requirements of the guidelines (such as the Erosion and Sediment Control Guidelines for the Wellington Region). The ability for the Council to impose conditions of consent relating to numerical water quality standards that provide a level of measurability for the management measures provides greater certainty for the rules and for resource consents.

131. I consider that reference to management measures rather than water quality performance standards creates significant uncertainty as to whether the Council, in allowing ancillary discharges through resource consents trigger by rules in Chapter 12 will satisfy the requirements of s107RMA (which says that the Council must not grant resource consent for a discharge to water if, after reasonable mixing, there will be a conspicuous change in colour or clarity of the water (among other things)). Reference to Schedule D, which contains the water quality numeric relevant to the Region, including for visual clarity, in Policy 12-1 gives the Council clear scope to consider those provisions via Chapter 12.

[37] Hearing Panel decision para 4.7.20, pg 4-31

132. Furthermore, in order to give effect to the RPS and also the Objectives of Chapter 11, the RP provisions in Chapter 12 need to work to achieve the outcomes set out in that higher document. In particular, the provisions of the RP need to be effective in implementing the objectives and policies of Chapter 5 as well as those of Chapter 6 (water quality). Numerical conditions relating to water quality outcomes are also, in my view, more consistent with the effects-based approach of the Act. Particularly with the management of cultivation and land disturbance activities, there are a raft of methods and measures that can be used to achieve the necessary standard, and the decision as to the most appropriate measure should be left as much as possible to the person undertaking the activity.

133. I therefore consider that Policy 12-1 should be amended to refer to the relevant objectives and policies of Chapter 6 as they relate to water quality, and also to introduce an additional matter to which the Council must have regard when considering resource consent applications – the degree to which ancillary discharges will comply with the water quality numeric set out in Schedule D. These changes are consistent with the NV of Policy 12-1.

134. As a consequential change, Policy 12-1 should be amended to refer to the particular rules to which it applies. Later in my evidence I propose some amendments to the rules, which will require consequential changes to this policy, and I have made those changes in the tracked changes provisions in Appendix 1. My understanding of the Plan's construction is that the direct reference to particular rules within this policy is to ensure that this decision-making policy does not apply to activities within rare, threatened and at risk habitats. The management of consented activities within these habitats is dealt with through Policy 12-5

APPROPRIATENESS OF THE POLICIES IN ACHIEVING THE OBJECTIVE

135. S32 RMA requires the evaluation of the appropriateness of the policies in achieving the objective.

136. The recommendations that I have made to align Policy 12-1A to the activities that need to be managed to avoid, mitigate or remedy accelerated erosion and its effects and to avoid or mitigate increased sedimentation in water bodies makes the policy

focus on the outcomes of the objective. The DV limited the focus of the policy on a subset of the activities that have significant potential adverse effects and therefore was only partially effective in addressing the objective.

137. Changes that I have recommended to Policy 12-1 improve the effectiveness of the policy in addressing both Objective 12-1, but also the objectives in Chapter 11, which require that the regulation of activities gives effect to the RPS. By establishing water quality linkages to guide decision-making around land use focussed resource consents improves the degree to which the regulation of activities gives effect to the Objectives an policies of the RPS, in particular Chapter 6.

RULES

138. There were some significant changes to the rules between the NV and DV. In particular, the following key changes were made:

139. Only large-scale (over 2500 square metres) land disturbance is required to meet performance standards in the DV (undertaken in accordance with and erosion and sediment control plan). In the NV, all land disturbance had to meet performance standards as a permitted activity, however only land disturbance over 1000 square metres had to implement erosion and sediment control measures.

140. The DV separates cultivation from land disturbance and manages it under a separate rule (12-3). Only cultivation close to water bodies is captured in the rules and is a permitted activity in those riparian provided that sediment discharge is minimised. The NV included cultivation within the definition of land disturbance and therefore required the same permitted activity standards to be met (erosion and sediment control measures for cultivation over 1000 square metres regardless of its proximity to a water body)

141. The DV does not regulate vegetation clearance or land disturbance close to water bodies except where those activities take place in a hill country erosion management area (land with a pre-existing slope over 28 degrees)[38]. In the NV, vegetation clearance or land disturbance required resource consent within water body setbacks.

[38.] See glossary term for 'slope' in DV.

142. The DV only regulates activities in or near ephemeral water bodies with active beds wider than 2m (and only in the hill country). The NV did not specify an active bed width and instead applied to rivers as defined in the Act.

143. The setback distances for water bodies in the DV are 5 metres for all water body types. In the NV, the water body setbacks were 10m on land under 15 degrees and were thereafter variable dependent on slope, with the maximum setback being 100m where steeper slopes (over 15 degrees) were present.

144. The DV has introduced ancillary diversions of water and ancillary discharges of sediment to water to the rules. The NV rules dealt only with s9 land uses and ancillary discharges were managed via the rules in Chapter 13, which relates to water quality and quantity.

145. Vegetation clearance rules in the DV apply only to woody vegetation where the area to be cleared has a canopy cover of woody vegetation greater than 70%. The NV rules applied to clearance of all vegetation where the area to be cleared exceeded 1ha on hill country highly erodible land and 100 square metres on coastal highly erodible land.

ANALYSIS OF THE RULES

146. In analysing the rules of the RP, I have based my evaluation of the underpinnings of the objectives and policies of the POP. I have adopted the approach of considering the land use activities that I have found to be necessary to manage using regulation and thereafter applying the outcomes of my analysis to changes to the wording of particular rules set out in Appendix 1.

DISCHARGES ASSOCIATED WITH LAND USES

147. The land use activities that are proposed to be managed in the Plan are, at least partially, being managed to address actual and potential effects of the discharge of sediment. As such, there is an obvious relationship with Chapter 13 which deals with discharges to land and water. However, as notified, Chapter 12 did not provide for discharges ancillary to land use activities controlled by the rules. The rules controlling land uses in Chapter 12 controlled only s9(2) matters and did not refer directly to associated discharges.

148. The Hearing Panel however introduced ancillary discharges and diversion provisions to the Chapter 12 rules, which was apparently intended to provide for a more streamlined Plan (plan users could deal with all of the land use and discharge components of their activity by reading a single rule). I support this approach in that sense. However it is not clear from the Hearing Panel's decision what the scope for this change was. As far as I can ascertain, the change came about as a result of the 'planning and legal review' that the Hearing Panel asked officers to undertake during the course of the hearing. The first inclusion of discharge provisions within the Chapter 12 rules appeared during the Land hearing when officers presented a tracked changes document that incorporated a number of changes requested and suggested by the Hearing Panel and other changes that officers proposed to address matters raised during the hearing. The supplementary evidence of planning officers (Phillip Percy (Land s42A officer) and Andrea Bell (planner commissioned to complete the planning review of the Plan) did not make mention of the added discharge provisions.

149. Nevertheless, the Hearing Panel adopted the approach and referred to it in their decision report, justifying the changes by saying that the Plan already included integration of the land rules with ancillary discharge and diversion provisions. "*As notified, the rules in Chapter 12 dealt with water-related ancillary activities such as discharges and diversions. We have decided to amend the Chapter 12 rules so that the ancillary water-related activities are narrowly defined and relate directly to the primary land use activities controlled by the rules. For example, we have limited the scope of the ancillary diversion activities to those that occur on the land subject to the earthworks or to cultivation*[39]." Contrary to the Panel's comment, my reading of the Plan as notified is that the rules in Chapter 12 did not deal with water-related ancillary activities.

150. On the basis that the decisions version of the Plan includes water-related ancillary activities in the Chapter 12 rules, I have approached the drafting of the rules assuming that there was scope for such changes to occur.

151. The particular challenge that the water-related provisions bring to the Chapter 12 rules is that there is an additional need to consider both s70 and s107 of the Act. Both of these sections place limitations on the creation of rules permitting discharges and granting of consents authorising discharges respectively. As will be seen in the rules

[39] Section 4.6.6, Page 4-22, Land Hearing - Volume 1 Part 4

in Chapter 13, there are comprehensive conditions attached to rules that permit discharges, the intention of which is to ensure that the requirements of s70 are met. However the equivalent discharges permitted in the decisions version of Chapter 12 do not apply this rigour. There are some conditions that require particular measures to be put in place (erosion and sediment control plans for example) that may go some way to meeting the s70 requirements, however in many cases those conditions will not be sufficient to avoid the specified effects on water bodies. Mr Ngapo describes in his evidence examples of land disturbance activities that have caused significant adverse effects on water bodies despite erosion and sediment control measures being in place. Mr Barber for Horticulture New Zealand similarly describes in his evidence the effects of sediment loss from cultivation activities where erosion and sediment control measures are not present or limited.

152. If the Rules in Chapter 12 are to permit discharges and diversions of water, s70 requires that the Council has satisfied itself that the effects from those activities will not cause the specified effects in the receiving water bodies. Based on the technical evidence presented by the parties, it appears that there is not sufficient certainty that ancillary discharges associated with the various permitted land use activities will satisfy s70 without additional conditions/standards/terms being included in those rules. There are several ways in which this issue could be addressed: 1. Make all activities involving ancillary discharges that are likely to cause the specified effects consented activities, 2. Include permitted activity standards within the Chapter 12 rules that specifically address water quality requirements, 3. Provide cross-reference conditions in the Chapter 12 rules to the necessary conditions/standards/terms in the relevant Chapter 13 rules, or 4. Decouple the water-related ancillary activities from the Chapter 12 rules so that they are instead dealt with entirely within Chapter 13.

153. Considering the two approaches against the requirements of s32 (3) (b), there is possibly some efficiency to be gained in a very simple sense around the use and interpretation of the Plan itself. Where plan users are able to quickly determine the activity status and all regulatory parameters for a proposed activity by reading only one section of the Plan, there may be an improved level of understanding of the regulatory requirements and less need for engagement of consultants or seeking advice from Council officers. In terms of the effectiveness of the provisions on the ground, there is likely to be little difference between coupling ancillary discharges with land use rules or separating them - the basic standards need to be the same for discharges regardless of where they are set out in the Plan.

154. The evidence of Mr Ngapo and Mr Kirk in relation to land disturbance, and Mr Kirk in relation to cultivation, show that there are likely to be situations where erosion and sediment control measures would need to be very carefully designed to achieve these outcomes, and in some cases even those measures may not be sufficient. The example I gave previously of the Genesis Energy Castle Hill Wind Farm proposal where the topographical constraints limited the erosion and sediment control measures available could mean that significant discharges of sediment to water as a result of land disturbance activities may occur. This raises sufficient uncertainty that the requirements of s70(1) would able to be met.

155. To provide some certainty around the requirements of s70(1), there are two options available (assuming discharges remain coupled with the land use rules):

(a) Include a standard/condition/term on permitted and controlled activity rules that sets water quality standards that need to be met by the ancillary discharges; or

(b) Amend the activity status of those rules to controlled or discretionary.

156. Amending the activity status to controlled may not be a panacea, as s107 RMA comes into play in relation to granting resource consents for discharges to water. The requirements of s107 are similar to s70 insofar as there are certain standards (the same as those in s70) that must be met before the Council can grant a discharge permit. In the case of a controlled activity (which must be granted) for large-scale land disturbance where there may not be sufficient mitigation measures available to address the s107 requirements, this would leave the Council in the position of having to grant resource consent contrary to the requirements of s107. The solution to this issue is to make activities where there is a significant likelihood of discharges not being able to meet s107 requirements restricted discretionary or discretionary activities.

157. Based on the risks associated with the various land use activities, and assuming discharges remain coupled with the land use rules, it is my conclusion that:

(a) large-scale land disturbance activities should be controlled activities due to there being a significant potential for discharges of sediment to water and that a condition is included to direct activities with a discretionary status if they are likely to exceed the equivalent s107 standards (Schedule D numeric for visual clarity).

(b) Cultivation on steeper slopes should be a restricted discretionary activity

(c) Land disturbance on steeper slopes should be a restricted discretionary activity

(d) Small scale land disturbance on flatter land should be a permitted activity subject to a water quality standards, riparian setbacks, and use of erosion and sediment control measures (an erosion and sediment control plan)

(e) Cultivation on flat land should be a permitted activity subject to a water quality standard, riparian setbacks, and use of erosion and sediment control measures (which may include the Horticulture New Zealand Code of Practice for Commercial Vegetable Growing in the Horizons Region.

MANAGEMENT OF VEGETATION CLEARANCE

158. As discussed previously in my evidence, the clearance of woody vegetation from land that is at higher risk of erosion should be regulated. This is to enable expert evaluation of the appropriateness of proposed vegetation clearance so as to avoid or mitigate potential increases in erosion or significant adverse effects caused by sediment discharges to water bodies. There does not appear to be any contention among appellants that the clearance of woody vegetation on hill country that is at higher risk of erosion should be regulated and should require resource consent. The contention appears to be in relation to the amount of vegetation that can be cleared in any one year, and how to define the type of vegetation that is of relevance (no parties wish to regulate the maintenance clearing of young scrub on pasture).

159. The technical experts who have provided evidence to date on this issue recommend vegetation clearance thresholds on steep land between 100 square metres and 2 hectares. Both the NV and DV of the POP specify 1 ha. Mr Hindrup in his planning evidence prefers 2 ha on the basis that that area is currently used in the Operative Land and Water Regional Plan and that landowners are familiar with it as a threshold. I see no reason to amend the 1ha area from the POP. I acknowledge that it is a lower threshold than the 2 ha in the operative Plan, however the evidence of Mr Kirk suggests that in the majority of cases landowners do not clear less than 10ha in any one vegetation clearance event. Therefore, whether the trigger is 1ha or 2ha, it should make little difference to the majority of users. My reservation with moving the limit to 2ha is that it creates potential for the rule to be circumvented and also for a permitted baseline argument to be established to support clearing unsustainable areas. Using a 2ha threshold, a landowner could clear 10ha of woody vegetation over a five year period without the need for resource consent. While the majority of

landowners would not consider clearing large areas over consecutive years, rules must be designed to account for people who wish to find loopholes or will try to work around them.

160. I do not agree with Mr Hindrup's preference for applying a vegetation clearance area threshold across the entire Region rather than focussing the regulation on the areas of the Region where the issue needs to be managed. While a less focussed approach may make administration of the Plan slightly easier, it creates at least two potential issues. Firstly it regulates activities that do not need to be regulated. This is inefficient as it requires people to seek and obtain resource consents unnecessarily. Secondly, it imposes regulation on landowners who have not been involved in the POP process because I am not aware of any submission that sought such an approach. Those landowners who would be subject to the regulation should have the opportunity to submit and be heard on such a proposal.

161. Mr Hindrup recommends in his evidence a simple 2 contiguous hectares of woody vegetation threshold for vegetation clearance. On face value this approach appears like a simple solution, however submitters raised concerns that this type of threshold would capture woody vegetation that was still young and should be able to be cleared without the need for resource consent as 'maintenance scrub clearance'. For this reason, the DV includes reference to a 70% canopy cover of woody vegetation in an attempt to only capture more mature woody vegetation that had grown sufficient to form a canopy. I also have concerns around the interpretation of the canopy cover approach. While the formation of a canopy cover is an indicator of vegetation maturity, it can be difficult to determine a % cover in the field (how do you measure the difference between 60% and 70% cover?).

162. Research by Korohan et al[40] concluded that there are a number of methods available for estimating canopy cover, and that there is a significant variation in the accuracy of the approaches. They state that *'the estimates provided by fast techniques (digital photographs, ocular estimation) have larger variances and may also be seriously biased'*. It is most likely that the Council and landowners will be estimating canopy cover based in one of these two techniques and are unlikely to undertake the more accurate but more detailed estimation methods available. The reference to canopy cover, in my view, makes the rule uncertain. Manipulation of natural canopy cover is

[40.] Korhonen, L., Korhonen, K.T., Rautiainen, M. & Stenberg, P. 2006. Estimation of forest canopy cover: a comparison of field measurement techniques. Silva Fennica 40(4): 577–588

also possible, such as through the use of cattle to break up vegetation and therefore open up the canopy.

163. Other options that have previously been discussed at the Council-level hearing is a trunk diameter at a certain height (breast height is a relatively common height reference) or a specified age. The advantage of these approaches is that they are easy to measure in the paddock. However the vegetation height approach does not reflect the significantly different growth rates of woody vegetation depending on climate, soil fertility and other factors that might prevent it from reaching the specified height until it is significantly more mature than faster growing specimens in more favourable conditions. The measurement of vegetation age is able to be achieved in the paddock, either by cutting a sample and counting the growth rings, or by using historical aerial photographs to identify the age of vegetation present. Where the vegetation is re-growth, landowners will likely also have their own records as to when the area was last cleared. On balance, I consider that reference to vegetation age is more easily applied by landowners and can be quickly verified by Council officers on site. In terms of the appropriate age at which vegetation clearance should trigger consent, the s42A report of Mr Kirk indicates that 7 years of age is when vegetation begins to play a considerable slope-holding role.

164. The rules need to be designed to provide for ease of interpretation and to avoid unnecessary regulation, but they also need to be sufficiently robust and precise so that they provide a roust platform for compliance and enforcement where landowners do not comply with them. The rule should therefore be certain and be able to be interpreted objectively. For this reason, I do not support the reference to % canopy cover, as this is not able to be accurately measured. Not having a reference to the size or age of woody vegetation (as proposed by Mr Hindrup) captures all vegetation clearance and therefore would be effective as a threshold for consenting. The vegetation age approach provides certainty, can be measured in the field or using aerial photographs, and provides for a more focussed approach that the unlimited approach.

165. Mr Hindrup explores the issue of how to determine the area in which the vegetation threshold should apply. He examines using a map (as in the Schedule A highly Erodible Land maps in the NV) and using a slope trigger (as used in the DV). I generally agree with his evaluation of those two options, and agree that a map is a useful tool to identify the relevant areas to which rules apply (as is evidenced by the use of zoning maps in district plans).

166. However a prerequisite for a map is that it can be interpreted at the appropriate scale. The Schedule A maps in the NV were of a scale too large to enable landowners to accurately identify their property. While this could be overcome to some extent by making better scale maps available on request and through the use of web-based mapping tools, the actual coarseness of the Schedule A map also caused application challenges. The Schedule A map was derived by identifying land at risk of erosion[41] and then colouring in properties that contained that land. The effect of this was that properties that may only have had a small area of land at significant risk of erosion on them were identified in their entirety. The NV addressed this issue by including a further refinement in whether the rules applied - a slope threshold of 20 degrees was applied to those properties mapped in Schedule A. So resource consent was only triggered if 1) a property was mapped in Schedule A and 2) the land on which the activity was proposed had a slope steeper than 20 degrees. This approach addressed the scale limitations of the map, but caused additional challenges as a result of whether slope could be accurately determined (as alluded to in Mr Hindrup's evidence). I would support a mapping approach if it was able to be applied at the property scale without a further slope trigger being required, however I am not aware that such mapping exists for the Region.

167. Mr Eyles explains in his evidence the application of Land Use Capability mapping and its applicability to determining erosion risk.[42] The LUC mapping approach includes reference to slope, however the slopes associated with a particular LUC unit are within a range rather than being absolute. LUC units need to be mapped by experienced practitioner who can accurately identify slopes and also erosion risk. Using LUC property-scale mapping would be efficient in identifying land to which particular rules apply because the mapping methodology identifies erosion risk. However the limitation is that not all properties are mapped. This situation is changing as more properties progress through the SLUI WFP programme (which includes LUC mapping as a base requirement) so that there are now a large number of farms that have a farm-scale map showing LUC units on a map. Mr Kirk states in his evidence[43] that 369 WFPs have been completed which corresponds to 28% of the Region's hill country farm land. The SLUI target is 1500 WFPs over a 10 year period, with 50% of those plans in the higher-risk hill country.[44] If a rule threshold were established that related to mapped LUC units, I consider that that would provide sufficient certainty

41. See s42A Reports of Jon Roygard and John Dymond
42. See evidence of Garth Eyles, para 33, pg 17
43. Evidence of Allan Kirk, para 54, pg 10
44. s42A report of Dr Alec McKay, para 25, pg 12

both for landowners and the Council in applying the rule. There would however still be a significant number of farms that haven't been mapped and some alternative would be required for those. I consider that a slope trigger would be the simplest threshold for unmapped farms.

168. Implementing the LUC farm map approach in the Plan would require the trigger – the specific LUC units on which erosion risk is high – to be set out in the Plan. This would logically be the list of LUC units that were identified by Dymond and Sheppard (2006) which underpinned the development of the Schedule A maps in the NV. However that list has a significant degree of complexity associated with it because the LUC units are based on four different regional classifications. So an LUC 6e5 in one part of the Region is different to a 6e5 in another part of the Region. Mr Eyles discusses this situation in his evidence and states that very recently a Manawatu classification which provides consistency across the Horizons region has been developed. A consistent LUC classification for the whole region would enable a simplified list of target LUC units to be specified in the POP as regulatory triggers. It would be possible to develop a conversion table that would enable POP users to convert their current LUC mapping units to the Manawatu classification and therefore apply the single list of LUC units. With a conversion table available, Horizons would also be able to provide assistance to plan users by producing amended LUC maps for properties with WFPs so that landowners would not need to calculate the conversion themselves. I note however that Mr Eyles had not had the opportunity to evaluate the Manawatu classification at the time of preparing his brief of evidence. On this basis, I would see value in the technical experts associated with this matter conferencing on the acceptability of the new Manawatu classification and the appropriate approach to converting the existing LUC units prior to planner conferencing occurring on this topic.

169. Subject to the technical experts recommendation on the LUC mapping approach, I propose that the following thresholds are applied to vegetation clearance at which resource consent is required:

a) 1 ha or more of woody vegetation clearance per property per year where the area to be cleared contains woody vegetation that is greater than 7 years old, and

b) The vegetation clearance is undertaken on a property that has had its LUC units mapped and the land on which the activity will occur has an LUC unit specified in the POP; or

c) Where (b) above does not apply (the property has not been mapped), vegetation clearance on slopes greater than 20 degrees

170. In my view, this approach is the most effective in achieving the objective because it provide for efficient plan interpretation by landowners and the Council, it focuses the cost of regulation on the areas where it is required (thereby avoiding costs to others), and it targets that areas that are at highest risk of accelerated erosion and provides for their effective management. A degree of coarseness is introduced by the slope threshold, however this is appropriate given that other methods for identifying target areas do not provide sufficient certainty.

171. Provided conditions are in place that require the avoidance of sensitive areas (riparian margins, steep hill country, and coastal foredunes) I consider that vegetation clearance should be provided for as a permitted activity. This is consistent with NV Rule 12-1, which provided for vegetation clearance (and land disturbance) as a permitted activity that was not otherwise regulated in the Plan. In my view, it is important to have permitted activity conditions applying to vegetation clearance outside of sensitive areas in order to control the ancillary discharges associated with them.

172. To implement these recommendations in the POP, I propose that, in addition to changes to the rules (see Rules 12-4 and 12-4A in Appendix 1), the definition of Erosion Management Area (see Glossary terms in Appendix 1) is amended to incorporate the LUC unit approach and the reduced slope angle (20 degrees rather than 28 degrees).

MANAGEMENT OF LAND DISTURBANCE ON FLATTER LAND

173. As previously discussed in my evidence, I am of the view that land disturbance on flatter land (land not within higher-risk hill country areas) has significant potential to cause adverse effects on the environment if not carefully managed. This potential for adverse effects increases with the area of land disturbance undertaken, as more unprotected soil is exposed to erosion actions of rain and wind. Of particular relevance to the consideration of regulation of land disturbance activities is the management of ancillary discharges of sediment. Because these discharges are managed under the Chapter 12 rules, the evaluation of the appropriate regulatory response must account for them.

174. I have reviewed Mr Hindrup's evidence as it relates to land disturbance on flatter land and I agree with his analysis in his paragraphs 87 − 108. I will not provide further analysis of the issue here. In summary:

175. I support Mr Hindrup's view that smaller-scale land disturbance activities should be provided for as permitted activities but should be subject to standards controlling ancillary discharges of sediment. Reference to the visual clarity targets in Schedule D is appropriate, as those reflect the local context for achieving the requirements of s70 (1) (d) RMA. I generally agree with Rule 12-1A Mr Hindrup has proposed subject to some minor amendments:

176. In relation to Mr Hindrup's suggested condition (b), I do not find the use of the word 'adequate' in reference to erosion and sediment control measures to be sufficiently precise for a permitted activity condition. The term could be interpreted differently by different people and therefore adds uncertainty to the rule. I propose that 'adequate' is simply deleted from condition (b).

177. Condition (e) refers to a 25 degree slope. I consider that this condition should instead refer to 'Erosion Management Area', which allows a more accurate description of the area to be managed. A discussed previously in my evidence, the identification of land at higher risk of erosion can be done more accurately than through a basic slope trigger, however I propose that a conservative 20 degrees slope trigger is also include in the definition. The intention of this condition appears to be to ensure that land disturbance activities in hill country areas are captured through a resource consent (which I agree with).

178. I support Mr Hindrup's view that large-scale land disturbance activities should require resource consent before proceeding because of the complexity of managing erosion and sediment minimisation. The technical evidence of Mr Kirk and Mr Ngapo in particular support the proposition that erosion and sediment control on large land disturbance sites should be carefully scrutinised by the Council. Amending the activity status to controlled is, in my view, consistent with the outcomes sought by WF&G in their appeal points on the objectives of Chapter 5 (which the RP needs to give effect to). It also reflects the changed structure of the rule stream that arose in the DV where ancillary discharges are now coupled with the land use provisions, placing a higher regulatory burden as established by s13 and s70 of the Act. I recommend the following amendments to Mr Hindrup's recommended Rule 12-1:

179. I do not support the reference to 'an appropriately qualified person' in condition (b), unless that phrase is a defined term. It is unclear who would be appropriately qualified, and it also leaves the Council with a degree of discretion over whether a proposed activity is actually a controlled activity. Mr Hindrup may have a definition in mind that would be appropriate, however in the interim I am of the view that the condition does not need the appropriately qualified person reference to be effective. This rule requires consent and the adequacy of the Erosion and Sediment Control Plan (ESCP) can be considered as part of the consent assessment process. I consider that the words 'must be submitted to the Regional Council' should also be removed, as the timing of ESCP submission can be secured by consent condition.

180. As discussed in relation to small-scale land disturbance, I consider that condition (3) might more appropriately refer to 'Erosion Management Area', which is a defined term.

MANAGEMENT OF LAND DISTURBANCE ON HILL COUNTRY

181. The management of land disturbance activities in the hill country areas that are at increase risk of erosion requires a considered regulatory response. The appeal parties do not appear to be in disagreement that some land use activities on hill country land with an elevated risk of erosion should be managed through the resource consent process. The primary challenge to how the rules define the activities and areas where resource consent is required.

182. The DV includes Rule 12-4 which makes only 'new tracking' a consented land disturbance activity within Hill Country Erosion management Areas. The DV does not capture other land disturbance activities in hill country areas such as earthworks associated with energy generation and transmission infrastructure development. Those other activities would only be captured by the large-scale land disturbance rule in the DV (Rule 12-1), which provides for them as permitted activities. In my view, land disturbance activities of all types (other than activities likely to have minor effects and which are excluded from the definition of land disturbance in the Glossary) should be captured by the rules and assessed through the resource consent process.

183. In terms of activity status, the NV captured all land disturbance on highly erodible land as a controlled activity. The DV changed this to restricted discretionary. Mr Hindrup, in his evidence, recommends that activities on slopes over 25 degrees are a

discretionary activity. I am not sure that there is scope within submissions to amend the activity status for land disturbance activities in the hill country to full discretionary, however the Hearing Panel appeared satisfied that there was sufficient scope for the change to restricted discretionary.

184. As with vegetation clearance, there is a degree of contention between the parties about how to define the land disturbance activities that should be captured in the rules. The DV captured only tracking on land over 28 degrees. Mr Hindrup recommends all land disturbance on slopes of 25 degrees or greater. Both approaches therefore rely on a slope threshold. As previously discussed, I agree that a slope threshold of 20 degrees is appropriate where farm-scale LUC mapping has not been completed. Where such mapping has been completed, it can be relied upon as an indicator of increased erosion risk potential and therefore as a regulatory trigger[45]. The evidence of Mr Eyles and Mr Ngapo recommends that 20 degrees is the appropriate conservative trigger so that it captures activities on geology that is susceptible to erosion at lower slope angles (such as the slumping areas near Taihape).

185. For the purpose of establishing rules that capture the majority of activities that require scrutiny, it is my view that the trigger level needs to be set conservatively. Therefore, I have adopted the recommendation of Mr Eyles and Mr Ngapo and specify a 20 degree slope trigger in relation to managing land disturbance on hill country. I also consider that the alternative LUC unit trigger as set out in the previous section of my evidence that relates to vegetation clearance is also appropriate for land disturbance activities in combination with the 20 degree slope trigger for properties that have not been mapped for LUC.

186. In relation to the area of land disturbance required to trigger resource consent, the NV threshold of 100 square metres 100 cubic metres per property per year provides for some minor activities to occur without the need for resource consent, but will capture larger activities, including tracking. However the definition of land disturbance in the Glossary excludes activities such as digging fence post holes, maintenance or upgrade of existing infrastructure (including existing tracks), and other minor activities. I am not aware of other activities that are likely to require small amounts of land disturbance that are not already covered by these exclusions, however I am not clear whether there is scope in submissions or appeals to remove that minimum

[45]Subject to confirmation of the approach by technical experts on this topic

criteria. I therefore consider that the rules in the Plan should apply to land disturbance exceeding 100 square metres. I do not see the necessity in retaining a volume measure as well given the conservative area limit.

MANAGEMENT OF CULTIVATION

187. Mr Hindrup provides analysis of the environmental risks associated with cultivation on flatter land and analyses the regulatory approach to its management in his paragraphs 115 to 133. I agree with Mr Hindrup's analysis on those matters, and add the following further comment.

188. In my view, and based on the technical evidence, cultivation can occur on flatter land as a permitted activity outside of water body setbacks provided that erosion and sediment control measures are put in place, and that a water quality standard is included (reference to the visual clarity target in Schedule D). Water body setbacks are both a precautionary measure to minimise sediment discharge to water bodies, but also to recognise their wider values in terms of water quality and ecosystem functions.

189. On steeper land, the risks of erosion and sediment discharge as a result of cultivation are significantly increased because of slope.[46] Mr Eyles in his evidence observes that cultivation on hill country is unlikely to occur regularly but may occur every few years for the purposes of re-grassing and for fodder crops. However Mr Eyles also considers that a precautionary approach should be adopted in relation to managing the effects of cultivation in hill country because of the high potential for erosion and sediment discharge to water bodies.[47]Based on the evidence in relation to this matter, it appears that the potential for erosion and sediment discharges from cultivation in hill country areas are similar to other land disturbance activities. The introduction of slope adds a significant risk factor that amplifies the erosive effects of overland flow during rain events.

190. There are likely to be some additional costs to landowners to apply for resource consent to undertake cultivation on steeper land, however the consenting costs have been minimised by Horizons' 'fast track' consent process. The costs of consenting also have to be weighed against the potential costs of lost soil from production land and the costs of the impacts of increased sedimentation of water bodies, both of

46. See evidence of Allan Kirk and Garth Eyles
47. See evidence of Garth Eyles, paras 55-57, pg 25

which can be minimised through the resource consent process. On balance, I am of the view that the costs of requiring resource consent for cultivation in hill country are outweighed by the benefits of better management of the effects of those activities in terms of soil loss and environmental impacts. I am of the view that cultivation on hill country should be managed through the resource consent process in the same way as other land disturbance activities are to ensure appropriate measures are in place to avoid or mitigate sediment discharges and to minimise erosion. I consider that a restricted discretionary activity status is appropriate for hill country cultivation as there may be circumstances where cultivation of particular areas of land is inappropriate and resource consent should not be granted. Due to the complexities of determining erosion risk of different areas of land, it is difficult to provide sufficient certainty through conditions of a permitted or controlled activity rule to limit inappropriate activities.

MANAGEMENT OF ACTIVITIES IN OR NEAR WATERBODIES

191. Mr Hindrup provides analysis of the water body setback issue as it relates to the rules in the POP at paragraphs 138 to 165. I agree with Mr Hindrup's analysis of the matter and agree with his overall recommendation that land disturbance and vegetation clearance should not occur within setback areas as permitted activities. The technical evidence of Mr Quinn and Mr Kirk that Mr Hindrup refers to in relation to the values and benefits of riparian areas appears to be in general agreement with the evidence of Associate Professor Death, Mr Eyles and Mr Ngapo. I note however that Associate Professor Death recommends in his evidence larger setback distances than those recommended by Mr Quinn. '*Thus I would recommend a minimum setback of 10 m for rivers, lakes and wetlands and a minimum setback of 20 m for regionally significant waterbodies (i.e., Sites of Significance Aquatic). Furthermore, given the sensitivity of trout to sediment and nutrient inputs, trout spawning rivers should also have a minimum setback of 20 m to avoid potential adverse effects. I would recommend buffer widths equal to the base buffer width (10 m) plus 0.62 times the LUC average slope (from (Barling & Moore, 1994; Wenger, 1999) i.e., buffer width = 10 + 0.62 x slope (m).*[48]

192. Acknowledging the additional benefits that the larger setbacks that Associate Professor Death recommends, I have considered the potential costs to landowners of not being able to undertake activities within these areas without first requiring

48. Evidence of Russell Death, para 916, pg 4

resource consent. In reality, this is only likely to be an issue for cultivation because that is the only activity that regularly occurs in the recommended setback zones. However, the definition of cultivation is important to consider, as it excludes direct drilling of seed and no-tillage practices so does not capture significant amounts of arable cropping activities. Other land disturbance and vegetation clearance activities will only be occurring intermittently and larger setbacks will have little impact on those activities.

193. Larger setbacks were included in the NV, which established 10m setback zones for land under 15 degrees slope. For land with a slope greater than 15 degrees, setback distances were dependent on the slope of that land adjacent to the waterbody and ranged from 10m to 100m. The increased risk of erosion and sediment discharge to water bodies in the hill country areas provides support for larger setbacks in these areas, and this is recognised in both Dr Quinn's and Associate Professor Death's evidence.

194. However, as previously discussed in my evidence, there are difficulties with identifying setbacks on the ground that rely on slope angle as a trigger, particularly at the micro landscape scale where there can be significant changes in slope angle within a short distance (slope angles adjacent to water ways in hill country will be highly variable). Slope is less problematic when applied at a larger scale, such as identifying the slope of a whole hill face (the small-scale variations within the slope are cancelled out to a large degree). I also note that the NV provides the maximum scope for riparian setbacks which, on flatter land where most cultivation is likely to take place, is 10m. Therefore I do not consider that riparian setbacks of more than 10m could be applied to land less than 15 degrees slope, through the current appeal process.

195. Associate Professor Death's evidence proposing larger setbacks is to some degree supported by the evidence of Dr Quinn who describes various research relating to riparian buffers. At paragraph 11, Mr Quinn summaries the results of an international research review (Yuan et al, 2009): '*This analysis found that sediment trapping efficiency was at least 80% for all buffer widths of greater than approximately 5m.*' He says further in the same paragraph '*Buffers wider than 6m had slightly greater (+ c. 12%) sediment removal efficiency than 4-6m wide buffers and buffers on steeper slopes (> 5%) were slightly less (up to 10%) efficient than those on lower slopes (<5%).*' Associate Professor Death, in also discussing this research (Yuan et al, 2009), expressed concerns that Dr Quinn while discussing the merits of larger

196. Associate Professor Death in discussing the Yuan et al (2009) report stated concerns around its robustness stating that "the authors themselves conclude "*.. attempts made to use the buffer width as a predictor for sediment trapping efficiency was not very successful." (model r2=0.29). The authors go on to state "Although sediment trapping efficiency is significantly affected by buffer width, there is still a lack of comprehensive understanding of the relationships between buffer width and trapping efficiency despite this ample research.*" I would therefore be reluctant to put as much weight on this model as Dr Quinn[49], and therefore proposes that a more precautionary approach is taken in establishing an appropriate riparian setback distance.

197. Associate Professor Death then goes on to add "Several international reviews of buffer width requirements to protect a cross section of instream values found widths ranged between 5 and more than 100 m (Barling & Moore, 1994; Wenger, 1999; Hickey & Doran, 2004; Lee, Smyth & Boutin, 2004; Yuan et al., 2009). Parkyn et al. (2000) recommended buffer widths of 10 – 20 m to manage vegetation in Auckland streams and Collier et al. (1995) presented a table to relate land slope, drainage and proportion of soil as clay to the efficiency of buffer strip widths expressed as percentage hill slope length*"*[50]. Further to this he states in his evidence that "The Natural Resources Conservation Service (NRCS) an agency of the United States Department of Agriculture that provides technical assistance to US farmers recommend minimum grass buffer widths of 8-10 m to protect water quality (Yuan et al 2009). Phosphorus removal rates increase from 53 to 98% as buffers increase from 4.6 to 27 m (Parkyn, 2004). Nitrogen removal of 70% is possible with 10 m wide strips but may need to be 20-30 m wide for 100% retention. Ecological health may require at least 10 -20 m buffers often much greater (Parkyn et al., 2000)"[51].

198. Mr Quinn also explains in his evidence that the type of vegetation within the riparian buffer influences its effectiveness in sediment removal. At paragraph 16 Mr Quinn states '*The setback rules in the POP will not necessarily result in development of effective riparian buffers. This will also require management of the land and vegetation within the setback areas so that livestock access is managed and suitable*

[49] Evidence of Associate Professor Death para 63 page 22
[50] Evidence of Associate Professor Death para 61, page 21
[51] Evidence of Associate Professor Death para 63, page 22

vegetation develops to provide the various ecosystem services of riparian buffers'. Mr Quinn also refers to the modelling undertaken by NIWA, which identifies the optimal width of 'a dense grass filter strip for sediment removal[52]'.

199. In many cases, because stock are not excluded from riparian setback areas, particularly on dry stock farms, grass within the riparian setback is likely to be grazed and therefore will not form the dense sward applied in the NIWA model. Taking into account the variability in riparian vegetation, slope, land uses and soils throughout the Region, it is unlikely that the water body setbacks will comprise optimal sediment trapping characteristics at the minimum standard of 5m.

200. While the 5m setback supported by Mr Quinn's evidence may not be sufficiently precautionary given the likely effectiveness of many riparian areas, this may be addressed either by setting a larger setback distance as proposed by Associate Professor Death, and/or through the requirement for other management measures to be in place. Such measures include good practice methods set out in documents such as the Erosion and Sediment Control Guidelines for the Wellington Region (Greater Wellington Regional Council) and the Code of Practice for Commercial Vegetable Growing in the Horizons Region (Horticulture New Zealand). Both of those documents emphasise that erosion and sediment control requires the use of a range of methods and techniques to manage erosion and sediment, of which riparian buffers is one.

201. In addressing potential discharges of sediment from overland flow, and provided that robust erosion and sediment control measures (or a well-managed narrower buffer) are in place, and the activity is well timed an executed, a narrower buffer distance could be applied to water bodies. However the degree of scrutiny required to ensure that the appropriate measures are adopted for each particular scenario supports those measures being applied through a resource consent process. On that basis, it is my view that 10m setbacks from all rivers that are either permanently flowing or are ephemeral with a bed width of more than 1m should be applied to land disturbance, vegetation clearance and cultivation activities.

202. Associate Professor Death recommends greater setbacks from Sites of Significance Aquatic (SoSA) and trout spawning sites on the basis that these areas are more sensitive to the effects of sediment discharge and therefore a more precautionary approach is justified. The provision of greater setback distances for SoSA and trout

[52] Evidence of Dr John Quinn, para 12

spawning habitats are also proposed by Dr Quinn. I agree with their expert opinions on this matter. However while Associate Professor Death recommends 20m setback distances from SoSA and trout spawning habitats, Dr Quinn recommends 10m which is increased from his recommendation of 5m for other rivers, wetlands and lakes. While the argument for the greater setback of 20m is justified, the scope of the WFG appeal is limited to 10m on land that is under 15 degrees in slope.

203. In regards to SoSA, in the DV, Schedule E of the POP includes riparian areas comprising indigenous or exotic woody vegetation within 20m from the banks of SoSA rivers as 'At Risk Habitats'. The effect of riparian vegetation along SoSA being specified as 'at risk habitats is that resource consent is required (via Rule 12-6) for clearance of that vegetation including for forestry activities, land disturbance, or cultivation, within that zone. As a result, Rule 12-6 in combination with Schedule E already sets a 20m water body setback in relation to those activities, but only where the 20m riparian zone adjacent to a SoSA comprises woody vegetation. No control over activities within setback distances from SoSA is then provided where the vegetation within that zone is not woody. Because of the sensitivity of these areas, I am of the view that a setback of at least 10m from SoSA (due to scope limitations of WFG appeal) should apply for activities not currently captured under rule 12-6 such as land disturbance, cultivation activities, within non woody vegetated riparian areas of SoSA

204. On the basis of the above evaluation, I recommend that the water body setbacks specified as permitted activity conditions in the suite of rules I propose include an additional setback of 10m for land disturbance and cultivation activities from SoSA.

MANAGEMENT OF ACTIVITIES IN COASTAL FOREDUNE AREAS

205. There does not appear to be any contention around the management of activities within coastal foredunes and therefore I will not provide further analysis of this aspect of the rules.

SUMMARY OF EVALUATION AGAINST STATUTORY TESTS

206. In this section of my evidence I provide a summary of how the provisions that have resulted from my analysis compare against the relevant statutory tests. In this section I address only the 'structural' tests. Evaluation of the various provisions has been

done through the body of my evidence so I will not provide further evaluation against s32 here.

A regional plan and regional policy statement should be designed to accord with and assist the regional council to carry out its functions so as to achieve the purpose of the Act (sections 30, 59, 61, 63 and 66(1)).

207. The provisions of the POP as recommended are within the functions of regional councils as set out in s30 (1), with the provisions in Chapter 5 focussed on the control of the use of land for the purpose of soil conservation, the maintenance and enhancement of the quality of water in water bodies, and the control of discharges of contaminants into or onto land or water. The POP enables the Council to carry out these functions thorough both regulatory and non-regulatory measures which have been evaluated to be effective and efficient.

208. The resource management approach set out in the POP, in my view, is appropriate in assisting the Council to achieve the purpose of the Act. A balance has been struck between addressing a significant environmental issue in accelerated erosion and sediment discharges using regulatory and non-regulatory measures that minimise the costs to individuals and communities. The WFP approach assists landowners in moving towards more sustainable practices while maintaining their farming business where possible. The regulatory provisions are focussed as much as possible on the parts of the Region where the resource management issue occurs and only manage activities that are likely to cause adverse effects on the environment. Therefore, the approach enables people and communities to continue to benefit from the use of natural and physical resources, but places appropriate limitations on some of those activities address adverse effects.

209. In my view, the DV does not achieve this outcome. The very limited focus of the regulation in the DV did not provide for the management of areas or activities that the technical evidence has shown have significant potential to cause adverse effects on the environment. As a result, the DV is likely to provide limited assistance to the Council in managing activities that can result in significant loss of productive soils through erosion, and the limited control over activities with significant potential to causes sedimentation of waterways will reduce the Council's ability to manage water quality effectively.

When preparing a regional plan or regional policy statement the regional council must give effect to any national policy statement, New Zealand Coastal Policy Statement and when preparing a regional plan must also give effect to the Regional Policy Statement (sections 62(3) and 67(3)).

NATIONAL POLICY STATEMENTS

210. The NPS Freshwater is particularly relevant to the management of erodible land. In my view, the provisions as amended by my recommendations enable the POP to more closely align with the NPS. They create an explicit linkage between the water quality strategy set out in Chapter 6, which is focussed on improving water quality where it is degraded and maintaining water quality where it is acceptable. Focussing the erodible land provisions on these same outcomes assists in giving effect to the NPS. The NPS Objective C1 also requires the integrated management of catchments to achieve freshwater management, which indicates that land use activities within catchments that do not directly involve water bodies should be managed where they contribute to the outcomes. It also supports the retention of vegetation in riparian areas, which performs wider ecosystem roles as well as water quality benefits.

211. The New Zealand Coastal Policy Statement (NZCPS) includes direct reference to management of activities on the land. In particular, policy 22 is focused on managing the effects of sedimentation derived from land use activities. The NZCPS is given effect to by the POP as amened by my recommendations because, in my view, the amended provisions provide greater certainty and provide for more comprehensive management of activities that have significant potential to discharge sediment into water bodies and ultimately the coastal environment.

REGIONAL POLICY STATEMENT

212. While the RPS is technically still proposed until appeals are resolved and it is formally made operative, the approach of the POP has clearly been for the RP to give effect to the RPS. In terms of the RP giving effect to the RPS, I am of the view that the two documents are closely integrated and that the RP does give effect to the RPS.

When preparing its regional plan the regional council shall have regard to any proposed regional policy statement (section 66(2)(a)).

213. As discussed above, the RPS in the POP is currently proposed and therefore the Court must have regard to it in considering the provisions of the RP. In my view, the

explicit references within both the RPS and RP that create direct linkages between the two documents, as well as the inherent relationship the two documents have by being combined together, means that the RP should give effect to the RPS. It would seem contrary to efficient plan-making to not give effect to the RPS through this process and to rely on future plan changes to achieve the alignment.

When preparing a regional plan or regional policy statement the regional council must also:

have regard to any relevant management plans and strategies under other Acts, and, in the case of a regional plan, to consistency with plans, policy statements and proposed plans and proposed policy statements of adjacent regional councils (sections 61(1) and 66(2)(d));

214. As the POP addresses cross-boundary issues in a separate section of the document I have not evaluated the appropriateness of those mechanisms here. In my view, there any inconsistencies between specific approaches or provision drafting between the POP and the planning documents of other regions are unlikely to cause any conflicts in terms of resource management. In relation to relevant management plans and strategies under other Acts, the POP is closely aligned with the outcomes intended by the SLUI programme and also other strategies such as the Whanganui Catchment Strategy.

Take into account any relevant planning document recognised by an iwi authority (s61(2A));

215. Mr Hindrup states in his evidence that there are two iwi management plans that the Council is aware of[53] and that these documents were taken into account when drafting the provisions for Chapter 4 of the POP. As Mr Hindrup identifies, the matters set out in Chapter 4 are implemented through the other provisions of the POP. To that end, my view is that the improvement of the provisions as proposed in my evidence to more comprehensively manage erosion and sediment discharges compared with the DV better gives effect to the outcomes intended in Chapter 4.

[53] See Appendix 3 of Mr Hindrup's evidence

Not have regard to trade competition or the effects of trade competition (sections 61(3) and 66(3)).

216. In my view, the provisions relating to the management of erodible land do not reflect any influences of trade competition.

The formal requirements that a regional policy statement must state matters including the following (sections 59 and 62):

The significant resource management issues for the region;

217. These are set out in Chapter 5 as they relate to erodible land.

The objectives

218. These are set out in Chapter 5 as they relate to erodible land.

The policies and methods

219. These are set out in Chapter 5 as they relate to erodible land.

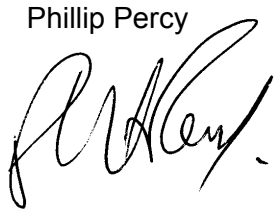
The processes to be used to deal with cross-boundary issues;

220. These are set out in Chapter 2.

The local authority responsible for specifying objectives, policies and methods for the control of the use of land relating to natural hazards, hazardous substances, and indigenous biological diversity

221. These are set out in Chapter 10 (natural hazards), Chapter 3 (hazardous substances) and Chapter 7 (indigenous biological diversity).

Phillip Percy



Planner

Appendix 1 - Recommended wording

5 Land

Scope and Background

Land management issues stem mainly from the effects of human activities on land. Potential for adverse environmental effects depends upon two factors: the capability of the land and soil to support particular uses and the effects of a given activity on different land and soil types. Mismanagement of the land resource has major implications for water quality and aquatic biological diversity in terms of sediment and nutrient inputs. These implications stem from the very strong links that exist between the land and water resources.

Agriculture, particularly pasture-based farming, is the foundation of the Region's economy and is one of the key elements that has defined the Region's social and visual landscape. However, in some areas, past and present agricultural practices have damaged the very resource upon which the agricultural sector is based – the land and soil. Future land management practices have the potential to increase the rate of damage if they do not take the natural limitations of the land into account.

Chapter Content

This chapter covers *accelerated erosion**, including the management of *vegetation clearance**, *land disturbance**, *forestry** and *cultivation**.

Activities related to land management which are covered in other chapters include:

(a) discharges of *agrichemicals**, agricultural *wastes** and other contaminants onto or into land, addressed in Chapter 6

(b) activities involving the beds of rivers and lakes, addressed in Chapter 6

(c) clearance of indigenous vegetation and drainage of significant wetlands, addressed in Chapter 7.

*Accelerated Erosion**

*Accelerated erosion** is often caused by historical and current clearance of *woody vegetation** and earthworks such as tracking, particularly on *land use capability classes** VII and VIII land. The Region has approximately 274,000 ha of hill country land at risk of moderate-severe erosion (Figure 5.1A), 116,000 ha of which were affected by the storms of 2004. Approximately 200 million tonnes of soil was eroded during the February 2004 storm, causing approximately 30 million tonnes of sediment to enter the Region's rivers. The sediment discharged by rivers in the Region during this single storm event was likely to be several times the average annual sediment discharge for the Region.

The Region's western coast, particularly the foredune and associated inland soils, is easily eroded when the protective vegetation cover is removed as part of coastal development, and as a consequence of activities such as land recontouring and vehicle movement. *Vegetation clearance** and *land disturbance** expose these fragile soils to wind erosion.

The present extent of erosion has occurred despite the work by catchment boards and other individuals and organisations to manage soil erosion since the 1940s. Where these activities brought about meaningful land use change, the results have been successful in decreasing erosion rates. For instance, in steep hill country, tree cover has reduced erosion rates by approximately 75% when compared with grass. However, the size and scale of the erosion issue is such that to date no agency has been able to deal with all erosion-prone land. Further, in some areas, large-scale land use changes are likely to be required, to which there is understandable landowner resistance.

*Accelerated erosion** can cause a number of on-site and off-site impacts:

(a) to the landowner – loss of soil and productive capability, reduced stock-carrying capacity, impacts on property and assets such as *tracks*,* fences and buildings, and the costs of carrying out repairs

(b) to the environment – reduced water quality in terms of nutrient loads (much of the phosphate load in water is the result of sediment run-off), reduced water clarity, and major impacts on instream life

(c) to others in the Region – damage to infrastructure and loss of flood protection to lowland communities as river beds within river and drainage schemes fill up with silt.

Soils that are damaged by slipping take a very long time to recover. Studies have shown it can take in the order of 20 years to regain 80% of pre-erosion productivity levels, and more than 100 years to achieve near-full recovery. Some soil types may never fully recover. Efforts to maintain farm productivity on land that has been affected by slipping generally increase pressure on less damaged parts of the *property**, thereby increasing the likelihood of further erosion and the loss of nutrients from increased *fertiliser** use.

Disturbed sandy soils can take many years to revegetate and stabilise naturally. In the interim, large quantities of sand can be eroded by the wind, threatening buildings and property and causing the inundation of productive land.

In addition to the damage that can be caused to the Region's fragile land types and soils discussed above, erosion rates and sediment run-off from other parts of the Region can be increased through activities that involve significant *vegetation clearance** and *land disturbance**. Such activities are typically involved with major infrastructure development (for example, road construction and upgrades or energy projects such as windfarm development), land development (such as new residential or industrial subdivisions on the edge of urban centres or recontouring of land associated with dairy conversions or intensification), or aggregate extraction (for example, gravel pits or quarries).

Insufficient attention to batter slopes, stormwater management, fill compaction, overburden containment, debris clearance and revegetation can significantly increase sediment loads in adjoining streams or sediment discharges onto neighbouring properties.

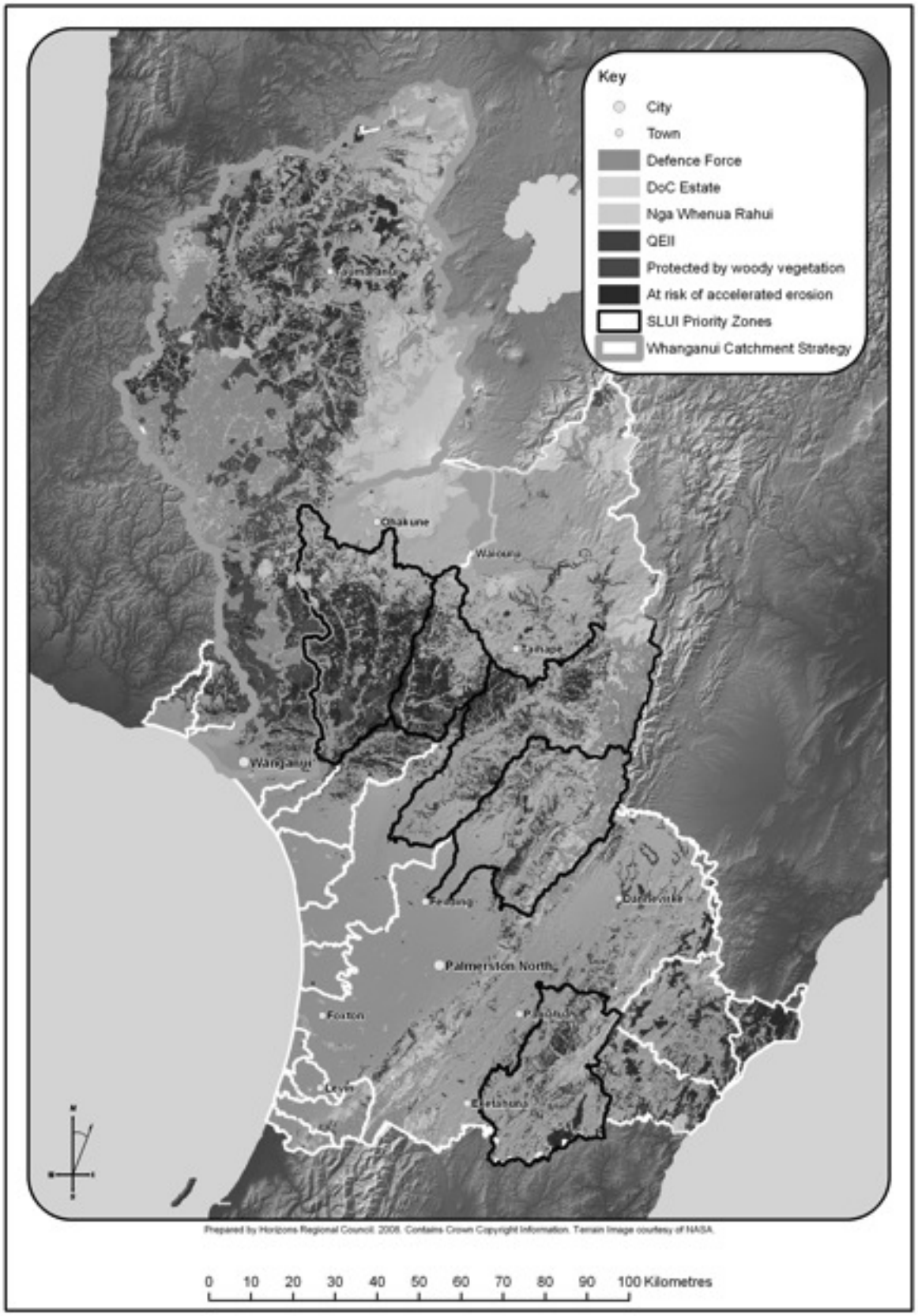


Figure 5.1A Distribution of hill country land subject to an elevated risk of *accelerated erosion**

Land and Soil Management

This section focuses on reducing *accelerated erosion**.

The Regional Council's focus continues to be largely non-regulatory, with the Council's Sustainable Land Use Initiative and Whanganui Catchment Strategy programmes being critical components of this approach.

The Regional Council's regulatory focus for land centres on protecting the stability of the Region's soil and maintaining or enhancing water quality.

This regulatory focus recognises that under s9(2) of the RMA, the use of land can occur as of right unless a rule in a plan states otherwise. Therefore, the Regional Council does not require rules allowing the use of land unless it wishes to control the way in which that use of land occurs.

Under this Plan, the majority of activities involving the use of land outside of Hill Country Erosion Management Areas can continue to occur as of right provided they are not within a *rare habitat**, *threatened habitat** or *at-risk habitat** or in or near a water body. However, ~~three~~ four specific activities can only continue to be undertaken without the need for a resource consent if conditions are met. These activities are:

(a) ~~large~~ small-scale *land disturbance**, including earthworks,

(b) *forestry**, ~~and~~

(c) *cultivation** ~~occurring adjacent to certain water bodies.~~, and
(d) *vegetation clearance*

These activities are permitted by Rules 12-1, 12-2 and 12-3 respectively.

*Vegetation clearance** cultivation and *land disturbance** require a resource consent if they are undertaken ~~adjacent to some water bodies~~ in *Hill Country Erosion Management Areas**, adjacent to some water bodies, or in *coastal foredune** areas subject to an elevated risk of *accelerated erosion**. ~~Removal of some *woody vegetation** and the construction of *new tracking** anywhere in those elevated risk areas also requires a resource consent.~~ These specific activities are the subject of Rule 12-4.

Significant Resource Management Issues

Issue 5-1: *Accelerated erosion**

(a) **Farming and other land uses in hill country**
Some aspects of current farming and other land use practices in the Region's hill country and adjacent to water bodies are unsustainable. Where *vegetation clearance**, cultivation, roading, tracking or other types of *land disturbance** (including filling) are carried out in hill country or adjacent to water bodies, there is potential to destabilise slopes, causing *accelerated erosion**. *Accelerated erosion** is often causing:

(i) a significant reduction in the productive capability of land

(ii) increased sediment loads in water bodies which are reducing water quality, smothering aquatic ecosystems, infilling rivers, lakes and estuaries, and increasing flood risk to lowland communities

(iii) land stability hazards, particularly in steep hill country, which threaten people, buildings and infrastructure.

(b) ***Coastal foredune****

Vegetation and soil disturbance associated with vehicle movement, tracking, coastal protection works and land recontouring have the potential to destabilise fragile *coastal foredunes** if not well managed.

(c) **Large-scale *land disturbance**** **including earthworks**

Most other land use activities are not of a sufficient scale to have significant regional adverse effects. However, large-scale earthworks related to urban expansion and other development can have significant adverse effects on water bodies if sediment from these earthworks is poorly managed. Large-scale land disturbance activities can also destabilise sandy soils in coastal areas which can cause significant adverse effects associated with wind-blown sand.

(d) ***Forestry****

*Forestry** is considered to be a generally beneficial land use in the Region's hill country due to its ability to facilitate the long-term stabilisation of land subject to an elevated risk of *accelerated erosion**. However, *forestry** needs to be prudently managed, in a manner consistent with industry best practice, to ensure that sustainable land use is realised and off-site adverse effects are minimised.

(e) ***Cultivation****

*Cultivation** does not generally cause soil erosion problems within the Region. However, *cultivation** undertaken adjacent to water bodies and on sloping land has the potential to result in increased sediment loads to those water bodies unless prudently managed including by the use of appropriate industry best practice erosion minimisation and sediment run-off control measures ~~are implemented~~.

Objectives

Objective 5-1: Managing *accelerated erosion**

By the year 2017, 50% of farms within hill country *land*^ subject to an elevated risk of *accelerated erosion** will have in place, or be in the process of putting in place, farm-wide sustainable *land*^ management practices to minimise *accelerated erosion** and to reduce sediment loads entering waterways as a result of accelerated erosion to the extent required to be consistent with the water management objectives and policies set out in Chapter 6 of this Plan.

Whāinga 5-1: Te whakahaere horo whenua tere

Ā te tau 2017 kia 50% o ngā pāmu kei ngā puke teitei ka whai tūponotanga nui ka pāngia pea e te horo whenua tere kua whakarite kē – kei te whakarite rānei – i ētahi tikanga whakauka mō te whakahaere whenua kei te pāmu katoa hei whakaiti i te horo whenua tere.

Objective 5-2: Regulating potential causes of *accelerated erosion**

Land^ is used in a manner that ensures:

*(a) accelerated erosion** and increased sedimentation in *water bodies*^ (with resultant adverse *effects*^ on people, buildings and *infrastructure*^*)* caused by *vegetation clearance**, *land disturbance**, *forestry**, or *cultivation** are avoided as far as reasonably practicable, or otherwise remedied or mitigated, and

(b) sediment loads entering waterways as a result of accelerated erosion are reduced to the extent required to be consistent with the water management objectives and policies set out in Chapter 6 of this Plan.

Whāinga 5-2: Te whakahaere pitomata e takea mai ai horo whenua tere

Ka whakamahia te whenua kia hua ai te horo whenua tere, ā, ka piki haere te parahanga ā-matū i roto i ngā wai (me te hua ko ngā pānga kino ki te tangata, ngā whare, me ngā kaupapa o raro) nā te whakapara tupu, te raweke whenua, te mahi rākau, te mahi māra – i ngā wā e tika ana ka parea, ka whakapaingia rānei, ka whakamemehatia rānei ēnei.

Policies

Policy 5-1: Encouraging and supporting sustainable *land*^ management

The Regional Council will encourage and support the adoption of sustainable *land*^ management practices by:

(a) working with relevant owners and occupiers of farms within hill country *land*^ subject to an elevated risk of *accelerated erosion** to prepare voluntary management plans under the Council's Sustainable Land Use Initiative or Whanganui Catchment Strategy, which identify sustainable *land*^ management practices for each farm and work programmes for implementing any agreed changes,

(b) monitoring the implementation of vouluntary management plans and sustainable *land*^ management practices within hill country *land*^ subject to an elevated risk of *accelerated erosion** ~~and~~, reporting this information on a two-yearly basis, and reviewing the effectiveness of voluntary management plans.

(c) responding to requests from owners or occupiers of *land*^ that is not within hill country *land*^ subject to an elevated risk of *accelerated erosion** to prepare a management plan, provided this does not impede the achievement of (a).

Policy 5-2A: Regulation of *land*^ use activities

(a) The Regional Council must regulate *vegetation clearance**, *land disturbance**, *forestry** and *cultivation** through *rules*^ in this Plan and decisions on *resource consents*^, in order to achieve Objective 5-2.

(b) *Territorial Authorities*^ may regulate, through *rules*^ in *district plans*^ and decisions on *resource consents*^, the actual or potential *effects*^ of the use, development, or protection of *land*^, in order to achieve Objective 5-2. However, *Territorial Authorities*^ must not have *rules*^ that are contradictory to the *rules*^ in this Plan that control the use of *land*^.

(c) The Regional Council will generally allow *vegetation clearance**, small scale *land disturbance**, *forestry** and *cultivation** to be undertaken without the need for a *resource consent*^ if *conditions*^ are met. *Vegetation clearance** cultivation and *land disturbance** require a *resource consent*^ if they are undertaken adjacent to some *water bodies*^ (including certain *wetlands*^), in *Hill Country Erosion Management Areas** or in *coastal foredune** areas. Large scale land disturbance acivities ~~Removal of some *woody vegetation** and the formation of *new tracking** in *Hill Country Erosion Management Areas** ~~ also require a *resource consent*^. Resource consents will only be granted in circumstances where:

i. the activity will not signficantly increase the risk of erosion'
ii. any significant increase in discharges of sediment to water will be avoided, and
iii. vegetation clearance within riparian areas of some water bodies is minimised so that the benefits of riparian vegetation are maintained.

Policy 5-5: Supporting codes of practice, standards, guidelines, environmental management plans and providing information on best management practices

The Regional Council must, and *Territorial Authorities*^ may:

(a) support the development of codes of practice, standards, guidelines and other sector-based initiatives targeted at achieving sustainable *land*^ use,

(b) recognise appropriately developed and administered codes of practice, standards, guidelines or environmental management plans targeted at achieving sustainable *land*^ use, and incorporate them within the regulatory framework where applicable, and

(c) make information describing best management practices for reducing erosion and maintaining *water*^ quality and soil health available to all relevant landowners, occupiers, asset owners, consultants, developers and contractors.

Methods

Managing activities on land is a mix of regulatory and non-regulatory approaches. Part II of this Plan contains regional rules relating to the activities described in this chapter.

Method 5-1	Sustainable Land Use Initiative – Hill Country Erosion
Description	The aim of this method is to reduce hill country *accelerated erosion**. While the emphasis will be on hill country, all land at risk of erosion will be eligible for assistance under this programme. Staff from the Regional Council and other agencies will work with landowners and occupiers to develop voluntary management plans. These plans will provide the blueprint for long-term environmental, economic and social sustainability. Research, publicity, education, information, incentives, joint ventures and land purchase will be used to encourage the landowner or occupier to manage their land in a sustainable manner.
Who	Regional Council, central government, Territorial Authorities, Crown Research Institutes, landowners or occupiers, recognised organisations representing farmers, and farm consultants.
Links to Policy	This method implements Policy 5-1.
Targets	50% of properties within hill country land subject to an elevated risk of *accelerated erosion** will have a voluntary management plan in place by 2017.

Method 5-2	Whanganui Catchment Strategy
Description	The aim of this method is to reduce hill country *accelerated erosion** within the Whanganui catchment. Whilst the emphasis will be on hill country land subject to an elevated risk of *accelerated erosion**, all land at risk of erosion within the catchment will be eligible for assistance under this programme. Staff from the Regional Council and consultants will work with landowners and occupiers to develop management plans. These plans will provide the blueprint for long-term environmental, economic and social sustainability. Research, publicity, education, information and incentives will be used to encourage the landowner or occupier to manage their land in a sustainable manner. The Whanganui Catchment method is a pilot for the much larger Sustainable Land Use Initiative – Hill Country Erosion method (Method 5-1). Eventually, the Whanganui Catchment Strategy method will be integrated with this method.
Who	Regional Council, Ruapehu and Wanganui District Councils, landowners or occupiers, relevant *hapū** and *iwi**, the Whanganui River Enhancement Trust, Department of Conservation, recognised

Method 5-2	Whanganui Catchment Strategy
	organisations representing farmers and farm consultants.
Links to Policy	This method implements Policy 5-1.
Targets	50% of properties within hill country land subject to an elevated risk of *accelerated erosion** in the Whanganui Catchment will have a voluntary management plan in place by 2015.

Method 5-3	Soil Health
Description	The aim of this method is to reduce the impact of horticulture, cropping and intensive farming activities on soil health, and the consequent off-site environmental impacts. Education on best management practices will be made available to landowners through a variety of means to encourage the adoption of sustainable land use practices. Research and monitoring will be used to identify and fine-tune best practice. This method includes the provision of advice and information to owners of land in the fragile sand country along the Region's west coast.
Who	Regional Council, landowners or occupiers, Landwise, Horticulture New Zealand, Federated Farmers, agricultural contractors, *fertiliser** companies and research institutes.
Links to Policy	This method implements Policy 5-5(c).
Targets	• All major croppers/horticulturists in the Region are operating under best management practice regimes by 2017. • All major agricultural contractors are operating under industry standards regimes by 2010. • All pasture-based farms are being managed in accordance with the relevant sector-based best management practice by the agreed target dates.

Method 5-4	Sustainable Land Use Codes of Practice and Best Management Practices
Description	This method will provide support for the development of codes of practice, best management practices and other sector-based initiatives for sustainable land use, construction, production and operating methods on all types of land within the Region – hill country, plains, sand country and along the coast. This method will also recognise, and where appropriate support, initiatives that raise awareness of sustainable land use. Examples include the monitor farm programme, sustainable farming and management funds, and Ballance Farm Environment Awards.
Who	Participation in this project is very much dependent upon approaches from industry and sector groups.
Links to Policy	This method implements Policy 5-5.
Targets	• All approaches for Regional Council assistance will be considered. • Where proposals are aligned with Regional Council objectives, assistance will be provided where possible.

Method 5-5	Land Research, Monitoring and Reporting Programme
Description	The aim of this method is to develop an integrated research, monitoring and reporting programme that supports delivery and refinement of

Method 5-5	Land Research, Monitoring and Reporting Programme
	existing policies and methods, guides implementation planning, and allows implementation effectiveness to be assessed. This will include a five-yearly assessment of the effectiveness of the above methods, particularly the Sustainable Land Use Initiative – Hill Country Erosion Method.
Who	Regional Council, landowners and occupiers, research institutes, universities, and non-government agencies and community groups.
Links to Policy	This method implements Policies 5-1, 5-2A and 5-5.
Target	A research, monitoring and reporting programme that supports delivery and refinement of existing policies and methods, and guides and assesses implementation.

Method 5-6	Infrastructure Protection
Description	The aim of this method is to reduce the erosion risk to, and caused by, the provision, *maintenance** or *upgrade** of infrastructure. Advice and information will be provided to infrastructure owners in the planning stages of new works, the carrying out of *maintenance** or *upgrade**, and protection of existing networks from erosion risks.
Who	Regional Council, Territorial Authorities and owners of major infrastructure.
Links to Policy	This method implements Policy 5-5.
Target	The Regional Council will have formed working partnerships with all major infrastructure owners for the purposes of assessing and identifying options to manage erosion risks.

Method 5-7	Education in Schools – Land
Description	The aim of this method is to implement a range of initiatives to raise awareness amongst the youth of the Region of the significance of the land and soil resource, the threats to it, and what they can do to protect/restore it. This will be achieved through various environmental education programmes/initiatives eg., Green RIG, Trees for Survival etc.
Who	Regional Council, national and local environmental education providers and youth organisations.
Links to Policy	This method implements Policy 5-5.
Targets	The Regional Council will develop and implement a land and soil related environmental education programme.

Anticipated Environmental Results

Anticipated Environmental Result	Link to Policy	Indicator	Data Source
By 2017, there will be a net reduction in the adverse effects on water quality, people, buildings and infrastructure caused by	Policies 5-1, 5-2A and 5-5 Policies 6-1 to 6-5 and 6-7	• Water quality monitoring results, especially for "muddy waterways" in the Whanganui and Rangitikei Rivers • Rate of deposition of sediment	• Regional Council's state of environment water quality monitoring programme • Regional Council's and Territorial Authorities' incidents

Anticipated Environmental Result	Link to Policy	Indicator	Data Source
accelerated erosion, including hill country and *coastal foredune** wind erosion, in the Region. Advice Note: There are linkages from this AER to the AERs within Chapter 6.		in coastal river reaches, focusing on the Whanganui, Rangitikei and Manawatu Rivers • Costs of storm damage • % of Region's land being used in accordance with sustainable use guidelines • Achievement of Schedule D targets for deposited sediment, visual clarity and Phosphorus • Changes to long-term mean sediment discharges of rivers to the sea • % of farms within the SLUI priority catchments that have Whole Farm Business Plans in place and being implemented	databases • Regional Council's river bed level survey results • Regional Council's and Territorial Authorities' storm damage reports • Land use mapping • Regional Council's Sustainable Land Use Initiative monitoring and implementation reports

Explanations and Principal Reasons

Objectives for land management are presented in this Plan to encourage sustainable land use and minimise erosion. These focus on responding to the fact that 65% of the Region consists of gullies and hillsides subject to *accelerated erosion**. A target has been introduced into Objective 5-1 to ensure that the progress toward sustainable hill country land use can be measured. This is particularly important because the policy platform that underpins this objective is largely non-regulatory.

Policy 5-1 recognises that regulation is not the appropriate tool to encourage change toward sustainable land management practices. Instead it uses non-regulatory farm plans that contain a programme of works involving the landowner's active participation. Policy 5-1 and associated methods acknowledge that the achievement of sustainable farming practices on hill country land subject to an elevated risk of *accelerated erosion** is a complex task. There are three reasons for this.

1. Recognition that sustainable land use means changing from unsustainable farming practices. This may mean the introduction of new practices such as employing different stocking rates, introducing *forestry** or retirement of land and fencing water bodies.

2. Commitment to implementing new land management practices will require capital outlay and most importantly require a willingness from the landowner to introduce change.

3. Sustainable land management practices need to be tailored to the specific land capability of an individual holding, which means a blanket approach introducing one solution for all hill country farming will probably fail.

Policy 5-2A recognises that *vegetation clearance** and *land disturbance** are two of the main contributors to *accelerated erosion**. It also recognises that vegetation clearance, land disturbance and cultivation within or close to water bodies have the potential to cause accelerated erosion and have a higher risk of causing discharges of sediment to water. The policy describes the regulation of land use activities to provide guidance to regional and district plan preparation.

Policy 5-5 states the Regional Council's support for codes of practice, standards, guidelines and environmental management plans as these can assist with reducing *accelerated erosion*.*

12 Land Use Activities and Indigenous Biological Diversity

Land Use Activities

12.1.1 Objectives

Objective 12-1: *Accelerated erosion - regulation of *vegetation clearance**, *land disturbance**, *forestry** and *cultivation****

The regulation of *vegetation clearance**, *land disturbance**, *forestry** and *cultivation** in a manner that ensures:

(a) a*ccelerated erosion** and any associated damage to people, buildings and *infrastructure*^ and other physical resources of regional or national importance are avoided as far as reasonably practicable or otherwise remedied or mitigated, and

(b) increased sedimentation in *water bodies*^ as a result of human activity is avoided as far as reasonably practicable, or otherwise mitigated.

12.1.2 Policies

Policy 12-1A: *Regional rules*^ for *vegetation clearance, *land disturbance**, *forestry** and *cultivation****

The Regional Council must:

(a) regulate *vegetation clearance**, *land disturbance**, *forestry** and *cultivation** through *regional rules*^ in accordance with Objectives 11A-1, 11A-2 and 12-1 and Policies 11A-1 to 11A-8, and

(b) manage the *effects*^ of *vegetation clearance**, ~~and~~ *land disturbance** and cultivation ~~in *Hill Country Erosion Management Areas**~~ by requiring *resource consents*^ for those activities:

(i) adjacent to some *water bodies*^,

(ii) involving the removal of some *woody vegetation** in *Hill Country Erosion Management Areas**, ~~and~~

(iii) involving ~~the formation of *new tracking**, *land disturbance**~~ and *cultivation** in *Hill Country Erosion Management Areas**, and

(iv) involving large-scale *land disturbance**

(v) within a *coastal foredune**

Policy 12-1: Consent decision-making for *vegetation clearance, *land disturbance**, *forestry** and *cultivation****

For *vegetation clearance**, *land disturbance**, *forestry** or *cultivation** and ancillary discharges to and diversions of surface water that requires *resource consent*^ under Rule 12-4 or Rule 12-5, the Regional Council must make decisions on consent applications and set consent *conditions*^ on a case-by-case basis, having regard to:

(aa) the Regional Policy Statement, particularly Objective 5-2 and Policies 5-2A and 5-5, and Objectives 6-1, 6-2 and Policies 6-1 to 6-5 and 6-7,

(ab) the degree to which any ancillary discharges will comply with the targets for managing surface water quality set out in Schedule D,

(fa) managing the *effects*^ of *land disturbance**, including large-scale earthworks, by requiring *Erosion and Sediment Control Plans** or other appropriate plans to be prepared,

(fb) managing the *effects*^ of *forestry** by requiring sustainable *forestry** management practices to be adopted and *Erosion and Sediment Control Plans** or other appropriate plans to be prepared,

(fc) managing the *effects*^ of *cultivation** ~~adjacent to some~~on *water bodies*^ through the use of sediment run-off control methods and setbacks from water bodies,

(fd) the appropriateness of establishing *infrastructure*^ and other physical resources of regional or national importance as identified in Policy 3-1,

(fe) generally allowing the clearance of *woody vegetation** on established pasture if that clearance will not lead to *accelerated erosion** or the increased sedimentation of *water bodies*^,

(ff) generally allowing activities that are for the purpose of managing *natural hazards*^, including the reduction of flood risk,

(fg) generally allowing *forestry** for soil conservation purposes,

(fh) generally allowing activities that result in improved *land*^ stability or enhanced surface *water*^ quality,

(fi) any relevant codes of practice, standards, guidelines, or environmental management plans and accepting compliance with them to the extent that they can be used as *conditions*^ on *resource consents*^,

(h) sediment and erosion control measures required to reasonably minimise adverse *effects*^, including those caused by rainfall and storm events, and

(hi) achieving integrated management through consents that are Region-wide or cover large areas for activities that are widespread and undertaken by or on behalf of a single consent holder including, but not limited to, *infrastructure*^ and other physical resources of regional or national importance, or *forestry**, provided any such consents are subject to *conditions*^, including review provisions, enabling *site**-specific matters to be addressed as necessary.

Indigenous Biological Diversity

Objective

Objective 12-2: Regulation of activities affecting indigenous *biological diversity*^

The regulation of *vegetation clearance**, *land disturbance**, *forestry** and *cultivation** and certain other resource use activities to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna or to maintain indigenous *biological diversity*^, including enhancement where appropriate.

Policies

Policy 12-5A: *Regional rules*^ for activities affecting indigenous *biological diversity*^

The Regional Council must require *resource consents*^ to be obtained for *vegetation clearance**, *land disturbance** and *cultivation** and certain other resource use activities within *rare habitats**, *threatened habitats** and *at-risk habitats**, and for *forestry** that does not minimise potential adverse *effects*^ on those habitats, through *regional rules*^ in accordance with Objectives 11A-1, 11A-2 and 12-2 and Policies 11A-1 to 11A-8.

Policy 12-5: Consent decision-making for activities in *rare habitats, *threatened habitats** and *at-risk habitats****

(a) For activities regulated under Rule 12-6, the Regional Council must make decisions on consent applications and set consent *conditions*^ on a case-by-case basis, having regard to:

  (i) the Regional Policy Statement, particularly Objective 7-1 and Policy 7-2A,

  (ii) the significance of the area of habitat, in terms of its representativeness, rarity and distinctiveness, and ecological context, as assessed under Policy 12-6,

  (iii) the potential adverse *effects*^ of the proposed activity on that significance, and

  (iv) for activities regulated under ss13, 14 and 15 RMA, the matters set out in Policy 12-1(h) and relevant objectives and policies in Chapters 6, 13, 15 and 16.

(b) Consent must generally not be granted for *vegetation clearance**, *land disturbance**, *forestry** or *cultivation** and certain other resource use activities in a *rare habitat**, *threatened habitat** or *at-risk habitat** assessed to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna, unless:

  (i) any more than minor adverse *effects*^ on that habitat's representativeness, rarity and distinctiveness, or ecological context assessed under Policy 12-6 are avoided as far as reasonably practicable, or otherwise remedied or mitigated, or

  (ii) any more than minor adverse *effects*^ which cannot reasonably be avoided, remedied or mitigated are offset to result in a net indigenous *biological diversity*^ gain.

(c) Consent must generally be granted for *vegetation clearance**, *land disturbance**, *forestry** or *cultivation** and certain other resource use activities in an *at-risk habitat** assessed not to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna when:

(i) there will be no significant adverse *effects*^ on that habitat's representativeness, rarity and distinctiveness, or ecological context as assessed in accordance with Policy 12-6, or

(ii) any significant adverse *effects*^ are avoided, as far as reasonably practicable, or otherwise remedied or mitigated, or

(iii) any significant adverse *effects*^ which cannot reasonably be avoided, remedied or mitigated are offset to result in a net indigenous *biological diversity*^ gain.

(d) When assessing an offset in accordance with (b)(ii) or (c)(iii), decision-makers must have regard to:

(i) the desirability of providing for a net gain within the same habitat type,

(ii) the desirability of providing for a net gain in the same ecologically relevant locality as the affected habitat, and

(iii) the appropriateness of establishing *infrastructure*^ and other physical resources of regional or national importance as identified in Policy 3-1.

Policy 12-6: Criteria for assessing the significance of, and the *effects*^ of activities on, an area of habitat

(a) An area of *rare habitat**, *threatened habitat** or *at-risk habitat** may be recognised as being an area of significant indigenous vegetation or a significant habitat of indigenous fauna if:

(i) in terms of representativeness, that habitat:

(A) comprises indigenous habitat type that is under-represented (20% or less of known or likely former cover), or

(B) is an area of indigenous vegetation that is large relative to other areas of habitat in the Ecological District or Ecological Region, with indigenous species composition, structure and diversity typical of the habitat type, and

(C) has functioning ecosystem processes.

or

(ii) in terms of rarity and distinctiveness, that habitat supports an indigenous species or community that:

(A) is classified as threatened (as determined by the *New Zealand Threat Classification System and Lists**), or

(B) is distinctive to the Region, or

(C) is at a natural distributional limit, or

(D) has a naturally disjunct distribution that defines a floristic gap, or

(E) was originally (ie., prehuman) uncommon within New Zealand, and supports an indigenous species or community of indigenous species.

or

(iii) in terms of ecological context, that habitat provides:

(A) connectivity (physical or process connections) between two or more areas of indigenous habitat, or

(B) an ecological buffer (provides protection) to an adjacent area of indigenous habitat (terrestrial or aquatic) that is ecologically significant, or

(C) part of an indigenous ecological sequence or connectivity between different habitat types across a gradient (eg., altitudinal or hydrological), or

(D) important breeding areas, seasonal food sources, or an important component of a migration path for indigenous species, or

(E) habitat for indigenous species that are dependent on large and contiguous habitats.

(b) The potential adverse *effects*^ of *vegetation clearance**, *land disturbance**, *forestry** or *cultivation** on a *rare habitat**, *threatened habitat** or *at-risk habitat** must be determined by the degree to which the proposed activity will diminish any of the above characteristics of the habitat that make it significant, while also having regard to the ecological sustainability of that habitat.

12.3 Rules - *Vegetation clearance**, *land disturbance**, *forestry** and *cultivation** and indigenous biological diversity

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
12-1A Small-scale land disturbance	Except as regulated by Rules 12-4 and 12-6, any *land disturbance** pursuant to s9(2) RMA of a total area up to 2500 m^2 per *property** per 12-month period and any ancillary: (a) diversion of *water*^ pursuant to s14(2) RMA on the *land*^ where the *land disturbance** is undertaken. (b) *discharge*^ of sediment into *water*^ pursuant to s15(1) RMA resulting from the *land disturbance**.	Permitted	(a) The activity must not take place on *land*^ that is within a *coastal foredune**. (b) Erosion and sediment control methods, which may include bunding, silt traps, interception drains or other alternative methods, to minimise sediment discharge to water must be installed prior to, and maintained during, the land disturbance activity. (c) Any ancillary discharge of sediment into water^ must not, after reasonable mixing, cause the receiving water body to breach the water quality targets for visual clarity set out in Schedule D for that water body. (a) The activity must not occur on *land*^ that is in, or within 10 m of: (i) the *bed*^ of a *river*^ that is either permanently flowing or is ephemeral with an *active bed** width greater than 1 m (ii) the *bed*^ of a *lake*^ (iii) A wetland^ (iv) Sites valued for trout spawning as identified in Schedule AB (v) Sites of Significance Aquatic as identified in Schedule AB.	
12-1 Large-scale *land disturbance** ~~including earthworks~~	Except as regulated by Rules 12-4 and 12-6, any *land disturbance** pursuant to s9(~~3~~2) RMA of a total area greater than 2500 m^2 per *property** per 12-month period and any ancillary: (c) diversion of *water*^ pursuant to s14(~~1~~2) RMA on the *land*^ where	~~Permitted~~ Controlled	(d) The activity must not take place on *land*^ that is within a *coastal foredune**. (e) The activity must be undertaken in accordance with an *Erosion and Sediment Control Plan** ~~which must be submitted to the Regional Council upon request~~. (f) ~~The Regional Council must be notified at least~~	Control is restricted to: (a) the location, nature, scale, timing and duration of the activity (b) the provision of an erosion and sediment control plan (c) *effects*^ of the activity and associated

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	the *land disturbance** is undertaken, or (b) *discharge*^ of sediment into *water*^ pursuant to s15(1) RMA resulting from the *land disturbance**.		~~48 hours prior to the activity commencing.~~ (g) Any ancillary discharge of sediment into water^ must not, after reasonable mixing, cause the receiving water body to breach the water quality targets for visual clarity set out in Schedule D for that water body. (b) The activity must not occur on *land*^ that is in, or within 10 m of: (vi) the *bed*^ of a *river*^ that is either permanently flowing or is ephemeral with an *active bed** width greater than 1 m (vii) the *bed*^ of a *lake*^ (viii) A wetland^ (ix) Sites valued for trout spawning as identified in Schedule AB (x) Sites of Significance Aquatic as identified in Schedule AB.	sediment run-off on soil conservation, surface *water*^ quality and aquatic ecology (d) the provision of set backs from water bodies (e) the principles and erosion and sediment control measures set out in Chapters 3-9 of the Erosion and Sediment Control Guidelines for the Wellington Region (September 2002) (f) Achievement of the water quality numerics set out in Schedule D (g) duration of consent and review of consent *conditions*^ (h) compliance monitoring.
12-2 *Forestry**	Except as regulated by Rule 12-6, any *forestry** pursuant to s9(2) RMA, and any ancillary: (a) disturbance of the *bed*^ of a *river*^ or *lake*^ pursuant to s13(1) RMA by *forestry**, or (b) diversion of *water*^ pursuant to s14(1) RMA on the *land*^ (but not within a *river*^) where the *forestry** is undertaken, or (c) *discharge*^ of sediment or *slash** into *water*^ pursuant to s15(1) RMA resulting from the *forestry**.	Permitted	(c) The activity must not take place on *land*^ that is within a c*oastal foredune**. (d) Any planting or replanting of *forestry** trees must not occur on *land*^ that is in, or within 5 m of: (xi) the *bed*^ of a *river*^ that is permanently flowing or has an *active bed** width greater than 2 m (xii) the *bed*^ of a *lake*^ (xiii) a *rare habitat**, *threatened habitat** or *at-risk habitat**. (c) If any *rare habitat**, *threatened habitat** or *at-risk habitat** is present within or within 5 m of an area of *forestry** prior to undertaking harvesting an *operational plan** must be prepared and submitted to the Regional Council and the *operational plan** must be complied with. (d) Any area of *forestry** that is harvested (other than	

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			firebreaks, *tracks**, landing *sites** or areas in (a) and (b)) must be planted or replanted to protect from erosion as soon as practicable and no later than 18 months from the date of the harvesting, unless the area is left to revegetate naturally. (e) *Water*^ run-off controls must be installed and maintained for *tracks** and landing *sites**. (f) Batters, cuts and side castings must be established by methods that prevent slumping. (g) Vegetation must be felled away from any area listed in (b), other than where this would endanger the health and safety of workers. (h) Felled vegetation must not be dragged through any *water body*^ or area listed in (b), other than where this is necessary to avoid endangering the health and safety of workers. (i) Harvesting must be planned and carried out so as to minimise the amount of *slash** entering any area listed in (b). (j) *Slash** must be removed from within areas listed in (b)(i) where it is blocking *river*^ flow, or is diverting *river*^ flow and causing bank erosion. (k) *Slash** associated with landing *sites** and processing *sites** must be placed on stable ground and managed to avoid it falling down any slope. (l) The activity must be undertaken in accordance with an *Erosion and Sediment Control Plan** which must be submitted to the Regional Council upon request.	
12-3 *Cultivation**	Except as regulated by Rules 12-4 and 12-6, any *cultivation** pursuant to s9(2) RMA ~~within 5 m of:~~ ~~(a) the *bed*^ of a *river*^ that is permanently flowing or has an *active bed** width greater than 2 m, or~~ ~~(b) the *bed*^ of a *lake*^, or~~	Permitted	(a) The activity must not take place on *land*^ that is within a c*oastal foredune**. (b) Bunding, silt traps, interception drains or other alternative methods to minimise sediment run-off to *water*^ must be installed prior to and maintained during *cultivation**. (c) Any ancillary discharge of sediment into water^ must not, after reasonable mixing, cause the	

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	(c) ~~*a wetland*^~~ and any ancillary: (d) diversion of *water*^ pursuant to s14(~~12~~) RMA on the *land*^ where the *cultivation** is undertaken, or (e) *discharge*^ of sediment into *water*^ pursuant to s15(1) RMA resulting from the *cultivation** or the use of bunding, silt traps, interception drains or other alternative methods to minimise sediment run-off into *water*^.		receiving water body to breach the water quality targets for visual clarity set out in Schedule D for that water body. (d) The activity must not occur on *land*^ that is in, or within 10 m of: a. the *bed*^ of a *river*^ that is either permanently flowing or is ephemeral with an *active bed** width greater than 1 m b. the *bed*^ of a *lake*^ c. A wetland^ d. Sites valued for trout spawning as identified in Schedule AB e. Sites of Significance Aquatic as identified in Schedule AB. Advice Note: Examples of alternative methods for minimising sediment run-off can be found in the Code of Practice for Commercial Vegetable Growing in the Horizons Region (Horticulture New Zealand).	
12-4 Specified *vegetation clearance** ~~,and~~ *land disturbance** and cultivation* in a *Hill Country Erosion Management Area**	Except as regulated by Rule 12-6, any *vegetation clearance**, ~~or~~ *land disturbance** or cultivation* pursuant to s9(2) RMA undertaken within a *Hill Country Erosion Management Area**: ~~(a) within 5 m of the *bed*^ of a *river*^ that is permanently flowing or has an *active bed** width greater than 2 m, or~~ ~~(b) within 5 m of the *bed*^ of a *lake*^, or~~	Restricted Discretionary	(a) The activity must not take place on *land*^ that is within a c*oastal foredune**. (b) The activity must not occur on *land*^ that is in, or within 10 m of: (i) the *bed*^ of a *river*^ that is either permanently flowing or is ephemeral with an *active bed** width greater than 1 m (ii) the *bed*^ of a *lake*^ (iii) A wetland^ (iv) Sites valued for trout spawning as identified in	Discretion is restricted to: (a) the location, nature, scale, timing and duration of the activity (b) the provision of an erosion and sediment control plan (c) *effects*^ of the activity and associated sediment run-off on soil conservation, surface *water*^ quality and aquatic ecology (d) the provision of set backs from water

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	~~(c) 5 m of a *wetland*^, or~~ ~~(d)~~ involving the clearance of 1 ha or greater per *property** per 12-month period of *woody vegetation** where the age~~*canopy** cover~~ of *woody vegetation** in the area to be cleared is greater than 7 years~~%,~~ or (e) involving land disturbance* or cultivation* of more than 100m2/year/property* or 100m3/year/property. ~~involving *new tracking**~~ and any ancillary: (f) diversion of *water*^ pursuant to s14(1) RMA on the *land*^ where the *vegetation clearance** or *land disturbance** is undertaken, or (g) *discharge*^ of sediment into *water*^ pursuant to s15(1) RMA resulting from the *vegetation clearance** or *land disturbance**.		Schedule AB (v) Sites of Significance Aquatic as identified in Schedule AB.	bodies (e) the principles and erosion and sediment control measures set out in Chapters 3-9 of the Erosion and Sediment Control Guidelines for the Wellington Region (September 2002) (f) Achievement of the water quality numerics set out in Schedule D (g) duration of consent and review of consent *conditions*^ (h) compliance monitoring. *Resource consent*^ applications under this *rule*^ will not be notified and written approval of affected persons will not be required (notice of applications need not be *served*^ on affected persons).
12-4A Vegetation clearance	Except as regulated by Rules 12-4 and 12-6, any vegetation clearance pursuant to s9(2) RMA and any ancillary: (a) diversion of *water*^ pursuant to s14(2) RMA on the *land*^ where the *vegetation clearance** is undertaken, (b) *discharge*^ of sediment into *water*^ pursuant to s15(1) RMA resulting from the *vegetation clearance**.	Permitted	(a) The activity must not take place on *land*^ that is within a *coastal foredune**. (b) The activity must not occur on *land*^ that is in, or within 10 m of: (i) the *bed*^ of a *river*^ that is either permanently flowing or is ephemeral and has an *active bed** width greater than 1 m (ii) the *bed*^ of a *lake*^ (iii) A wetland^ (iv) Sites valued for trout spawning as identified in Schedule AB (c) Any ancillary discharge of sediment into water^ must not, after reasonable mixing, cause the receiving water body to breach the water quality targets for	

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			visual clarity set out in Schedule D for that water body.	
12-5 *Vegetation clearance**, *land disturbance**, *cultivation** or *forestry** that does not comply with Rules 12-1A to 12-4A (including near water bodies)	Except as regulated by Rule 12-6, any *vegetation clearance**, *land disturbance**, *cultivation** or *forestry** pursuant to s9(2) RMA that does not meet the *conditions*^, standards or terms of Rules 12-1, 12-1A, 12-2, 12-3, 12-4A or 12-4 and any ancillary: (a) disturbance of the *bed*^ of a *river*^ or *lake*^ by *forestry** authorised by those *rules*^ pursuant to s13(1) RMA (b) diversion of *water*^ authorised by those *rules*^ pursuant to s14(~~1~~2) RMA, or (c) *discharge*^ of sediment or *slash** authorised by those *rules*^ pursuant to s15(1) RMA.	Discretionary		
12-6 Some activities within *rare habitats**, *threatened habitats** and *at-risk habitats**	Except as regulated by Rules 13-2, 13-10, 13-22, 15-5B, 15-9, 16-3, 16-5, 16-6, 16-8 in relation to any existing small dam *structure*^, 16-13 and 16-14, any of the following activities within a *rare habitat**, *threatened habitat** or *at-risk habitat**: (a) *vegetation clearance**, *land disturbance** or *cultivation** pursuant to s9(2) RMA (b) *forestry** pursuant to s9(2) RMA that does not meet *condition*^, standard or term of Rule 12-2 (b)(iii) or (c) (c) the drilling, construction or alteration of any *bore** pursuant to	Discretionary		

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	s9(2) RMA (d) activities restricted by s13(1) or s13(2) RMA in the *beds*^ of *rivers*^ or *lakes*^ (e) the taking, using, damming or diverting of *water*^ pursuant to s14(2) RMA (f) *discharge*^ of *water*^ or *contaminants*^ into *water*^ or onto or into *land*^ pursuant to s15(1) or s15(2A) RMA.			

Glossary terms

Hill Country Erosion Management Area means an area of land:

a) That has been mapped by a suitably qualified person in accordance with the 2nd or 3rd edition of the Land Use Capability Survey Handbook (Lynn et al., 2009) and comprises one or more of the following Land Use Capability Units; or

LUC unit (Manawatu Classification)
[LUC units to be set out as derived from the Manawatu classification which covers the Horizons region.

b) That has not been mapped in accordance with (a) and has a pre-existing slope of 20 degrees or greater.