PART C – USE AND DEVELOPMENT: COASTAL MARGIN

7A Consolidated regional plan provisions inserted by various national directions

Introduction

7A.1 From time to time, national directions (e.g. in national policy statements, national environmental standard or other forms of regulation direction issued by Central Government Ministers) directs councils to insert provisions or amend plan provisions as soon as practicable **without** using a Schedule 1 RMA process. This chapter consolidates the various objectives and policies that have been directed to be in regional plans. These objectives and policies are to be treated just like any other regional plan objective or policy included elsewhere in the RCEP.

7A.2 Consolidation is done for ease of reference and avoiding repetition throughout multiple chapters of the regional plan.

OBJECTIVES

Objective 7A.1 Fish passage [a]

The passage of fish is maintained, or is improved, by instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.

POLICIES

Policy 7A.1 Natural inland wetlands [b]

The loss of extent of natural inland wetlands is avoided, their values are protected, and their restoration is promoted, except where:

(a) the loss of extent or values arises from any of the following:

(i) the customary harvest of food or resources undertaken in accordance with tikanga Māori

(ii) restoration activities

(iii) scientific research

(iv) the sustainable harvest of sphagnum moss

(v) the construction or maintenance of wetland utility structures (as defined in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020)

(vi) the maintenance or operation of specified infrastructure, or other infrastructure (as defined in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020

(vii) natural hazard works (as defined in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020); or

(b) the regional council is satisfied that:

(i) the activity is necessary for the construction or upgrade of specified infrastructure; and

(ii) the specified infrastructure will provide significant national or regional benefits; and

(iii) there is a functional need for the specified infrastructure in that location; and

(iv) the effects of the activity are managed through applying the effects management hierarchy.

Policy 7A.2 Loss of river extent and values [c]

The loss of river extent and values is avoided, unless the council is satisfied:

(a) that there is a functional need for the activity in that location; and

(b) the effects of the activity are managed by applying the effects management hierarchy.

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[a] Objective 7A.1 was inserted in accordance with the direction stated in Clause 1.7 and Clause 3.26(1) of the National Policy Statement for Freshwater Management 2020 and took effect from 3 September 2020.

[b] Policy 7A.1 was inserted in accordance with the direction stated in Clause 1.7 and Clause 3.22(1) of the National Policy Statement for Freshwater Management 2020 and took effect from 3 September 2020.
NOTE: For meanings of some terms referenced in Policy 7A.1, refer to Clause 3.21 of NPSFM2020.

[c] Policy 7A.2 was inserted in accordance with the direction stated in Clause 1.7 and Clause 3.24(1) of the National Policy Statement for Freshwater Management 2020 and took effect from 3 September 2020.

Policy 7A.3 DISCHARGE PERMITS – Matters for consideration in catchments other than Tukituki River catchment [d]

(1) When considering any application for a discharge the consent authority must have regard to the following matters:

(a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and

(b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.

(2) When considering any application for a discharge the consent authority must have regard to the following matters:

(a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of the people and communities as affected by their contact with fresh water; and

(b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of the people and communities as affected by their contact with fresh water resulting from the discharge would be avoided.

(3) This policy applies to the following discharges (including a diffuse discharge by any person or animal):

(a) a new discharge or

(b) a change or increase in any discharge –

of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

(4) Policy 7A.3(1) does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.

(5) Policy 7A.3(2) does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 took effect on 1 August 2014.

(6) Policy 7A.3 does not apply to any application for a discharge permit within the Tukituki River catchment (refer RRMP Schedule 14C).

Policy 7A.4 WATER PERMITS – Matters for consideration in catchments other than Tukituki River catchment [e]

(1) When considering any application the consent authority must have regard to the following matters:

(a) the extent to which the change would adversely affect safeguarding the life-supporting capacity of fresh water and of any associated ecosystem and

(b) the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.

(2) This policy applies to:

(a) any new activity and

(b) any change in the character, intensity or scale of any established activity –

that involves any taking, using, damming or diverting of fresh water or draining of any wetland which is likely to result in any more than minor adverse change in the natural variability of flows or level of any fresh water, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).

(3) Policy 7A.4 does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management took effect on 1 July 2011.

(4) Policy 7A.4 does not apply to any application for a water permit within the Tukituki River catchment (refer RRMP Schedule 14C).

[d] Policy 7A.3 was inserted in accordance with the direction stated in Policy A4 of the National Policy Statement for Freshwater Management 2014 and took effect from 1 August 2014. It was amended further in accordance with the direction stated in amended Policy A4 of the National Policy Statement for Freshwater Management 2014 (amended 2017) and took further effect from 7 October 2017.

[e] Policy 7A.4 was inserted in accordance with the direction stated in Policy B7 of the National Policy Statement for Freshwater Management 2014 and took effect from 1 August 2014.

8 Land Resources

NOTE: The provisions in this chapter apply only within the Coastal Margin between mean high water springs and the Coastal Environment Inland Boundary identified on the Planning Maps.

Objective 8.1

The sustainable management of the land resource so as to avoid compromising future use and water quality.

Policies

Policy 8.1 To encourage landowners and occupiers to manage the effects of activities affecting soil (including both land use activities and discharges of contaminants onto or into land) in accordance with the environmental guidelines set out in Table 8-1 below.

Table 8-1: Environmental Guidelines - Land.

Issue	Guideline
1. Appropriate land use	Land use activities should not exceed the land use capability of the subject land, as described in Schedule A to this Plan and assessed on-site.
2. Soils prone to wind erosion	Areas prone to wind erosion from land use activities should have preventative or remedial measures applied. The depth of soil (including sand) should not be reduced at a rate that exceeds the natural rate of replenishment.
3. Soils prone to other types of erosion	Where vegetation is removed from areas prone to erosion, best management practices should be followed. These should include replanting the area within 18 months with vegetation that will provide equivalent or better land stabilisation, or other recognised methods that will stabilise land or prevent erosion.
4. Soil health	There should be no long-term degradation of the physical properties (including soil structure) or biological properties (including organic matter content) of soil.
5. Soil contamination	The discharge of contaminants into the soil, including hazardous substances, pathogens and diseases, should be at a level that will not cause acute or chronic toxic effects on humans or other non-target species, or have the potential to reduce long-term land use potential.
6. Earthworks, roading, tracking	In order to meet the surface water quality guidelines set out in Chapter 9 where land is subject to earthworks, best practice should be adopted to mitigate or avoid the effects of runoff into water bodies (as necessary according to the erodibility of the soil).

Policy 8.2 To implement the environmental guidelines for land set out in Policy 8.1 in the following manner:

(a) Non-regulatory methods - The environmental guidelines for land will be implemented predominantly through non-regulatory methods, including the provision of financial incentives, the preparation of farm plans, and the provision of information, field days and other educational services.

(b) Unregulated activities - If necessary, the environmental guidelines will be used as a guide to ascertain whether the provisions of s17 of the RMA have been breached (the duty of every person to avoid, remedy or mitigate any adverse effect on the environment).

(c) Regulatory methods - In association with the above non-regulatory methods to regulate vegetation clearance in accordance with the rules set out in Part E of this Plan where significant adverse effects occur as a result of the vegetation clearance activities.

Explanation and Reasons

Objective 8.1 establishes the overall objective for land management in Hawke's Bay. It is based on the principle that land outside that used for urban, commercial or industrial activities should be used in a sustainable manner such that future use options and water quality are not compromised. The policies, which support the objective, establish how the land resource may be sustainably managed and how Council's land management functions will be implemented. For example, highly fertile flat to rolling land is likely to be suitable for a wide range of uses, including intensive cropping, horticulture, pastoral farming and forestry. By comparison, much of the land in Hawke's Bay is suitable for significantly fewer land use activities. Some areas may not be suitable for pastoral farming and others like very steep, erodible areas, for forestry. Land use capability throughout the Region has been mapped as part of the New Zealand Land Resource Inventory. This information is presented in Schedule A to this Plan. However, the land use capability of specific sites requires individual on-site assessments.

Policy 8.1 establishes environmental guidelines for land. Guideline 1 continues the approach taken in the objective, that land should be used within its suite of sustainable land use activities. As noted above, Schedule A provides more detail on what this means in practice. Guidelines 2 to 6 address both physical parameters (soil erosion, vegetation removal, and earthworks), and chemical and biological parameters (soil health and soil contamination).

The Visual Soils Assessment technique has been developed to provide soil health indicators for use by land users. A state of the environment monitoring framework is being developed for hill and flat land. Until this study is completed, a comparison of existing land use against land use capability will be the primary method of assessing the state of the soil resource in Hawke's Bay. This is shown in the maps in Schedule A of this Plan, which are at a scale suitable for regional assessments. However, the Sustainable Land Use index of specific sites requires individual on-site assessments. Those areas identified as being used outside their capability can be assumed to be at most risk of soil loss or degradation.

The environmental guidelines for land will largely be used in association with non-regulatory methods, based on HBRC's overall stance to continue its approach of imposing very few rules regulating land use activities.

Rules in this Plan are intended to allow most vegetation clearance as permitted activities providing water quality is reasonably protected and the activities do not impact adversely off-site.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
8.1 Land use activities not exceeding land use capability of subject land	% region being sustainably managed against land use capability	Land cover mapping (5 yearly)
8.2 Areas prone to wind erosion have remedial measures applied	% vulnerable land protected by shelterbelts or vegetative cover	Survey (5 yearly)
8.3 Areas prone to erosion are replanted within 18 months	Number of incidents reported/ complaints received	Council records
8.4 No long term degradation of physical or biological properties	Flat land '500 Soils' assessments Hill country –':Visual Soil Assessment' technique	State of Environment monitoring
8.5 Reduction in number of sites with significant levels of contaminants in soils	Level of contamination below that which causes acute or toxic effects on humans, other non-target species, or reduces long term land use potential	Compliance monitoring
8.6 Surface water quality guidelines are complied with	1. Temperature not changed by more than 3 degrees Celsius, nor raised above 25 degrees Celsius 2. Dissolved oxygen not exceeding guideline values 3. Ammoniacal nitrogen levels not exceeding guideline values 4. Soluble reactive phosphorous values not exceeding guideline values 5. No loss of fish species or indigenous invertebrates 6. Clarity in areas used for contact recreation not exceeding guideline values 7. Faecal coliform concentrations not exceeding levels in Schedule D 8. Suspended solid concentrations not exceeding levels in Schedule D 9. Shellfish and other taonga species are safe for human consumption	Council surface water quality monitoring programme Annual SOE Reporting Cultural Health Index Monitoring

9 Surface Water Quality

NOTE: The provisions in this chapter apply only within the Coastal Margin between mean high water springs and the Coastal Environment Inland Boundary identified on the Planning Maps.

Objective 9.1

The maintenance and enhancement of the water quality of rivers and lakes in order that the existing species and natural character are sustained, while providing for resource availability for a variety of purposes, including groundwater recharge, maintenance or enhancement of mauri, and the protection of aquatic ecosystems.

Policies

Policy 9.1 To manage the effects of activities affecting the quality of water in rivers, lakes and wetlands in accordance with the environmental guidelines set out in Table 9-1 and Table 9-2.

Table 9-1: Environmental Guidelines – Surface Water Quality (Guidelines that apply across the entire Coastal Margin).

These guidelines apply after reasonable mixing and disregarding the effect of any natural perturbations that may affect the water body, as set out in Policy 9.2.

Issue	Guideline
1. Temperature	The temperature of the water should be suitable for sustaining the aquatic habitat.
2. Dissolved oxygen	The concentration of dissolved oxygen should exceed 80% of saturation concentration.
3. Ammoniacal nitrogen	The concentration of ammoniacal nitrogen (N-NH4+) should not exceed 0.1 mg/l.
4. Soluble reactive phosphorus	The concentration of soluble reactive phosphorus should not exceed 0.015 mg/l.
5. Clarity	In areas used for contact recreation, the horizontal sighting range of a 200mm black disk should exceed 1.6 m.
6. Heavy metals	The concentration of heavy metals should not exceed the relevant limits contained in: (a) The contact recreation guidelines contained in 'Microbial Guidelines for Marine and Freshwater Recreational Areas' (Ministry of Health and Ministry for the Environment, June 2003); and (b) The guidelines for the protection of aquatic ecosystems contained in the 'Guidelines for Fresh and Marine Water Quality 2000' (ANZECC, 2000).

Table 9-2: Environmental Guidelines – Surface Water Quality (Guidelines that apply to specific catchments).

These guidelines apply after reasonable mixing and disregarding the effect of any natural perturbations that may affect the water body, as set out in Policy 9.2.

Catchment Area	Faecal Coliforms (cfu/100ml)	Suspended Solids (mg/l)
Aropaoanui River	200	50
Clive River and tributaries	200	10
Esk River	200	50
Ikanui Stream	200	50
Kopuawhara Stream	200	50
Mangakuri Stream	200	50
Maraetotara River	200	50

Catchment Area	Faecal Coliforms (cfu/100ml)	Suspended Solids (mg/l)
Mohaka River	50	10
Ngaruroro River downstream of the Expressway Bridge	150	25
Opoutama Stream	200	50
Porangahau River	200	50
Puhokio Stream	200	50
Tukituki River downstream of Tamumu bridge	100	10
Tutaekuri River downstream of the Expressway Bridge	150	25
Waingonoro Stream	200	50
Waipatiki Stream	200	50
Waipuka Stream	200	50
Wairoa River at and downstream of Frasertown	200	25

* The figures in Table 9-2 represent concentrations of contaminants in the water body that should not be exceeded after reasonable mixing.

Policy 9.2 To implement the environmental guidelines set out in Policy 9.1 predominantly in the process of making decisions on resource consents in accordance with the RMA, and in accordance with the following approach:

(a) After reasonable mixing - The environmental guidelines apply to surface water bodies after reasonable mixing of contaminants, and disregarding the effect of any natural perturbations that may affect the water body. The exception is where water diverted or discharged into water from a hydro-electric power scheme entrains sediment between the point of discharge and the point of reasonable mixing, causing a breach of the suspended sediments guidelines c(i) and c(ii) below. In this case, the guidelines may apply at the point of discharge, disregarding the effect of any natural perturbations that may affect the water body;

(b) Point of discharge – Notwithstanding (a) above, where individual circumstances are appropriate, conditions may be imposed on resource consents that require surface water quality parameters to comply with limits measured at the point of discharge;

(c) At or below median flows or levels for all guidelines except suspended solids - All environmental guidelines, except those for suspended solids, apply to flowing surface water bodies when the flow of water is at or less than the median flow, or for non-flowing water bodies, the level of water is at or less than the median level;

(d) At all flows for suspended solids - The guidelines for suspended solids apply as follows:

(i) At times when the suspended solids concentration is less than the specified guideline for a particular water body and location, an activity should not cause, or contribute to, a breach of the specified guideline. In no case should an activity cause more than a doubling of the suspended solids concentration or turbidity of the receiving water body;

(ii) At times when the suspended solids concentration is equal to or greater than the specified guideline, an individual activity should not cause the concentration of suspended solids or the turbidity in any river or lake to increase by more than 10%, as determined on a case by case basis;

[Note: HBRC recognises that some resource users prefer to measure clarity, rather than concentrations of suspended solids or turbidity. While there is not a direct relationship between suspended solids and clarity that can be applied across the Region, the HBRC is happy to work with any such resource users to establish allowable changes in clarity corresponding to the suspended solids limits where this is required.]

(e) Existing good water quality - Where existing water quality is better than the guidelines, no more than minor degradation of water quality will be allowed;

(f) Improvement of poor water quality - Where existing water quality is poorer than the guidelines, the following approach will be adopted:

(i) Regulated activities - Where activities that are regulated by way of resource consents (e.g. discharges of contaminants into water) are the predominant cause of poor water quality, improvements will be sought at the time of granting, review or renewal of the consent while having regard to the following:

- the degree to which the activity adversely affects aquatic ecosystems and contact recreation
- the extent to which the activity causes the poor water quality relative to other activities

- for existing activities, the need to allow time to achieve the required improvements.

Where activities that are regulated by way of resource consents are not the predominant cause of degraded water quality, conditions will be imposed on such consents to avoid further degradation of water quality unless the HBRC is satisfied that:

- the activity will not cause any significant adverse effects on aquatic ecosystems and contact recreation
- exceptional circumstances justify allowing further degradation or
- in the case of discharges, the discharge is of a temporary nature, or is associated with necessary maintenance work.

(ii) Unregulated activities - Where activities that are unregulated are the predominant cause of poor water quality, non-regulatory methods (as set out in Part F) will be used as the primary means for achieving an improvement in water quality, in particular -

- the provision of financial incentives to facilitate improved land management practices, including the retirement of riparian margins, or to enhance wetlands
- the provision of education and co-ordination.

Where no improvement or where further degradation is evident over time as a result of unregulated activities, the HBRC will consider the need for regulation of these activities.

(g) Recognition of variables - Consideration of the environmental guidelines will take into account the measurement uncertainties associated with variables such as location, flows, seasonal variation and climatic events.

(h) Temporary / maintenance activities (including those required for the management of a commercial forest) - Consideration of the environmental guidelines in relation to discharges will take into account the degree to which a discharge is of a temporary nature, or is associated with maintenance work.

Explanation and reasons

Prior to this Plan being prepared, the HBRC had already established an approach of managing rivers, lakes and wetlands for the purposes of aquatic ecosystems in its former Regional Policy Statement and Regional Water Resources Plan. These documents had also signalled the need to manage water quality for the purpose of contact recreation where this was practicable and desirable. Objective 9.1 above continues this overall approach – it establishes that rivers, lakes and wetlands are to be managed for both aquatic ecosystems and contact recreation purposes, where appropriate. During the life of this Plan the Council will continue to work towards surface water management on a catchment by catchment basis. The goal of managing for contact recreation purposes does not pre-suppose that contact recreation will occur, but rather sets a guideline which is another stage in the overall attainment of better water quality. Those stretches of river near the coast which are influenced by the sea will have guidelines which reflect the water quality expectations of the coastal marine area. These are set out elsewhere in this Plan.

Policy 9.1 sets out the surface water quality guidelines. In most cases, existing water quality reaches the levels set. However in some cases, such as faecal coliforms, there is a need for improvement. Overall, the water quality of Hawke's Bay's rivers and lakes compares quite favourably with the rest of New Zealand. Indeed, some water quality parameters are at a level throughout the Region that limits the onset of problems, e.g. soluble reactive phosphorus is at a sufficiently low level that it restricts the undesirable growth of green algal slimes. The presence of heavy metal concentrations within sediments can adversely impact upon the benthic community and on organisms which feed upon them. Suspended sediments containing metals and other contaminants affect water quality and can disperse over a wide area. Further research on background (ambient) heavy metal levels is required before guidelines are included in the policies.

The water quality guidelines set out in Policy 9.1 are likely to be refined in future. The Ministry for the Environment is undertaking a substantial amount of work that is likely to influence the resource management approaches of regional councils in future. In particular, the Ministry is developing a suite of environmental indicators, and a methodology classifying specific reaches of catchments for different management purposes. After this information becomes available, the HBRC is likely to build upon, and refine, its present overall direction for water quality management (rather than start afresh). This is likely to mean that, in future, more detailed water management objectives and standards will be developed on a reach-by-reach basis for surface water resources in the Region.

The relevance of the specific water quality parameters chosen in Policy 9.1 is as follows (note that further Explanation and Reasons of the parameters used is provided in Schedule D while the State of the Environment Report and Annual Updates provide information on existing water quality for comparative purposes):

(a) Temperature – Temperature changes have a significant effect on the functioning of aquatic ecosystems; particular increases in temperature have adverse effects.

(b) Dissolved oxygen – An adequate concentration of dissolved oxygen is critical for sustaining aquatic life. An inadequate level is akin to 'suffocating' the aquatic ecosystem.

(c) Ammoniacal nitrogen – Ammoniacal nitrogen is toxic to aquatic fauna and, in sufficient concentrations, can also be linked to adverse instream pH and hardness. High concentrations are generally as a result of animal faecal material and decomposing organic matter being carried into waterways.

(d) Soluble reactive phosphorus – The presence of high concentrations of soluble reactive phosphorus can result in undesirable biological growths. It can also indicate that land use practices may not be appropriate, e.g. fertiliser application, grazing or cultivation of river margins. Soluble reactive phosphorus is naturally low in waterways in Hawke's Bay – maintaining these low levels will assist in the maintenance of instream habitat.

(e) Faecal coliforms – Faecal coliform bacteria are a general indicator of mammalian contamination, including human sewage. In sufficient numbers, faecal coliform bacteria denote a significant health risk. Achieving low levels is thus critical for contact recreation purposes. High numbers can also restrict macroinvertebrate fauna, and increase the abundance of benthic slimes and macro flora.

(f) Suspended solids and clarity – The presence of high levels of suspended solids or turbidity can inhibit the abundance of fish species, and reduce the diversity and abundance of instream life in general and restrict other uses. Poor clarity is likely to restrict contact recreation use.

Policy 9.2 sets out how the surface water quality guidelines are to be implemented. It specifies that the guidelines are to be implemented largely through resource consent processes and then sets out the manner in which the guidelines will be used. This policy makes it clear that, where existing water quality is better than the guidelines, the present water quality should be maintained. By contrast, where existing water quality is worse than the guidelines, the Council will seek improvements by way of resource consents or non-regulatory methods as appropriate.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
9.1 Surface water bodies suitable for sustaining aquatic ecosystems	1. Temperature not changed by more than 3 degrees Celsius, nor raised above 25 degrees Celsius 2. Dissolved oxygen not exceeding guideline values 3. Ammoniacal nitrogen levels not exceeding guideline values 4. Soluble reactive phosphorus values not exceeding guideline values 5. No loss of fish species or indigenous invertebrates 6. Clarity in areas used for contact recreation not exceeding guideline values 7. Faecal coliform concentrations not exceeding guideline values 8. Suspended solid concentrations not exceeding guideline values 9. Enhancement of degraded aquatic habitats 10. Fewer occurrences of algal growth to prevent effects on amenity, cultural values, macroinvertebrates and fish species	Council water quality monitoring programme Annual SOE monitoring and reporting

10 Surface Water Quantity

NOTE: The provisions in this chapter apply only within the Coastal Margin between mean high water springs and the Coastal Environment Inland Boundary identified on the Planning Maps.

Objective 10.1

The maintenance of the water quantity of specific rivers in order that the existing aquatic ecosystems are sustained.

Policies

Policy 10.1 To sustain aquatic ecosystems by establishing a minimum flow in a river as that level which will maintain the existing ecosystem.

Policy 10.2 On rivers (or water management zones) where minimum flows have been established, all takes for which a resource consent is required will be required to cease when the river is flowing at or below the minimum flow. Except that where the taking has, as a primary purpose, the provision of drinking water to people or animals taking could be restricted to the level necessary to maintain human or animal welfare.

Policy 10.3 To provide a known level of risk to resource users by ensuring that, for rivers with an established minimum flow, the total allocation authorised through the resource consent process does not result in authorised takes being restricted for more than 5% of the time on average during the period November – April.

Policy 10.4 To define the allocatable volume as being the difference between the summer 7-day Q95 and the minimum flow.

Policy 10.5 To sustain the natural character of the surface water body when determining the minimum flows and allocatable volumes for surface water bodies in Table 4.

Policy 10.6 To allocate surface water for irrigation purposes on the basis of actual crop requirements up to a maximum equal to that required during a one in five year drought. The allocation assessment will take into account information on crop type, rainfall, potential evapotranspiration rates, and best irrigation management practices. The allocation assessment may also have regard to soil type and moisture holding capacity.

Policy 10.7 To implement Policy 10.1, Policy 10.2 and Policy 10.3 predominantly in the process of making decisions on resource consents in accordance with the RMA, through Table 10-1:

Table 10-1: Minimum flow and allocatable volumes for specified rivers.

River name	Minimum Flow Site Name	Minimum Flow (l/s)	Allocatable Volume (m^3/week)	Map Reference
Esk River	Shingle Works	1400	355 018	V20:432945
Esk River	At SH2	1000	-	V20:438939
Maraetotara River	At Te Awanga Bridge	220	30 971	W21:520661
Ngaruroro River	At Fernhill Bridge	2400	956 189	V21:330729
Nuhaka River	At Valley Road	80	41 731	X19:225329
Pouhokio Stream	At Allens Bridge	80	-	V22:498441
Tukituki River	At Red Bridge	3500	1 407 751	V22:466581
Tutaekuri River	At Puketapu	2000	928 972	V21:357812
Waimaunu Stream	At Duncans	10	15 304	X19:229300

Explanation and Reasons

Policy 10.1, Policy 10.2, and Policy 10.3 recognise that Hawke's Bay is prone to extended dry periods when river flows can decrease dramatically. During these periods it is important to ensure, as far as possible, that aquatic ecosystems are not placed under additional stress over and above that which occurs naturally. In addition, the uses of water provided for as of right by the RMA (domestic use, stock water and fire fighting) need to be safeguarded. The taking of water should also not detract from aquatic or marine ecosystem integrity and function, or adversely affect the use of aquatic resources by tangata whenua in accordance with tikanga Maori.

Policy 10.6 sets out the technical procedure that HBRC will use for the allocation of surface water for irrigation purposes. In essence, HBRC will allocate surface water based on crop water requirements during a 1 in 5 year drought, adjusted according to local data for rainfall and evapotranspiration rates. For planning purposes it is necessary to establish a level of risk. A 20% risk that actual water needs will exceed the authorised volume in any one year (ie: a 1 in 5 year return period) recognises the need to balance crop water needs against the ability of the surface water body to maintain flow above the minimum flow and its ability to recover from a low flow situation. Policy 10.6 also notes that the water will also be allocated on the basis of best irrigation management practices rather than, for example, the amount of water required for an inefficient irrigation system.

Policy 10.4 and Policy 10.7 incorporate the results of investigations undertaken by the HBRC into identifying sustainable management levels for rivers. The general approach to developing minimum flows has been to seek to balance the risks of environmental effects against the needs of stream users for security of supply.

The criteria for setting minimum flows are based on the following:

(a) identified or estimated habitat requirements for a range of species which currently exist in the river
(b) the need to maintain water quality at low flows
(c) the need to meet recreational requirements
(d) Maori cultural and spiritual values
(e) the application of consistent methodology when setting and reviewing minimum flows.

In order to determine the maximum amount of water that could be sustainably allocated from a river the HBRC has selected the 7-day average flow that is exceeded 95% of the time over the summer period November-April as the key statistic. This statistic (the 7-day Q95) was selected because:

(a) it takes account of the natural availability of water within rivers
(b) the November–April period is both the period of lowest flows and the time of greatest water demand in Hawke's Bay
(c) the seven day averaged flow smoothes out short-term variations that can skew low flow estimates
(d) when a river is fully allocated and fully used the river should not drop below its minimum flow for more than 5% of the summer low flow period.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
10.1 The Minimum Flow is established and maintained at levels that provide for the sustaining of aquatic ecosystems and natural character in Hawke's Bay rivers	Measurement of river flow at minimum flow sites	Minimum flow monitoring and analysis
10.2 The maintenance of surface water quantity (other than by natural events) at a level which sustains the aquatic ecosystems in the relevant surface water bodies	Physical and biological parameters	Council SOE monitoring
10.3 Restoration and enhancement of mauri	Physical, biological and cultural parameters	Cultural Impact assessments where available Cultural Health Index monitoring

11 Groundwater Quality

NOTE: The provisions in this chapter apply only within the Coastal Margin between mean high water springs and the Coastal Environment Inland Boundary identified on the Planning Maps.

Objectives

11.1 No degradation of existing groundwater quality in aquifers in the Heretaunga Plains aquifer system.

11.2 The maintenance or enhancement of groundwater quality in unconfined or semi-confined productive aquifers in order that it is suitable for human consumption and irrigation without treatment, or after treatment where this is necessary because of the natural water quality.

Policies

Policy 11.1 To manage the effects of activities affecting the quality of groundwater in accordance with the environmental guidelines set out in Table 11-1.

Table 11-1: Environmental Guidelines – Groundwater Quality.

Issue	Guideline
CONFINED, PRODUCTIVE AQUIFERS IN THE HERETAUNGA PLAINS AQUIFER SYSTEMS	
1. No degradation	There should be no degradation of existing groundwater quality.
OTHER PRODUCTIVE AQUIFERS	
2. Human consumption	The quality of groundwater should meet the '*Drinking Water Quality Standards for New Zealand*' (Ministry of Health, 2005) without treatment, or after treatment where this is necessary because of the natural water quality.
3. Irrigation	The quality of groundwater should meet the guidelines for irrigation water contained in the '*Guidelines for Fresh and Marine Water Quality 2000*' (ANZECC, 2000) without treatment, or after filtration where this is necessary because of the natural water quality.

Policy 11.2 To implement the environmental guidelines for groundwater quality set out in Policy 11.1 predominantly in the following manner:

(a) Resource consents - The environmental guidelines will primarily be used in the process of making decisions on resource consents, in accordance with the RMA;

(b) Regional rules - The environmental guidelines have also been incorporated in conditions, standards and terms in the rules set out in Part E of this Plan as appropriate -

and in accordance with the following approach:

(c) After reasonable mixing - The environmental guidelines will apply after reasonable mixing of contaminants, and disregarding the effect of any natural perturbations that may affect the water body;

(d) Heretaunga and Ruataniwha Plains confined aquifers - To not permit any activity that is likely to cause any degradation of groundwater quality in confined productive aquifers in the Heretaunga Plains and Ruataniwha Plains aquifer systems. This means that activities involving the discharge of contaminants over the recharge areas will be regulated;

(e) Other productive aquifers with good water quality - For other productive aquifers where the existing groundwater quality is suitable for human consumption and irrigation (without treatment, or after filtration where this is necessary because of the natural water quality), to ensure that the groundwater quality remains within these guidelines;

(f) Other productive aquifers with poor water quality - Where existing water quality is poorer than the guidelines for 'other productive aquifers', the following approach will be adopted:

(i) Regulated activities - Where activities that are regulated by way of resource consents (e.g. discharges of contaminants onto land) are the predominant cause of poor water quality, improvements will be sought at the time of granting, review or renewal of consent while having regard to the following:

- the extent to which the activity causes the poor water quality relative to other activities
- for existing activities, the need to allow time to achieve the required improvements.

Where activities that are regulated by way of resource consents are not the predominant cause of degraded water quality, conditions will be imposed on such consents to avoid further degradation of water quality unless the HBRC is satisfied that:

- exceptional circumstances justify allowing further degradation or
- in the case of discharges, the discharge is of a temporary nature, or is associated with necessary maintenance work.

(ii) Unregulated activities - Where activities that are unregulated are the predominant cause of poor water quality, non-regulatory methods (as set out in Part F of this Plan) will be used as the primary means for achieving an improvement in water quality, in particular the provision of education and co-ordination.

Where no improvement or where further degradation is evident over time as a result of unregulated activities, the HBRC will consider the need for regulation of these activities.

(g) Interconnections between aquifers and other water bodies - Aquifers (including unconfined, unproductive aquifers) that have hydraulic connections with other aquifers or surface water bodies will be managed in a manner which avoids any degradation of groundwater quality or a breach of the environmental guidelines for those other water bodies that are hydraulically connected.

Explanation and Reasons

Policy 11.1 recognises the very high quality of groundwater in confined, productive aquifers in the Heretaunga Plains aquifer system (being a significant system partly within the coastal environment), and the strategic importance of this groundwater resources to the Region. It therefore establishes a regime of not allowing any degradation of the quality of this aquifer system.

For other productive aquifers, the objectives and policies continue the approach established in the former Proposed Regional Water Resources Plan of managing the water within these aquifers for the purposes of human consumption and irrigation. This may allow for some limited degradation of groundwater quality, provided the guidelines for human consumption and irrigation are met.

Policy 11.2 sets out how the guidelines for groundwater quality will be implemented. It specifies that the guidelines have been applied through regional rules, and will be used in resource consent processes. It then sets out the manner in which the guidelines will be applied.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
11.1 No degradation of existing groundwater quality in confined productive aquifers	Nitrate levels Pesticides and herbicides Faecal coliform concentrations not exceeding values in Schedule D	Ministry of Health Council SOE monitoring
11.2 Groundwater quality in productive aquifers which meets the *'Drinking Water Quality Standards for New Zealand'* (MoH, 2005)	Nitrate levels Pesticides and herbicides Faecal coliform concentrations not exceeding values in Schedule D	Ministry of Health Council SOE monitoring
11.3 Groundwater quality in productive aquifers which meets irrigation guidelines contained in the *'Guidelines for Fresh and Marine Water Quality 2000'* (ANZECC, 2000)	Nitrate levels Pesticides and herbicides Faecal coliform concentrations not exceeding values in Schedule D	Ministry of Health Council SOE monitoring

12 Groundwater Quantity

NOTE: The provisions in this chapter apply only within the Coastal Margin between mean high water springs and the Coastal Environment Inland Boundary identified on the Planning Maps.

Objective 12.1

The maintenance of a sustainable groundwater resource.

Policies

Policy 12.1 To manage takes of groundwater to ensure abstraction does not exceed the rate of recharge.

Policy 12.2 To manage the available groundwater resource to ensure supplies of good quality groundwater.

Policy 12.3 To manage the groundwater resource in such a manner that existing efficient groundwater takes are not disadvantaged by new takes.

Policy 12.4 To manage takes of groundwater to ensure abstraction does not have an adverse effect on rivers, lakes, springs, or wetlands.

Policy 12.5 To allocate groundwater for irrigation purposes on the basis of actual crop water requirements up to a maximum equal to that required during a one in ten year drought. The allocation assessment will take into account information on crop type, rainfall, potential evapotranspiration rates, and best irrigation management practices. The allocation assessment may also have regard to soil type and moisture holding capacity.

Policy 12.6 To manage the effects of activities affecting quantity of groundwater in accordance with the environmental guidelines set out in Table 12-1.

Table 12-1: Environmental Guidelines – Groundwater Quantity.

Issue	Guideline
1. Demand	The safe yield identified for an aquifer should not be exceeded by a single activity or the cumulative effect of more than one activity.
2. Effects of takes and uses on water quality	Takes should not contribute to the intrusion of salt water into fresh water aquifers.
3. Effects of takes on levels of rivers, lakes, springs and wetlands	Takes should not cause a reduction in the flow of rivers, levels of springs or lakes or ecologically significant wetlands.
4. Effects of new takes on existing authorised users	The take should not adversely impact on existing efficient groundwater or surface water takes unless written approval from affected persons is obtained.

Policy 12.7 To implement the environmental guidelines for groundwater quantity set out in Policy 12.6 predominantly in the following manner:

(a) Regional rules - The environmental guidelines have been incorporated in conditions, standards and terms in the rules set out in Part E of this Plan, and to provide a basis for the level of regulation, as appropriate. In particular, minor takes and uses of groundwater have been permitted provided adverse effects are managed in accordance with the environmental guidelines.

(b) Resource consents - The environmental guidelines will also be used in the process of making decisions on resource consents, in accordance with the RMA.

Explanation and Reasons

Policy 12.1 to Policy 12.6 recognise that groundwater is a critical resource in Hawke's Bay, and in many areas is the main source of water. It is therefore necessary to ensure that the resource is managed in a sustainable manner to accommodate a variety of needs. It is also important to recognise that demand for the resource is high across a variety of sectors, in particular horticulture and agriculture. It is critical that there is a degree of protection for existing resource consent holders and permitted users whose takes are efficient, from adverse effects of new or proposed takes.

Policy 12.5 sets out the technical procedure that HBRC will use for the allocation of groundwater for irrigation purposes. For planning purposes, it is necessary to establish a level of risk. A 10% risk that actual water needs will exceed the authorised volume in any year (ie: a 1 in 10 year return period) is reasonable. This level of risk means that the groundwater allocated will meet crop requirements for a 1 in 10 year drought and will exceed crop requirements in the other 9 years on average. Policy 12.5 also notes that the water will also be allocated on the basis of best irrigation management practices rather than, for example, the amount of water required for an inefficient irrigation system.

Policy 12.7 establishes how the environmental guidelines for groundwater quantity will be implemented. They will be used in rules, and in the resource consent process.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
12.1 Avoid any significant adverse effects of water takes on the long term quantity of groundwater in the regions aquifers	Water level trends	Council SOE monitoring
12.2 The availability of groundwater for use without it being taken at a rate that depletes the resource beyond a sustainable level	Water level trends	Council SOE monitoring
12.3 Avoid or remedy significant adverse effects of groundwater takes on rivers, lakes, springs and ecologically significant wetlands	Flow or level data	Council surface water monitoring programme

13 Beds of Rivers and Lakes

NOTE: The provisions in this chapter apply only within the Coastal Margin between mean high water springs and the Coastal Environment Inland Boundary identified on the Planning Maps.

Objective 13.1

The maintenance or enhancement of the natural and physical resources, and use and values, of the beds of rivers and lakes within the Region as a whole.

Policies

Policy 13.1 To manage the effects of activities affecting river beds and lake beds in accordance with the environmental guidelines set out in Table 13-1.

Table 13-1: Environmental Guidelines – Beds of Rivers and Lakes.

Issue	Guideline
1. Fish passage	The activity should be undertaken in a manner that continues to provide for the existing passage of fish past the structure.
2. Fish spawning	In areas of fish spawning, the activity should be undertaken in a manner that minimises adverse effects on overall fish spawning patterns.
3. Bed stability	No long term or ongoing acceleration of the rate of erosion or accretion of the bed of a river or lake as a result of any activity in a river bed or lake bed.
4. Habitat	Adverse effects on the habitat of aquatic and terrestrial flora and fauna within the bed of a river or lake should be avoided, remedied or mitigated.
5. Flow regimes	Adverse effects on natural flow regimes should be avoided where this is possible, or remedied or mitigated where avoidance is not possible.
6. Other structures and activities	There should be no significant adverse effects, including by way of destabilisation, on lawful existing structures or activities within the bed of a river or lake.
7. Flood risk	There should be no reduction in the channel's capacity that results in adverse flooding effects.
8. Debris risk	There should be no significant impedance to the passage of floating debris.
9. Damage to property	There should be no damage caused, and no increase in the risk of damage, to any property, including river control works, unless written approval is obtained from any affected parties.
10. Temporary activities	Upon completion of any temporary activity affecting the bed of a river or lake, the bed should as far as practicable be restored to no less than the state it was in prior to the activity taking place.
11. Outstanding natural features	Adverse effects on any outstanding natural features within river and lake beds should be avoided, remedied or mitigated.
12. Historic heritage and significant cultural values	Adverse effects on historic heritage features and areas of significant cultural heritage within river and lake beds should be avoided, remedied or mitigated.

Policy 13.2 To implement the environmental guidelines for river beds and lake beds set out in Policy 13.1 predominantly in the following manner:

(a) Regional rules - The environmental guidelines have been incorporated in conditions, standards and terms in the rules set out in Part E of this Plan, and to provide a basis for the level of regulation, as appropriate. In particular, the use, maintenance and removal of structures have been allowed provided adverse effects are managed in accordance with the environmental guidelines.

(b) Resource consents - The environmental guidelines will also be used in the process of making decisions on resource consents, in accordance with the RMA.

Explanation and reasons

Policy 13.1 sets out environmental guidelines for the management of activities affecting river beds and lake beds, including structures in, on, under or over river or lake beds, and bed disturbances. The environmental guidelines address the management of both natural and physical resources within river beds and lake beds.

Policy 13.2 establishes that the environmental guidelines for river and lake beds will be used to guide regulation. They have been used in rules, and will be used in resource consent processes.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
13.1 Fish passage and spawning are able to continue despite the erection or use of a structure or bed disturbance	Abundance of fish in selected locations	Department of Conservation, Fish and Game, HBRC, tangata whenua
13.2 Avoidance, remedy or mitigation of adverse effects on natural flow regimes	Natural flow regimes	Flow monitoring programme
13.3 No significant adverse effects on existing structures or activities within the bed of a river or lake	Destabilisation of existing structures or activities	Compliance monitoring
13.4 No reduction in ability of channels to convey flood flows	River bed cross section profiles	Asset Management Plans and flow monitoring
13.5 No damage to property by works in river beds, without owners' consent	Reports of damage from river control works	Occasional event reports
13.6 Restoration of river or lake bed following temporary activity	As far as practicable the bed is restored to at least its state prior to activity occurring	Compliance monitoring
13.7 Aquatic habitat is maintained at a sustainable level	1. Temperature not changed by more than 3 degrees Celsius nor raised above 25 degrees Celsius 2. Dissolved oxygen not exceeding guideline values 3. Ammoniacal nitrogen levels not exceeding guideline values 4. Soluble reactive phosphorous values not exceeding guideline values 5. No loss of fish species or indigenous invertebrate diversity and abundance 6. Clarity in areas used for contact recreation not exceeding guideline values 7. Faecal coliform concentrations not exceeding with guideline values 8. Suspended solid concentrations not exceeding guideline values 9. Sediments and contaminants not having adverse effects on sedimentary fauna or aquatic ecosystems	Council water quality monitoring programme, and tangata whenua monitoring programmes where available

14 Air Quality

NOTE: The provisions in this chapter apply only within the Coastal Margin between mean high water springs and the Coastal Environment Inland Boundary identified on the Planning Maps.

Objectives

Obj 14.1 A standard of ambient air quality is maintained at, or enhanced to, a level that is not detrimental to human health, amenity values or the life supporting capacity of air, and meets National Environmental Standards.

Obj 14.2 A standard of local air quality is maintained that is not detrimental to human health, amenity values or the life supporting capacity of air.

Obj 14.3 In the Napier, Hastings, Awatoto and Whirinaki Airsheds, improve ambient air quality so that by 1 September 2020 the concentration of PM10 does not exceed 50µg/m3 (24 hour average), more than once in any 12 month period.

Obj 14.4 In the balance of the region outside the Napier, Hastings, Awatoto and Whirinaki Airsheds, the ambient air quality shall be managed in a manner that ensures the concentration of PM10 does not exceed 50µg/m3 (24 hour average), more than once in any 12 month period.

Policies

Policy 14.1 To manage the effects of activities affecting air quality in accordance with the environmental guidelines and standards set out in Table 14-1.

Table 14-1: Environmental Guidelines and Standards – Air Quality.

Issue	Guideline
1. Odour	There should be no offensive or objectionable odour beyond the boundary of the subject property[8].
2. Gases, airborne liquid and other noxious or dangerous contaminants	There should be no noxious or dangerous levels of gases or airborne liquid or other airborne contaminants beyond the boundary of the subject property, in concentrations and at locations that are likely to cause adverse effects on human health, terrestrial ecosystems, aquatic ecosystems or property.
3. Smoke and water vapour	The discharge should not result in any smoke, water vapour or other contaminant that adversely affects navigation, traffic safety, or reduces horizontal visibility within 5m of ground level beyond the boundary of the subject property.
4. Dust	Any dust deposition should not raise the ambient dust deposition rate by more than 4 g/m2 per 30 days at any point beyond the boundary of the subject property.
5. Particulate matter	There should be no objectionable deposition of particulate matter on any land or structure beyond the boundary of the subject property.
6. Ambient air quality	(a) The ambient air quality must remain within the Resource Management (National Environmental Standards for Air Quality) Regulations 2004[9]. (b) Where no national environmental standards exist, the ambient air quality should remain within the New Zealand Ambient Air Quality Guidelines MfE 2002[10]. (c) Where the existing ambient air quality is better than the concentrations specified in relevant national environmental standards and guidelines in (a) and (b) above, there should be no significant degradation of ambient air quality.

8 'Subject property' means the legally defined property, whether private land or public land, within which the subject activity occurs and includes all land that is under common ownership.

9 Ministry for the Environment (2011) Resource Management (National Environmental Standards Relating to Air Quality) Regulations 2004.

10 Ministry for the Environment (2002) Ambient Air Quality Guidelines.

7. Particulate matter – PM10 levels	Concentrations of PM10 in the Hastings Airshed and Napier Airshed shall be reduced using the following strategies: (a) control discharges to air from industrial or trade premises and dwelling houses producing particulate matter; (b) prevent outdoor burning practices contributing any significant PM10 during the time when Objectives 14.3 and 14.4 might not be met; (c) minimise an overall increase in PM10 emissions from other discharge sources, including large scale fuel burning equipment, unless: (i) the PM10 emissions are offset by reductions from other sources of similar emissions, beyond the reductions achieved through the implementation of this Policy; or (ii) the PM10 emissions will not contribute to the ambient PM10 concentrations during the time when an ambient air quality concentration of PM10 is likely to exceed 50 μg/m3 (24 hour average) in any airshed. (d) ensure a reduction in emissions from small scale solid fuel burners by the amount that is sufficient to achieve the National Environmental Standard for PM10 ; (e) ensure that the concentration of PM10 emissions in the Napier and Hastings Airsheds do not increase, and are reduced over time.
8. Decision making – Offsets	The matters to be taken into account when assessing offsets in accordance with Policy 14.1(7), shall include, but not be limited to: (a) the amount of offset required shall be estimated in kilograms of PM10 per day based on the likely worst case daily PM10 emissions from the new activity during the months May to August. If there is no discharge from the new activity during the months May to August then no offset is required. (b) the measurement of the 'offset' discharge must take place at the same time of day as the new discharge or occur at a time of the day when meteorological conditions are more conducive to elevated PM10. The onus is on the applicant to demonstrate this. (c) the 'offset' discharge must be similar to the new discharge in terms of particle mode (fine or coarse) and composition except that it may differ if the applicant demonstrates that the 'offset' discharge is more harmful. (d) the 'offset' discharge must not already be accounted for in air quality improvement programmes. In the Hastings and Napier Airsheds the following activities cannot be used for offsets: (i) removal of open fires (ii) removal of solid fuel burners not complying with the requirements of Schedule K[11] (iii) outdoor burning. (e) the 'offset' must be legally binding and must be effective from the first day of discharge from the new activity and for the duration of the consent for the new activity. (f) the 'offset' can be from a discharge within the same site. For example, an applicant may choose to install control technology such as a bagfilter on an existing discharge to 'make room' for a new discharge. (g) if the new discharge point is at a lower height than the 'offset' discharge the applicant must demonstrate that the 'offset' results in an equal or greater reduction in the maximum ground level concentrations of PM10 (24-hour average). (h) the applicant must demonstrate that the location of the 'offset' discharge/s will have an equal or no greater impact on concentrations of PM10 under meteorological conditions most conducive to elevated concentrations.

11 An exception to this could occur if the 'offset' were only required for a short duration which does not extend beyond the period for which the appliance group is prohibited as per Rule 77.

	(i) The National Environmental Standards for Air Quality must be considered in relation to all 'offsets" as in some situations the National Environmental Standards for Air Quality may restrict their use. Note: For clarification, the 'offset' discharge is the one that is being removed and the "new" discharge is the one that is new. The offset discharge must be therefore equal or "worse than the new discharge so there is an environmental improvement.

Policy 14.2 To implement the environmental guidelines for air quality set out in Policy 14.1 predominantly in the following manner:

(a) Regional rules -The environmental guidelines and standards for air quality have been incorporated primarily in conditions, standards and terms in the rules set out in Part E of this Plan as appropriate. The environmental guidelines for air quality that refer to 'noxious', 'dangerous', 'offensive' or 'objectionable' effects will be interpreted in the manner described in Schedule C of this Plan, and in accordance with any relevant case law.

(b) Resource consents - The environmental guidelines and standards for air quality will also be used in the process of making decisions on resource consents, in accordance with the RMA.

(c) Enforcement – Enforcement action will be used, where necessary, to aid in implementing the standards and terms of the rules set out in Part E of this Plan. Any enforcement action will be undertaken in accordance with the enforcement provisions of the RMA.

(d) Non-regulatory methods - Non-regulatory methods will also be used, where appropriate, in achieving the objectives and implementing policies in Chapter 14, including:

i) liaising with territorial authorities to seek the inclusion of appropriate land use policies, rules and methods within district plans, and building codes, as necessary to meet the objectives and policies within Chapter 14.

ii) the Hawke's Bay Regional Council will influence and inform the community through the development of an appropriate communications and marketing strategy. Information will be provided to assist the community (including industrial and horticultural operators) understand the types of effects that can occur as a result of discharges of contaminants into air and the overall effects of such discharges on ambient air quality. Information will be provided advising appropriate methods to avoid, remedy or mitigate any adverse effects of discharging contaminants into air.

iii) the Hawke's Bay Regional Council will encourage the use of dry wood through education.

iv) the Hawke's Bay Regional Council will develop a best practice guide for the sale of wood by accredited dry wood merchants.

v) provision of financial incentives. The Hawke's Bay Regional Council may choose to provide incentives and financial assistance to assist achievement of Objective 14.3, thereby complying with National Environmental Standard for PM10.

vi) development of a best practice guide for outdoor burning to ensure that those undertaking the activity are aware of what steps need to be taken to minimise the effects from outdoor burning.

vii) encouraging people currently using open fires and small scale solid fuel burners that are not NESAQ compliant burners to install cleaner forms of heating.

(e) Resource Management Regulations - National Environmental Standards apply across New Zealand. These national standards may prohibit or restrict certain types of activities affecting air quality. The Hawke's Bay Regional Council will enforce these standards in accordance with (c) above.

Explanation and reasons

Prior to this Plan being prepared, the Hawke's Bay Regional Council had already established an approach for air management in its former Regional Air Plan. Objective 14.1 continues the direction set by the objectives of this former Plan. In particular, it recognises the need to focus on both ambient air quality and local air quality. Similarly, the environmental guidelines set out in Policy 14.1 follow the direction set in the former Regional Air Plan for regulating discharges of contaminants into air. This policy seeks to manage the range of effects that can be caused by discharges of contaminants into air, drawing on common conditions contained in rules in the former Regional Air Plan and in resource consents granted by the Hawke's Bay Regional Council.

Guidelines 1 to 5 largely address localised effects, recognising that these are the most common air quality problems. By comparison, Guideline 6 addresses ambient air quality. Ministry for the Environment has produced Ambient Air Quality Guidelines for a range of key air contaminants which detail the minimum requirements that outdoor air quality should meet in order to protect human health and the environment. Five of these guidelines have been implemented as mandatory standards in the form of National Environmental Standards which are Regulations under the Act. The guideline and standard values are applied as a 'bottom line', and where existing air quality is better than the Guidelines and Standards (which is the case for most areas in Hawke's Bay), the present air quality should be maintained. In other words, the existing ambient air quality should not be allowed to degrade to a level of contamination beyond that specified in the NZ Ambient Air Quality Guidelines and National Environmental Standards for Air Quality (NESAQ).

PM10 ambient air quality in Hastings and Napier can be poor in winter and in 2008 did not meet the National Environmental Standards for PM10 with the main contribution coming from domestic heating sources; air quality within the Whirinaki and Awatoto Airsheds is also poor. However, the main contributor within these relatively small and focussed airsheds is industry. Excessive concentrations of PM10 are associated with numerous health problems ranging from minor irritation of the eyes and nose to exacerbating existing respiratory problems among small children and the elderly in particular.

Objective 14.3 defines the ambient air quality PM10 concentration to be achieved in the Napier, Hastings, Awatoto and Whirinaki Airsheds. Objective 14.4 covers the rest of the region and ensures the existing ambient air quality PM10 concentration remains less than 50µg/m3 (24 hour average), with no more than one annual exceedence. Guideline 7 specifies strategies to reduce PM10 concentrations in the Hastings and Napier Airsheds to a level which complies with the NESAQ for PM10.

Objectives 14.3 and 14.4 and Guideline 7 have been adopted in response to the National Environmental Standards for Air Quality set by Ministry of the Environment in 2004. Objective 14.3 predates the 2011 amendments to the National Environmental Standards for Air Quality, which revised the timeframes for compliance with the ambient PM10 standard from 2013 to either 2016 or 2020, depending on the number of times the ambient PM10 standard was exceeded in an Airshed at 1 September 2011. The amended regulations require the National Environmental Standard for PM10 to be met in the Napier Airshed by 1 September 2016, and in the Hastings, Awatoto and Whirinaki Airsheds by 1 September 2020.

The Hawke's Bay Regional Council will monitor changes in PM10 concentrations in these airsheds. If monitoring indicates that the Objective 14.3 will not be met, or that Objective 14.4 is at risk of being compromised, the Council will initiate further measures, in addition to those outlined in the Plan. These measures may be regulatory, non-regulatory, or a combination of both.

Policy 14.2 establishes that, unlike the environmental guidelines for land (which will largely be used in a non-regulatory manner), the environmental guidelines for air quality have been used to guide regulation as the principal means of meeting the air quality objectives. The guidelines have been used in rules, and will be used in resource consent processes. Policy 14.2(a) cross-references Schedule C of this Plan, which provides some guidance on interpretation of the terms 'noxious', 'dangerous', 'offensive' or 'objectionable'. These terms are commonly used in the regulation of discharges of contaminants into air.

Regulatory and non regulatory methods will play a significant part in meeting Objective 14.3. Policy14.2(d)(i) will help integrate decision making under the Resource Management Act and Building Act and ensure that regional council and territorial authority requirements are considered at the same time. Policy 14.2(d)(ii),(iii),(iv) recognises that awareness about effects can lead to people adopting practices which can bring about changes in the quality of the air resource, and that information transfer can be an effective alternative to enforcement as a means of changing people's behaviour. In particular, Policy 14.2(d)(ii),(iii),(iv) can focus on educating people about the adverse effects associated with the discharges from domestic fuel burners, open fires and outdoor rubbish burning. Many of the problems associated with domestic heating are caused or exacerbated by ongoing use of open fires and small scale solid fuel burners that do not meet the NESAQ emission standards, incorrect use of appliances, and the use of poor quality fuels. While the use of NESAQ compliant burners will improve environmental outcomes and assist the Council in meeting Objective 14.3, it is acknowledged that the use of heating appliances which reduce or minimise incorrect operation and can only use clean energy sources or dry fuels, will further improve air quality within Napier and Hastings. Similarly, problems associated with vegetation burning often relate to when and how burning is undertaken. Both these issues can be addressed through education of the public about their burning and heating practices. Policy 14.2(d)(v) states that the Hawke's Bay Regional Council may choose to provide financial packages to encourage the maximum uptake by households of NESAQ compliant burners and/or clean heating systems.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
14.1 No offensive or objectionable odour beyond the boundary of any subject property	Number, nature and type of resource consent, and reported incidents of odour	Compliance monitoring Incident monitoring
14.2 No noxious or dangerous gases or airborne liquid or other airborne contaminants beyond the boundary of any subject property	Number, nature, type and location of resource consent, and reported incidents of spray drift and other contaminants	Compliance monitoring Incident monitoring
14.3 Reduction in number of incidents where smoke, water vapour or other contaminants reduce visibility or affect traffic safety	Visibility monitoring	5 yearly monitoring for input into State of the Environment Report Incident monitoring
14.4 Reduction in occurrences of dust deposition which do not comply with guidelines beyond subject property boundary	Dust deposition should comply with the guidelines value of 4g/m2 per 30 days	Annual State of the Environment update reporting Incident monitoring
14.5 Reduction in occurrences of objectionable deposition of particulate matter beyond subject property boundary	The accumulation of particulate matter	Annual State of the Environment update reporting Incident monitoring
14.6 Ambient Air Quality	NO2, SO2, and CO	Four yearly monitoring
14.7 By 1 September 2020 the concentration of PM10 in any airshed is not exceeding 50µg/m3 (24 hour average), more than once in any year	PM10	Compliance monitoring in accordance with Resource Management (National Environmental Standards for Air Quality) Regulations 2004

15 Coastal Hazards

Objectives

Obj 15.1 Risks posed by coastal hazards to people and property are avoided or mitigated.

Obj 15.2 The avoidance of new and further inappropriate development in areas identified as being currently at risk of coastal erosion or inundation (ie: those areas within Coastal Hazard Zone 1).

Obj 15.3 The avoidance of new and further inappropriate development in areas identified as being at risk of coastal erosion or inundation during the next 100 years (ie: those areas within Coastal Hazard Zone 2 or Coastal Hazard Zone 3), taking into account the risk associated with global sea level rise and the level of protection afforded by natural coastal features and lawfully established coastal protection structures.

Policies

Policy 15.1 To manage coastal erosion and inundation risks in accordance with the environmental guidelines set out in Table 15-1.

Table 15-1: Environmental Guidelines – Coastal Hazards.

Issue	Guideline
1. Management approach	Coastal hazards will be proactively managed in the following prioritised ways: (a) avoidance of new development in areas that are, or have potential to be, subject to coastal erosion or inundation (b) maintaining and enhancing natural values and features that provide a buffer against coastal erosion and inundation (c) relocation and removal of existing uses and development from areas at risk of coastal hazards will be evaluated, and implemented if appropriate; (d) evaluating, then implementing if appropriate, activities which mitigate coastal hazards (for example, beach renourishment); and then (e) evaluating, then implementing if appropriate subject to Guideline 12, permanent structures (for example, sea walls, groynes, artificial reefs) to mitigate coastal hazards.
2. Identification of coastal hazard areas	With the availability of new or updated information, areas subject to, or likely to be subject to, short and long-term coastal erosion, sea-water inundation, and cliff shoreline instability should be reviewed, identified and managed in an integrated manner. The most recent mid-range IPCC sea level rise scenario should be taken into account in these reviews.
3. Precautionary approach	(a) A precautionary approach will be adopted in the assessment of: (i) areas at risk from short, medium and long-term coastal erosion and inundation hazards and (ii) potential adverse effects of subdivision, use and development in the coastal environment. (b) Where a district plan gives effect to a more precautionary approach to the assessment and management of coastal hazard areas and controls on subdivision, use and development of land within those hazard areas than this Plan, then coastal hazard zones will not be identified in this Plan for those areas.
4. Information	The most up to date information on coastal processes and coastal hazards within the region will be made available to local authorities, statutory agencies and the public to inform people of the relevant risk of coastal hazards in the area, and to encourage people to avoid developing in areas at risk of coastal hazards.

5. Hazard Zone Review	HBRC will review the coastal hazard zones no less than every six years to coincide with sea level rise scenarios reviewed by the IPCC and any subsequent guidance produced by New Zealand's government on planning for climate change and sea level rise.
6. Foreshore protection	(a) Protection and enhancement of natural values and features will be promoted, particularly those that provide a natural buffer against coastal erosion and inundation. These features include significant landscape forms and features which have high amenity, cultural or historical values, along with dunes, gravel barriers, active off-shore sediment reservoirs, intertidal rock platforms and coastal vegetation. Coastal enhancement works will be provided for as a permitted activity. (b) Allowance shall be made for the future inland migration of natural features such as dunes and gravel barriers, as a result of coastal processes (including sea level rise).
7. Existing subdivision, use and development	(a) Where existing subdivision, use and development is subject to, or is likely to be subject to, coastal erosion or inundation, further inappropriate subdivision, use and development within those existing developed areas should be avoided. (b) Further subdivision, use and development may be appropriate in areas where existing subdivision, use and development is subject to, or is likely to be subject to, coastal erosion or inundation if: (i) it is for a temporary activity and/or (ii) it protects or enhances natural features (for example, dunes, wetlands, gravel barriers, intertidal rock platforms) between existing development and the sea and (iii) it presents less than a minor risk of exacerbating coastal hazards and (iv) Council is satisfied that risks from coastal hazards are not increased and (v) its location is proposed as far landward as practicable within the subject property. (c) When assessing options for the management and control of land use activities to avoid or mitigate the effects of coastal hazards, removal of existing uses and avoidance of further development shall be recognised as an appropriate means of managing coastal erosion and inundation hazards. (d) Recognise and provide for local authorities' existing structures, facilities and infrastructure activities within coastal hazard zones, in order to assist them to meet the needs of their respective communities and future generations. (e) land use activities in CHZ1, CHZ2 and CHZ3 that have less than a minor effect on exacerbating coastal hazards, and structures for public recreation facilities, will be provided for as permitted activities.
8. New use and development	New uses and development, (in particular, buildings and infrastructure) should not be located in areas that are, or have potential to be, subject to coastal erosion or inundation, unless: (a) it is for a temporary activity and/or (b) it protects or enhances natural features (for example, dunes, wetlands, gravel barriers, intertidal rock platforms) between existing development and the sea and (c) it presents less than a minor risk of exacerbating coastal hazards. (d) Council is satisfied that risks from coastal hazards are not increased.

9. New subdivision and district plan rezoning	(a) New and further subdivision shall be strongly discouraged within areas subject to, or likely to be subject to, coastal erosion or inundation hazards. (b) District plans should restrict new and further subdivision of land and rezoning of land within coastal hazard zones so subdivision and zoning of land presents less than a minor risk of exacerbating coastal hazards.
10. Deposition and removal of sediment (and other earthworks)	Subject to Guideline 11, deposition and removal of gravel and other earthworks should not occur in, or adjacent to, areas that are, or have potential to be, subject to coastal erosion, unless: (a) it is for a temporary activity; and/or (b) it protects or enhances natural features (for example, dunes, wetlands, gravel barriers, intertidal rock platforms) between existing development and the sea; and (c) it presents less than a minor risk of exacerbating coastal hazards; and (d) Council is satisfied that risks from coastal hazards are not increased.
11. Hazard mitigation works	(a) The ability for local authorities to carry out hazard mitigation works shall be provided for. Such works undertaken to mitigate coastal hazards shall, to the greatest extent practicable, avoid adversely affecting public access, natural character, dynamic coastal processes, historic heritage, landscape and ecological values in the coastal environment. (b) Recognise and provide for the ongoing renourishment of Westshore Beach as an appropriate means of mitigating the effects of coastal hazards on the shoreline.
12. Coastal protection structures	(a) Coastal protection structures should only be used to mitigate coastal hazards when: (i) it is the best practicable option and (ii) no other non-structural alternative is effective or feasible to reduce coastal hazard risk and (iii) the structure is to be located and designed so as to avoid adverse environmental effects to the greatest extent practicable, particularly effects on coastal processes, landscape values and the existing natural character of the coastline and (iv) the structure is to: ▪ serve a use with a functional need to locate in the coastal marine area or ▪ protect areas of existing development and network utility operations from coastal erosion or inundation risks. (b) Maintenance and repair of existing lawfully established coastal protection structures will be provided for in this Plan as a restricted discretionary activity. In considering whether or not to grant consent, Council will have particular regard to the duration of consent to enable the undertaking of maintenance and repair works over an extended period of time.
13. Network utility operations	(a) The continued use and protection of essential infrastructure and services in coastal hazard areas shall be provided for as a permitted activity where the infrastructure and service is located in a road reserve. (b) New and upgraded infrastructure and services should not be located in areas that are, or have potential to be, subject to coastal erosion or inundation risk unless: (i) it is for a temporary activity and/or (ii) it protects or enhances natural features (for example, dunes, wetlands, gravel barriers, intertidal rock platforms) between existing development and the sea and (iii) it presents less than a minor risk of exacerbating hazards and (iv) Council is satisfied that risks from coastal hazards are not increased and

	(v) no other reasonable alternative location or service delivery option exists beyond a CHZ.
14. Temporary activities	(a) The use of land subject to, or likely to be subject to, coastal erosion or inundation for the purposes of temporary activities (and any associated structures) shall be provided for as a permitted activity. (b) Upon completion of any temporary activity that altered the profile of the fore dune, the fore dune should as far as practicable, be restored to no lesser state than it was in prior to the activity taking place.
15. Decision Making	When assessing resource consent applications the following matters shall be taken into account for activities in CHZ1, and in relation to CHZ2 and CHZ3, the following matters should be taken into account (where relevant):- (a) site elevation relative to mean sea level (b) the presence and long-term effectiveness of any lawfully established coastal protection structures (c) sea level rise predictions (d) geological characteristics of the site and surrounding environment (e) the expected life of the proposed activity (f) the purpose and intended use of the proposed activity (eg: habitation, storage of goods and materials, commercial activity, essential infrastructure, or some other purpose). (g) the reasons for the proposed siting or location of the activity on the property relative to the location of coastal hazard zone(s) (h) the findings and recommendations of a site-specific coastal hazard assessment prepared by a suitably qualified person. Site-specific coastal hazard assessments shall address: (i) Impacts of sea level rise using the Intergovernmental Panel on Climate Change's most recent assessment, and figures recommended in the most recent version of guidance manuals published by Ministry for the Environment and/or NZ Climate Change Office. (ii) Shoreline response to storm erosion and flooding: Scientifically appropriate models should be used, such as those based on, but not restricted to, the Bruun Rule or Komar Rule. (iii) Planning horizon: A 100-year planning horizon should be used. (iv) Long term trend: This should be derived from cadastral, aerial photography, surveys, or other reliable historic data. The reference shore adopted should be the toe of the foredune where these land forms occur, or elsewhere should be the seaward limit of vegetation or RL 11.0m datum as appropriate. (v) Short term fluctuation: This should be derived from the most reliable records available at the time for particular stretches of the coast, and should err on the side of caution. (vi) Land stability factor: This should be based on the angle of repose (AOR) of the land geology as defined locally. (vii) Factor of safety: The coastal hazard area assessment should include an appropriate factor of safety, either built into the above criteria and standards, or added on in the final stage in the calculation. (viii) Any profiles (cross sections) should be carried out to accepted surveyors standards and practice. All levels must be in terms of mean sea level to Hawke's Bay datum. (ix) For inundation hazards, sea level rise; minimum annual exceedance probability of 2%; tide level; wave set up; wave runup; factor of safety; and the potential for contaminants to mix with flood waters.

Policy 15.2 To implement the environmental guidelines for coastal hazards set out in Policy 15.1 predominantly in the following manner:

(a) Resource consents - The environmental guidelines will be used in the process of making decisions on resource consents, in accordance with the RMA.

(b) Regional rules - The environmental guidelines have been incorporated into rules, (including conditions, standards and terms) set out in Part E of this Plan and provide a basis for the level of regulation used.

(c) Non-regulatory methods - The environmental guidelines for coastal hazards may also be implemented through non-regulatory methods where appropriate, including the provision of information, advocacy on district plans and resource consent applications (including joint-hearing proceedings), environmental monitoring and reporting, financial incentives, and liaison/consultation with territorial authorities.

Explanation and reasons

Natural disasters or the potential for disasters arise where these dynamic coastal processes interact with human use, property and infrastructure. Primary hazards arising from these interactions include erosion, inundation of low lying areas, and land instability including major slumping, slips and earthflows. There is a significant history of natural disasters and lesser adverse events affecting property at numerous locations along Hawke's Bay's coastline. The entire region's shoreline is prone to storm damage and the influence of cyclical erosion and accretion trends. There is also a risk of erosion due to ongoing and accelerated global sea level rise. Coastal erosion and inundation can and have damaged property and threatened people's safety and wellbeing. Limitations on the supply of sediment to coastal areas and impediments to sediment transport can affect the risks posed by coastal hazards. Also, in many instances, risks of damage to property, people's safety and the environment have increased due to the inappropriate location of assets and activities within hazard-prone areas.

While most natural processes which generate the coastal hazard originate in the coastal marine area, the adverse effects are usually expressed on the land above mean high water springs, where the regional council and territorial authorities have joint responsibilities to ensure such impacts are avoided or mitigated. Sustainable management of the coastal environment with respect to hazards involves consideration of the particular hazard in the wider context (both above and below mean high water springs), and over long-term timeframes. This is necessary to ensure appropriate methods are used to effectively avoid or mitigate natural coastal hazards.

Avoiding permanent development in areas prone to coastal erosion or inundation and taking into account the risk associated with global sea level rise is necessary to promote the sustainable management of the coastal environment's natural and physical resources. This approach enables the community to provide for efficient and effective use of resources and the safety of people and property and recognises the reasonably foreseeable needs of future generations. It also gives a clear indication to resource users that most development in these areas is inappropriate. Some limited forms of development may be appropriate if it does not interfere with coastal processes or the risks of coastal hazards are not worsened. Where existing development is within areas subject to coastal hazards, the risk needs to be minimised. This may be achieved through strategies involving planned retreat of existing development or perhaps strategies to implement physical solutions to mitigate coastal erosion or inundation processes. It is up to a consent applicant to satisfy HBRC about the effectiveness of any proposed measure for mitigating the risks of inundation associated with the proposed activity. For example, an applicant could supply survey data showing that ground levels are or will be raised to a suitable level, or details of building platforms that have been specifically designed in a way that will mitigate against inundation risk.

Any strategic decision for the co-ordinated removal, relocation or even abandonment of public and private assets at risk of being impacted by coastal hazards is often referred to as 'managed retreat.' The extent, scale and timeframes over which retreat could occur will vary depending on a variety of factors. Various scales of retreat include:

(a) micro-retreat, where the elevation of building floors is raised;
(b) relocation within a property's boundaries;
(c) relocation to another site;
(d) large-scale relocation of settlements and associated infrastructure.

Guideline 1(iii) expects an evaluation of 'managed retreat' options as part of a landowners' response or community-wide response to avoiding and mitigating risks associated with coastal hazards. The extent, scale, timeframes, feasibility and practicality of each response will differ. The most likely, but not necessarily only, methods for implementing a managed retreat strategy would be a mix of some or all of the following:

(e) regional and district rules that relate to managing existing uses, restricting new uses, and restricting construction of coastal protection structures;
(f) property title covenants;
(g) education and improved awareness of hazard and consequences;
(h) financial instruments (for example: property purchases, subsidies for relocation, taxation of risk, pre-paid community relocation funds, transferable development rights, etc);
(i) removal, relocation and construction of infrastructure out of at risk areas;
(j) insurance incentives and disincentives.

Responses to coastal hazards should be prioritised. Guideline 1 outlines a prioritised approach (from avoidance of the hazard in the first instance; followed by maintenance and enhancement of natural features and buffers; then in cases where existing development is threatened, consideration of relocating or removing such development; then evaluating the use of beach nourishment solutions to mitigate the coastal hazard. The use of structural works is considered only after these other priorities have been evaluated and deemed inappropriate or not feasible. Even then, the use of structural protection works needs to be proven as the best practicable option. These priorities are outlined further in Guidelines 6-11 that give effect to policies in Chapter 3 of the NZCPS, particularly Policy 3.4.6.

Guidelines 2-4 are consistent with Policies 3.4.1 and 3.4.2 of the NZCPS which suggest local authorities should identify areas where coastal hazards exist and also take into account the possibility of sea level rise and its effects. A consistent regional approach should give a clear indication of which areas, on extrapolated trends, will be at risk from coastal erosion and inundation within defined time periods. Guideline 5 indicates that coastal hazard zones will be regularly reassessed to coincide with IPCC assessments and guidance from central government. The CHZ review process may or may not reveal a need to amend the CHZs identified in the Plan. If amendments are necessary, then the RMA's plan change process will be used to introduce any such amendments.

Given the importance of network utility operations to the wellbeing of people and communities, it is appropriate that some new infrastructure may be established in coastal hazard areas where there are no other reasonable locations or no other service delivery options. The Plan provides for establishment of network utility operations in coastal hazard zones, but in order to ensure the effects are appropriately managed, a resource consent will be required where they are not located within road reserves.

Guideline 3 gives effect to NZCPS Policy 3.3.1. Adopting a precautionary approach recognises that with further monitoring and research about the region's coastal processes and the effects of activities on those processes, adjustments to the policy and regulatory structure may need to be made at the next review of this Plan. Guideline 3(b) states that regional rules for coastal hazards will not be applied in areas where district plans identify coastal hazard zones and rules apply to subdivision, use and development within such zones. At the time of adopting this Plan, these circumstances were only relevant along the Westshore and Bay View coastline in Napier City.

Guideline 15 is intended to assist decision-makers and resource users by clearly outlining some of the key matters that shall be taken into account when assessing resource consent applications for non-complying activities in CHZ1. Where relevant, these matters should also be applied to assessment of other resource consent applications for

activities in the CHZs. Specific details are provided on the desired type of information to be applied in preparation and review of any site-specific hazard assessments submitted in support of a resource consent application. These 'criteria' will assist in ensuring a consistently high level of quality is presented in such assessments.

Since 1987, gravel has been deposited at Westshore Beach to renourish that beach and mitigate the effects of coastal erosion at Westshore and to a lesser extent, Bay View. Guideline 11(b) recognises that depositing gravel at Westshore Beach is an appropriate and effective way of mitigating coastal erosion in that location. Renourishment material has historically been sourced from an area just south of the Port of Napier on Marine Parade. A resource consent currently allows up to 30,000m3 of sediment per annum to be extracted from the Parade Gravel Extraction Area for Westshore Beach renourishment purposes until 2017.

Anticipated environmental results

Anticipated Environmental Result	Indicator	Data Source
15.1 Avoidance and mitigation of the risk to property and other values from the effects of natural coastal hazards, in particular storm erosion and storm surge inundation.	Position of shoreline and upper beach crest Volumetric change in beach profile	HBRC Coastal Profile Monitoring Compliance monitoring Incident reports
15.2 Coastal protection structures are only constructed where such structures will not exacerbate the coastal hazard and where potential adverse effects on public and private land, amenity values, ecosystems and natural coastal processes can be avoided, remedied or mitigated.	Position of shoreline and upper beach crest Volumetric change in beach profile Number of incident reports / complaints received Physical and biological parameters	HBRC Coastal Profile Monitoring Compliance monitoring Incident reports