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WQ Water Quantity and Allocation

The contents of section 5.1 are subject to Proposed Plan Change 9 (Region-wide Water Quantity) notified on 18 October 2016 therefore no changes have been made to this section by this amendment.

The explanation/principal reasons for the provisions in this section have been moved to Appendix 1, except where Plan Change 9 applies.

The take and use of geothermal fluid is covered by provisions in the Geothermal Resources section of this regional plan, and the Rotorua Geothermal Regional Plan (for activities in the Rotorua Field), and is not subject to the provisions in section 5 Water Quantity and Allocation.

5.1 Take and Use of Surface Water and Groundwater

Para 1

Section 5.1 of this regional plan addresses consumptive use of water where the water is taken out of a surface water body or groundwater system (e.g. irrigation, industrial use, municipal water supply). The non-consumptive use of water where water is used within the water body and not abstracted from the river, stream or lake (e.g. hydro-generation systems), is addressed in section 5.2 Damming and Diversion.

5.1.1 Issues

Issue 29

The over-abstraction of surface water can degrade water quality and adversely affect ecological values, landscape values, recreational values, Maori customary values and traditional instream uses, the downstream environment, and existing uses.

Para 1

'Pressure abstraction' areas are those where surface water is at or near full allocation relative to the allocation policy, which determines the flow available for use from a specific stream or river. Catchments that are under abstraction pressure are largely in the western Bay of Plenty area (e.g. Waiari, Waimapu, Waipapa, Ohaurere, Kopurereroa, Mangawahi, Uretara (Wharawhara streams), and the Haumea Stream catchment on the Galatea plains. Municipal water takes consume a large proportion of the available low flow allocation in the majority of pressure abstraction catchments. Adverse effects of over-abstraction that are evident in the Bay of Plenty are reduced habitat for fish and invertebrates, reduced water velocities (which can allow the accumulation of sediment and algae), reduced dilution of contaminants (which increases the impact of contaminants such as ammonia), increased water temperature, and reduced oxygen concentration as re-aeration is reduced and plant respiration increases. Over-abstraction of surface water can adversely affect other users, including non-consumptive uses.

Objective	*40, 41, 46*
Policy	*64, 66, 67, 68, 69, 72, 76, 79*
Method	*54, 66, 67, 159, 166, 167, 169, 171, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 185*
Rule	*41, 43*
Schedule	*7*

Issue 30 **Increasing demand for water in the Bay of Plenty is placing pressure on streams, rivers, springs and groundwater.**

Para 1 Increasing water demand in the Bay of Plenty is evident due to increasing amounts of water being abstracted for irrigation, domestic water supply (e.g. life-style blocks), and municipal water supply as a result of population growth. The lack of availability of water resources may limit land use intensification or urban growth in some areas of the region, as increased water abstraction may cause significant adverse effects on the environment.

Objective *44*
Policy *68, 77, 78*
Method *152, 153, 154, 155, 156, 157, 158, 159*
Rule *39, 40, 41, 52,*

Issue 31 **The inefficient use of water can exclude other abstractors from streams and rivers.**

Para 1 Other potential water abstractors may be excluded where a water body is fully allocated, but actual water use is lower than the volume consented by water permits. Inefficient water use also occurs where a greater volume of water is taken than that required to operate the use without wastage.

Objective *39*
Policy *73*
Method *155, 157, 160, 161, 162, 164, 168, 170*
Rule *40, 41, 41A, 43*

Issue 32 **Over-abstraction of groundwater can degrade groundwater quality, and reduce water levels in aquifer systems and associated surface water bodies.**

Objective *43*
Policy *70, 71, 74, 75*
Method *54, 66, 155, 156, 159, 165, 166, 167, 169, 183, 184*
Rule *38, 42, 43*

Issue 33 **Continued abstraction of water from streams and rivers during drought conditions may reduce water flows below that necessary to sustain aquatic life.**

Para 1 It may be necessary to restrict the take and use of surface water during meteorological and hydrological droughts to ensure aquatic life is sustained.

Objective *45*
Policy *80*
Method *158, 163, 172*
Rule *41, 41A, 43*

Issue 34 **Water abstraction from streams and rivers can reduce stream flow variability, which is necessary for instream biota and flushing of stream systems.**

Objective *42*
Policy *65, 68*
Method *152, 155, 158, 159, 169, 171, 172, 173, 175, 176, 177, 181, 185*
Rule *43*

5.1.2 Objectives

Objective 39 Efficient use of water resources in the Bay of Plenty.

Objective 40 Allocation of water resources in the Bay of Plenty recognises hydroelectric electricity generation as a renewable energy source.

Objective 41 Water flows in streams and rivers are maintained to:

(a) Provide protection for existing aquatic life in the water body.
(b) Maintain identified significant ecological values, landscape values, recreational values, and Maori customary values and traditional instream uses of rivers and streams.
(c) Maintain water quality relative to the assimilative capacity of the water body, and the Water Quality Classification of the water body.
(d) Avoid or mitigate adverse effects on downstream environments, and existing uses of the water resource.

Objective 42 Instream flow variability is maintained to sufficient levels to allow for instream biota and stream flushing requirements.

Objective 43 Abstraction of groundwater at a volume and rate that does not:

(a) Permanently or unsustainably lower water levels or decrease groundwater quality in aquifer systems.
(b) Permanently or unsustainably lower water levels in streams or rivers where groundwater and surface water bodies are linked.

Objective 44 Land use changes, including urban growth and land use intensification, are planned to account for water resource limitations of the location, particularly in areas with existing and projected high water demand, and limited water resources.

Objective 45 Water abstractions account for water availability limitations during drought events.

Objective 46 Adequate flows are restored to rivers, streams, including individual reaches where allocation or diversion causes water flow to be at or below the Instream Minimum Flow Requirements set in Schedule 7.

5.1.3 Policies

Policy 64 To establish Instream Minimum Flow Requirements for streams and rivers where water abstraction occurs, that will:

(a) Provide protection for existing aquatic life in the water body.
(b) Maintain identified significant ecological values, landscape values, recreational values, Maori customary values and traditional instream uses of rivers and streams where such values can be adversely affected by lower water flows.
(c) Maintain water quality relative to the assimilative capacity and water quality classification of the water body.
(d) Avoid or mitigate adverse effects on downstream environments.
(e) Provide for the assimilative capacity of the river or stream where there are existing discharges of contaminants to water (refer to Methods 172 and 177).

Policy 65 To allow for flow variation in streams and rivers when allocating water, and controlling the effects of damming and diversion activities.

Policy 66 To allocate surface water according to Policy 71, Policy 73, and Policy 69, and the following (refer to Figure 5 for explanation):

Table 13 Water Allocation Methodology

	Aspect	Policy
Use of Water excluding existing Hydroelectric Power Schemes listed in Schedule 11		
(a)	Low flow allocation.	To allocate no more than the maximum allocatable flow in a stream reach. The maximum allocatable flow is Q_5 7 day low flow minus the instream minimum flow requirement.
(b)	High flow allocation (water harvesting) during periods of high flow.	To consider allocating water flow above the Q_5 7 day low flow for water takes that are of short duration, and do not compromise the instream minimum flow requirement.
(c)	Water allocation for new Hydroelectric Power Schemes that are not otherwise provided for in (a) or (b).	To consider allocating water for new Hydroelectric Power Schemes on a case by case basis to avoid, remedy or mitigate adverse effects on the environment, while: (i) Maintaining the instream minimum flow requirements set in accordance with this regional plan (refer to Schedule 7 or Policy 68). (ii) Requiring the efficient use of the water. Also refer to Policies 65, 67 and 72, and Section 5.2 for Policies relating to the Damming and Diversion of Water.
Dam, diversion or take of water associated with existing Hydroelectric Power Schemes listed in Schedule 11		
(d)	Water allocation for existing Hydroelectric Power Schemes listed in Schedule 11.	To allocate water to avoid, remedy or mitigate adverse effects on the environment, while having regard to relevant instream minimum flow requirements set in accordance with this regional plan, and the value of investment by the existing consent holder. Policy 66(d) applies at the time existing resource consents come in for replacement. Also refer to Section 5.2 for policies relating to the Damming and Diversion of Water.

Notes:

1 All consumptive abstractions and non-consumptive uses, excluding existing Hydroelectric Power Schemes listed in Schedule 11, as defined by their existing resource consents, will be allocated water in accordance with Policy 66(a), (b) and (c). Both consumptive and non-consumptive water uses will reduce the remaining allocatable flow, even though non-consumptive uses may not physically take water out of the water body. Water allocated to non-consumptive uses may be available for allocation downstream of the activity site subject to Policy 66(a), (b) and (c) as appropriate. The release of water from dams is addressed by Policy 81(a).

2 Resource consent conditions will specify the rate of take of water allocated to a consumptive or non-consumptive use.

3 In relation to Policy 66(d), the effects of existing Hydroelectric Power Schemes listed in Schedule 11 will also be considered on case by case basis in accordance with Policy 83. Both consumptive and non-consumptive water uses will reduce the remaining allocatable flow, even though non-consumptive uses may not physically take water out of the water body. Water allocated to non-consumptive uses may be available for allocation downstream of the activity site subject to Policy 66(a), (b) and (c) as appropriate. The release of water from dams is addressed by Policy 81(a).

Policy 67 To take into account adverse effects of water abstraction from rivers and streams on existing downstream water users, including non-consumptive users.

Policy 68 To consider granting an application for a resource consent to take water from a river or stream, subject to an instream minimum flow that is an alternative to that specified in Schedule 7 or Method 179, on a case by case basis, where:

(a) The applicant has proposed an appropriate Instream Minimum Flow Requirement based on new or improved scientific knowledge; and

(b) The adverse effect on aquatic ecosystems is no more than minor; and
(c) The adverse effect on significant landscape, recreational, and Maori customary and traditional heritage values is no more that minor (where the values have been identified as significant through the use of the Criteria for Assessing Specified Matters in the Bay of Plenty Region in the Bay of Plenty Regional Policy Statement); and
(d) The matters listed in Method 177(c) have been considered; and
(e) The adverse effects of the take on existing downstream users, including non-consumptive users, are no more than minor.

Policy 68A

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.

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).

This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management takes effect on 1 July 2011.

Note: This policy was inserted to meet the requirements of the National Policy Statement for Freshwater Management 2011.

Policy 69

To manage water allocation on surface water bodies where there are existing Hydroelectric Power Schemes listed in Schedule 11 in accordance with the following, until resource consents for the existing Hydroelectric Power Schemes come in for replacement:

Table 14 Water Allocation on Surface Water bodies with Hydroelectric Power Schemes

	Hydroelectric Power Scheme as listed in Schedule 11	**Water Allocation Management**
(a)	Kaimai	(i) Upstream of the: • McLaren Falls Dam on the Wairoa River, including Mangakarengorengo River and Tributaries, Opuiaki River and tributaries (including Ngatuhoa, Awakotuku and Mangaonui Streams), Mangapapa River and tributaries; and • Dam and intake structure on the Omanawa River; and • Dam on the Ruakaka Stream; and • Points on Tributary streams 1, 2 and 3 of the Wairoa River where they intersect the Ruahihi Canal, water allocation held by existing consent holders (other than the power scheme owner) will be recognised until the consent expires. (ii) There is no more surface water available for allocation from the following

	Hydroelectric Power Scheme as listed in Schedule 11	Water Allocation Management
		areas: • Upstream of the McLarens Falls Dam on the Wairoa River, including Mangakarengorengo River and tributaries, Opuiaki River and tributaries (including Ngatuhoa, Awakotuku and Mangaonui Streams), Mangapapa River and tributaries; • Upstream of the dam and intake structure on the Omanawa River; • Upstream of the dam on the Ruakaka Stream; • Upstream of the points on tributary streams 1, 2 and 3 of the Wairoa River where they intersect the Ruahihi Canal; unless the water flow in the rivers and streams are above the levels allocated to the power scheme owner. (iii) On the Wairoa River between the McLarens Falls Dam and the Ruahihi Power Station, surface water will be allocated in accordance with Policy 66(a). Any water released from the dam above the required discharge flow is available for reallocation under Policy 66(b) while fully accounting for recreational use between the McLaren Falls Dam and the State Highway 29 Bridge, and where the proposed users recognise that the additional flow is subject to the operating regime used by the hydroelectric power scheme owner. (iv) On the: • Wairoa River downstream of the Ruahihi Power Station; • Omanawa River downstream of the dam and intake structure; • Ruakaka Stream downstream of the dam; • Mangakarengorengo River between the diversion structure and McLarens Falls Dam; • Opuiaki River and tributaries (including Ngatuhoa, Awakotuku and Mangaonui Streams) between the diversion structures and McLarens Falls Dam; • Mangapapa River between the diversion structure and McLarens Falls Dam; surface water will be allocated in accordance with Policy 66(a). Any water released from the scheme or dam is available for allocation under Policy 66(b) where the proposed users recognise that the additional flow is subject to the operating regime used by the hydroelectric power scheme owner.
(b)	Wheao	(i) Upstream of the: • Rangitaiki Intake structure on the Rangitaiki River; and • Wheao Intake structure on the Wheao River; and • Flaxy Dam on Flaxy Creek, water allocation held by existing consent holders (other that the power scheme owner) will be recognised until the consent expires. (ii) There is no more surface water, or groundwater connected to surface water bodies, available for allocation from the following areas: • Rangitaiki River and tributaries above the Rangitaiki Intake structure; • Wheao River and tributaries above the Wheao Intake structure; • Flaxy Creek and tributaries above the Flaxy Dam; Unless the river flow into Lake Matahina is greater than 160 cubic metres per second (160,000 litres per second).
(c)	Aniwhenua	(i) Upstream of the Aniwhenua dam, water allocation held by existing consent holders (other than the power scheme owner) will be recognised until the consent expires. (ii) There is no more surface water or groundwater connected to surface water bodies, available for allocation from the Rangitaiki River and tributaries above the Aniwhenua Dam unless the river flow into Lake Matahina is greater than 160 cubic metres per second (160,000 litres per second).

	Hydroelectric Power Scheme as listed in Schedule 11	Water Allocation Management
(d)	Matahina	(i) Upstream of the Matahina dam, water allocation held by existing consent holders will be recognised until the consent expires. (ii) There is no more surface water or groundwater connected to surface water bodies, available for allocation from the Rangitaiki River and tributaries above the Matahina Dam unless the river flow into Lake Matahina is greater than 160 cubic metres per second (160,000 per second). (iii) Water downstream of the Matahina dam will be allocated in accordance with policy 66(b) where the proposed users recognise that the additional flow is subject to the operating regime used by the hydroelectric power scheme owner.
(e)	Karaponga	(i) Upstream of the Karaponga dam, water allocation held by existing consent holders (other than the hydroelectric power scheme owner) will be recognised until the consent expires. (ii) There is no more surface water available for allocation from the Karaponga Stream and tributaries above the Karaponga dam. (iii) Water downstream of the Karaponga dam will be allocated in accordance with Policy 66(a). Any additional water released from the dam above the required discharge flow from the dam is available for allocation under Policy 66(b) where the proposed users recognise that the additional flow is subject to the operating regime used by the hydroelectric power scheme owner.

Note:

1 Existing consented surface water and shallow groundwater takes, and transfers of such consents in the areas specified in Policy 69 will be allowed to continue. However, there will be no increase in the rate or volume of surface water and shallow groundwater allocated upstream of the Hydroelectric Power Schemes listed in Policy 69, except for water harvesting where river flows are greater than the levels already allocated to the Hydroelectric Power Scheme.

Policy 70 To allocate groundwater according to Policy 73, and at a sustainable yield that avoids permanently or unsustainably lowering water levels, or degrading water quality in aquifer systems.

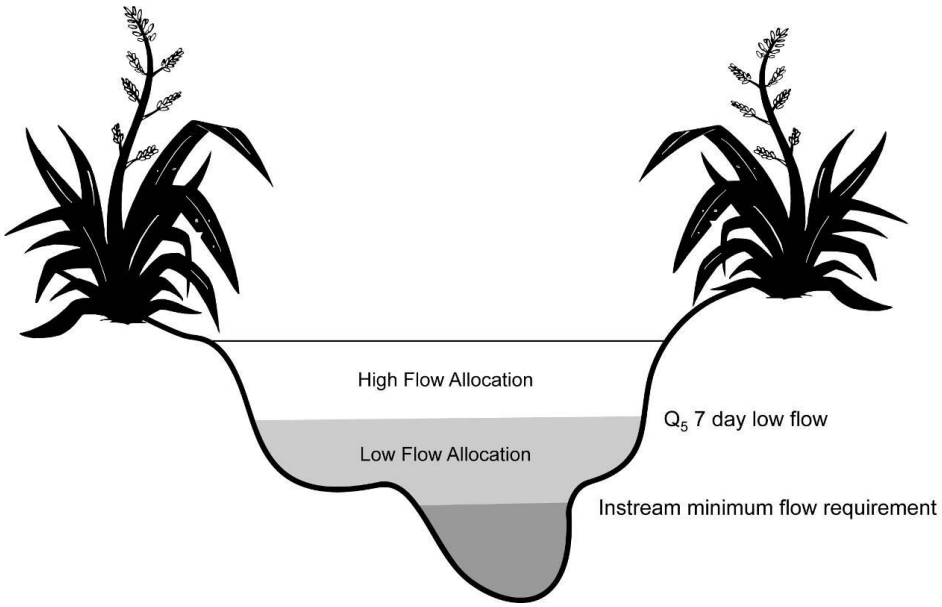
Policy 71 To allocate water on a first in first served basis, subject to efficient use as specified in Policy 73.

Policy 72 To ensure that any allocation of water does not derogate from any existing consents.

Policy 73 To require the efficient use of water where the efficiency is assessed as defined in Method 168.

Policy 74 To investigate the linkage between groundwater and surface water bodies to determine if groundwater takes are adversely affecting water flows in streams, rivers and springs.

Figure 5 Water Allocation Program



Policy 75 To take appropriate action within the framework of this regional plan (including future plan changes) to address the adverse effects of groundwater takes on associated surface water bodies where investigations prove this is a significant issue in the areas noted in Method 184.

Policy 76 To identify catchments that are under abstraction pressure, relative to low flow allocation in Policy 66, and take appropriate action to manage consented water takes in those areas. Pressure abstraction areas are those where surface water abstraction in a stream or river reach is at, or near, full allocation relative to the allocation limits in Policy 66.

Policy 77 To encourage landowners, developers, the city council and district councils to account for water resource limitations before making any land use changes, including land use intensification and urban growth.

Policy 78 To develop and implement a long-term water sustainability strategy to manage future water use in areas of high population growth, or where there is high demand for commercial, industrial, agricultural or horticultural uses.

Policy 79 To assess the adverse effects of proposed abstraction of surface water or the discharge of contaminants to water on the assimilative capacity of the water body when processing resource consent applications. The assimilative capacity will be determined relative to the water quality classification, instream minimum flow requirement, ecological values, landscape values, recreational values, Maori customary values and traditional instream uses of the water body, amount of water already abstracted from the water body, and cumulative effect of existing and proposed activities in the catchment.

Policy 80 To use appropriate measures to restrict the take and use of water during hydrologic or meteorological drought events to ensure the instream minimum flow requirement is not breached as a result of abstraction, while recognising and providing for public health requirements.

5.1.4 Methods of Implementation

Environment Bay of Plenty will:

Long-Term Strategic Overview

Method 152 Develop a long-term water sustainability strategy in conjunction with the city council, district councils, stakeholders and the community (including representatives from commercial, industrial, horticultural and agricultural organisations) to manage future water use requirements in areas of high water demand. The strategy will:

(a) Determine the potential long-term requirement for water resources in the region according to future population growth projections, possible horticultural and agricultural land use changes, and possible industrial growth.
(b) Investigate:
  (i) Surface water and groundwater resource quantities, availability and reliability.
  (ii) Water quality, and the suitability of surface and groundwater quality for various uses.
  (iii) The capacity of those surface and groundwater resources to meet expected future water demand.
  (iv) Water resources that are likely to come under abstraction pressure.
(c) Identify appropriate mechanisms to manage future water use to ensure water is allocated in a fair and equitable manner.
(d) Integrate long-term development and the protection of the Bay of Plenty's water resources in relation to Policy 66 and 70.
(e) Identify areas in the region where:
  (i) There is a lack of water resources that may limit land use intensification or urban growth, as increased water abstraction may cause significant adverse effects on the environment.
  (ii) The area is suitable for non-consumptive uses based on the availability of water resources.

Any changes to the regional plan resulting from the Water Sustainability Strategy will be in accordance with the requirements of Schedule 1 to the Act, and in consultation with the community and stakeholders.

Method 153 Make submissions on district plans and district resource consents in accordance with statutory contacts processes, to advise that land use changes, intensification and urban growth should not occur without adequate assessment of water resources, and account for any limitations on the available resource.

Method 154 Undertake surveys in areas of the region where water is at or near full allocation, or where location-specific projects are being carried out, to identify water takes permitted under Rule 38 and 41, and allowed by Section 14(3)(b) of the Act, for the purpose of establishing an accurate record of water takes in the region.

Method 155 Raise community awareness of:

(a) The adverse effects of the over-abstraction of surface water on the ecological values, landscape values, recreational values, Maori customary values and traditional instream uses, downstream environments, and water users,
(b) The finite characteristics of high quality fresh water resources,
(c) The present allocation of surface and groundwater resources,
(d) The long-term effects of depletion and degradation of groundwater resources, and
(e) The availability of water resources in the region, abstraction pressures, and water limitations in the region.

Method 156 Provide information to the community on the availability and quality of freshwater resources, where such information is available.

Method 157 Encourage the community to:

(a) Use water audits to identify water losses, wastage, or opportunities to conserve or use water more efficiently,
(b) Adopt efficient water use and conservation practices, and
(c) Utilise water conservation devices.

Method 158 Promote and encourage the use of water management methods to reduce surface water abstraction during low flow, particularly in catchments under water abstraction pressure, and to buffer sensitive streams. Such methods include:

(a) Collection of rainwater.
(b) Water harvesting and peak flow collection and storage.

Method 159 Develop and implement a surface water allocation database system that will document the following information for each river or stream where water abstraction is occurring, where appropriate:

(a) The instream minimum flow requirement for each stream reach.
(b) The total volume of water that is available for allocation from each stream reach.
(c) The total volume of water that has been allocated through resource consents.
(d) The volume of water that is available for allocation with regards to (b) and (c).
(e) Other information relevant to water allocation in the water body.

Education, Promotion and Provision of Information

Method 160 Advise the community that section 3A of the Act provides the opportunity for people to use water that has been allocated to another person as part of a resource consent, where the activity complies with the conditions of the original resource consent and the permission of the consent holder has been obtained. **Note:** Water may only be taken from the surface water intake structure or groundwater bore on the original resource consent, but may then be piped or otherwise transported to another site or property.

Method 161 Encourage the adoption of best irrigation management practices.

Method 162 Provide information to the community about the need to use efficient pump technology and appropriate bore construction techniques to adequately and efficiently access groundwater resources. Efficient pump technology and bore construction is where a bore penetrates the aquifer from which water is being drawn at a depth sufficient to enable water to be drawn all year (i.e. the bore depth is below the range of seasonal fluctuations in groundwater level), is adequately maintained, of sufficient diameter, and is screened to minimise drawdown within the bore with a pump capable of drawing water from the base of the bore to the land surface.

Working with Other Resource Management Agencies and the Community

Method 163 Establish a Memorandum of Understanding with the city council, district councils and the Medical Officer of Health regarding the management of water abstraction for municipal water supply during drought events.

Advocacy

Method 164 Advocate that the city council and district councils use individual property water metering systems in reticulated areas to reduce water usage and wastage.

Regulatory Methods

Method 165 Consider using any of the following methods to address the adverse effects of groundwater takes on associated surface water bodies:

(a) Initiate a Plan change to address the outcomes of the investigations in respect to the linkage between groundwater and surface water bodies. This may include, but not be limited to, provisions to control the proximity of groundwater bores to surface water bodies, and the volume of groundwater abstractions.
(b) Work with existing groundwater abstractors, including water user groups where appropriate.

Cross-Reference Also refer to Method 54, Rules 38, 41, 42, 43.

Matters Relevant to Resource Consent Applications and Processing

Method 166 Give preference to existing holders of resource consents for the take and use of water when allocating water in pressure abstraction catchments and existing consents are being replaced. This is subject to the efficient use of water (refer to Policy 73), and that the mechanisms to use the water have already been installed in association with the existing consent (including, but not limited to, irrigation systems).

Method 167 Require the installation of a water measuring device to measure the take of water as a condition on a resource consent for the take of water where any of the following are met:

(a) The take is from a stream where the Q_5 7day low flow is less than 250 litres per second.
(b) The take is for municipal water supply.
(c) The take is from groundwater and the aquifer is at or near full allocation of the sustainable yield. This will be applied to applications for the take and use of groundwater where a sustainable yield for an identified aquifer has been included in the regional plan through a publicly notified change.
(d) The take is from surface water and the cumulative take from the river or stream is approaching full allocation within the river or stream reach.
(e) The take is from surface water in an area that has sensitive or significant ecological values, landscape values, recreational values, or Maori customary values and traditional instream uses.
(f) The take is from a surface water body where water quality is degraded below its Water Quality Classification, or it is necessary to maintain the assimilative capacity of the water body.

Resource consent applicants are advised to consult with Environment Bay of Plenty to determine if this requirement will be enacted for their proposed activity. Water measuring devices can be located on portable pumps. Water measuring devices or methods will be required, as appropriate, relative to the specific activity and site characterises. For example, where a take of water is physically restricted, that restriction may be accepted as a means to measure water flows. A flow meter is not necessarily required to comply with Method 167.

Method 168 Assess the efficiency of the water use of a proposed activity on a case by case basis relative to the proposed use with consideration to the following:

(a) For irrigation activities – soil moisture deficit, evapotranspiration, and reasonable water coverage for crop type. Efficient irrigation use is the minimum volume of water required to optimise production while avoiding or mitigating adverse effects on the environment, using current best management practices.
(b) For commercial, trade and industrial processes – sufficient to meet the needs of the use with minimal waste of water.
(c) For municipal or community water takes – sufficient to meet the needs of the urban area, including projected population growth based on Census figures.

Method 169 Include any of the following conditions on resource consents for the take and use of water where appropriate:

(a) The maximum allowable water take over specific time periods and maximum abstraction rates.
(b) The maximum abstraction rate or volume during water short periods, and the river or stream flow levels at which the action outlined in Method 172 are to be implemented.
(c) Variations to the maximum allowable take over the duration of the consent.
(d) For the take and use of surface water, specify no-take days by catchment, or processes that will be enacted, to allow monitoring of stream flows in their natural condition.

Note: There are also conditions on surface water intake structures in this regional plan that must be complied with – refer to Rule 52 (permitted).

Method 170 Require groundwater bores to be constructed to minimise the leakage of water, including, but not limited to, the protection of headworks against wastage, and the appropriate casing and construction of bores.

Method 171 Use any of the following instruments, where appropriate, to manage existing water takes in surface water abstraction pressure catchments, and aquifers where groundwater levels or quality has been adversely affected:

(a) Use water user groups to encourage the voluntary rostering or rationing of water takes, or pro rata reduction of water takes.
(b) Encouraging, or recommending the surrender or cancellation of unused resource consents pursuant to section 126 and 138 of the Act.
(c) Reviewing consent conditions on large water takes pursuant to section 128 (1) (b) of the Act. Environment Bay of Plenty will review a resource consent in accordance with section 128 of the Act, where it is proven that adverse environmental effects will occur or continue due to the exercise of that consent.
(d) Reviewing resource consent conditions according to actual use pursuant to section 128(1) (a) or (b) of the Act, while allowing for matters under Method 168 (b) and (c).
(e) Promote efficient use of water.
(f) Promote the use of alternative water sources.

In relation to groundwater, such methods may be temporary until groundwater levels or quality return to ‘normal’, particularly where there is saline intrusion of fresh water.

Method 172 Manage water abstraction during drought/low flow events according to the following:

Table 15 Water Management during Drought and Low Flow Events

	Water Flow	Action Taken
Consumptive Water Use		
(a)	River or stream flow is within 10% of the instream minimum flow requirement, or default instream minimum flow requirement.	Consider giving water shortage advice, including: (i) Advising abstractors to restrict non-essential use of water in order to meet water take reduction requirements; (ii) Providing water conservation advice to the community; (iii) Working with city and district councils to reduce community usage of water (iv) Suggesting rostering or rationing to abstractors. Water user groups may also be used to facilitate the voluntary reduction of abstraction during drought events.
(b)	River or stream flow is at the instream minimum flow requirement.	Issue, where appropriate, water shortage directions under Section 329 of the Act to apportion, restrict or suspend water takes, and restrict the discharge of contaminants to water. This includes rationing, rostering, water user groups, or no take days for selected or all abstractors. The memorandum of understanding developed under Method 163 will be implemented at this stage.
Non-Consumptive Water Use		
(c)	River or stream flow is at the instream minimum flow requirement.	Issue, where appropriate, water shortage directions under Section 329 of the Act to apportion, restrict or suspend water use. This includes requiring such uses to be managed to ensure that the discharge from a dam/impoundment is equal to the inflow.

Note:
Water flow is measured assuming all consumptive water takes are occurring, and at their full allocated rate, on the river or stream.

Method 173 Assess the adverse effects of the take of water from rivers and streams on downstream users, including non-consumptive users, in the resource consent process.

Method 174 Initiate early discussion with resource consent holders where an existing water take is above the water allocation limits in Policy 66 or Policy 70, or there is a diversion of water that is greater than required for the use. The discussion will identify measures to comply with the requirements of this regional plan, and be included in resource consent conditions at the time of consent renewal.

Monitoring and Investigation of the Environment

Method 175 Prioritise the establishment of instream minimum flow requirements using the methodology in Method 177 in catchments where:

(a) There are large abstractions and low residual flows.
(b) There are large abstractions and the water permits were issued prior to 1991.
(c) A catchment is under abstraction pressure with regards to Policy 66(a). Pressure abstraction catchments will be identified using Method 182.
(d) Significant ecological values, landscape values, recreational values, Maori customary values and traditional instream uses are potentially adversely affected by water abstraction.

This does not restrict the establishment of an instream minimum flow requirement by a resource consent applicant in other areas.

Method 176 Identify the ecological values, landscape values, recreational values, and Maori customary values and traditional instream uses of a stream or river reach at the time of determining an instream minimum flow in accordance with Method 177.

Method 177 Use the following process and methodology to determine an appropriate instream minimum flow requirement:

Table 16 Instream Minimum Flow Requirement Methodology

	Process	Methodology to be used
(a)	Determine the water flow necessary to sustain aquatic life evident in the stream or river reach.	Use a scientifically accepted ecological assessment method, such as Instream Flow Incremental Methodology (IFIM) or similar. In assessing the effects on instream aquatic life, the method will consider factors including: (i) Hydrological parameters. (ii) Substrate. (iii) Dissolved oxygen. (iv) Water temperature. If RHYHABSIM is selected, use the following steps to interpret habitat flow response curves:
		Step 1 For each species present in the stream or river reach identify a primary flow where habitat is optimum (greatest). Where the flow equating to optimal habitat exceeds the stream's median flow, use the MALF as the primary flow. **Step 2** Multiply habitat at the primary flow by the protection level in Method 178 to obtain a minimum flow for each species present in the stream or river reach. The point of inflection may be used instead of the scaled primary flow in cases where this exceeds the minimum flow otherwise produced, or where any additional loss of habitat is insignificant.
		Step 3 Identify the highest flow of the minimum flows identified for the species present. This is the Instream Minimum Flow Requirement necessary to sustain aquatic life.
(b)	Determine the water flow necessary to sustain significant landscape, recreational, Maori customary and traditional heritage values, where these have been identified as significant through the use of the Criteria for Assessing Specified Matters in the Bay of Plenty Region in the Bay of Plenty Regional Policy Statement, and where those values may be adversely affected by water abstraction.	Ministry for the Environment Flow Guidelines for Instream Values (May 1998)[27].
(c)	Assess the importance of other factors that may be relevant to the environmental quality of the stream or river reach.	Assess effect of lower water flow on the following factors, and take this into account if the effect is important: (i) Water quality class in the river or stream, assimilative capacity of the river or stream and effects on downstream surface water bodies. (ii) Coastal or lake environments. (iii) Instream minimum flow requirements in downstream areas. (iv) Wetlands. (v) Fish migratory pathways and spawning sites. (vi) River or stream mouth closure (some mouths may naturally close periodically). (vi) Flow variability.

[27] Ministry for the Environment, May 1998. Flow Guidelines for Instream Values. Wellington, New Zealand.

	Process	Methodology to be used
		(viii) Habitat requirements of indigenous fauna and trout. (ix) Water temperature. (x) Aquatic flora requirements (e.g. watercress beds). (xi) Lagoon or estuary habitat requirements. The Ministry for the Environment Flow Guidelines for Instream Values (May 1998) may assist this assessment.
(d)	Determine the highest flow resulting from the assessments in (a) to (c).	
(e)	Assess the social, economic, cultural and environmental benefits and costs.	Have regard to the following matters: (i) The value of investment by existing consent holders. (ii) The effect on the operation of existing infrastructure. (iii) Other relevant social, economic, cultural and environmental matters relevant to the stream or river reach.
(f)	Determine the most appropriate instream minimum flow requirement resulting from the assessments in (a) to (e).	

Notes:

1 An Instream Minimum Flow Requirement will not be determined in the following circumstances:

(a) Ephemeral flowpaths (refer to Definition of Terms), or
(b) Artificial watercourses (refer to Definition of Terms), or
(c) Dry streams reaches allowed for in existing resource consent conditions.

2 The adverse effects of existing dams and diversions on aquatic ecosystems and water flows will be considered on a case by case basis when consents are reviewed or replaced consistent with Policy 83.

3 When the Instream Minimum Flow Requirement, determined under Method 177(f) is less than the flow determined by Method 177(d), then the flow determined under Methods 177(d) will included as an Advisory Note in Schedule 7.

Method 178 Use the following protection levels for aquatic life in relation to Method 177(a), except where alternative catchment-specific or area-specific protection levels are ecologically justified:

Table 17 Protection Levels for Aquatic Life

	Significance Criteria	Protection Level (percentage of primary habitat)
(a)	Short-jawed kokopu, Giant Kokopu.	100%
(b)	Banded Kokopu, koaro, black mudfish, dwarf galaxias.	95%
(c)	Significant trout fisheries and spawning habitat as identified in Schedule 1D.	95%
(d)	Diverse indigenous fish communities: Fish community featuring a significant high number of indigenous species. Constituent species that do not meet criteria in (a) or (b) are individually given this protection level.	90%
(e)	Other indigenous aquatic species, migratory pathways of trout to Schedule 1D areas, and other trout populations contributing to Schedule 1D areas.	85%

Notes:

1 Species in (a) and (b) have been sourced from Molly, J., and Davies, A., as upgraded by Tisdall, C., 1994. Setting Priorities for the Conservation of New Zealand's Threatened Plants and Animals. 2nd edition. Department of Conservation.

2 Documents that determine Instream Minimum Flow Requirements will include justification of the protection levels used for that catchment or area.

Method 179 Where an instream minimum flow has not been established in accordance with Method 177, the following flow will be used as the default instream minimum flow requirement: 90% of Q_5 7 day low flow.

Method 180 Initiate a plan change or plan variation in accordance with the requirements of the Act and in consultation with stakeholders and the community, to include Instream Minimum Flow Requirements in Schedule 7 of this regional plan, where they have been determined in accordance with Method 177. Plan changes for the following areas will be publicly notified by the specified dates:

(a) Kaimai area, and Tauranga area – July 2007.
(b) Rotorua area – July 2007.
(c) Rangitaiki River downstream of the Matahina Dam – December 2007.
(d) Eastern Bay of Plenty (excluding (c) and the Rangitaiki River above the Matahina Dam) – December 2008.
(e) Main stem of the Rangitaiki River above the Matahina Dam, Whirinaki River, Haumea River – December 2009.

Method 181 Identify the location of each river or stream reach where an Instream Minimum Flow Requirement will apply as part of each plan change to Schedule 7.

Method 182 Identify pressure abstraction catchments in technical publications that report on stream flows. Such reports are prepared as part of NERMN.

Method 183 Determine sustainable yields for groundwater systems.

Method 184 Investigate the linkages between groundwater and surface water in the Bay of Plenty, as necessary, in the Galatea plains, Opotiki plains, and areas where there are large abstractions of groundwater in the recharge areas of springs used for municipal water supply.

Method 185 Monitor the ongoing appropriateness of instream minimum flow requirements with regards to the ecology of rivers and streams.

Cross-reference Also refer to Methods 66 and 67.

5.1.5 Explanation/Principal Reasons

Para 1 The objectives, policies and methods in this section are necessary to promote the sustainable management of water resources, maintain good quantity of groundwater and surface water, and achieve the integrated management of water and land resources in the Bay of Plenty Region.

Para 2 Objective 39, Policy 73, Method 155, 157, 160, 161, 162, 164 and 170 are to require the efficient use of water, which is a major factor in the sustainable management of water resources. Environment Bay of Plenty is required to have particular regard to the efficient use and development of natural and physical resources by section 7(b) of the Act. Policy 73 is intended to sustain the use rather than allow for peak use, for example to sustain pasture through summer rather than allow for peak growth rates.

Para 3

Policy 66 establishes the surface water allocation regime for the Bay of Plenty, and is necessary to achieve Objective 41. The Q_5 management level for low flow allocation has been set as it represents an acceptable level of risk (the community can expect water restriction one in every five years on fully allocated streams) while allowing sufficient allocatable volume to service reasonable needs. Those communities who can expect water restrictions one in every five years on fully allocated streams will be advised of water restrictions in relation to Method 172. High flow allocation provides for water harvesting or short-term abstractions during high flows (e.g. frost protection, municipal water supply storage), and contributes to the efficient allocation of water while protecting the Instream Minimum Flow Requirement. Method 177 takes into consideration the effect of water abstraction on water quality for consistency with Policy 79 and Objective 45. The methodology to determine Instream Minimum Flow Requirements to sustain ecological values has been established by assessments carried out by Environment Bay of Plenty (refer to Environmental Reports 99/22 and 2000/25[28]). Method 179 will be used where an Instream Minimum Flow Requirement has not been set in accordance with Method 177. The default Instream Minimum Flow Requirement will generally apply where there is low water abstraction from a catchment and it is not cost-effective to carry out investigations. In the absence of an Instream Minimum Flow Requirement established under Method 177, water allocation will be conservative, and as such it is expected that an Instream Minimum Flow Requirement (under Method 177) will be lower than the default Instream Minimum Flow Requirement (under Method 179).

Over-allocated streams will be identified and addressed on a case by case basis using measures appropriate to the circumstances of the individual catchment using Policy 76 and Method 171. Objective 42 and Policy 65 ensure that stream flows variations are maintained and stream hydrographs are not managed as a 'flat line'. This is necessary to sustain stream biota and natural flushing processes.

Para 4

Schedule 7 contains a list of Instream Minimum Flow Requirements set using Method 177. Other Instream Minimum Flow Requirements will be included in Schedule 7 using Method 180. The Instream Minimum Flow Requirement low flow allocation is the 'environmental baseline' and Environment Bay of Plenty will allocate water flows above that level for consented surface water abstraction.

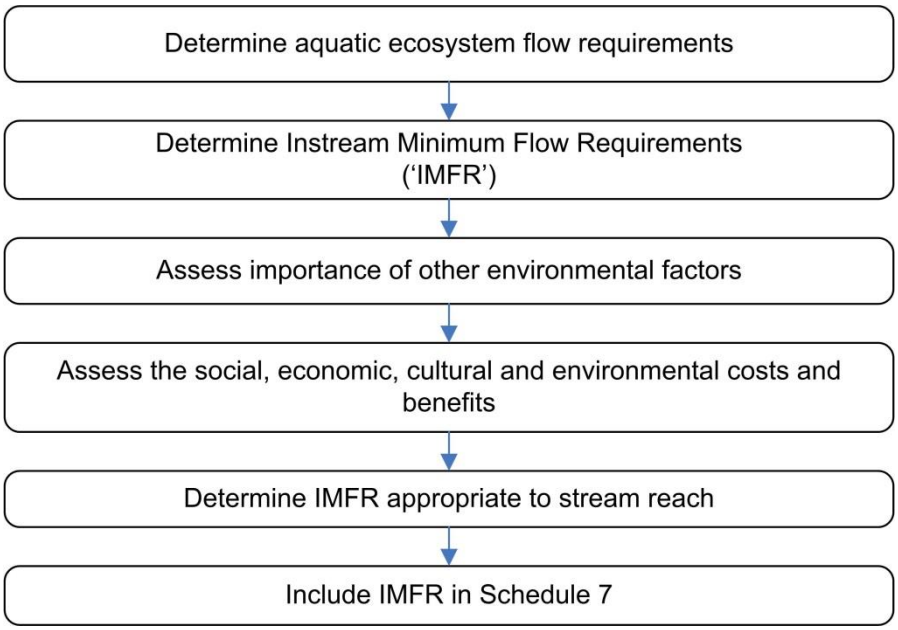
Policy 68 provides for situations where new or improved scientific knowledge is available to a resource consent applicant to determine an Instream Minimum Flow Requirement, while considering the matters specified in Policy 68 and taking into account instream values and existing users. In those situations an Instream Minimum Flow Requirement, different from that in Schedule 7 may be applied when assessing the consent application.

Para 5

Method 177 sets the methodology used to determine Instream Minimum Flow Requirements. This follows from Objective 41, which clearly identifies the water quantity management goals for the Bay of Plenty region. Appropriate Instream Minimum Flow Requirements will be determined for each stream or river reach in relation to aquatic habitat requirements for species present in the reach; other values identified during the Instream Minimum Flow Requirement investigation; the water quality classification of the water body; and other social, economic, cultural and environmental matters relevant to the particular stream or river reach. All the matters listed in Method 177 must be assessed to determine an appropriate Instream Minimum Flow Requirement before it is included in Schedule 7 of the regional plan in accordance with Method 180. Figure 6 explains the Instream Minimum Flow Requirement process. Effects on other water users are assessed during the processing of resource consent applications. Method 178 states the habitat protection level that will be provided by an Instream Minimum Flow Requirement for the species present in the stream or river reach.

[28] Wilding, T.K., 1999. Instream Flow requirements and Water Takes in the Bay of Plenty – A Discussion Document. Environmental Report 99/22. Environment Bay of Plenty.
Wilding, T.K., 2000. Minimum Flow report for the Waitahanui Stream. Environmental Report 2000/25. Environment Bay of Plenty.

Figure 6 Instream Minimum Flow Requirements Process



Para 6 Objective 45 will be achieved through the implementation of Policy 80, Method 169(b), and Method 172. The water flow levels in Method 127 determine the points at which Environment Bay of Plenty will take appropriate action to ensure the Instream Minimum Flow Requirement is not breached as a result of abstractions. The type of actions that will be considered are also listed in Method 172.

Para 7 Policy 71 and Method 166 provide guidance to the community on water allocation. It is not appropriate or economically efficient to specify priority allocation uses in particular catchments as the dominant use may change over the life of the regional plan due to market forces or landowner choice.

Para 8 Policy 77 identifies that water is scarce in some catchments, particularly those under existing abstraction pressure or where water is naturally in low volume, and consideration of this matter should be made before investment is undertaken in major developments that require large amounts of water.

Para 9 Policy 73 and Method 168 are consistent with section 7(b) of the Act. Method 168 provides guidance to the community on how the efficiency of water use will be assessed as part of a resource consent application, and lists the matters relevant to different types of water use activities. Efficient water uses are subject to the water allocation regimes established in Policies 66 and 67 (surface water), and Policy 70 (groundwater). Resource users should not expect to be able to abstract the maximum consented water take during drought events when measures in Method 172 are enacted. Efficient use of water will also be achieved through the implementation of Methods 157, 158, 160, 161, 162, 164 and 170.

Rules

Take and Use of Water

Advisory Note

1 Section 14(3)(e) of the Act allows the take and use of water for fire-fighting purposes. This applies to surface water, groundwater, geothermal and coastal water.

2 Section 14(3)(b) of the Act allows the take and use of freshwater (this excludes geothermal water [greater than 30º Celsius] and coastal water) for:

(a) An individual's reasonable domestic needs,

(b) The reasonable needs of an individual's animals for drinking water,

providing the take or use does not, or is not likely to, have an adverse effect on the environment. Adverse effects include, but are not limited to, effects on other persons, abstraction (either singularly or cumulative takes within the stream) at a rate or volume that cause the water flow to fall below the instream minimum flow requirement (including the default instream minimum flow requirement).

People taking and using water may take a reasonable volume of water for the purposes of (a) and/or (b) above, plus an additional volume as permitted by Rule 38 (groundwater) or Rule 41 (surface water).

Rule 38 **Permitted – Take and Use of Groundwater**

The take and use of groundwater with a temperature of less than 30º Celsius, where the quantity of water taken does not exceed 35 cubic metres per day per property, is a permitted activity.

Explanation/Intent of Rule

To allow minor takes of groundwater for any purpose that are unlikely to have adverse effects on the environment, and to prevent a proliferation of small takes on a single property that may have significant cumulative effects on a groundwater system. This rule allows the take of water for the supply of the persons for their reasonable domestic needs and the needs of their animals. A greater volume is permitted for groundwater takes than for surface water takes (refer to Rule 41) to encourage people to use groundwater, and reduce abstraction pressure on surface water bodies (particularly small streams).

Plan Change 8 (Groundwater Bores and Flooding Conditions)

Rule 39 was subject to Plan Change 8 (Groundwater Bores and Flooding Conditions). Rule 39 and new Rule 39A now relate to the use, maintenance, decommissioning or reconstruction of a hole, bore, well or water infiltration gallery.

Rule 39 **Permitted – Use, Maintenance, Decommissioning or Reconstruction of a Hole, Bore, Well or Water Infiltration Gallery**

The use of land to use, maintain, decommission or reconstruct a hole, bore, well or water infiltration gallery is a permitted activity subject to the following conditions:

(a) the bore design and headworks prevent:
  (i) the infiltration of contaminants; and
  (ii) the uncontrolled discharge or leakage of water to the surface.

(b) the use and maintenance of a bore, well or infiltration gallery is carried out in accordance with Section 1 of Schedule 14 (*Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries*).

(c) the decommissioning of a hole, bore, well or infiltration gallery is carried out in accordance with Section 4 of Schedule 14 (*Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries*).

(d) the reconstruction of an existing hole, bore, well or infiltration gallery:

(i) occurs at the same or similar location, depth, diameter and intercepts the same aquifer interval as the hole, bore, well or infiltration gallery being replaced; and

(ii) is of a previously authorised hole, bore, well or infiltration gallery; and

(iii) a bore log and structural detail log for the hole, bore, well or water infiltration gallery has been previously registered with the Regional Council; and

(iv) is carried out in accordance with Sections 2 and 3 of Schedule 14 (*Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries)*

Advisory Note

1 The use, maintenance, decommissioning or reconstruction of a hole, bore, well or water infiltration gallery as a permitted activity does not confer any right to take or use water.

2 The owner of the hole, bore, well or water infiltration gallery is responsible for the maintenance and must carry out necessary maintenance and repairs to prevent contaminants from entering groundwater or aquifers. Where the owner of the hole, bore, well or water infiltration gallery cannot be traced, then the owner of the site where the hole, bore, well or water infiltration gallery is located may be responsible for the maintenance.

3 For the purpose of this rule, reconstruction is defined as replacement of a previously authorised hole, bore, well or water infiltration gallery that is no longer functional, to the same or similar location, diameter, depth, and intercepting the same aquifer interval as the hole, bore, well or infiltration gallery being replaced. The same or similar location means within a 50 m radius of the existing hole, bore, well or water infiltration gallery.

4 Bores, holes, wells or water infiltration galleries for the purpose of monitoring water levels and water sampling are permitted activities subject to the permitted activity conditions of Rule 39.

Explanation/Intent of Rule

To provide for the use, maintenance, decommissioning or reconstruction of holes, bores, wells or water infiltration galleries to prevent contaminants from entering groundwater or aquifers. It is important that holes, bores and wells are maintained and decommissioned to appropriate standards, as outlined in Schedule 14 of this regional plan.

Rule 39A **Restricted Discretionary – Use, Maintenance, Decommissioning or Reconstruction of a Hole, Bore, Well or Water Infiltration Gallery**

The use of land to use, maintain, decommission or reconstruct a hole, bore, well or water infiltration gallery, where the activity does not comply with any one or more of conditions of Rule 39, is a restricted discretionary activity.

The Regional Council restricts its discretion to the following matters:

(a) The use and maintenance of the bore, well or infiltration gallery, which shall be in accordance with Section 1 of Schedule 14 (*Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries*).

(b) The method of decommissioning the hole, bore, well or infiltration gallery which shall be in accordance with Section 4 of Schedule 14 (*Standards for the Construction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries*).

(c) The method of reconstructing an existing hole, bore, well or infiltration gallery is carried out in accordance with Sections 2 and 3 of Schedule 14 (*Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries*).
(d) Measures to avoid, remedy or mitigate the adverse effects of the activity on groundwater quality.
(e) The duration of the resource consent.
(f) Information and monitoring requirements.
(g) Administration charges under section 36 of the Act.

Explanation/Intent of Rule

To allow The Regional Council to assess the potential adverse effects of holes, bores, wells and infiltration galleries that do not comply with the conditions of Rule 39 in order to ensure that contaminants are prevented from entering groundwater or aquifers.

Plan Change 8 (Groundwater Bores and Flooding Conditions)

Rule 40 was subject to Plan Change 8 (Groundwater Bores and Flooding Conditions). Rule 40 and new Rules 40A and 40B now relate to the drilling of land and the installation or alteration of a hole, bore, well or water infiltration gallery.

Rule 40 **Permitted – Drilling**

The drilling of land, where the activity does not intercept a water table or aquifer is a permitted activity.

Advisory Note

1 The drilling of land as a permitted activity does not confer any right to take or use water.
2 The rules in this regional plan do not authorise the modification or disturbance of any archaeological or registered waahi tapu sites within the area of the activity. Should any artefacts, koiwi (human remains) or any other sites of archaeological or cultural significance be discovered within the area affected by the activity, written authorisation should be obtained from the Historic Places Trust before any damage, modification or destruction is undertaken.
3 For the purposes of this rule, drilling is the act or method of boring a cylindrical hole in the earth and excludes the installation of sub-soil drains.

Explanation/Intent of Rule

To provide for minor drilling activities that do not intercept a water table or aquifer and the risk of contaminants entering groundwater or aquifers as a result of these activities is minor.

Rule 40A **Controlled – Drilling**

The drilling of land, and associated discharge of drilling fluid, where the activity:

1 Does intercept a water table or aquifer; and,
2 Is not for the purpose of constructing a bore;

Is a controlled activity.

The Regional Council reserves its control over the following matters:

(a) Location and depth of the drilling.
(b) The method of drilling, which shall be in accordance with Section 2 of Schedule 14 (*Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries.*

(c) Management of the drill hole on completion.
(d) The proximity of the hole to surface water, potential sources of groundwater contamination, and existing bores.
(e) Measures to avoid, remedy or mitigate the adverse effects of the activity on groundwater quality and quantity and pressure.
(f) The duration of the resource consent.
(g) Information and monitoring requirements.
(h) Administration charges under section 36 of the Act.
(i) Decommissioning requirements.

Notification

Applications for controlled activities under Rule 40A do not require the written approval of affected persons, and shall not be publicly notified except where the Regional Council considers special circumstances exist in accordance with Section 94C of the Act.

Advisory Note

1 The rules in this regional plan do not authorise the modification or disturbance of any archaeological or registered waahi tapu sites within the area of the activity. Should any artefacts, koiwi (human remains) or any other sites of archaeological or cultural significance be discovered within the area affected by the activity, written authorisation should be obtained from the Historic Places Trust before any damage, modification or destruction is undertaken.

Explanation/Intent of Rule

To provide for drilling activities, such as geotechnical investigations and mineral exploration, where the bore or hole intercepts a water table or aquifer. It is important that holes are drilled to appropriate standards such as that outlined in Schedule 14 of this regional plan. Such standards will therefore be used in the development of appropriate consent conditions.

Rule 40B Controlled – Installation or Alteration of a Hole, Bore, Well or Water Infiltration Gallery

The excavation, drilling or other disturbance of land, for the purpose of:

1 altering an existing hole, bore, well or water infiltration gallery; or,
2 constructing a hole, bore, well or water infiltration gallery; or,
3 constructing a hole, bore, well or water infiltration gallery and, taking groundwater for aquifer or pump testing purposes and, discharging drilling or test fluids to land.

Is a controlled activity.

The Regional Council reserves its control over the following matters:

(a) Location, depth, diameter or screening interval of the hole, bore, well or water infiltration gallery.
(b) Method of construction of the hole, bore, well or water infiltration gallery.
(c) Construction and development of the hole, bore, well or water infiltration gallery which shall be in accordance with Sections 2 and 3 of Schedule 14 (*Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries*).
(d) Proximity of the hole, bore, well or water infiltration gallery to surface water, potential sources of groundwater contamination, and existing bores.
(e) Backflow prevention measures.
(f) Measures to avoid, remedy or mitigate the adverse effects of the activity on groundwater quality.

(g) Amount of water taken and used for aquifer or pump testing.
(h) Duration of testing or pumping for aquifer or pump testing.
(i) Information requirements, including bore logs.
(j) Review of consent conditions.
(k) The timing and method of pump testing to meet Council requirements.

Advisory Note

1 For the purpose of this rule, a bore is defined as any structure or hole in the ground, which is drilled or constructed for the purpose of accessing, taking or using groundwater, or which results in groundwater being taken or used.
2 The granting of consent to install or alter a hole, bore, well or water infiltration gallery does not confer any right to take water. Groundwater takes, other than for aquifer or pump testing purposes, may require a resource consent, as outlined in Rule 43 of this regional plan.
3 The owner of the hole, bore, well or water infiltration gallery is responsible for the maintenance and must carry out necessary maintenance and repairs to prevent contaminants from entering groundwater or aquifers. Where the owner of the hole, bore, well or water infiltration gallery cannot be traced, then the owner of the site where the hole, bore, well or water infiltration gallery is located may be responsible for the maintenance.
4 The rules in this regional plan do not authorise the modification or disturbance of any archaeological or registered waahi tapu sites within the area of the activity. Should any artefacts, koiwi (human remains) or any other sites of archaeological or cultural significance be discovered within the area affected by the activity, written authorisation should be obtained from the Historic Places Trust before any damage, modification or destruction is undertaken.
5 Any alteration to the headworks of any hole, bore, well or water infiltration gallery for the purposes of installing a water meter or water measuring device are exempt from this rule and are permitted under Rule 39.

Explanation/Intent of Rule

To allow the Regional Council to assess the potential adverse effects associated with bore and infiltration gallery construction on the environment, particularly in relation to potential effects on groundwater quality. It is important that all new bores are constructed to appropriate standards such as the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock. Such standards will therefore be used in the development of appropriate consent conditions.

Rule 41 **Permitted – Take and Use of Surface Water**

The take and use of water from any surface water body for any purpose, where the water has a temperature of less than 30º Celsius, is a permitted activity subject to the following conditions:

(a) The take of water shall not be from a wetland.
(b) The quantity of water taken shall not exceed 15 cubic metres per day per property.
(c) Where the take is from a river or stream, the rate of abstraction shall not exceed 2.5 litres per second or 10% of the estimated five year low flow (Q_5 7 day low flow) at the point of abstraction whichever is the lesser.
(d) Where the take is from a river or stream, the total abstraction (all users) of surface water takes shall not exceed the instream minimum flow requirement (including the default instream minimum flow requirement) for the river or stream at any point.
(e) The intake structure shall be screened with a mesh aperture size:
    (i) Not exceeding three (3) millimetres by 30 millimetres in the tidal areas of rivers and streams.
    (ii) Not exceeding five (5) millimetres by 30 millimetres or five (5) mm diameter holes in any other area that is not in the tidal area of a river or stream.

(f) The intake velocity through the screen shall not exceed 0.3 metres per second.

Advisory Note

1 Potential water abstractors are encouraged to seek the advice of the Regional Council to ensure that there is sufficient flow in a water body to accommodate their water take and comply with condition (d). This is particularly relevant for small streams. The Regional Council will take appropriate action when flows fall below the instream minimum flow requirement.
2 Surface water intake structures for the take and use of water under this rule must also be authorised (refer to Rule 52).

Explanation/Intent of Rule

To allow small takes of water from rivers, streams, lakes and other surface water bodies excluding wetlands, that are unlikely to cause adverse environmental effects. Conditions (c) and (d) are to avoid adverse effects on small streams, which are particularly sensitive to abstraction pressure. 15 m^3 per day is a reasonable amount for small uses, such as dairy shed wash-down, small glasshouse operations, horticultural spray makeup, or irrigation of gardens (up to approximately 0.5 hectares). Condition (b) is to prevent a proliferation of small takes on a single property, which may have significant cumulative effects on streams and rivers. Intake velocity and screening conditions are to prevent adverse effects on aquatic life. This rule allows the take of water for the supply of the persons for their reasonable domestic needs and the needs of their animals.

Rule 41A **Controlled – Take and Use of Surface Water within Allocation Regime**

The take and use of surface water or groundwater that:

1 Is not permitted by a rule in this regional plan, and
2 Is not prohibited by Rule 49, and
3 Complies with the low flow allocation specified in Policy 66 and where an instream minimum flow requirement has been established in Schedule 7 for the stream or river reach, and
4 Does not have an adverse effect on downstream water users.

Is a controlled activity.

The Regional Council reserves its control over the following matters:

(a) Volume and rate of water take.
(b) Measures to achieve the efficient use of water.
(c) Measures to restrict the water take during low flow or drought events.
(d) Measures to avoid, remedy or mitigate adverse effects on downstream water users.
(e) Requirements to temporarily stop water takes to enable the Regional Council water flow monitoring.
(f) Monitoring requirements.

Explanation/Intent of Rule

To provide for the take and use of water where the activity complies with Policy 66(a), and Policy 67. Matters of which the Regional Council retains control are those relevant to effects on water flows and administrative issues. The take and use of surface water that does not meet the conditions of Rule 41A is a discretionary activity under Rule 43.

Rule 42 **Permitted – Take of Water and Discharge of Sediment Contaminated Water from the Dewatering of Building and Construction Sites**

The:

1 Take of water, and
2 Temporary discharge of sediment contaminated water to water or to land where the contaminant may enter water,

for the purposes of dewatering of building and construction sites is a permitted activity subject to compliance with the following conditions:

(a) The discharge shall not be water taken from contaminated land (refer to Definition of Terms and Advisory Note (3), or a trade or industrial site.
(b) There shall be no direct discharge of water to water in Lake Rotorua, Rotoiti, Rotoehu, Rotoma, Okataina, Okareka, Tikitapu, Rotokakahi, Tarawera, Okaro, Rotomahana, or Rerewhakaaitu. Discharge to these lakes shall pass through a filter system or a land soakage pond prior to overland flow, and the suspended solids concentration shall comply with condition (g).
(c) The discharge shall not contain any wastes (including, but not limited to, wastewater or condensates) from a trade or industrial process.
(d) The discharge shall not cause a conspicuous change in the colour of the receiving waters as measured at a downstream distance of three (3) times the width of the stream or river at the point of discharge.
(e) Where the discharge is to a receiving water body that is classified as Water Supply, the discharge shall not contain any substance that renders the water unsuitable for treatment (equivalent to coagulation, filtration, disinfection or micro-filtration) for human consumption.
(f) The discharge shall not contaminate an authorised water take (refer to Advisory Note 4).
(g) Where the discharge is to a surface water body, the suspended solids concentration of the discharge shall not be greater than 80g/m^3.
(h) Where the discharge is to land soakage where there is overland flow to a surface water body, the suspended solids concentration of the discharge shall not be greater than 150g/m^3.
(i) The volume of discharge from the activity site shall not be greater than 80 litres per second.
(j) The discharge shall not damage or destroy aquatic ecosystems. This includes, but is not limited to, the smothering of flora and fauna by sedimentation of aquatic habitats.
(k) The take of water, or the discharge, shall not cause or induce subsidence, erosion to the bed or banks of any surface water body, or to land, where the erosion is persistent or requires active erosion control measures to bring it under control. Erosion includes:
    (i) Instability of land or the banks of the surface water body.
    (ii) Scour to the bed of the surface water body.
(l) The discharge shall not cause flooding or ponding on any land or property owned or occupied by another person, unless the written approval of the affected person(s) has been obtained.
(m) Where the activity prevents the normal use of any existing bore or well in the vicinity due to draw-down, the activity shall be halted immediately.

Advisory Note

1 Where the discharge is made to a closed/piped stormwater system, permission for the discharge shall be obtained from the city or district council.
2 For the purposes of Rule 42, ‘building or construction site’ means an activity for the construction or maintenance of a building, structure, or infrastructure.
3 In relation to condition (a), contact the Regional Council for more information on the location of contaminated land.

4 It is recognised that there are natural geothermal inflows or volcanic soils in the Bay of Plenty region that have high natural background levels of metals above those in New Zealand drinking water standards. These metals are part of the ambient environment, and naturally enter water bodies.

Explanation/Intent of Rule

To allow the dewatering of building and construction sites, where it may be necessary to undertake such activities at short notice. It would not be practicable or efficient to require a resource consent in these circumstances.

Rule 43 **Discretionary – Take and Use of Water**

The take and use of surface water or groundwater that:

1 Is not permitted by a rule in this regional plan, and
2 Is not a controlled activity under a rule in this regional plan, and,
3 Is not prohibited by Rule 49.

Is a discretionary activity.

In relation to this rule, the Regional Council may review resource consents for the take and use of surface water where the total volume of water authorised to be taken from a stream or river reach is greater than that provided for in the low flow allocation specified in Policy 66 and an Instream Minimum Flow Requirement for the stream or river reach has been specified in Schedule 7.

Explanation/Intent of Rule

To allow the Regional Council to assess the effects of water takes on the environment on a case by case basis according to the objectives, policies and methods in section 5.1 of this regional plan. This rule includes, but is not limited to municipal water supply, irrigation, non-consumptive use by human activities, and other uses.

Assessment Criteria

When assessing resource consent applications under this rule, the Regional Council will have particular regard to, but not be limited to, the following provisions as appropriate to the source of the proposed water take:

Objective *4, 5, 6, 8, 36, 39, 41, 42, 43, 45*
Policy *5, 11, 14, 15, 17, 18, 19, 20, 21, 66, 69, 70, 71, 72, 73, 79, 80*
Method *13, 17, 18, 20, 21, 56, 60, 66, 67, 169, 170, 172, Schedule 7*

Other matters relevant to existing water takes:
(a) Investment in existing infrastructure for the activity.
(b) Site characteristics.
(c) Statistical variations on water flow data.
(d) Adverse effects of the activity on the matters listed in Method 169.
(e) Adverse effects on existing users of the surface water body.

Other matters relevant to new water takes:

(a) Site characteristics.
(b) Statistical variations in water flow data.
(c) Adverse effects of the activity on the matters listed in Method 169.
(d) Adverse effects on existing users of the surface water body.

Damming and Diversion of Water

Damming and diversion is considered to be the non-consumptive use of water.

Issues

WQ I12 (Issue 35)

The damming and diversion of water in streams, rivers and lakes can have adverse effects on the environment.

Adverse effects may occur in relation to the following:

(a) Water flow – the modification of flow regimes and hydrological characteristics can lead to adverse effects on other stream users, aquatic ecosystems, groundwater recharge and levels, water allocation, and natural character. Water flow may fall below the instream minimum flow requirement downstream of dams and diversions. The flood storage capacity of the catchment may be altered. The natural migration of streams and rivers may be artificially constrained. Damming and diversion may reduce stream flow variability, which is necessary for instream biota and the flushing of stream systems. Any adverse effects of the damming of ephemeral watercourses may be offset by beneficial outcomes for erosion control.

(b) Water quality – the impoundment of water may lead to temperature increases which, coupled with high nutrient levels, can lead to algal/weed growth. Stratification may also occur in impounded water behind dams. There may also be changes to sediment and bed load transport processes.

(c) Land – dams and diversions may flood land that has productive, ecological, and heritage values.

(d) Beds and banks of streams and rivers – scour, erosion and bank instability may occur due to increased gradient and water velocity, or saturation of soils.

(e) Landscape values, Maori cultural values (especially in relation to the loss of natural flow characteristics, and the mixing of water from different water bodies), natural character, recreational use of the water body, and public access to and along the margins of rivers may be diminished. The effects on Maori cultural values should be assessed on a case by case basis with tangata whenua of the activity site.

(f) Ecological values - fish migration can be prevented, aquatic habitats and wetlands can be damaged or destroyed.

A major area of concern in the Bay of Plenty in the past has been the unauthorised damming and diversion of small streams, resulting from the lack of community awareness about the adverse effects of such activities.

Damming and diversion of water can have benefits for the people and communities of the Bay of Plenty Region, and the wider national community, in providing for their social and economic well-being, such as:

(a) The generation of electricity.
(b) Water storage, particularly when used for water harvesting during high flows.
(c) Creation of wetland habitats.
(d) Temporary mitigation measures for instream works.
(e) Management of stormwater runoff to provide for nutrient and sediment treatment.

Objective	*42, WQ O12*
Policy	*65, WQ P32, WQ P33, WQ P34, WQ P35, WQ P36*
Method	*IM M3, LM M18, IM M15*
Rule	*WQ R13 to WQ R21*

WQ I13 (Issue 36)

Land use and development activities can dam and divert water, which can:

(a) Change flood flow patterns.
(b) Divert water from natural flowpaths and catchments.
(c) Prevent drainage of floodwaters.
(d) Exacerbate flood effects in other areas.

Such activities include the diversion of surface runoff by roading, the concentration and diversion of water by land use developments increasing stormwater flows in downstream areas, drain cleaning spoil creating barriers to flood drainage, deposition of material in floodable areas, and stopbanks.

Objective *WQ O13*
Policy *WQ P37*
Method *WQ M10, WQ M11, WQ M12*
Rule *WQ 14, WQ R16, WQ R21*

Objectives

WQ O12 (Objective 47) Damming and diversion activities avoid, remedy or mitigate adverse effects on the environment, as appropriate to the values, uses and existing environmental quality of the water body and downstream of the activity.

WQ O13 (Objective 48) Land use and development activities avoid, remedy or mitigate adverse effects on the natural flow of water, including flood flows.

Cross-Reference Also refer to Objectives 42 and BW O1 of this regional plan.

Policies

WQ P32 (Policy 81) All new damming and diversion activities, or changes to existing damming and diversion activities, are required to comply with the following environmental standards:

Table WQ 1 Environmental Standards for Damming and Diversion Activities

	Aspect	Environmental Standard
(a)	Water flow	• Ensure a sustainable residual flow to maintain the instream minimum flow requirement and provide for existing surface water takes, and for existing assimilative requirements associated with existing discharges of contaminants to water in downstream areas. • Provide for natural flow-variability where appropriate.
(b)	Water quality	• Not cause the breach of Water Quality Classification of the stream, river or lake. • **Note:** – the discharge of contaminants to water is addressed in the Discharges to Water and Land section of this regional plan. Refer to DW P1(b)(vii) with regards to the discharge of sediment resulting from maintenance dredging of dams. Dam owners and operators are not responsible for contaminants discharged within the catchment above the dam.
(c)	Stability of Banks and Beds of Water bodies	• Avoid, remedy or mitigate adverse effects on the stability of banks and beds of surface water bodies, including scour, erosion and slumping which can be directly attributed to the existence and operation of the dam. Any erosion events that can be directly attributed to the existence and operation of the dam are to be remedied or mitigated as soon as practicable.

	Aspect	Environmental Standard
(d)	Landscape values, natural character, recreational use, public access to and along the margins of rivers and lakes, and Maori cultural values	• Refer to BW P3 for requirements for aquatic habitats. Refer to the Kaitiakitanga Section of this regional plan for matters relating to Maori cultural values.
(e)	Wetlands	• Refer to the Wetlands section of this regional plan for provisions regarding wetlands.

WQ P33 (Policy 82) Where a resource consent holder applies for a change to an existing damming or diversion activity, only the aspects in WQ P32 relevant to the change in the activity will be considered.

WQ P34 (Policy 83) Mitigation or remediation is a requirement for all existing dams and diversions, and associated maintenance activities, to address adverse effects on aquatic ecosystems, water quality, water flow, the beds and banks of surface water bodies, and significant heritage values, where appropriate. Actions to mitigate or remedy adverse effects are to be appropriate to the scale of the effect, and have regard to the requirements of WQ P32.

WQ P35 (Policy 84) To recognise that damming and diversion of water may be necessary to maintain or enhance wetlands.

WQ P36 (Policy 85) To raise community awareness about the requirement for all damming and diversion activities to be authorised either by resource consent or compliance with permitted activity rules. This is particularly relevant to landowners adjoining small streams.

WQ P37 (Policy 86) To advise the community on means to avoid or mitigate the effects of flooding caused by the diversion or concentration of water by land use and development activities.

Cross-Reference Also refer to Policies 65 and BW P4, and the Role of the Bay of Plenty Regional Council section in the Introduction of this regional plan.

Methods of Implementation

The Regional Council will:

Education, Promotion and Provision of Information

WQ M10 (Method 186) Encourage developers to use the Regional Council's Hydrological and Hydraulic Guidelines (2001)[29] to assist in the assessment of the effect of land use and development on the diversion or concentration of water.

WQ M11 (Method 187) Provide advice to the community on measures to avoid or mitigate increased runoff, changed water flowpaths, and flooding in relation to land use and development activities.

Cross-Reference Also refer to IM M3.

Regulatory Methods

Cross-Reference Also refer to LM M18, WQ R13-WQ R21.

Monitoring and Investigation of the Environment

[29] Everitt, S., 2001. Hydrological and Hydraulic Guidelines. Environment Bay of Plenty Operations Report 2000/04.

WQ M12 (Method 188) Identify areas where diversion of stormwater and flood water by land use activities is occurring and causing adverse effects on the environment, people and property. Each situation will be assessed and addressed on a case by case basis in relation to the individual circumstances. This will be carried out in conjunction with the city council and district councils, where appropriate.

Cross-Reference Also refer to IM M15.

Rules

Advisory Note

1 The rules in this regional plan do not authorise the modification or disturbance of any archaeological or registered waahi tapu sites within the area of the activity. Written authority from Heritage New Zealand Pouhere Taonga is required prior to any destruction, damage or modification of an archaeological or registered waahi tapu site or an area where there is reasonable cause to suspect there is an archaeological site. Should any artefacts, bones or any other sites of archaeological or cultural significance be discovered within the area affected by the activity, written authorisation should be obtained from Heritage New Zealand Pouhere Taonga before any damage, modification or destruction is undertaken.

2 City and district councils may also control the structural integrity of dam structures under the Building Act 2004.

3 It is the intent of this regional plan for all dam and diversion activities in the Bay of Plenty region to comply with the requirements of the regional plan. The damming or diversion of water for which there is an existing resource consent is not subject to the rules in this section. However, such activities will be required to comply with the requirements of this regional plan when the resource consent expires. For activities that are not otherwise covered by a resource consent, the following rules apply:

Table WQ 2 Rules for Damming and Diversion Activities

Activity	Permitted Activity Rule	Activities that do not comply with Permitted Activity Rules
Temporary damming of a land drainage canal or drain	WQ R13	WQ R21
Diversion of stormwater	WQ R14	WQ R21
Damming and diversion by existing flood control structures	WQ R15	WQ R21
Damming of surface runoff	WQ R16	WQ R17, WQ R21
Damming of a river or stream	WQ R18	WQ R19, WQ R21
Lawfully established Hydroelectric Power Schemes in Schedule 11	-	WQ R20

WQ R13 (Rule 44) Permitted – Temporary Damming of Water in a Land Drainage Canal or Drain

The temporary damming of water in a Land Drainage Canal or drain, including the:

1 Damming of water, and
2 Use, erection, maintenance, reconstruction, placement, alteration or extension of a dam structure, and
3 Disturbance of the bed of the Land Drainage Canal associated with the construction of the dam,

where:

4 The activity does not extend beyond a period of six (6) months, and
5 The dam is not located within an Urban Area or Settlement or within one (1) kilometre upstream of an Urban Area or Settlement.

Is a permitted activity subject to the following conditions:

(a) The activity shall not change, damage or destroy a wetland.
(b) Where the activity is in a Land Drainage Canal, the activity shall be carried out by the administrator of the Land Drainage Scheme or its contractor.
(c) The activity shall not cause flooding or ponding on any land or property owned or occupied by another person that would not naturally carry water during storm or flood events, unless the written approval of the affected person(s) has been obtained.
(d) Where the dam is located on a watercourse specified in Schedule 3, the dam structure shall provide for fish passage.
(e) The activity shall not cause or induce erosion to the bed or banks of any surface water body, or to land, where the erosion is persistent or requires active erosion control measures to bring it under control. Erosion includes:
    (i) Instability of land or the banks of the surface water body.
    (ii) Scour to the bed of the surface water body.
    (iii) Damage to the margins or banks of the surface water body.
(f) The dam does not impound more than 10,000 m^3 of water and the lowest point of the dam crest does not exceed 1.5 metres vertical height relative to the land where the dam is sited, as measured from the centre line of the dam structure.
(g) The dam shall be designed, constructed and maintained to ensure that its structural integrity is not compromised, and incorporates a spillway with a 10% AEP (1 in 10 return) event flood design standard, and erosion protection devices, to safely return surplus water to land or water where the dam is sited.
(h) The dam shall, at all times, be maintained in a sound condition.
(i) The dam structure shall be removed when it is no longer required, or after six (6) months, whichever is the sooner.

Explanation/Intent of Rule

Allows for the temporary damming of land drainage canals and drains, including for the purposes of reducing the shrinkage of peat soils. The rule does not allow for the diversion of water. The activity is unlikely to have more than minor adverse environmental effects.

WQ R14 (Rule 44A) Permitted – Diversion of Stormwater (Surface Runoff)

The diversion of stormwater is a permitted activity subject to the following conditions:

(a) The activity shall not cause or induce erosion to the bed or banks of any surface water body, or to land, where the erosion is persistent or requires active erosion control measures to bring it under control.

Erosion includes:
(i) Instability of land or the banks of the surface water body.
(ii) Scour to the bed of the surface water body.
(iii) Damage to the margins or banks of the surface water body.

(b) The activity shall not cause flooding or ponding on any land or property owned or occupied by another person, where that land would not naturally carry water during storm or flood events.

Advisory Note

1 The discharge of stormwater to surface water, or to land soakage, must comply with the requirements of DW R20 or DW R22, or a resource consent must be obtained.

Explanation/Intent of Rule

To allow for the appropriate management of stormwater where it may be necessary to divert surface runoff from rain events. This may include, but is not limited to, the diversion of 'clean' stormwater away from disturbed land, waste disposal sites, or contaminated land. This rule does not permit the discharge of stormwater which is addressed by DW R20 to DW R23.

WQ R15 (Rule 45) Permitted – Damming and Diversion of Flood Waters by Existing Flood Control Structures

The damming or diversion of surface flood waters by stopbanks and other flood control structures that existed as of 19 February 2002 (except the damming or diversion of water for the purpose of controlling natural lake levels), that are shown in "Regional Water and Land Plan – Maps of Stopbanks and Other Flood Control Structures Permitted by Rule 45" (now WQ R15) and are operated by an organisation exercising its functions under the Soil Conservation and Rivers Control Act 1941, the Local Government Act 1974, the Land Drainage Act 1908, or the Rangitaiki Land Drainage Act 1956, is a permitted activity subject to the following conditions:

(a) The authorised maintenance or restoration of any stopbank or other flood control structure is limited to its height and profile as at 19 February 2002, except that
(b) Subject to the written approval of the land owner, the height and profile of a stopbank or other flood control structure that existed on that land owners property as at 19 February 2002 may be altered to achieve a new design standard established in a Floodplain Management Strategy or Asset Management Plan that has been agreed with the community through a local government public consultative process.

Explanation/Intent of Rule

To allow flood control structures and stopbanks that existed as of 19 February 2002 to continue to operate and be restored and maintained for flood hazard mitigation purposes. Stopbanks and other flood control structures protect areas by preventing (i.e. damming) flood waters from flowing into towns and farm land, and diverting floodwaters away from natural flood flow paths back into the main river

channels. This rule does not permit the damming and diversion of water by stopbanks or other flood control structures installed after 19 February 2002, these will require consents. The maps "Regional Water and Land Plan – Maps of Stopbanks and Other Flood Control Structures Permitted by Rule 45" (now WQ R15) are available from the Regional Council.

WQ R16 (Rule 46) Permitted – Damming of Surface Runoff Water

The damming of water, and associated dam structure, that:

1 Is in an ephemeral flowpath or gully, or
2 Is in an artificial watercourse, or
3 Is runoff from the surface of land,

Is a permitted activity, subject to the following conditions:

(a) The activity shall not change, damage or destroy a wetland.
(b) The activity shall not cause or increase flooding or ponding on any land or property owned or occupied by another person that would not naturally carry water during storm or flood events, unless the written approval of the affected person(s) has been obtained.
(c) The activity shall not cause or induce erosion to the bed or banks of any surface water body, or to land, where the erosion is persistent or requires active erosion control measures to bring it under control. Erosion includes:
    (i) Instability of land or the banks of the surface water body;
    (ii) Scour to the bed of the surface water body;
    (iii) Damage to the margins or banks of the surface water body.
(d) The impoundment of water and the dam structure shall comply with either (i) or (ii)
    (i) The dam shall not impound more than 5,000 m^3 of water and the level of the dam spillway invert does not exceed 2.5 metres vertical height relative to the land where the dam is sited as measured from the centre line of the dam structure (refer to Figure WQ 1).
    (ii) The dam does not impound more than 10,000 m^3 of water and the level of the dam spillway invert does not exceed 1.5 metres vertical height relative to the land where the dam is sited as measured from the centre line of the dam structure (refer to Figure WQ 1).
(e) The structure shall be designed by, or under the guidance of, a chartered professional engineer.
(f) The dam shall be designed, constructed and maintained to ensure that its structural integrity is not compromised, and incorporates spillway with a 1 in 100 year flood design standard, and erosion protection devices, to safely return surplus water to land where the dam is sited.
(g) The dam shall, at all times, be maintained in a sound condition.

Explanation/Intent of Rule

To allow the minor damming of clean water that is not in the bed of a permanently flowing stream or river, or a lake or wetland. It includes, but is not limited to:

- stock water dams,
- prevention of peat shrinkage,
- coffer dams,
- detention dams for erosion control,
- dams for the creation of wetland, and
- activities relating to water harvesting

The rule does not apply to earthworks sediment retention ponds, which will be addressed in conjunction with the discharge of sediment contaminated stormwater in a resource consent under DW R8, and does not permit the diversion of water. **Note:** that WQ R14 addresses the diversion of stormwater.

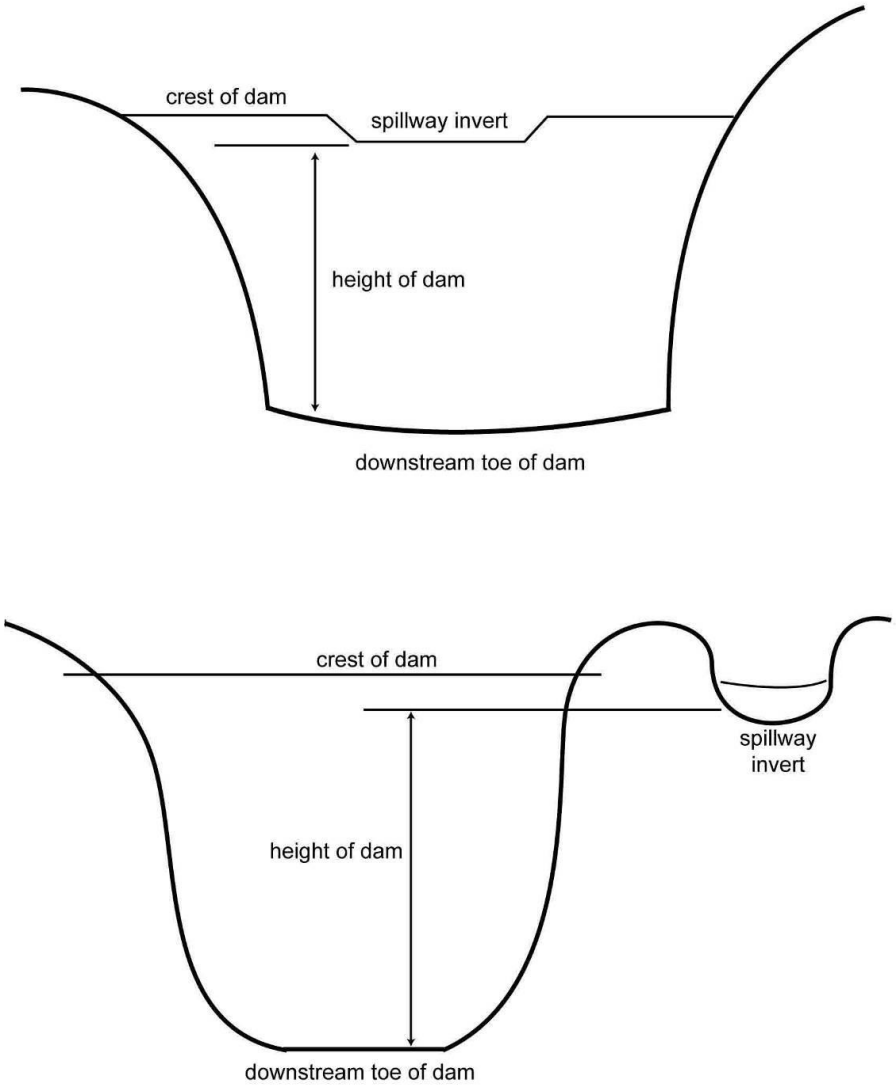


Figure WQ 1 Measurement of Dam Height in WQ R16

WQ R17 (Rule 46A) Restricted Discretionary – Damming of Surface Run–off Water

The damming of water, and associated dam structure, that:

1 Is in an ephemeral flowpath or gully, or
2 Is in an artificial watercourse, or
3 Is runoff from the surface of land,

and is not otherwise permitted by WQ R16 is a restricted discretionary activity, subject to the following condition:

(a) The activity shall not disturb vegetation in a wetland, or change the water flow or quantity, or water quality in a wetland.

The Regional Council restricts its discretion to the following matters:

(a) Measures to avoid, remedy or mitigate adverse effects on:
  (i) Water flows.
  (ii) Land owned or occupied by another person, including flooding and ponding.
  (iii) The stability of land.
  (iv) Houses, assets and other activities downstream of the dam, which are at risk of the dam failure.

(b) The structural integrity, safety issues, construction standards.
(c) Maintenance of the dam.
(d) Measures to avoid or mitigate vegetation, soil, slash, construction material or other debris being deposited in a surface water body, or placed in a position where it could readily enter or be carried into a water body.
(e) Monitoring requirements.

Explanation/intent of Rule

To allow the damming of water that is not in the bed of a permanently flowing stream or river, or a lake or wetland and not otherwise permitted by WQ R16. It includes, but is not limited to:

- stock water dams,
- prevention of peat shrinkage,
- coffer dams,
- detention dams for erosion control,
- dams for the creation of wetland, and
- activities relating to water harvesting.

The rule does not apply to earthworks sediment retention ponds, which will be addressed in conjunction with the discharge of sediment contaminated stormwater in a resource consent under DW R8, and does not permit the diversion of water. WQ R14 addresses the diversion of stormwater.

WQ R18 (Rule 47) **Permitted – Damming of Water in the Bed of a River or Stream**

The:

1 Damming of water in the bed of a river or stream, and
2 Use, erection, maintenance, reconstruction, placement, alteration and extension of a dam structure in the bed of a river or stream, and
3 Disturbance of the bed of a river or stream associated with the activity, are permitted activities subject to the following conditions:

(a) The dam shall not be located in any stream or river listed in Schedule 1, or that has a water quality classification of Natural State (River).
(b) The structure shall not prevent the passage of fish.
(c) The mean annual daily flow of the river or stream to be dammed shall not exceed 150 litres per second.
(d) The activity shall not cause or induce erosion of the bed or banks of any surface water body, where the erosion is persistent or requires active erosion control measures to bring it under control. Erosion includes:
(i) Instability of land or the banks of the surface water body.
(ii) Scour to the bed of the surface water body.
(e) The activity shall not disturb vegetation in a wetland; or change the water flow of quantity, or water quality in a wetland.
(f) All machinery shall be kept out of the bed of the stream, river or lake where practicable.
(g) The disturbance of the bed shall be limited to the extent necessary to carry out the activity.
(h) No machinery refuelling or fuel storage shall occur at a location where fuel can enter any water body.
(i) All practicable measures shall be taken to avoid vegetation, soil, slash or any other debris being deposited into a water body or placed in a position where it could readily enter or be carried into a water body during the activity.

(j) The structure shall at all times be maintained in a sound condition for the purpose for which it was constructed, and be kept clear of accumulated debris.
(k) Approaches and abutments shall be stabilised, and appropriate water controls installed, to protect against erosion.
(l) Following the completion of construction, all excess construction materials and equipment shall be removed from the bed of the stream, river or lake.
(m) The damming of water shall not cause water flow downstream of the dam to fall below the instream minimum flow requirement or default Instream Minimum Flow Requirement for the river or stream, or adversely affect any authorised water take.
(n) The impoundment of water and the dam structure shall not impound more than 5,000 m^3 of water, and the lowest point of the dam crest shall not exceed 1.5 metres vertical height relative to the natural bed of the watercourse where the dam is sited, as measured from the centre line of the dam structure.
(o) The structure shall be designed by, or under the guidance of, a chartered professional engineer
(p) The dam shall be designed, constructed and maintained to ensure that its structural integrity is not compromised, and incorporates a spillway with a 1 in 100 year flood design standard, and erosion protection devices, to safely return surplus water to the natural bed of the river or stream.
(q) All dams constructed after 23 March 2004 shall be registered with the Regional Council by forwarding the following information:
  (i) The location of the dam.
  (ii) The surface water body on which the dam is located.
  (iii) The size of the dam.

Advisory Note

1 In relation to condition (b), the Regional Council has information to assist resource users to provide fish passage on dam structures.
2 In relation to condition (n), the community is advised to contact the Regional Council for information regarding the instream minimum flow requirement or default instream minimum flow requirement for the river or stream.

Explanation/Intent of Rule

To permit the damming of water in small streams and rivers where the adverse environmental effects are likely to be no more than minor. The rule applies to temporary or permanent damming of water, and does not permit the diversion of water. This rule does not apply to instream stormwater treatment ponds.

WQ R19 (Rule 47B) **Restricted Discretionary – Damming of Water in the Bed of a River or Stream**

The:

1 Damming of water in the bed of a river or stream, and
2 Use, erection, maintenance, reconstruction, placement, alteration and extension of a dam structure in the bed of a river or stream, and
3 Disturbance of the bed of a river or stream associated with the activity,

that complies with the following terms and conditions is a restricted discretionary activity:

(a) The dam shall not be located in any stream or river listed in Schedule 1.
(b) Measures to avoid, remedy or mitigate adverse effects on:
  (i) The passage of fish.
  (ii) Aquatic ecosystems, including indigenous biodiversity.

(c) The mean annual daily flow of the river or stream to be dammed shall not exceed 300 litres per second.
(d) The activity shall not damage or destroy a wetland.
(e) The damming of water shall not cause water flow downstream of the dam to fall below the Instream Minimum Flow Requirement or default Instream Minimum Flow Requirement for the river or stream, or adversely affect any authorised water take.
(f) The impoundment of water and the dam structure shall comply with either (i) or (ii):
    (i) The dam does not impound more than 5,000 m^3 of water and the lowest point of the dam crest does not exceed 1.8 metres vertical height relative to the natural bed of the watercourse where the dam is sited as measured from the centre line of the dam structure.
    (ii) The dam does not impound more than 10,000 m^3 of water and the lowest point the dam crest does not exceed 1.5 metres vertical height relative to the natural bed of the watercourse where the dam is sited as measured from the centre line of the dam structure.
(g) The structure shall be designed by, or under the guidance of, a chartered professional engineer.
(h) The dam shall be designed, constructed and maintained to ensure that its structural integrity is not compromised, and incorporates a spillway with a 1 in 100 year flood design standard, and erosion protection devices, to safely return surplus water to the natural bed of the river or stream.

The Regional Council restricts its discretion to the following matters:

(a) Measures to avoid, remedy or mitigate adverse effects on water quality, water flows, flooding of land owned or occupied by another person, and the stability of the beds and banks of the water body.
(b) The structural integrity, and maintenance of the structure.
(c) The administration charges under section 36 of the Act.

Explanation/Intent of Rule

To allow the Regional Council to assess the adverse effects of small dams in streams not listed in Schedule 1 on a case by case basis through the resource consent process, where there is a risk that adverse effects on the environment may be more than minor, particularly in relation to fish passage and aquatic habitats.

WQ R20 (Rule 47C) **Controlled – Lawfully Established Hydroelectric Power Schemes in Schedule 11**

The lawfully established:

1 Discharge of water to water; and
2 Discharges of contaminants to water; and
3 Take and use of water (including non-consumptive use); and
4 Damming and diversion of water; and
5 Use of a structure in the bed of a stream or river;

Associated with a hydroelectric power scheme that existed on the date this regional plan becomes operative and is listed in Schedule 11, is a controlled activity.

This rule applies to applications to replace existing resource consents.

The Regional Council reserves its control over the following matters:

(a) Measures to provide for the passage of fish, both upstream and downstream.
(b) Upstream and downstream water levels, residual flows and water quality.
(c) Screening of intake and diversion structures.
(d) Intake velocities.

(e) Measures to manage erosion effects (including destabilisation of beds and banks or river).
(f) Measures to identify and manage the risk of dam failure.
(g) Stability of the land bordering the dam.
(h) Measures to manage discharges to water from the use or alteration of the dam structure.
(i) Measures to avoid, remedy or mitigate any adverse effect on aquatic ecosystems, areas of significant indigenous vegetation, significant habitats of indigenous fauna.
(j) The quantity and flow rate, outstanding natural features and natural character.
(k) Measures to avoid, remedy or mitigate any effects on other lawfully established users of the river or stream of water released from the dam.
(l) Volume and rate of any take or diversion.
(m) Techniques for ensuring the safe passage of flood water.
(n) Effects on the relationship of tangata whenua and their culture and traditions with the site and any waahi tapu or other taonga affected by the activity.
(o) Effects on the ability of tangata whenua to exercise their kaitiaki role in respect of any waahi tapu or other taonga affected by the activity.
(p) Measures to avoid, remedy or mitigate adverse effects of the operation on downstream sediment transport processes.
(q) Measures to avoid, remedy or mitigate adverse effects on lawfully established downstream infrastructure.
(r) The range, or rate of change of levels or flows of water.
(s) The structural integrity and maintenance of the structure.
(t) Measures to avoid, remedy or mitigate adverse effects on amenity values (including recreation), and existing public access to and along the margins of rivers and lakes.
(u) Information and monitoring requirements.
(v) Administration charges under section 36 of the Act.

Notification

Applications for resource consents under WQ R20 will be publicly notified in accordance with the requirements of section 93(2) of the Act.

Explanation/Intent of Rule

To provide for existing, lawfully existing hydroelectric power schemes that are listed in Schedule 11, and clearly state that all aspects of the activity will be managed within one resource consent. Resource consent applicants may wish to separate ancillary activities (such as the take of water for domestic supply needs, or stormwater discharges) from the main consent for the hydroelectric scheme. Public Notification of resource consents under WQ R20 is in accordance with section 94D(1) of the Act.

WQ R21 (Rule 48) Discretionary – Damming or Diversion of Water

The damming or diversion of water that is:

1 Not permitted by a rule in this regional plan, and
2 Not restricted discretionary status under a rule in this regional plan, and
3 Not prohibited by EC R1,

Is a discretionary activity.

Explanation/Intent of Rule

To allow the Regional Council to assess any damming or diversion activity that will have greater than minor adverse effects on the environment, on a case by case basis through the resource consent process.

Assessment Criteria

When assessing resource consent applications under this rule, the Regional Council will have particular regard to, but not be limited to, the following provisions as appropriate to the source of the proposed water take:

Objective	*KT O4, KT O5, KT O6, IM O1, 42, WQ O12, BW O1, WL O1, WL O3*
Policy	*KT P5, KT P11, KT P14, KT P15, KT P17, KT P18, KT P19, KT P20, IM P1, 65, WQ P32, WQ P34, WQ P35, BW P3, WL P1, WL P2*
Method	*KT M13, KT M17, KT M18, KT M20, KT M21, IM M10, IM M12*

Control of Water Levels in Natural Lakes

This section does not apply to artificial lakes (e.g. Lakes Aniwhenua, Matahina). Water levels in artificial lakes are established through the resource consent process, usually in relation to the damming of water.

Issues

WQ I14 (Issue 40) The artificial control of water levels in natural lakes can have adverse effects on the environment.

Adverse effects can occur in relation to:

(a) Water quality. This may occur where water with a high nutrient level or geothermally influenced water is discharged from one lake to another. However, greater inputs of nutrients or other contaminants result from land use in a lake catchment, or sub-surface flows of water from one lake to another. The discharge of blue-green algae via a lake control structure is the main water quality concern relating artificial control of lake water levels. Natural lake flushing processes are reduced if water is retained to maintain high water levels. This can have adverse effects on water quality. The mauri of the lake may be adversely affected.

(b) Water flows and quantity. Instream minimum flows in downstream areas may be breached if water is withheld to increase water levels. Some aquatic species in streams and rivers may require fluctuations in water levels for completion of their life cycles, and could be adversely affected where water flows from lakes are controlled.

(c) The beds and banks of watercourses. Erosion may occur if the water flow from control structures is not managed appropriately.

(d) Wetlands on the margins of lakes. Wetlands can be adversely affected or destroyed where lake levels are lowered.

(e) Riparian vegetation. Riparian vegetation may be inundated by increased water levels.

(f) Natural beach-forming processes. The loss of lakeside beaches on Lake Rotoiti is due to vegetation being able to grow down to the water line. As the water level is kept stable there is no control of vegetation growth on the lakeshore by natural processes.

(g) Ecological values. Fish migration may also be impeded where control structures are used. Aquatic habitat characteristics may be modified or destroyed where water levels are changed. Also refer to (d) and (e).

(h) Heritage values. Significant heritage sites may be inundated by increased water levels. Recreational users of rivers downstream of controlled lakes can be adversely affected when outflows are restricted to maintain lake levels, and river flows fall below that necessary for recreational activities. It may be difficult to establish a lake level control that is appropriate for the whole

community. A level that suits lakeside residents may not account for recreational users in downstream areas, and vice versa.

(i) Existing development. Urban developments, septic tanks, and roading are flooded when lake water levels are artificially controlled to high levels that do not account for existing development.

Objective *WQ O17, WQ O19*
Policy *WQ P43, WQ P44, WQ P45, WQ P47, WQ P48*
Method *IM M3, IM M15, WQ M22, WQ M23, WQ M24*
Rule *WQ R25*

WQ I15 (Issue 41) Land use and development, including structures on the beds of lakes, may be flooded or adversely affected where such development is not planned to account for natural lake water level fluctuations.

Urban developments, septic tanks, and roading can be flooded where these occur within the range of natural lake water level fluctuations. The use of structures in beds of lakes may be affected where these are not constructed to take into account natural lake level fluctuations. Jetties may be swamped if not constructed to allow for high lake levels.

There is a lack of recognition of natural fluctuations in lake levels, and a community perception that all lake levels are artificially controlled within defined limits. Lake water levels in the Rotorua lakes naturally fluctuate, displaying high or low water levels relative to rainfall in previous years, or decades. High water levels may only reach a certain level before natural drainage occurs. Some lakes do not have a natural surface outflow, rather they have sub-surface drainage patterns, which recharge other lakes or regional groundwater systems. It is difficult to control lake levels in this situation. There may also be large-scale geologic movements that cause lake water levels to change, or appear to change. The apparent rise in lake water levels at the Hinehopu end of Lake Rotoiti is due to tilting of the lake bed, and subsequent falling of land levels in the Hinehopu area on average 75 millimetres since the 1950's.

Objective *WQ O18*
Policy *WQ P46, WQ P47, BW P4*
Method *IM M3, WQ M16*
Rule *WQ R25*

Objectives

WQ O14 (Objective 52) Further artificial control of lake water levels is avoided, except where extremely high water levels are threatening urban development and infrastructure.

WQ O15 (Objective 53) Land use development on the margins of lakes, and activities on the beds of lakes, are managed to avoid conflict with natural fluctuations of water levels in lakes.

WQ O16 (Objective 54) Where it is necessary to artificially control lake water levels, the activity will avoid, remedy or mitigate adverse effects on:

(a) Water quality of the lake and associated surface water bodies.
(b) Water quantity and flow variability in surface outflows.
(c) Beds and banks of surface outflows.
(d) Wetlands on the margins of the lake.
(e) Riparian vegetation.
(f) Natural beach-forming processes in the lake.
(g) Ecological values in the lake and downstream surface water bodies.
(h) Recreational, landscape, natural character, and Maori cultural values.
(i) Existing urban development and infrastructure.

Policies

WQ P38 (Policy 92) To discourage the artificial control of water levels in lakes that are not already controlled at the time this regional plan is notified, except in extreme circumstances where unusually high lake water levels are reached and buildings and important infrastructure are threatened by flooding and there are no practicable alternatives.

WQ P39 (Policy 93) To use the following 2% AEP levels for the Rotorua lakes in relation to WQ P40 and WQ P41:

Rotorua	281.18 m RL Moturiki
Rotoiti	280.46 m RL Moturiki
Okareka	355.20 m RL Moturiki
Tarawera	299.40 m RL Moturiki
Rotoma	319.04 m RL Moturiki
Rotoehu	298.16 m RL Moturiki
Rotokakahi	395.90 m RL Moturiki
Rerewhakaaitu	436.89 m RL Moturiki
Okataina	314.90 m RL Moturiki
Tikitapu	419.50 m RL Moturiki

WQ P40 (Policy 94) To consider the natural 2% AEP (50 year return period) maximum and minimum level fluctuations when:

(a) Establishing new artificial lake level control limits, and
(b) Processing resource consent replacements for existing lake level control activities.

WQ P41 (Policy 95) To advocate the city council and district councils to control land use and development within the area floodable by the 2% AEP level (high water level) of the lakes, as specified in WQ P39, except where higher levels are necessary due to the sensitivity of land use and development in the area to flooding.

WQ P42 (Policy 96) To raise community awareness of lake water level issues, including:

(a) The range of natural lake level fluctuations.
(b) Long-term geological changes, climatic variations, and other environmental variances that cause lake level fluctuations.
(c) The environmental, economic and technical restrictions on controlling lake levels.
(d) The effects of the tilting of land at Hinehopu on perceived lake water levels in Lake Rotoiti.

WQ P43 (Policy 97) Where artificial control of lake water levels is necessary in extreme circumstances, the activity is required to comply with the following:

Table WQ 3 Requirements for the Artificial Control of Lake Water Levels

	Aspect	Requirement
(a)	Water Quality	• Not cause, or contribute to, the breach of Water Quality Classification of the lake or downstream surface outflows, or the TLI of the lake.
(b)	Water Quantity	• Allow a sufficient flow in natural surface outflows to maintain the Instream Minimum Flow Requirement and provide for existing surface water takes in downstream areas. • Provide for flow variation in natural surface outflows. • Avoid, remedy or mitigate adverse effects on natural hydrological processes, including natural beach-forming processes.
(c)	Stability of Banks and Beds of Water bodies	• Avoid, remedy or mitigate adverse effects on the stability of banks and beds of surface water bodies, including scour and erosion.

	Aspect	Requirement
(d)	Wetlands	• Adverse effects on wetlands on the margins of lakes are to be avoided where possible. Where it is not possible to avoid adverse effects, the wetlands are to be remediated to their original extent and condition. • Also refer to the Wetlands section of this regional plan.
(e)	Ecological values	• Adverse effects on ecological values of the lake, downstream surface water bodies, and the riparian vegetation of the lake, are to be avoided where possible, or remedied or mitigated where avoidance is not possible.
(f)	Recreational, landscape, natural character	• Adverse effects on recreational, landscape and natural character values of the lake, downstream surface water bodies, and the margins of the lake, are to be avoided where possible, or remedied or mitigated where avoidance is not possible.
(g)	Maori cultural values	• Refer to the Kaitiakitanga section of this regional plan.
(h)	Existing urban development and infrastructure	• Avoid, remedy or mitigate adverse effects on existing urban development and infrastructure except where written approval of affected parties is obtained.

Cross-Reference Also refer to BW P4

Methods of Implementation

The Regional Council will:

Education

Cross-Reference Refer to IM M3.

Advocacy

Cross-Reference Refer to NH M4

Regulatory Methods

Cross-Reference Refer to WQ R22.

Matters Relevant to Resource Consent Applications and Processing

WQ M13 (Method 198) When processing resource consent applications for the artificial control of lake water levels, consider the suitability of the 2% AEP level to establish maximum and minimum levels in relation to:

(a) The sensitivity of existing land use and development in the area to flooding.
(b) Adverse effects on aquatic and terrestrial ecosystems, riparian wetlands, natural processes, cultural values, and heritage sites.
(c) Effects on associated waterways and heritage values.

Monitoring and Investigation of the Environment

WQ M14 (Method 199) Investigate the following, where appropriate:

(a) The cause of unusually high or low lake levels when these become evident.
(b) Natural lake outlets and drainage patterns.
(c) The effects of controlling water levels on aquatic and terrestrial values, riparian wetlands and water quality.

WQ M15 (Method 200) Consider the possibility of enhancing natural surface outflows, or other methods to control lake levels when a lake has reached an unusually high water level that are above the 2% AEP levels specified in WQ P39, and there are significant adverse effects on infrastructure and buildings from inundation.

Cross-Reference Also refer to IM M15.

Rules

Artificial Control of Water Levels in Natural Lakes

WQ R22 (Rule 50) **Discretionary – Artificial Control of Water Levels in Natural Lakes**

The artificial control of water levels in natural lakes, including any associated activities, is a discretionary activity.

Explanation/Intent of Rule

This discretionary rule approach is consistent with the provisions in this section of the regional plan. The intent of the rule is to restrict the artificial control of water levels in natural lakes, and allow the Regional Council to assess the adverse environmental effects of the proposed activity through a resource consent application. Specific conditions can be established to avoid, remedy or mitigate those effects.

Assessment Criteria

When assessing resource consent applications under this rule, the Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective	*KT O4, KT O5, KT O6, IM O1, WQ O17, WQ O16*
Policy	*KT P5, KT P11, KT P14, KT P15, KT P17, KT P18, KT P19, KT P20, IM P1, WQ P38, WQ P39, WQ P40, WQ P43*
Method	*KT M13, KT M17, KT M18, KT M20, KT M21, IM M10, WQ M13*