6 Water Allocation

6.1 Introduction and Principal Reasons

6.1.1 Statutory Framework

This chapter contains provisions relating to fresh and geothermal water quantity and allocation. Sections 14(1) and 14(3) of the RMA provide that:

14 Restrictions relating to water –

(1) No person may take, use, dam, or divert any –

(a) Water (other than open coastal water); or

(b) Heat or energy from water (other than open coastal water); or

(c) Heat or energy from the material surrounding any geothermal water –

unless the taking, use, damming, or diversion is allowed by subsection (3)."……..

"(3) A person is not prohibited … from taking, using, damming, or diverting any water, heat, or energy if …

(a) The taking, use damming or diversion is expressly allowed by a rule in a regional plan (or any proposed regional plan), or a resource consent or

(b) In the case of fresh water, the water, heat, or energy is required to be taken or used for –

(i) An individual's reasonable domestic needs; or

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

and the taking or use does not, or is not likely to, have an adverse effect on the environment; or

(c) In the case of geothermal water, the water, heat or energy is taken or used in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area and does not have an adverse effect on the environment, or …..

(e) The water is required to be taken or used for fire-fighting purposes."

6.1.2 Scope of Chapter

This chapter deals with issues associated with water quality and allocation, that is:

- the taking and use, of fresh water and geothermal water,
- the *damming* of *surface water*
- the diversion of *groundwater* and
- the quantity, level and flow of water in any water body.

Drilling is also addressed in this chapter because of its association with the taking of *groundwater*. *Drilling* is controlled by section 9(4)(b) of the RMA which allows land to be used in any manner unless a land use is restricted by a rule in a Plan.

Note that the diversion of:

- *stormwater* is addressed in Chapter 5 of this Plan and
- rivers and streams are addressed in Chapter 7 of this Plan.

Note also that while *dam* construction is controlled in part by the Building Act, the ARC must consider the potential effects of *dam* failure under the RMA.

6.1.3 Water Resource Use and Management

Water is essential to the social, economic and cultural wellbeing of the Auckland region and is highly valued for both its 'instream qualities', and its 'out-of-stream' benefits for consumptive uses. These values are also discussed in the Introduction and Values chapters of this plan.

6.1.3.1 Geographic Distribution

Major sources of water supply in the Auckland region include the municipal bulk water supply ***dams*** in the Waitakere and Hunua Ranges, Hays Creek, and the Onehunga Aquifer.

Significant quantities of water are also taken in the Franklin Lowlands, the north-western periphery of Metropolitan Auckland, industrialised parts of the Auckland Isthmus and Manukau City and Clevedon Valley. Rural towns and townships with individual reticulated water supplies include Wellsford, Warkworth, Helensville, Snells Beach/Algies Bay, Pukekohe and Waiuku.

The presence of geothermal ***groundwater*** at Waiwera and Parakai has led to the development of local tourism industries (public pools, motels) based on the perceived therapeutic benefits of bathing in natural geothermal water.

6.1.3.2 Consumptive Values

The biggest 'out-of-stream' water use in the Auckland region is for municipal supply which accounts for 75 per cent of ***surface water*** and 30 per cent of ***groundwater takes***. Much of this water then needs disposing to sensitive aquatic receiving environments, raising issues addressed in the Discharges to Land and Water Chapter of this plan.

The horticultural sector accounts for the second highest water demand; the Pukekohe area, for example, produces over a quarter of the country's fresh vegetables. Other water uses include industrial processes and irrigation of recreational facilities like golf courses and sports fields.

6.1.3.3 Non-Consumptive Values

Water's essential 'in-stream' ecological value is providing habitat for fish and other freshwater biota. Socially, water may comprise or complement natural and landscape values and provide outdoor recreational opportunities like kayaking, swimming, fishing and picnicking which often coincide with times of high abstractive demand. Culturally, water is perhaps the most highly regarded natural resource to tangata whenua. Water facilitates social obligations of ***manakitanga***, and holds significant spiritual value, elements of which include:

- Associations with the ***mauri*** of the surrounding environment (including people)
- Cultural use and purposes, and
- ***Iwi, hapü*** and whänau identity.

6.1.3.4 Key Constraints

Auckland has small, short streams, small ***lakes*** (often with degraded water quality), low-yielding ***aquifers*** (the region is dominated by the low yielding Waitemata Sandstone Aquifer) and moderate rainfall. The absence of riparian vegetation, stock trampling of stream margins, and point source and non-point source discharges contribute to water quality degradation which can also limit the amount of water that can be abstracted from a water body.

Inefficient taking and use of water can limit the number of users that can benefit from a water source; taking more water than is needed, wasting water, poor matching of water use with actual needs and supply system losses all reduce the amount of water available for other people to use and can also unnecessarily increase the volume of ***wastewater*** needing disposal.

Parts of the region are water short in summer. Demand from some waterbodies already equals or exceeds availability. Current allocations are equivalent to the quantity available in rivers, streams and ***lakes*** such as the Kaipara River, Ngakaroa Stream, Mauku Stream and Slipper and Spectacle Lakes, and in ***aquifers*** such as Pukekohe, Omaha and parts of the Kumeu sandstone ***aquifers***.

Auckland has also experienced temporary municipal water shortages. The Region's population is expected to double within the next 50 years and competition will place even greater pressure on what is already a limited resource. Although a major source has recently been secured from the Waikato River in the Waikato Region, a further municipal bulk water supply source is likely to be required before 2030 to meet the ***drought security standard*** of the region's major supplier of bulk water (Watercare Services Ltd).

Potential municipal water supply problems also exist in projected future growth towns such as Wellsford, Warkworth, Helensville, Snells-Algies, Kumeu and Pukekohe. Demand may exceed availability more frequently and in more places in the future.

Section 14(3) of the RMA refers to the rights of individuals to ***take*** and use water for their reasonable domestic needs and for drinking water for their animals. In most instances this will not be a problem. However, because there is a lot of pressure on water resources in the Auckland Region there will be times when taking and using water even for these purposes may cause adverse effects either on others who ***take*** water or on freshwater ecosystems.

Several waterbodies cross the boundary between the Auckland and Waikato Regions (the Mangatangi and Tuatenui Streams, the Mangatawhiri River, and the Pukekohe Volcanic and Franklin Kaawa Aquifers) requiring careful consideration of inter-regional demands for water.

These constraints demonstrate the need to use water efficiently so as to maximise the consumptive benefits of water for present and future generations of Aucklanders.

6.1.3.5 Effects of Taking Surface Water

Abstracting ***surface water*** can reduce water levels and change flow regimes in rivers and streams and water levels in ***lakes***, ***dams*** and wetlands. An increase in the frequency and duration of low flows can result in reduced contaminant assimilation capacity, poorer water quality and a reduction in available habitat. These may all have adverse effects on freshwater ecosystems and on tangata whenua values. Numerous small and high use streams in the region such as the Mahurangi, Kaukapakapa, Puhinui, Taiataia, Hays, Ngakoroa, Mauku and Waitangi, and larger waterbodies where water quality is already degraded such as the Kaipara and Hoteo Rivers, are all potentially vulnerable to these effects. Water allocation from rivers and streams, especially in summer when flows are at their lowest and demand is generally at its highest, will be carefully managed so as to safeguard the life-supporting capacity of these water bodies.

Water intake structures may cause fish and other freshwater biota to be drawn into the structures or trapped on intake screens. These effects will be avoided by ensuring that ***water intake structures*** are suitably designed and operated.

6.1.3.6 Effects of Taking Groundwater

Changed water level and flow regimes in ***aquifers*** caused by the taking of ***groundwater*** may lead to reductions in spring and ***base flow***, the degradation of freshwater ecosystems and wetlands, the degradation of water quality through ***saltwater intrusion*** and contaminant transport, loss of recharge to adjacent ***aquifers, aquifer*** consolidation and reduction in the temperature of geothermal waters. Such changes can result in reduced ***water availability***, both for present and future generations.

High use *aquifers* particularly vulnerable to these effects include: the Kumeu Waitemata Aquifers, Omaha Waitemata Aquifers, Tomarata Waitemata Aquifers, Onehunga and Mt Wellington Volcanic Aquifers, Waiheke Aquifers, Manukau City Waitemata Aquifers, Manukau Kaawa Aquifers, Clevedon East and West Waitemata Aquifers, Franklin Volcanic and Kaawa Aquifers, Drury Sand Aquifer, Waiwera Geothermal Aquifer and Parakai Geothermal Aquifer.

The potential of *aquifers* in the Auckland Region, particularly in high use areas, will be sustained for current and future generations through the careful management of *groundwater* allocation.

Geothermal *aquifers* have particular resource attributes and are only found in a limited number of places in the Auckland Region. The taking of geothermal water from the Waiwera and Parakai Geothermal Aquifers for purposes other than therapeutic bathing and tangata whenua uses reduces opportunities for people and communities to provide for the perceived health benefits
of bathing in natural geothermal water.

Certain activities, such as land *drainage* and the seepage of water into *stormwater* and sewer pipes, involve the passive taking of *groundwater* and minor lowering of shallow water tables. Such activities are unlikely to result in a significant reduction in recharge to the region's *aquifers* or other adverse effects, as long as land *drainage* avoids areas of wetlands.

6.1.3.7 Effects of Bore Drilling

Drilling is carried out for geotechnical, geological and hydrogeological investigations, monitoring, installing underground services, installing *bores* for the purpose of taking water and for a wide variety of other purposes.

Groundwater quality can be degraded by *drilling*, constructing and sealing new *bores* and by poor operation, *maintenance* and/or abandonment of existing *bores* through introducing contaminated waters, linking *aquifers* of different water quality and linking *surface water* and *groundwater* of different quality. This plan distinguishes between *hole* and *bore drilling* because drilled *holes* are backfilled or, in the case of quarry blast *holes*, destroyed thereby reducing the potential for adverse effects, whereas *bores* remain open in the long term.

Degrading *groundwater* quality can indirectly affect the quantity of water available, while poorly installed *bores* can also dewater *aquifers*.

Selecting a *drilling* location appropriate to the purpose helps achieve the *drilling* purpose whilst ensuring that *wähi tapu* and significant surface features are not destroyed, *groundwater* quality is not compromised by nearby sources of contamination, stream or spring flows are not depleted, and the potential for saline intrusion is minimised.

The location and construction of *bores* will be controlled so as to avoid *surface water* and *groundwater* contamination and damage to *archaeological sites*.

6.1.3.8 Effects of Dams and Damming Water

Rivers and streams are dammed for many reasons, including storing water, controlling sediment runoff from earthworks, controlling flooding and *stormwater* quality and in order to create weirs and flow measuring structures. Several of the region's largest rivers have been dammed for bulk municipal water supply, while thousands of small *dams* have been constructed both off and on streams for irrigation, animal drinking water, wildlife habitat, and many for aesthetic purposes.

In highly urbanised catchments natural unmodified streams may no longer exist and water quality is potentially severely degraded by contaminants in *stormwater*. In such catchments streams may be dammed to reduce the flooding caused by increased runoff from impervious urban surfaces and to reduce further water quality degradation

by providing ***stormwater*** treatment. The adverse effects of urban development on water quality and flooding will be avoided, remedied or mitigated by providing for the ***damming*** of rivers and streams for the purposes of ***stormwater*** management in the *Urban Areas*.

Dams and weirs are also used to control water levels so as to maintain and restore natural wetlands. The ARPS recognises the scarcity of freshwater wetlands in the Auckland Region.

In such circumstances the environmental benefits of ***damming*** can outweigh the costs. However whilst the ***damming*** of water can have social and economic benefits, any adverse effects resulting from ***damming*** water must be avoided, remedied or mitigated. The effects of erecting structures, including ***dams***, is discussed in Chapter 7.2.

Damming water and taking water from ***dams*** can reduce water levels and change flow regimes (including the natural ***flow variability***) in rivers, streams, ***lakes*** and wetlands. Unless ***dams*** are built offstream or adequate provision is made for the bypassing or release of flows, these changes can result in an increase in the frequency and duration of low flows, reduced contaminant assimilation capacity, poorer water quality, and a reduction in available instream habitat attributable to the drowning or inundation of the section of stream behind the ***dam***. These factors may have adverse effects on freshwater ecosystems or on ***water availability*** for downstream water users.

Dams also pose barriers that can prevent fish from accessing habitat necessary for specific life-cycle stages. Populations of 13 of the 15 indigenous species recorded in the Auckland Region depend on annual upstream migrations of juveniles. Providing ***fish passage*** may not help species that are non-climbers and there is, moreover, some uncertainty as to the effectiveness of possible ***fish passage*** options for all but strong climbing species. ***Damming*** rivers and streams and taking water from those ***dams*** is likely to be a contributing factor in the decline of New Zealand's freshwater fish populations.

Objectives, policies and methods in this chapter seek to avoid, remedy or mitigate the adverse environmental effects of the ***damming*** of perennial rivers and streams on freshwater ecosystems including the passage of fish.

First and second order streams (the fingertip tributaries at the head of catchments) in the region are likely to house around 90 per cent of the region's freshwater diversity. ***Damming*** these streams has the potential to undermine their life-supporting capacity. The regulation of ***dams*** is therefore based on encouraging offstream ***dams*** and affording maximum ***protection*** for rivers and streams with high natural values. Not enough is yet known about the habitat significance of ***Intermittent streams***, so this plan does not attempt to restrict their ***damming***. However, further research may indicate a need to do so in the future.

In some parts of the Region there are many unauthorised small ***dams***. Their high density can have significant cumulative effects on flows, water quality, instream habitat and ***water availability***. Further rural subdivision could lead to additional intensification of small ***dams*** in these and other areas with a resulting escalation of these cumulative effects.

The ***damming*** of water carries with it a risk that the ***dam*** will fail, with potential damage to the downstream environment, including freshwater ecosystems, property, people, communities and infrastructure. In the Auckland Region ***dams*** have failed for a number of reasons including inadequate investigation of foundation conditions, poor design and construction of embankments and conduits, undersized spillways and poor ***maintenance***, including excessive vegetation growth. There have not been any failures involving the municipal water supply ***dams*** operated by Watercare Services Ltd or any ***dam*** authorised by a resource consent and which complied with all the conditions of the consent.

The *maintenance* and enforcement of standards on *dam* design, construction, operation and *maintenance* will reduce the risk of *dam* failure.

6.1.3.9 Effects of Diverting Groundwater

Groundwater may be either temporarily or permanently diverted to facilitate the excavations associated with quarrying and the building of underground basements/ car parks, tunnels and so on. *Groundwater diversions* are often associated with large urban developments, for example, high rise buildings with deep basements that can be below *groundwater* tables. If an inground development below the ambient *groundwater* level is sealed to resist hydrostatic pressure or has a higher permeability than the local *aquifer, groundwater* will continue to be diverted after construction by the physical presence of the structure. *Groundwater diversion* is also a common method in the Auckland Region for improving land stability.

Changing the permeability of an *aquifer* or re-routing *groundwater* flow can cause building instability and/or surface flooding. Draining layers of weak, compressible sediments may cause ground subsidence and consequently damage to susceptible structures or inground services. If *groundwater* flow paths are blocked, consequent increases in *groundwater* levels may cause an increase in the frequency and intensity of flooding. Careful management of *groundwater diversions* will avoid, remedy or mitigate adverse effects on *groundwater* regimes, *surface water* bodies, neighbouring structures and services and on people and communities.

6.1.4 Water Allocation Management Approach

Chapter 3 of this plan delineates various Management Areas in order to recognise different values and focus on managing cumulative effects in areas where activities are concentrated. The taking of water, for example, is likely to have an effect on the life-supporting capacity of Natural Streams and Wetlands and on ecosystems associated with and those who *take* water from High Use Streams and High Use *Aquifers*. Rules for taking, using, and *damming* water reflect the values of these Management Areas.

In order to achieve the objectives of this chapter, the management approach focuses on:

- Encouraging *groundwater* use in preference to taking water from rivers and streams (subject to *groundwater* availability) and encouraging the taking and storing of water off-stream in winter for use in summer;
- Providing for the setting of *minimum flows* in high-use rivers and streams;
- Setting *aquifer* levels and *water availability* in high-use *aquifers*;
- Implementing the NZ Environmental Standard for Drilling of Soil and Rock;
- Requiring the installation and monitoring of water meters so that users only *take* as much as they are allocated, freeing up *water availability* for other users;
- Maximising the benefit derived from the use of available water by encouraging conservation and efficient use of water and use of alternative sources such as *wastewater* re-use and rainfall capture (e.g. saving *stormwater* in suitable tanks to supplement water supply for such things as clothes washing and garden watering). Rules limit the quantities that can be *taken* as permitted or controlled activities, especially during the summer period, in order to manage the potential cumulative effects of these activities;
- Encouraging riparian planting to provide shading and limit the effects of taking water on stream water temperature and consequently on freshwater biota;
- Minimising the adverse effects of *damming* by encouraging *off-stream dams*, strongly discouraging *dams* on *Permanent* rivers and streams, and considering *decommissioning* of *dams* that are no longer needed or are causing adverse

effects that cannot be avoided, remedied or mitigated;

- Recognising that the benefits of ***damming*** water, for example, those associated with ***stormwater*** management within the ***Urban Areas*** and the social, cultural and economic well being derived from the provision of the Region's bulk water supply, are relevant matters to consider when determining the extent to which any adverse effects resulting from the ***damming*** of water are avoided, remedied or mitigated;
- Developing a strategy for addressing issues associated with existing ***dams*** in the Region which have been constructed without authorisation or which may fail to meet the requirements of this plan or resource consent conditions;
- Requiring works and/or services to be undertaken, particularly for addressing the cumulative effects of activities;
- Integrated catchment management through the concurrent expiry or review of consents to ***take***, use and ***dam surface water*** or discharge contaminants to ***surface water*** in a specific catchment or water body;
- Integrated management where surface and ground ***water availability*** are closely related;
- Involving stakeholders and water users in water management;
- Education on matters such as tangata whenua issues and perspectives, efficient water use, the design of ***water intake structures***, ***fish passage***, ***bore drilling*** and alternatives to the ***damming*** of ***Permanent rivers and streams***;
- On-going investigations into ***water availability***, water demand and efficient water use;
- Developing a water conservation strategy; and
- Providing Water Resource Assessment Reports and Catchment Management Plans,as provided for by the ARPS.

6.2 Issues

6.2.1 The Auckland Region has a large population, small streams, few large rivers, moderate rainfall and some low yielding ***aquifers***. Current demand for water already equals or exceeds availability in some ***surface water*** bodies and ***aquifers*** in the Auckland Region. Projected future growth is likely to increase competition for water and may limit the opportunities for people and communities in some areas, particularly some of the High Use Streams and High Use Aquifer Management Areas, to provide for their social, economic and cultural wellbeing.

6.2.2 The taking and using of water for domestic and animal drinking purposes is provided for in Section 14(3)(b) of the RMA. In parts of the Auckland Region that taking has the potential to cause adverse effects on the environment.

6.2.3 Abstracting water from ***surface water*** bodies can reduce water levels and change flow regimes. The freshwater ecosystems of Auckland's numerous small streams, especially those in the Wetlands, Natural Streams, and High Use Streams Management Areas are particularly vulnerable at times of low flow in summer when water quality can be at its most degraded and when demand is generally at its peak. Taking water from rivers, streams and ***lakes*** can also have adverse effects on other users.

6.2.4 The taking and using of geothermal water from the Waiwera and Parakai geothermal High Use Aquifer Management Areas for purposes other than therapeutic bathing and tangata whenua use reduces opportunities for people and communities to provide for the perceived therapeutic benefits of bathing in natural geothermal water.

6.2.5 *Drilling* activities, inappropriate siting and poor *maintenance* and operation of *bores* may have an adverse effect on surface and *groundwater* quality by introducing contaminated waters, linking *aquifers* of different water quality and linking *surface water* and *groundwater* of different quality (including geothermal water).

6.2.6 Abstracting water from *aquifers*, especially those in High Use Aquifer Management Areas, can reduce water levels, especially in summer when demand is generally at its peak. This can lead to reduced spring and stream flow and *saltwater intrusion* into the *aquifer*. Taking *groundwater* can also have adverse effects on other users depending on *bore* location and depth.

6.2.7 Water may not be used efficiently when the quantity or quality exceeds the needs of an activity. The inefficient use of water, particularly in water-short areas of the region (some High Use Streams and High Use Aquifer Management Areas), can result in potential water users being denied access to water resources. It can also lead to excessive generation of *wastewater* that requires subsequent disposal to sensitive aquatic receiving environments.

6.2.8 The *damming* of *Permanent rivers and streams* and the taking of water from *dams* can increase the frequency and duration of low flows, change *flow variability*, degrade water quality and reduce available instream habitat. This can have significant adverse effects on freshwater ecosystems (including wetlands) and reduce water available to downstream users. In the Auckland Region the cumulative effects may be significant as there are thousands of small *dams*, many unauthorised, in catchments with small streams and high *dam* densities. *Dam* construction can degrade water quality and involve the removal of habitat. Wetlands, Natural Streams, and High Use Streams Management Areas are the most vulnerable to these adverse effects.

6.2.9 *Dams* on *Permanent rivers or streams*, particularly in Wetland, Natural Stream, Urban Stream (Types 1 and 2), and High Use Stream Management Areas, can act as a barrier to the movement and migration of indigenous freshwater fish. *Fish passage* measures may not be effective at avoiding, remedying or mitigating the adverse effects of *dams* on species without a well-developed climbing ability. Fish and other freshwater biota can be entrained and impinged on *water intake structures* that have inappropriate screen mesh sizing, intake velocities and locations.

6.2.10 While *damming* can cause adverse effects on streams in the Auckland Region there may be circumstances such as *stormwater* management where *damming* is the best practicable option to avoid, remedy or mitigate the adverse environmental effects of *stormwater* discharges to streams within the *Urban Areas,* and in particular Urban Stream Management Areas Types 3, 4, 5 and 6, and where *damming* to restore or maintain wetlands remedies or mitigates the previous degradation or loss of wetlands.

6.2.11 Inappropriate location, design, construction, operation and *maintenance* of *dams* can lead to *dam* failure. *Dam* failure can pose a risk to freshwater ecosystems, property, stock, people, communities and infrastructure.

6.2.12 The diverting of *groundwater* for excavations such as quarries, tunnels, service trenches, building basements or other structures may cause a change in *groundwater* levels. This may give rise to adverse effects on *groundwater* regimes, *surface water* bodies, neighbouring structures and services and may cause flooding or ground settlement particularly in areas with layers of weak, compressible sediments. The Auckland Region has considerable areas of unstable land. *Groundwater diversions* are a common method of improving land stability.

6.3 Objectives

6.3.1 To maintain ***water availability*** for consumptive use, to enhance access to water resources and to minimise ***wastewater*** generation so that the people of the Auckland Region can provide for their social, economic and cultural well-being.

(This Objective relates to Issues 6.2.1, 6.2.2 and 6.2.7)

6.3.2 To maintain the quantity, quality, levels and flows in the region's ***surface water*** bodies sufficient to safeguard their life-supporting capacity, preserve and protect their ***natural character***, protect their outstanding landscapes from inappropriate use and development, protect significant habitats of indigenous freshwater fauna, recognise and provide for the relationship of Maori and their culture and traditions with water, and have particular regard to maintaining and enhancing their ***amenity*** values and protecting habitats of trout.

(This Objective relates to Issues 6.2.2, 6.2.3 and 6.2.8)

6.3.3 To maintain the quantity and levels of water in the Region's ***aquifers*** in the long term so as to safeguard spring flows, stream ***base flows***, water quality, and geothermal temperature and ***amenity***.

(This Objective relates to Issues 6.2.2, 6.2.4 and 6.2.6)

6.3.4 To provide for ***drilling*** activities and on-going use of ***bores*** while maintaining the quality of the Auckland Region's ***groundwater*** and avoiding damage to the values of heritage sites, buildings, places or areas.

(This Objective relates to Issue 6.2.5)

6.3.5 To avoid, remedy or mitigate the adverse environmental effects of erecting ***dams*** and the ***damming*** of ***permanent*** rivers and streams on the passage of fish and to minimise the risk
of fish and other freshwater biota being drawn into ***water intake structures***.

(This Objective relates to Issue 6.2.9)

6.3.6 To avoid, remedy or mitigate the adverse environmental effects of ***stormwater*** discharges to streams within the ***Urban Areas*** by facilitating the ***damming*** of water where it is the best practicable option for ***stormwater*** management within the ***Urban Areas***, and in particular in Urban Stream Management Areas Types 3, 4, 5 and 6.

(This Objective relates to Issue 6.2.10

6.3.7 To avoid the adverse effects of ***dam*** failure on people, communities, ecosystems, properties and infrastructure.

(This Objective relates to Issue 6.2.11)

6.3.8 To enable people and communities to divert ***groundwater*** while avoiding, remedying or mitigating adverse effects on ***groundwater*** regimes, ***surface water*** bodies, neighbouring structures and services and on people and communities.

(This Objective relates to Issue 6.2.12)

6.4 Policies

General

6.4.1 The taking and use of water from rivers, streams, ***lakes***, wetlands, and ***aquifers***, the erection of ***dams*** and the ***damming*** of water shall not result in more than minor adverse effects on the values of the Wetland, Natural Stream (excluding those in Water

Supply Management Areas), High Use Stream and High Use Aquifer Management Areas, and Urban River and Stream Management Areas

– Type 1 Streams where biological communities and water quality are currently good, as characterized by Anticipated Environmental Result 5.7.5 in Chapter 5 and

– Type 2 Streams.

In considering the effects on Natural Stream and Wetland Management Areas in Water Supply Management Areas, regard shall be had to Policies 3.5.4.1 to 3.5.4.2 in Chapter 3 Management Areas.

(This Policy relates to Objectives 6.3.2 and 6.3.3)

6.4.2 To have regard to the objectives and policies of Chapters 2.1, 2.2 and 2.3, and to the objectives and policies in Chapter 3.5. Water Supply Management Areas where relevant, in assessing any resource consent to ***take*** and use water from a river, stream, ***lake***, wetland, ***dam*** or ***aquifer***, and any proposal to erect a ***dam*** and ***dam*** or divert water, and any proposal to drill a ***hole*** or ***bore***.

(This Policy relates to Objectives 6.3.1, 6.3.2 and 6.3.3)

Taking and Using Water – General

6.4.3 Priority shall be given to the taking and use of water for the purposes of ***municipal water supply*** from Water Supply Management Areas.

6.4.4 No restrictions will be placed on the taking and using of water for domestic and animal drinking purposes in accordance with Section 14(3)(b) of the RMA unless the taking or use has or is likely to have adverse effects on the environment.

Note: Water taken for the purposes of supply to domestic or food processing premises should meet the Ministry of Health's current Drinking – Water Standards for New Zealand.

(This Policy relates to Objectives 6.3.1, 6.3.2 and 6.3.3)

6.4.5 Any proposal to ***take*** and use water for which a resource consent is required shall demonstrate that:

(a) The water quantity and quality taken is consistent with the requirements of the activity to promote efficient use of water resources;

(b) In situations where it is likely that the activity will result in significant adverse effects on the environment, there are no practicable ***alternative water sources*** available;

(c) Consideration has been given to water conservation and ***wastewater*** re-use methods;

(d) The consequential environmental effects of ***wastewater*** generation have been considered concurrently;

(e) The taking of water will not adversely affect the water quality of the water body; and

(f) Consideration has been given to existing lawful ***takes*** and priorities of ***take*** (including those granted by neighbouring regional councils where water bodies cross regional boundaries) including but not limited to:

  (i) the location (including distance from existing lawful ***takes***);

  (ii) quantity, rate and timing of the ***take***; and

  (iii) depth of ***groundwater take*** other than provided for by Policy 6.4.35 (e).

(g) Regard has been had to the purpose and values for which the water body is being managed (including those identified by neighbouring Regional Councils).

(This Policy relates to Objectives 6.3.1, 6.3.2 and 6.3.3)

6.4.6 In areas where ***groundwater*** is available the taking of ***groundwater*** shall be considered in preference to the taking of water from rivers and streams.

(This Policy relates to Objective 6.3.2)

6.4.7 Water allocated for abstractive use shall not exceed ***water availability***.

(This Policy relates to Objectives 6.3.2 and 6.3.3)

6.4.8 In areas where water allocated to users currently equals or exceeds ***water availability***, water allocation shall be reduced to ***water availability*** by:

(a) encouraging voluntary reductions in the authorised allocations of existing consent holders;

(b) ceasing any further allocation until such time that the availability again exceeds the quantity allocated; and

(c) reviewing the conditions of existing consents in accordance with General Policy 6.4.14 below.

(This Policy relates to Objectives 6.3.1, 6.3.2 and 6.3.3)

6.4.9 In situations where it is appropriate to establish priorities of allocation or use, including but not limited to situations in which the total demand for water exceeds its availability, priority of allocation or use shall be given to:

(a) In the case of freshwater, in the following order:

(i) Reasonable domestic needs and reasonable animal drinking needs;

(ii) Municipal water supply;

(iii) Existing lawfully established water users;

(iv) Those uses of water for which ***alternative water sources*** are unavailable or unsuitable;

except, in the case of (iii) and (iv), where this is contrary to the strategic direction and regional development priorities of the ARPS;

(b) In the case of geothermal water, the taking and use of geothermal water, heat or energy in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area; and

the quantity of water allocated shall be consistent with the efficient requirements of the activity.

(This Policy relates to Objectives 6.3.1, 6.3.2 and 6.3.3)

6.4.10 In circumstances when:

(a) a water shortage direction is issued under section 329 of the RMA;

(b) water restrictions are enacted in accordance with Policy 6.4.21

priority shall be given to water supply for public health needs (including municipal supply).

(This Policy relates to Objective 6.3.1)

6.4.11 Any proposal for the taking and use of water for municipal supply shall provide, in addition to the provisions of other relevant policies in this plan:

(a) A ***demand management plan/programme***;

(b) A ***drought management plan***;

(c) ***Network efficiency procedures***; and

(d) An analysis of the ***wastewater*** disposal requirements associated with the water ***take***.

(This Policy relates to Objective 6.3.1)

6.4.12 The social and economic benefits of the taking and use of water for the purposes of municipal water supply shall be recognised in assessing the effects of any proposal for municipal water supply.

6.4.13 Where a resource consent is granted to ***take***, use and/or ***dam*** water, the consent shall include a condition setting the duration and review date of the consent such that:

(a) Consents to ***take*** and use ***surface water***, to ***dam*** water and to discharge contaminants to ***surface water*** within a catchment shall be reviewed concurrently and shall expire at a date that coincides with a future review date so that water quantity and quality issues within that catchment can be considered on an integrated and comprehensive basis;

(b) All consents to ***take groundwater*** from an ***aquifer*** shall be reviewed concurrently and shall expire at a date that coincides with a future review date so that effects on ***groundwater*** quantity and quality can be considered on a comprehensive basis; and

(c) Where surface and ***groundwater*** availabilities are closely related, all consents to ***take surface water*** and ***groundwater*** within the combined catchment/***aquifer*** system shall be reviewed concurrently and shall expire at a date that coincides with a future review date so that water quantity and quality issues within that catchment/aquifer system can be considered on an integrated and comprehensive basis;

unless it is appropriate to set a different expiry or review date for any individual consent in order to avoid, remedy or mitigate the adverse effects of that activity.

(This Policy relates to Objective 6.3.2 and 6.3.3)

6.4.14 Where a resource consent is granted to ***take*** and use water, the consent shall include a condition/s enabling a review of the consent conditions (in accordance with Sections 128 and 129 of the RMA). The purposes for which the ARC will review the conditions of consent may include, but shall not be limited to:

(a) Varying the quantities and, in particular, to reduce authorised quantities in areas of highly - or over- allocated water resources; monitoring and reporting requirements; and performance standards in order to take account of information, including the results of previous monitoring and changed environmental knowledge, on:

(i) ***water use efficiency***;

(ii) water flow and level regimes;

(iii) ***water availability***, including ***alternative water sources***;

(iv) actual and potential water use;

(v) water quality;

(vi) instream biota, including the functioning of freshwater ecosystems, and

(vii) the relationship of Maori with water.

(b) Avoiding, remedying or mitigating any adverse effect on the environment arising or potentially arising from the exercise of the consent.

(This Policy relates to Objective 6.3.1, 6.3.2 and 6.3.3)

Taking and Using Surface Water

6.4.15 The taking of water from rivers and streams during the six month period from May to October inclusive for use and/or storage off-stream will be considered more appropriate than taking water during the six month period from November to April inclusive.

(This Policy relates to Objective 6.3.2)

6.4.16 The need to set ***minimum flows*** and/or other flow regime requirements for rivers or streams shall be determined according to, but not limited to, the following criteria:

(a) Level of actual or potential water demand in comparison to flow;

(b) Sensitivity of ecosystems and water quality to changed flow regimes;

(c) Sensitivity of Maori relationships with water to changed flow regimes;

(d) Sensitivity of significant ***amenity*** values (landscape and ***recreation***) to changed flow regimes;

(e) Demonstrating that the taking of water is causing significant adverse effects on the environment; and

(f) Availability of alternative mitigation options.

(This Policy relates to Objective 6.3.2)

6.4.17 Having established the need for flow regime requirements in accordance with the criteria of Policy 6.4.16, ***minimum flows*** and other flow regime requirements will be determined:

(a) In catchments where a number of consents to ***take*** and use ***surface water*** are due to expire, or at times when the conditions of consents are reviewed; or

(b) In circumstances where it is appropriate to set a ***minimum flow*** or other flow regime requirement in relation to individual applications for resource consent, through the consent process.

(This Policy relates to Objective 6.3.2)

6.4.18 Any ***minimum flows*** and other flow requirements determined in accordance with policy 6.4.17 will be set and implemented through the conditions of resource consents and/or variation to this plan.

(This Policy relates to Objective 6.3.2)

6.4.19 ***Minimum flows*** and other flow regime requirements shall be set using the following method:

(a) Management objectives shall be determined from an assessment of the following values of the river or stream:

  (i) instream: ecological, Maori, ***amenity*** (including landscape and ***recreation***); and

  (ii) out of stream: consumptive use, including municipal water supply and its associated infrastructure; and

(b) When selecting methods for setting flow regime requirements that will ensure that these management objectives are met, regard shall be had to relevant technical publications, codes of practice, guidelines and design manuals, including but not limited to "Flow Guidelines for Instream Values (Ministry for the Environment, 1998) and "Guidelines for Setting Streamflow Regimes in the Auckland Region" - draft (Auckland Regional Council, 2000).

(This Policy relates to Objective 6.3.2)

6.4.20 Where a ***minimum flow*** or other flow regime requirement has been set in accordance with Policy 6.4.19 of this plan or through the determination of a resource consent application, the maximum amount of water that can sustainably be allocated from a river or stream (the ***water availability***) shall be determined using the following method:

(a) A '***management flow***' shall be determined at a flow greater than any ***minimum flow*** set for the river or stream, taking into account matters which include, but are not limited to:

(i) the total actual or potential water demand; and

(ii) the potential frequency of restrictions on ***takes*** associated with the setting of the ***management flow***; and

(b) Availability shall equal a quantity of no more than the difference between the ***management flow*** and the ***minimum flow***.

Further ***water availability*** may be set for ***takes*** by either:

(c) Raising the ***management flow***; or

(d) Setting one or more higher ***management flows*** with corresponding higher ***minimum flows***.

(This Policy relates to Objective 6.3.2)

6.4.21 In any water body for which a ***minimum flow*** and ***water availability*** has been set in accordance with Policies 6.4.19 and 6.4.20 of this plan or through the determination of a resource consent application, adverse effects on the environment will be avoided, remedied or mitigated by allowing the taking of water only at times when ***minimum flow*** requirements are met. Restrictions on ***takes*** will include, but not be limited to the cessation, rostering or rationing of ***takes*** at times when the ***takes*** would otherwise cause the flow to fall below the ***minimum flow***. The implementation of restrictions on ***takes*** may involve water user groups where appropriate.

Explanation:
*Policies 6.4.19, 6.4.20 and 6.4.21 describe the process by which a **minimum flow**, **water availability** and **take** restrictions may be determined for any river or stream.*

*Fundamental to this approach is that the taking of water should not cause flow to fall below a **minimum flow**. One way of ensuring this is to establish a threshold at which pumping must cease that is actually higher than the **minimum flow**. This is best explained by way of an example:*

*It is determined that a **minimum flow** of 100 litres per second (l/sec) should be maintained in a river. There are several water users upstream of the **minimum flow** site taking a combined quantity of 50 l/sec. To provide for a **water availability** of 50 l/sec, the **management flow** in this example would be set at no less than 150 l/sec.*

*Policy 6.4.21 provides for a range of alternative means by which the **minimum flow** can be maintained. In this example the **minimum flow** could be maintained by requiring all **takes** to cease when flow falls below 150 l/sec because, if all users were to pump concurrently when the flow was, for example, 149 l/sec, the flow would fall to 99 l/sec and the **minimum flow** would not be maintained.*

*An alternative option would require **takes** to be rostered between two groups of users (each with a total **take** of 25 l/sec) when flows are in the range 125 to 150 l/sec. **Takes** would only have to cease once flows fall below 125 l/sec. Rostering can, for example, be on a 'one day on, one day off' basis or provide users with priority use at different times of year reflecting their key periods of demand.*

*Any system of water allocation needs to be flexible to reflect different circumstances and changing demand over time. Policy 6.4.20 provides for **water availability** to be up to the full difference between the management and **minimum flows** which allows more water to be taken when flows are higher than the **management flow***

*but with restrictions on those **takes** being more frequent when flows are below the **management flow**. The policy also provides for **water availability** to be increased by setting a higher **management flow** but with a consequent raising of the threshold below which **takes** would be restricted. This trade-off between increased availability and reduced access can be avoided by catering for additional water use only at higher flows. In the above example, an additional 50 l/sec could be made available, but only when flows exceed 200 l/sec. This additional availability could be taken by existing users to supplement their **take** allowed at lower flows, or by new users, or both.*

(This Policy relates to Objective 6.3.2)

6.4.22 The implementation of Policies 6.4.9, 6.4.19, 6.4.20 and 6.4.21 that determine management objectives, flow regime requirements, ***water availability*** and ***take*** restrictions will involve consultation with water users, tangata whenua, local communities, neighbouring regional councils where water bodies cross regional boundaries and interested parties.

(This Policy relates to Objective 6.3.1 and 6.3.2)

6.4.23 The taking of water from ***dams*** on ***Permanent rivers or streams*** shall be subject to any ***minimum flows*** and/or other flow regime requirements for rivers or streams set in accordance with the policies of this plan.

(This Policy relates to Objective 6.3.2)

6.4.24 Any proposal to ***take*** and use water from rivers, streams, springs, ***lakes***, wetlands and ***dams*** on ***Permanent rivers or streams*** for which a resource consent is required shall demonstrate that:

(a) ***Water availability*** for the water body will not be exceeded;

(b) Maintenance of downstream flow regimes and water levels will be provided for, including:

  (i) low flows;

  (ii) ***flow variability***;

  (iii) levels and flows in wetlands;

  (iv) ***lake*** levels;

(c) The taking of water will be at times of the day or year that will safeguard the life-supporting capacity of freshwater ecosystems;

(d) Mitigation options have been incorporated where appropriate, including but not limited to:

  (i) alternative rates and timing of ***takes***;

  (ii) riparian planting;

  (iii) wetland creation;

  (iv) provision for ***fish passage***;

  (v) reducing both point source and non-point source discharges; and

  (vi) water conservation options in times of reduced ***water availability***; and

(e) Monitoring of a type and scale appropriate for the activity has been incorporated including but not limited to:

  (i) measurement and recording of water use; and/or

  (ii) measurement and recording of water flows and levels; or

  (iii) sampling and assessment of water quality and freshwater biota.

(This Policy relates to Objective 6.3.2)

6.4.25 *Surface water intake structures* will be designed, constructed, operated and maintained to avoid adverse effects on biota, including the *entrainment* and *impingement of fish*.

(This Policy relates to Objective 6.3.5)

Drilling

6.4.26 The location, design, and construction of any *drilling* activity shall:

(a) Prevent contaminants from entering an *aquifer*;

(b) Prevent cross-*aquifer* contamination;

(c) Avoids disturbance of any *wähi tapu* or other *archaeological site*; and

(d) Comply with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock.

(This Policy relates to Objective 6.3.4)

6.4.27 Any *bore* shall be operated, used and maintained in a manner that:

(a) Complies with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock;

(b) Prevents contaminants from entering an *aquifer*; and

(c) Prevents cross-*aquifer* contamination.

(This Policy relates to Objective 6.3.4)

Taking and Using Groundwater – General

6.4.28 The maximum amount of water that can sustainably be allocated from an *aquifer* (the *water availability*) shall be determined by taking into account

(a) *Aquifer* recharge;

(b) The spatial distribution of *bores*; and

(c) Outflow requirements of the *aquifer*, including

(i) flow at the coast, to prevent *saltwater intrusion*;

(ii) requirements of streams and springs;

(iii) recharge of adjacent or underlying *aquifers*; and

(iv) in the case of geothermal *aquifers*, water levels or outflow to prevent cold *groundwater* or seawater intrusion and reduction in *aquifer* temperatures.

(This Policy relates to Objective 6.3.3)

6.4.29 Water allocated to users in an *aquifer* shall not exceed the *water availability* for that *aquifer* as specified in Schedule 2 of this plan.

(This Policy relates to Objective 6.3.3)

6.4.30 If changes occur in *aquifer water availability* due to changes in recharge attributable to land use or climate change, the spatial distribution of *bores*, or *aquifer* outflow requirements, alterations to availability as specified in Schedule 2 of this plan will be notified by way of a variation to the plan.

(This Policy relates to Objective 6.3.3)

6.4.31 In locations where *groundwater* levels have fallen below minimum levels set in Schedule 2 of this plan, adverse effects on the environment shall be avoided, remedied or mitigated by:

(a) Ceasing any further allocation in the *aquifer* or parts of the *aquifer* until *groundwater* levels return to above the minimum level; and

(b) Temporarily restricting the taking of water by the issuing of a water shortage direction under Section 329 of the RMA until ***groundwater*** levels return to above the minimum level; and

(c) Reviewing the conditions of existing consents in accordance with General Policy 6.4.14.

(This Policy relates to Objective 6.3.3)

6.4.32 In ***aquifers*** where monitoring shows that outflow requirements are not being met (as indicated by, for example, the occurrence of ***saltwater intrusion***, reduction of stream and spring ***base flow*** to levels where an adverse effect is occurring or where adequate recharge to adjacent or underlying ***aquifers*** is not occurring), adverse effects on the environment shall be avoided, remedied or mitigated by:

(a) Ceasing any further allocation of ***groundwater***;

(b) Temporarily restricting the taking of water by the issuing of a water shortage direction under Section 329 of the RMA;

(c) Reviewing the conditions of existing consents in accordance with General Policy 6.4.14.

(This Policy relates to Objective 6.3.3)

6.4.33 Priorities for setting ***water availability*** and minimum ***groundwater*** levels for ***aquifers*** and/or ***groundwater*** Management Areas that are not set out in Schedule 2 shall be determined according to the following criteria:

(a) The ***aquifer*** is listed as a High Use Aquifer Management Area; and

(b) ***Aquifers*** not listed as a High Use Aquifer Management Area where there is an increase in use to the point where ***aquifer*** outflow requirements may not be met,

and shall be notified by way of variation or change to this plan.

(This Policy relates to Objective 6.3.3)

6.4.34 The implementation of policies 6.4.31, 6.4.32 and 6.4.33, that provide for the determination and implementation of management objectives, ***aquifer*** levels or ***water availability*** and ***take*** restrictions, will involve consultation with water users, tangata whenua, local communities and interested parties.

(This Policy relates to Objective 6.3.3)

6.4.35 Any proposal to ***take*** and use ***groundwater*** for which a resource consent is required shall demonstrate that:

(a) ***Water availability*** for the ***aquifer*** will not be exceeded;

(b) The taking of ***groundwater*** will not reduce ***groundwater*** levels to below a minimum level
at a location in an ***aquifer*** set by this plan;

(c) The taking of ***groundwater*** will avoid, remedy or mitigate adverse effects on ***surface water*** flows, including:

(i) ***base flow*** of streams and springs; and

(ii) any stream flow requirements;

(d) The taking of ***groundwater*** will not cause ***saltwater intrusion*** or any other contamination;

(e) The taking of ***groundwater*** will not cause adverse interference effects on neighbouring ***bores*** to the extent where the neighbouring ***bore*** owner is prevented from obtaining their lawfully established water requirements. This requirement will not apply in the following circumstances:

(i) where it is practicably possible to locate the pump intake at a greater depth within the affected ***bore;*** and

(ii) where it can be demonstrated that the ***bore*** accesses, or could access, the resource at a deeper level within the same ***aquifer***, if drilled or cased to a greater depth;

(f) That the proposed ***bore*** is capable of extracting the quantity applied for;

(g) The taking of ***groundwater*** will sustain the potential of ***aquifers*** to meet the reasonably foreseeable needs of future generations and to avoid, remedy or mitigate adverse effects on the environment, particularly:

(i) maintaining recharge to other ***aquifers***; and

(ii) avoiding ***aquifer*** consolidation and surface subsidence;

(h) Mitigation options have been incorporated where appropriate, including but not limited to:

(i) alternative rates and timing of ***takes***;

(ii) providing alternative water supplies; or

(iii) water conservation options in times of reduced ***water availability***; and

(i) Monitoring of a type and scale appropriate for the activity has been incorporated, including but not limited to:

(i) measurement and recording of water use;

(ii) measurement and recording of water flows and levels; or

(iii) sampling and assessment of water quality and freshwater biota.

(This Policy relates to Objective 6.3.3)

6.4.36 The efficient ***taking*** of water from ***groundwater*** resources shall be encouraged through the ***drilling*** of ***bores*** that fully penetrate the ***aquifer***.

(This Policy relates to Objective 6.3.1 and 6.3.3)

Taking and Using Geothermal Water

6.4.37 Any proposal to ***take*** and use geothermal water for which a resource consent is required shall demonstrate that:

(a) ***Aquifer*** water levels and pressures will be managed to avoid, remedy or mitigate:

(i) cold ***groundwater*** or seawater intrusion; and

(ii) reduction in ***aquifer*** temperatures,

(b) The taking will not adversely affect the potential for restoration, maintenance and enhancement of surface geothermal water springs;

(c) Adverse effects on the taking of geothermal water, heat or energy in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area (as provided for by s.14(3)(c) of the RMA) will be avoided, remedied or mitigated; and

(d) The taking and use of geothermal water will be thermally efficient in terms of:

(i) ***bore*** construction;

(ii) sharing of ***bores*** between/amongst geothermal pool users;

(iii) retention of heat in conveyance of water from ***bore*** to use;

(iv) disposal of geothermal ***wastewater*** in a manner that contributes to efficient use of geothermal energy;

(v) the relationship between pool dimensions, desired pool temperatures, hours of pool use and numbers using the pool; and

(vi) the use of thermal conservation techniques for controlling heat loss.

(This Policy relates to Objective 6.3.3)

6.4.38 Any proposal to transfer the whole or part of a consent holder's interest in a water permit for taking and using water to another site in the same geothermal field shall demonstrate that the quantity transferred is used in a thermally efficient manner.

(This Policy relates to Objective 6.3.3)

6.4.39 The taking and use of geothermal water from Waiwera and Parakai Geothermal Aquifer Management Areas shall be considered inappropriate unless it is for the communal benefit of the tangata whenua of the area in accordance with s.14(3)(c) of the RMA or for heating for bathing pools.

(This Policy relates to Objective 6.3.3)

Damming

*Note 1: The policies and rules relating to **damming** and authorisations for the use of the bed of a river, stream or **lake** for **dam** structures encompass, but are not limited to, **damming** for the purposes of: storing water, **stormwater** detention and treatment ponds, controlling sediment discharges from cultivated land, habitat creation, maintenance and restoration, weirs, and flow measuring structures.*

*Note 2: Anyone proposing to establish a **dam**, and wanting guidance regarding the design, construction, operation and maintenance of a **dam** are referred to ARC Technical Publication No. 109 Dam Safety Guidelines and the New Zealand Dam Safety Guidelines (New Zealand Society on Large Dam, November 2000).*

6.4.40 The conditions of any resource consent to ***dam*** water relating to the design, construction, operation or maintenance and monitoring of the ***dam*** shall be consistent with:

(a) any prior building consent for the ***dam*** issued under the Building Act 2004; and

(b) any prior ***dam*** safety assurance programme for the ***dam*** approved under the Building Act 2004,

unless the conditions are necessary for the purposes of avoiding, remedying or mitigating adverse effects on the environment.

Note: Policy 6.4.40 is to avoid inconsistency between the RMA and Building Act 2004 processes.

6.4.41 The erection or placement of a ***dam*** on the bed of a ***lake*** or ***Permanent river or stream*** shall be subject to assessment against Policies 7.4.1 to 7.4.8 in Chapter 7: Beds of Lakes and Rivers.

(This Policy relates to Objective 6.3.2)

6.4.42 The adverse effects of ***dams*** existing at the date of notification of this Plan shall be avoided, remedied or mitigated by:

(a) Riparian planting;

(b) Installing a low flow by-pass;

(c) Providing for appropriate ***fish passage;***

(d) Providing for flow and water level variability;

(e) Wetland creation;

(f) Remedial measures which ensure *dam* safety performance standards are being met;

(g) *Decommissioning*/removal; or

(h) Any other appropriate remedy or mitigation.

(This Policy relates to Objective 6.3.2, 6.3.5 and 6.3.7)

6.4.43 The off stream *damming* of water shall be preferred to the *damming* of *Permanent rivers or streams*.

(This Policy relates to Objective 6.3.2 and 6.3.5)

6.4.44 The *damming* of *Permanent rivers or streams, lakes* and wetlands shall be avoided unless, in addition to the other relevant policies in this plan, the proposal to *dam* a water body can demonstrate that either:

(a) (i) There are no practicable alternative methods or locations that would result in lesser adverse environmental effects than *damming Permanent rivers or streams*; and

(ii) There are significant positive environmental effects sufficient to mitigate adverse effects resulting from the *damming* of *Permanent rivers or streams, lakes* and wetlands; or

(b) The *damming* is consistent with the best practicable option determined in accordance with relevant policies in Chapter 5 (Discharges to Land and Water and Land Management) of this Plan for the management of *stormwater* diversions and discharges in Type 3, 4, 5 or 6 Urban River and Stream Management Areas; or

(c) The *damming* of water with a *dam* on the bed of a *Permanent river or stream* is for the purposes of *municipal water supply* in a Water Supply Management Area.

(This Policy relates to Objective 6.3.2 and 6.3.5)

6.4.45 Any proposal to *dam* a *Permanent river or stream, lake* or wetland for which a resource consent is required shall demonstrate that:

(a) Adverse effects on *fish passage* are avoided, remedied or mitigated where appropriate (depending on the actual or potential existence of native fish and/or habitat upstream);

(b) Maintenance of any downstream flow regimes and water levels will be provided for, including:

(i) *minimum flows*;

(ii) *flow variability*;

(iii) levels and flows in Wetlands Management Areas; and

(iv) *lake* levels;

(c) Existing lawfully established upstream and downstream water uses are not adversely affected by the *damming* proposal;

(d) The design, construction, operation and *maintenance* of the *dam*

(i) is consistent with the hazard rating determined for the *dam*; and

(ii) avoids, remedies or mitigates:

(a) flooding;

(b) bank or bed erosion or aggradation;

(c) restriction of ***drainage*** of any property;

(d) land instability;

(e) Adverse effects on people and communities are avoided, remedied or mitigated;

(f) Adverse effects on any habitat of fauna or flora, including wetlands, either upstream or downstream of the ***dam*** are avoided, remedied or mitigated;

(g) Adverse cumulative effects that may arise from the scale, location or number of ***dams*** in the catchment are avoided, remedied or mitigated;

(h) The requirement for, and conditions of, a bond have been considered; and

(i) Monitoring has been incorporated where appropriate, including but not limited to:

(i) inspection of ***dam*** embankments and spillways;

(ii) measurement and recording of embankment internal water levels and pressures; or

(iii) sampling and assessment of water quality and freshwater biota.

*Note: In assessing proposals to **dam** a **Permanent river or stream, lake** or wetland, the ARC will have regard to ARC Technical Publication 131: Fish Passage Guidelines for the Auckland Region or equivalent recognised guidelines.*

(This Policy relates to Objective 6.3.2, 6.3.5 and 6.3.7)

6.4.46 Any proposal to establish an ***off-stream dam*** for which a resource consent is required shall demonstrate that:

(a) The design, construction, operation and ***maintenance*** of the ***dam***

(i) is consistent with the hazard rating determined for the ***dam***

(ii) avoids, remedies or mitigates:

(a) flooding;

(b) restriction of ***drainage*** of any property; and

(c) land instability;

(b) Adverse effects on ecosystem habitat, both terrestrial and freshwater and people and communities are avoided, remedied or mitigated; and

(c) Monitoring has been incorporated where appropriate, including but not limited to:

(i) inspection of ***dam*** embankments and spillways; and

(ii) measurement and recording of embankment internal water levels and pressures.

(This Policy relates to Objective 6.3.7)

6.4.47 Where a resource consent is granted to ***dam*** water the consent shall include a condition(s) enabling a review of the consent conditions (in accordance with Sections 128 and 129 of the RMA). The purposes for which the ARC shall review the conditions may include, but shall not be limited to:

(a) Varying the operating, monitoring and reporting requirements, mitigation measures and performance standards in order to ***take*** account of information, including the results of previous monitoring and changed environmental knowledge, on:

(i) water flow and level regimes;

(ii) ***water availability***, including ***alternative water sources***;

(iii) water quality;

(iv) instream biota, including the functioning of aquatic ecosystems; and

(v) *dam* safety performance;

(b) Addressing any adverse effect on the environment arising or potentially arising from the exercise of the consent; and

(c) Addressing water shortage under drought conditions in relation to municipal water supply.

(This Policy relates to Objective 6.3.1, 6.3.2, 6.3.5 and 6.3.7)

6.4.48 The requirement for a bond will be considered to avoid, remedy or mitigate potential adverse effects of ***damming*** water, except where a resource consent to dam water is held by a ***TA***, a ***stormwater*** or ***wastewater Network Utility Operator***, or a ***Highway Network Operator***.

(This Policy relates to Objective 6.3.2, 6.3.5 and 6.3.7)

Diverting Groundwater

6.4.49 Any proposal to divert ***groundwater*** for which a resource consent is required shall demonstrate that the diversion:

(a) Ensures the flow regime required for the life supporting capacity of water bodies is provided for including:

(i) low/***minimum flows***;

(ii) levels and flows in wetlands; and

(iii) ***lake*** levels;

(b) Ensures existing lawful ***groundwater*** users are not adversely affected by the proposal;

(c) Ensures that the proposal avoids, remedies or mitigates any ground settlement that may result in any adverse effects including:

(i) damage to structures;

(ii) damage to buildings; and

(iii) damage to services (e.g. roads, pavements, power, gas, electricity, and fibre optic cables);

(d) Ensures that the ***groundwater diversion*** does not cause or exacerbate any flooding;

(e) Avoids any actual or potential adverse cumulative effects that may arise from the scale, location and/or number of ***groundwater diversions*** in the same area;

(f) Avoids any actual or potential adverse effects of the discharge of ***groundwater*** containing:

(i) sediment;

(ii) contaminants;

(g) Ensures that adverse effects on ecosystem habitat, both terrestrial and freshwater, are avoided, remedied or mitigated; and

(h) Monitoring has been incorporated where appropriate, including but not limited to:

(i) measurement and recording of water levels and pressures; and

(ii) measurement and recording of the movement of ground, buildings and other structures.

(This Policy relates to Objective 6.3.8)

6.5 Rules

Note: The assessment of effects submitted with an application for resource consent needs to be sufficiently detailed to correspond to the scale and significance of the actual and potential effects that the activity may have on the environment. Refer to Section 10.3 of this Plan for further guidance on the information requirements associated with making an application for resource consent.

Taking and Using Water in Accordance with Section 14 (3) (b) and (c) of the RMA

Explanation:
*The following section refers to the rights of individuals to **take** and use water for their reasonable domestic needs and for drinking water for their animals, and the taking of geothermal water, heat or energy for tangata whenua in accordance with section 14(3)(b) and (c) of the RMA. In most instances the taking and using of water under this provision will not result in adverse effects. However, because of the high level of demand for water resources in the Auckland Region there will be times when taking and using water even for these purposes may cause adverse effects either on others who **take** water or on freshwater ecosystems. For that reason the Plan sets out provisions in case those circumstances arise. The most likely circumstances are:*

(a) the taking of water from small streams at a rate or quantity which does or is likely to effect downstream water users; or

*(b) the taking of **groundwater** from a **bore** at a rate or quantity which does, or is likely to interfere with the operation of other **bores** in close proximity.*

Section 14 of the RMA provides that:

*"(3) A person is not prohibited … from taking, using, **damming**, or diverting any water, heat, or energy if …*

(b) In the case of fresh water, the water, heat, or energy is required to be taken or used for –

(i) An individual's reasonable domestic needs; or

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

and the taking or use does not, or is not likely to, have an adverse effect on the environment; or

(c) In the case of geothermal water, the water, heat or energy is taken or used in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area and does not have an adverse effect on the environment;..."

*Note that resource users may also **take** water where provided for under the following rules in addition to the taking and using of water in accordance with Section 14(3)(b) of the RMA.*

6.5.1 The taking and using of ***surface water*** under section 14(3)(b) of the RMA is likely to have an adverse effect on the environment unless it complies with the following condition:

(a) The location and/or rate of the taking does not adversely affect any lawfully established taking of water.

6.5.2 If the taking and use of ***surface water*** in accordance with section 14(3)(b) of the RMA does not comply with the conditions of Rule 6.5.1, then the taking and use shall cease until a resource consent for the taking and use under Rule 6.5.18 has been applied for and granted by the ARC.

6.5.3 The taking and use of fresh ***groundwater*** in accordance with section 14(3)(b) of the RMA is likely to have an adverse effect on the environment unless it complies with the following condition:

(a) The location and/or rate of the taking does not adversely affect any lawfully established taking of water.

6.5.4 If the taking and use of fresh ***groundwater*** in accordance with section 14(3)(b) of the RMA does not comply with the condition of Rule 6.5.3, then the taking and use shall cease until a resource consent for the taking and use under Rule 6.5.48 has been applied for and granted by the ARC.

6.5.5 The taking and use of geothermal water in accordance with section 14(3)(c) of the RMA is likely to have an adverse effect on the environment unless it complies with the following conditions:

(a) Any new ***take*** of geothermal water, heat or energy

(i) is located at least 20 metres from any other existing lawful geothermal ***take***; and

(ii) does not reduce ***groundwater*** levels to below any minimum level set in Schedule 2 of this Plan.

6.5.6 If the taking and use of geothermal water in accordance with section 14(3)(c) of the RMA does not comply with the conditions of Rule 6.5.5, then the taking and use shall cease until a resource consent for the taking and use under Rule 6.5.47 has been applied for and granted by the ARC.

Taking And Using Water – General

*Note: An advice note is to be appended to all consents for **groundwater** and **surface water takes** for **potable water** recommending the need for regular water quality testing and treatment. The advice note should advise that water being extracted for community supplies should meet the Ministry of Health's current Drinking Water Standards for New Zealand. Guidelines for Drinking Water Quality for New Zealand (Ministry of Health, 1995) assist in determining how those standards can be met.*

Taking and Using Rainwater

Note: Rainwater is water collected before it enters the ground or a waterbody.

Permitted Activity

6.5.7 The taking and use of rainwater is a Permitted Activity.

Taking and Using Surface Water (Excluding From Dams)

*Note: The following rules relate to **surface water** taken and used for purposes other than provided for by section 14(3)(b) (reasonable domestic needs or reasonable needs for animal drinking) and (c) (geothermal water by the tangata whenua) of the RMA and Rules 6.5.1 and 6.5.2 of this Plan.*

Permitted Activities

6.5.8 The taking and use of no more than 20m³/day of water from a ***lake*** is a Permitted Activity, subject to the following conditions:

(a) The ***water intake structure*** shall be designed and constructed so that:

(i) the maximum water velocity into the entry point of the intake structure is no greater than 0.3 metres per second;

(ii) the intake screen mesh spacings are no greater in one dimension than 1.5 millimetres; and

(iii) the intake screen is located no less than 0.5 metres instream from the water's edge; and

(b) Notice on the prescribed form shall be received by the Auckland Regional Council at least 15 working days before exercising this permitted activity.

6.5.9 The taking and use of no more than 5 m³/day of water from a river, stream or spring at times when any relevant flow regime requirement specified in this Plan is met is a Permitted Activity, subject to the following conditions:

(a) The ***water intake structure*** shall be designed and constructed so that

(i) the maximum water velocity into the entry point of the intake structure is no greater than 0.3 metres per second;

(ii) the intake screen mesh spacings are no greater in one dimension than 1.5 millimetres; and

(iii) the intake screen is located no less than 0.5 metres instream from the water's edge, or, in streams of less than 1 m width, as far as practicable from the water's edge; and

(b) Notice on the prescribed form shall be received by the Auckland Regional Council at least 15 working days before exercising this permitted activity.

*Note: The prescribed form referred to in the Permitted Activity rules to **take** water can be obtained by contacting the Auckland Regional Council or by visiting the ARC's website (www.arc.govt.nz).*

Controlled Activities

6.5.10 The taking and use of no more than 100m³/day of water from a river, stream or spring during the six month period May 1 – October 31 inclusive at times when any relevant flow regime requirement specified in this Plan is met is a Controlled Activity.

6.5.11 The taking and use of more than 20m³/day and no more than 100m³/day of water from a ***lake*** is a Controlled Activity.

6.5.12 Rules 6.5.10 and 6.5.11 are subject to the following standards and terms:

(a) The taking of water is not from any Wetlands, and High Use Stream Management Areas;

(b) The ***water intake structure*** shall be designed and constructed so that:

(i) the maximum water velocity into the entry point of the intake structure is no greater than 0.3 metres per second;

(ii) the intake screen mesh spacings are no greater in one dimension than 1.5 millimetres; and

(iii) the intake screen is located no less than 0.5 metres instream from the water's edge, or, in streams of less than 1 m width, as far as practicable from the water's edge;

(c) A water meter shall be installed and maintained on the outlet of the pump so that:

(i) The meter shall measure the total daily quantity of water being taken;

(ii) A quarterly return of water meter readings measured at daily intervals shall be provided to the ARC, by no later than 10 working days after 28 February, 30 May, 30 August and 30 November each year;

(iii) Records may be also viewed at any time during any working day by an ARC Enforcement Officer;

(iv) The water meter shall be capable of measuring to an accuracy of at least plus or minus 5 per cent and it is to read the water taken to at least 1 cubic metre; and

(v) The meter shall be installed to the manufacturer's specifications, and shall be maintained to the specified requirements and in a working condition at all times.

6.5.13 The ARC will exercise its control over the following matters in Rules 6.5.10 and 6.5.11:

(a) The maximum rate of ***take***;

(b) The location of the taking of water;

(c) The monitoring and reporting requirements;

(d) The duration of the consent; and

(e) The timing and nature of reviews of consent conditions.

Non notification

Applications for controlled activities shall be considered without public notification or the need to serve notice of the application on affected persons in accordance with Sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

Discretionary Activities

6.5.14 The taking and use of more than 100 m^3/day of water from a river, stream or spring not in a Wetlands or High Use Streams Management Area during the six month period May 1 to October 31 inclusive is a Discretionary Activity.

6.5.15 The taking and use of more than 5m^3/day of water from a river, stream or spring not in a Wetlands or High Use Streams Management Area during the six month period November 1 to April 30 inclusive is a Discretionary Activity.

6.5.16 The taking and use of more than 5m^3/day of water from a river, stream or spring in a High Use Streams Management Area or from a wetland in a Wetlands Management Area is a Discretionary Activity.

6.5.17 The taking and use of more than 100m^3/day of water from a ***lake*** is a Discretionary Activity.

6.5.18 The taking and use of water from a river, stream, spring ***lake*** or wetland that does not comply with Rules 6.5.1, 6.5.8, 6.5.9, 6.5.10 and 6.5.11 or is not provided for by any other rule in this plan is a Discretionary Activity.

(For Rules 6.5.14 – 6.5.18 see also Policies 6.4.1 – 6.4.25)

Drilling

Permitted Activities

6.5.19 The ***drilling*** of a ***hole***, including those into a single ***aquifer***, is a Permitted Activity, subject to the following conditions:

(a) The ***drilling*** is not in a Wetlands Management Area;

(b) The ***drilling*** shall not disturb:

(i) an ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) a registered historic place, area, ***wähi tapu*** or ***wähi tapu*** area (as defined in the Historic Places Act 1993); or

(iii) a ***wähi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans or ***iwi*** planning documents;

(c) The ***drilling*** shall not be for the purpose of constructing a ***bore*** for the purpose of taking water;

(d) The ***hole*** shall be ***decommissioned*** within three months of the commencement of ***drilling***;

(e) Before being ***decommissioned***, the ***hole*** shall be secure so that contamination cannot enter the ground;

(f) Where more than one ***aquifer*** is accessed, the ***hole*** shall be ***decommissioned*** and the ***aquifers*** separated immediately upon completion of the ***drilling***; and

(g) The ***drilling*** and ***decommissioning*** of the ***hole*** complies with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock.

(h) If, during preparation for or ***drilling*** of the ***hole***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bones), work shall cease immediately and the ARC Archaeologist shall be contacted so that the appropriate action can be undertaken.

6.5.20 The ***drilling*** and construction of a ***bore*** for ***groundwater*** level or ***groundwater*** quality monitoring purposes is a Permitted Activity, subject to the following conditions:

(a) The ***drilling*** and construction of the ***bore*** is not in a Wetlands Management Area;

(b) The ***drilling*** and construction of the ***bore*** shall not disturb:

(i) an ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) a registered historic place, area, ***wähi tapu*** or ***wähi tapu*** area (as defined in the Historic Places Act 1991); or

(iii) a ***wähi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans or ***iwi*** planning documents;

(c) If, during preparation for or ***drilling*** of the ***bore***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bones), work shall cease immediately and the ARC Archaeologist shall be contacted so that the appropriate action can be undertaken;

(d) The ***drilling***, construction or ***decommissioning*** of the ***bore*** shall comply with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock;

(e) The ***bore*** shall not be for the purposes of taking of ***groundwater*** except for the removal of a sample for ***groundwater*** quality analysis;

(f) Where more than one ***aquifer*** is accessed the construction of the ***bore*** shall be such that there is no connection between the ***aquifers***; and

(g) The ARC shall be notified on the prescribed form prior to the ***bore*** being ***drilled*** and shall be provided with details of the location and the purpose of the ***bore***.

Note: The prescribed form referred to in Rule 6.5.20(g) can be obtained by contacting the Auckland Regional Council or by visiting the ARC's website (www.arc.govt.nz).

6.5.21 The ***drilling*** of a ***bore*** or ***hole*** for the purpose of ***stormwater*** disposal, including those into a single ***aquifer***, is a Permitted Activity, subject to the following conditions:

(a) The ***drilling*** is not in a Wetlands Management Area;

(b) The ***drilling*** shall not disturb:

(i) an ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) a registered historic place, area, ***wāhi tapu*** or ***wāhi tapu*** area (as defined in the Historic Places Act 1993); or

(iii) a ***wāhi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans or ***iwi*** planning documents;

(c) The ***drilling*** shall not be for the purpose of constructing a ***bore*** for the purpose of taking water:

(d) Where more than one ***aquifer*** is accessed, the ***hole*** shall be ***decommissioned*** and the ***aquifers*** separated immediately upon completion of the ***drilling***; and

(e) The ***drilling*** and ***decommissioning*** complies with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock.

(f) If, during preparation for or ***drilling*** of the ***hole***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bones), work shall cease immediately and the ARC Archaeologist shall be contacted so that the appropriate action can be undertaken.

6.5.22 The use of land for the purpose of operating, using and maintaining a lawfully established ***bore*** is a Permitted Activity, subject to the following conditions:

(a) The operation, use and ***maintenance*** of the ***bore*** complies with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock.

6.5.23 The restoration, alteration or replacement of a lawfully established ***bore*** to restore an existing lawful water ***take*** is a Permitted Activity, subject to the following standards and terms:

(a) The replaced or altered ***bore*** shall be constructed in the same ***aquifer*** as the existing ***bore***;

(b) The replaced ***bore*** shall be installed within 10 metres of the existing ***bore***; and

(c) The ***drilling*** of the ***bore*** shall comply with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock; and

(d) The ARC shall be notified within 15 working days of the ***bore*** being drilled;

(e) The ***drilling*** of the ***hole*** shall not disturb:

(i) an ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) a registered historic place, area, ***wāhi tapu*** or ***wāhi tapu*** area (as defined in the Historic Places Act 1993); or

(iii) a ***wähi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans or ***iwi*** planning documents;

(f) If, during preparation for or ***drilling*** of the ***hole***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bones), work shall cease immediately and the ARC Archaeologist shall be contacted so that the appropriate action can be undertaken;

(g) The requirement to keep records as per NZS 4411:2001 and forward them to ARC within one month of the ***bore*** being drilled.

6.5.24 The abandonment or ***decommissioning*** of a ***hole*** or a ***bore*** is a Permitted Activity, subject to the following standards and terms:

(a) ***Decommissioned holes*** and ***bores*** shall be backfilled and sealed at the surface to prevent contamination of ***groundwater***;

(b) ***Decommissioned holes*** and ***bores*** intersecting ***groundwater*** shall be sealed to prevent the vertical movement of ***groundwater***, and to permanently confine the ***groundwater*** to the specific zone (or zones) in which it originally occurred;

(c) Sealing materials shall be suitable in terms of their composition, density, strength and corrosion resistance for the site and installation conditions and shall be placed from the bottom upward, by methods that will avoid segregation or dilution of material and the contamination of ***groundwater***;

(d) Cement used for grout shall be to New Zealand Standard NZS 3022-1995: Specification for Portland and Blended Cements (General and Special Purpose);

(e) Backfill materials where used shall consist of clean sand, coarse stone, clay or drill cuttings. The material shall be non-toxic;

(f) The ***decommissioning*** of the ***hole*** or ***bore*** shall comply with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock; and

(g) The ARC shall be notified within 15 working days of the ***bore*** being ***decommissioned***.

Controlled Activities

6.5.25 The ***drilling***, construction and alteration of a ***bore*** drilled into an ***aquifer*** other than provided for by Rule 6.5.23 or Rule 6.5.20 is a Controlled Activity, subject to the following standards and terms:

(a) The ***bore*** is not in a Wetlands Management Area,

(b) The ***drilling*** of the ***bore*** shall not disturb;

(i) an ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) a registered historic place, area, ***wähi tapu*** or ***wähi tapu*** area (as defined in the Historic Places Act 1993); or

(iii) a ***wähi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans or ***iwi*** planning documents;

(c) The ***drilling***, construction or alteration of the ***bore*** shall comply with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock; and

(d) The requirement to keep records of ***drilling*** activities and the forwarding of the records to the ARC within one month of the ***bore*** being drilled;

(e) If, during preparation for or ***drilling*** of the ***hole***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bones), work shall cease immediately and the ARC Archaeologist shall be contacted so that the appropriate action can be undertaken.

6.5.26 The ***drilling*** of a ***hole*** or ***bore*** that does not comply with Rule 6.5.19(d), (e), or (f), or Rule 6.5.21(d) is a Controlled Activity, subject to the following standards and terms:

(a) The ***drilling*** is not in a Wetlands Management Area; and

(b) The ***drilling*** shall not disturb:

(i) An ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) A registered historic place, area, ***wähi tapu*** or ***wähi tapu*** area (as defined in the Historic Places Act 1991); or

(iii) A ***wähi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans or ***iwi*** planning documents;

(c) The ***drilling***, construction or alteration of the ***bore*** shall comply with the NZS 4411:2001 Environmental Standard for Drilling of Soil and Rock; and

(d) The requirement to keep records of ***drilling*** activities and the forwarding of the records to the ARC within one month of the ***bore*** being drilled; and

(e) If, during preparation for or ***drilling*** of the ***bore***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bones), work shall cease immediately and the ARC Archaeologist shall be contacted so that the appropriate action can be undertaken;

6.5.27 The ARC will exercise its control under Rules 6.5.25 and 6.5.26 over the following matters:

(a) The location and design of the ***bore***, including depth, and the design of the headworks;

(b) The provision for ***bore*** identification;

(c) The monitoring and reporting requirements;

(d) The duration of the consent;

(e) The timing and nature of reviews of consent conditions; and

(f) The requirement for and conditions of a financial bond.

Non notification

Applications for controlled activities shall be considered without public notification or the need to serve notice of the application on affected persons in accordance with Sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

Discretionary Activities

6.5.28 Any ***drilling*** activity in a Wetlands Management Area is a Discretionary Activity.

6.5.29 Any ***drilling*** activity that does not comply with Rules 6.5.19(a)-(c) and (g)-(h), 6.5.20, 6.5.21(a)-(c) and (e)-(f), 6.5.22, 6.5.23, 6.5.24, and 6.5.2.23 or 6.5.26 or is not provided for under any other rule in this plan is a Discretionary Activity.

(For Rules 6.5.28 – 6.5.29 see also Policies 6.4.26 and 6.4.27)

Taking and Using Groundwater

*Note: The following rules relate to **groundwater** taken and used for purposes other than provided for by section 14(3)(b) (reasonable domestic needs or reasonable needs for animal drinking) and (c) (geothermal water by the tangata whenua) of the RMA, and Rules 6.5.3 – 6.5.6 of this plan.*

Permitted Activities

6.5.30 The taking and use of no more than 5m^3/day of fresh ***groundwater*** (not geothermal), when averaged over any consecutive 20 day period is a Permitted Activity, subject to the following conditions:

(a) The taking is not from an ***aquifer*** in the Kumeu Waitemata or Omaha Waitemata High Use Aquifer Management Areas;

(b) Notice on the prescribed form is received by the ARC 15 working days before exercising this authorisation.

6.5.31 The taking and use of no more than 20m^3/day, when averaged over any consecutive five day period, and no more than 5000m^3/year of fresh ***groundwater*** (not geothermal) is a Permitted Activity, subject to the following conditions:

(a) The taking is not from an ***aquifer*** in a High Use Aquifer Management Area;

(b) The taking is located 100 metres or more from any other existing lawfully established ***groundwater take*** from the same ***aquifer***; and

(c) Notice on the prescribed form is received by the ARC 15 working days before exercising this authorisation.

*Note: The prescribed form referred to in the Permitted Activity rules to **take** water can be obtained by contacting the Auckland Regional Council or by visiting the ARC's website (www.arc.govt.co.nz).*

6.5.32 The taking of ***groundwater*** for the purposes of a pumping test from a ***bore*** for up to 7 days at an average rate of no more than 1000 m^3/day is a Permitted Activity.

6.5.33 The taking of ***groundwater*** for the purposes of ***groundwater diversion*** under Rule 6.5.76 of this plan is a Permitted Activity.

6.5.34 The taking of ***groundwater*** for the purposes of infiltration and leakage into ***stormwater*** and sewer pipes, manholes, ***catchpits*** and lined channels is a Permitted Activity, subject to the following condition:

(a) The ***take*** is not for the purpose of dewatering or ***groundwater*** level control.

6.5.35 The taking and diversion of ***groundwater*** for land ***drainage***, including ***drainage*** under roads, but excluding ***land drainage for cultivation and pasture management***, is a Permitted Activity, subject to the following conditions:

(a) The taking and diversion is not in a Natural Streams or Wetlands Management Area; and

(b) The depth of the ***drainage*** measures are not greater than 2 metres.

6.5.36 The taking and diversion of ***groundwater*** for ***land drainage for cultivation and pasture management***, is a Permitted Activity, subject to the following conditions:

(a) The taking and diversion is not in a Natural Streams or Wetlands Management Area.

Controlled Activities

6.5.37 The taking and use of no more than 20m^3/day, when averaged over any consecutive

five day period, and no more than 5000m³/year of fresh ***groundwater*** (not geothermal) where the ***take*** is less than 100 metres from any existing lawfully established ***groundwater take*** from the same ***aquifer*** is a Controlled Activity.

6.5.38 The taking and use of more than 20m³/day and more than 5,000m³/year, and no more than 100 m³/day and no more than 15,000 m³/year of fresh ***groundwater*** where the ***take*** is 100 metres or more from any existing lawfully established ***groundwater take*** from the same ***aquifer*** is a Controlled Activity.

6.5.39 Rules 6.5.37 and 6.5.38 are subject to the following standards and terms:

(a) The taking is not in a High Use Aquifer Management Area; and

(b) A water meter shall be installed and maintained on the outlet of the pump so that:

(i) The meter shall measure the total daily quantity of water being taken;

(ii) A quarterly return of water meter readings measured at weekly intervals shall be provided to the ARC, by no later than 10 working days after 28 February, 30 May, 30 August and 30 November each year;

(iii) Records may be also viewed at any time during any working day by an ARC Enforcement Officer;

(iv) The water meter shall be capable of measuring to an accuracy of at least plus or minus 5 per cent and it is to read the water taken to at least 1 cubic metre; and

(v) The meter shall be installed to the manufacturer's specifications, and shall be maintained to the specified requirements and in a working condition at all times.

6.5.40 The ARC will exercise its control under Rules 6.5.37 and 6.5.38 over the following matters:

(a) The location and depth of the taking of water and the design of the ***bore*** to ensure that no existing lawful ***take*** or ***surface water*** body is adversely affected;

(b) The monitoring and reporting requirements;

(c) The duration of the consent; and

(d) The timing and nature of reviews of consent conditions.

Non notification

Applications for controlled activities shall be considered without public notification or the need to serve notice of the application on affected persons in accordance with Sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

Restricted Discretionary Activities

6.5.41 The taking of ***groundwater*** for the purposes of a pumping test from a ***bore*** for more than 7 days and/or at an average rate of more than 1000m³/day is a Restricted Discretionary Activity.

6.5.42 The ARC will restrict the exercise of its discretion under Rule 6.5.41 to the following matter:

(a) Any effects of the taking on existing lawfully established ***takes*** of ***groundwater***.

Non notification

Applications for restricted discretionary activities shall be considered without public notification or the need to serve notice of the application on affected persons in

accordance with Sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

6.5.43 The taking of ***groundwater*** for the purposes of ***groundwater diversion*** under Rule 6.5.77 of this Plan is a Restricted Discretionary Activity. The ARC will restrict its discretion to the matters listed in Rule 6.5.77 of this Plan.

Discretionary Activities

6.5.44 The taking and use of no more than 100m³/day and no more than 15000m³/year of fresh ***groundwater*** (not geothermal) is a Discretionary Activity, subject to the following standards and terms:

(a) The taking is not from an ***aquifer*** in a High Use Aquifer Management Area; and

(b) The taking is located less than 100 metres from any existing lawfully established ***groundwater take*** from the same ***aquifer***.

6.5.45 The taking and use of more than 100 m³/day and/or more than 15000m³/year of fresh ***groundwater*** (not geothermal) is a Discretionary Activity, subject to the following term:

(a) The taking is not from an ***aquifer*** in a High Use Aquifer Management Area.

6.5.46 The taking and use of ***groundwater*** from an ***aquifer*** in a High Use Aquifer Management Area is a Discretionary Activity.

6.5.47 The taking and use of geothermal water is a Discretionary Activity.

6.5.48 The taking and use of ***groundwater*** that does not comply with Rules 6.5.4, 6.5.34, 6.5.20, 6.5.35, 6.5.37 and 6.5.38 or is not provided for by another rule in this chapter is a Discretionary Activity.

(For Rules 6.5.44 – 6.5.48 see also Policies 6.4.1 – 6.4.14 and 6.4.28 - 6.4.39)

Non-complying Activity

6.5.49 The taking and use of geothermal water for non-bathing use from the Waiwera Geothermal Aquifer and the Parakai Geothermal Aquifer Management Areas unless it is for the communal benefit of the tangata whenua of the area in accordance with s.14(3) (c) of the RMA is a Non-Complying Activity.

Damming Surface Water

*Note 1: The Building Act 2004 contains requirements for **dams**. Section 17 of that Act requires all building work, including **dams**, to comply with the Building Code to achieve the purpose of that Act. Part 7, Safety of Dams, of the Building Act contains specific provisions for large **dams**, i.e. "a **dam** that retains 3 or more metres depth, and holds 20,000 or more cubic metres volume, of water or other fluid", to achieve the purpose of that Act.*

*The **damming** provisions relating to **dam** safety in this Plan are to achieve the purpose of the Resource Management Act. Any approvals required under the Building Act 2004 must be obtained from the relevant authority in addition to the requirements set out in these rules.*

*When considering the scope of the information that is provided with resource consent applications and the conditions that may be imposed on such consents, the ARC will take into account the need for **dams** to meet the requirements of the Building Act 2004, including those requirements relating to the safety of the **dam**. This is to avoid duplication or inconsistency between the RMA and Building Act 2004 requirements and processes.*

*Note 2: This section also contains rules relating to the use, erection or placement of a **dam** on the bed of a **lake** or **Permanent river or stream.***

*Note 3: The Freshwater Fisheries Regulations 1983, Part 6, should be consulted with regard to **fish passage**.*

*Note 4: Refer to Rule 7.5.2 in Chapter 7: Beds of Lakes and Rivers with regard to the removal or demolition of **dams**.*

*Note 5: The Auckland Regional Plan: Sediment Control (ARP:SC) contains provisions relating to the **damming** of water for the purpose of controlling sediment associated with land disturbing activities, including temporary **damming** for **stormwater** purposes and quarrying. Rule 5.5.3 of the ARP: SC provides for the **damming** of water as a permitted activity as follows:*

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

(i) The land use activity is a permitted activity under this Plan [the ARP: SC]; or

(ii) A resource consent given under this Plan [the ARP: SC] is obtained and complied with.

*Note 6: Rule 7 of the Auckland Transitional Regional Plan 1991 (ATRP) authorised small low risk **dams** as a permitted activity, subject to a number of conditions. Rules 6.5.51 and 6.5.52 of this plan provide for the continued **damming** of water with **dams** constructed in accordance with Rule 7 of the ATRP as a permitted activity, subject to compliance with the conditions of Rule 6.5.51 which relates to **off-stream dams** or Rule 6.5.52 which relates to **dams** on **Permanent rivers and streams**, whichever is relevant.*

Permitted Activities

6.5.50 The ***damming*** of water with an ***off-stream dam***, including any existing ***off-stream dam***, for the purpose of controlling sediment discharges from cultivated land is a Permitted Activity, subject to the following conditions:

(a) The ***cultivation*** of soil and the associated management and discharge of sediment laden stormwater runoff from rainfall events is authorised by Rule 5.5.32 or by a resource consent granted in accordance with Rule 5.5.33 in Chapter 5 Discharges to Land and Water and Land Management (Land Management) of this Plan;

(b) The ***dam*** embankment, outlets and spillways shall be designed, constructed, operated and maintained so as to avoid:

  (i) Significant off-site movement of soil; and

  (ii) Hazards to human safety, neighbouring properties or infrastructure as a result of ***dam*** failure or other non-performance; and

(c) The ***damming*** of water shall not result in the loss, degradation or permanent flooding of any wetland except for the purposes of wetland enhancement, maintenance or restoration;

(d) The ***dam*** structure shall be no greater than 4 metres in height when measured vertically from the downstream toe of the ***dam*** embankment to the highest point of the ***dam*** crest;

(e) Either the surface area of the impounded water shall not exceed 5000m^2 or the storage volume of the impounded water shall not exceed 20,000m^3;

(f) The dammed water shall not adversely raise sub-surface or ***surface water*** levels or adversely impede ***drainage*** on adjacent properties;

(g) The construction of the ***dam*** and the ***damming*** of water shall not disturb or inundate;

  (i) an ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) a registered historic place, area, ***wāhi tapu*** or ***wāhi tapu*** area (as defined in the Historic Places Act 1993); or

(iii) a ***wāhi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans;

(h) The ***dam*** shall be designed, constructed, operated and maintained with a flood spillway to pass a 100 year ARI flood event without overtopping the ***dam*** crest (see advice note below Rule 6.5.52);

(i) The entry to the spillway(s) shall not be restricted by debris;

(j) All spillways and bypass arrangements shall be constructed, terminated and maintained in such a way as to minimize erosion;

(k) No trees or vegetation which could weaken the ***dam*** stability or prevent inspection of the ***dam*** embankment shall be allowed to grow on or near the embankment;

(l) Stock shall not be allowed to cause damage to the crest and downstream face of the ***dam***;

(m) The ***dam*** structure and spillway shall be inspected at intervals of no more than 12 months and following any operation of the flood spillway. Any damage recorded at times of inspecting, or noticed at any other time, shall be remedied as soon as is practicable; and

(n) If, during the construction of the ***dam***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bone), work shall cease immediately and the ARC shall be contacted so that the appropriate action can be undertaken.

Note 1: Anyone damming water in accordance with Rule 6.5.50 should also refer to Rules 5.5.32 and 5.5.33 in Chapter 5 Discharges to Land and Water and Land Management relating to the cultivation of soil and management and discharge of sediment laden stormwater.

6.5.51 The ***damming*** of water with an ***off-stream dam*** for any purpose not covered by Rule 6.5.50, including any existing ***off-stream dam*** is a Permitted Activity, subject to the following conditions:

(a) The ***damming*** of water shall not result in the loss, degradation or permanent flooding of any wetland except for the purposes of wetland enhancement, maintenance or restoration;

(b) The ***dam*** structure shall be no greater than 4 metres in height when measured vertically from the downstream toe of the ***dam*** embankment to the highest point of the ***dam*** crest;

(c) The contributing catchment area of ***dams*** constructed on or after 23 October 2001 shall not exceed 20 hectares;

(d) The contributing catchment area of ***dams*** constructed prior to 23 October 2001 shall not exceed 40 hectares;

(e) Either the surface area of the impounded water shall not exceed 5000m^2 or the storage volume of the impounded water shall not exceed 20,000m^3;

(f) The dammed water shall not adversely raise sub-surface or ***surface water*** levels or adversely impede ***drainage*** on adjacent properties;

(g) The construction of the ***dam*** and the ***damming*** of water shall not disturb or inundate;

(i) an ***archaeological site*** (as defined in the Historic Places Act 1993); or

(ii) a registered historic place, area, ***wāhi tapu*** or ***wāhi tapu*** area (as defined

in the Historic Places Act 1993); or

(iii) a ***wähi tapu*** or sites and areas of significance to tangata whenua identified in regional and district plans;

(h) The ***dam*** shall be designed, constructed, operated and maintained with a flood spillway to pass a 100 year ARI flood event without overtopping the ***dam*** crest (see advice note below Rule 6.5.52);

(i) The entry to the spillway(s) shall not be restricted by debris

(j) All spillways and bypass arrangements shall be constructed, terminated and maintained in such a way as to minimise erosion;

(k) No trees or vegetation which could weaken the ***dam*** stability or prevent inspection of the ***dam*** embankment shall be allowed to grow on or near the embankment;

(l) Stock shall not be allowed to cause damage to the crest and downstream face of the ***dam***;

(m) The ***dam*** structure and spillway shall be inspected at intervals of no more than 12 months and following any operation of the flood spillway. Any damage recorded at times of inspecting, or noticed at any other time, shall be remedied as soon as is practicable;

(n) For ***dams*** constructed on or after 23 October 2001, notice on the prescribed form shall be received by the ARC at least 15 working days before exercising this permitted activity.

(o) If, during the construction of the ***dam***, archaeological evidence is uncovered (e.g. shell midden, hangi or ovens, pit depressions, defensive ditches or human bones), work shall cease immediately and the ARC Archaeologist shall be contacted so that the appropriate action can be undertaken.

(p) For ***dams*** constructed for ***stormwater*** management purposes within the ***Urban Areas***, the ***dam*** location and design shall be consistent with the proposed methods and works of any ***integrated catchment management plan*** required as part of a resource consent to divert and discharge ***stormwater*** under Chapter 5 of this Plan.

*Note 1: The Auckland Regional Plan: Sediment Control (ARP:SC) contains provisions relating to the **damming** of water for the purpose of controlling sediment associated with land disturbing activities, including temporary **damming** for **stormwater** purposes and quarrying. (See Note 5 above).*

*Note 2: The prescribed form referred to in the Permitted Activity rules to **dam** water can be obtained by contacting the Auckland Regional Council or by visiting the ARC's website (www.arc.govt.nz).*

6.5.52 The ***damming*** of water with and the use of an existing ***dam*** as at 23 October 2001 on the bed of a ***Permanent river or stream*** is a Permitted Activity, subject to the following conditions:

(a) The ***damming*** of water shall not result in the loss, degradation or permanent flooding of any wetland except for the purposes of wetland enhancement, maintenance or restoration;

(b) The ***dam*** structure shall be no greater than 4 metres in height when measured vertically from the downstream toe of the ***dam*** embankment to the highest point of the ***dam*** crest;

(c) The contributing catchment area shall not exceed 40 hectares;

(d) The maximum depth of the dammed water shall not exceed 3 metres;

(e) The surface area of the impounded water shall not exceed 5000m^2;

(f) The dammed water shall not adversely raise sub-surface or ***surface water*** levels or adversely impede ***drainage*** on adjacent properties;

(g) ***Fish passage*** shall be provided for;

(h) The ***dam*** has been designed and constructed and is operated and maintained with a flood spillway to pass a 100 year ARI flood event without overtopping the ***dam*** crest (see advice note below);

  (i) The entry to the spillway(s) shall not be restricted by debris;

(j) All spillways and bypass arrangements shall be constructed, terminated and maintained in such a way as to minimise erosion;

(k) No trees or vegetation which could weaken the ***dam*** stability or prevent inspection of the ***dam*** embankment shall be allowed to grow on or near the embankment;

(l) Stock shall not be allowed to cause damage to the crest and downstream face of the ***dam***; and

(m) The ***dam*** structure and spillway shall be inspected at intervals of no more than 12 months, and following any operation of the flood spillway. Any damage recorded at times of inspecting, or noticed at any other time, shall be remedied as soon as is practicably possible.

Note: A flood spillway having the following dimensions will comply with conditions 6.5.51 (h) and 6.5.52(h):

- Depth of 0.75 metres from ***dam*** crest to spillway invert;
- Base width of between 0.3 metres (for flat catchments) to 0.5 metres (for steep catchments) for each hectare of catchment upstream of the ***dam***; and
- Spillway side slopes of 2 horizontal to 1 vertical

Reference should be made to the ARC's Dam Safety Guidelines (ARC Technical Publication 109, June 2000) for further guidance on spillway sizing.

6.5.53 The ***damming*** of water with, and the use, erection or placement of a ***dam*** on the bed of a ***Permanent river or stream*** for the purpose of controlling water levels for the measurement of river or stream flow is a Permitted Activity, subject to the following conditions:

(a) The ***damming*** of water shall not result in the loss ~~of~~, degradation or permanent flooding of any wetland;

(b) The dammed water shall not adversely raise sub-surface or ***surface water*** levels or adversely impede ***drainage*** on adjacent properties;

(c) ***Fish passage*** shall be provided for;

(d) At all times that there is natural flow upstream of the control structure, an equivalent outflow shall be maintained downstream; and

(e) The use, erection or placement of the ***dam*** shall be in accordance with General Performance Conditions (a) to (i) of Rule 7.5.6 and with the conditions listed in List of Structures clause vi of Rule 7.5.5.

(f) The activity shall not disturb any ***wāhi tapu*** or other ***archaeological site***

including those identified in any regional or district plan, in the NZ Archaeological Association's Site Recording Scheme, or by the Historic Places Trust except where the Historic Places Trust approval has been obtained.

(g) In the event that an ***archaeological site*** or ***wähi tapu*** is discovered while undertaking the activity, the activity shall cease immediately and the ARC shall be notified as soon as practicable. The activity shall not be recommenced without the approval of the ARC.

6.5.54 The temporary ***damming*** of water with, and the use, erection or placement of a ***dam*** on the bed of a ***Permanent river or stream*** for the purpose of enabling works in the bed of a river is a Permitted Activity, subject to the following conditions:

(a) The works in the bed of the river are provided for by a rule contained in Chapter 7 of this Plan or by a resource consent granted in accordance with a rule contained in Chapter 7 of this Plan;

(b) Provision shall be made for the bypassing of flows up to and including the 20 year ARI event to the stream downstream of the ***dam***;

(c) The ***dam*** is constructed from non-erodible materials, including but not limited to sandbags;

(d) The ***dam*** shall be removed as soon as is practicably possible, and no later than two weeks, following the completion of the works.

Controlled Activities

6.5.55 The ***damming*** of water with an ***off-stream dam*** not covered by Rules 6.5.50 and 6.5.51 is a Controlled Activity, subject to the following standards and terms:

(a) The ***dam*** was constructed prior to 23 October 2001; or

(b) If not constructed prior to 23 October 2001, the ***dam*** is located within the ***Urban Areas*** and is required in order to meet the conditions of a consent to divert and discharge ***stormwater*** required under Chapter 5 of this plan; and

(c) Where (b) applies, the application for consent is lodged within the period ending five years from the date of commencement of the relevant consent to divert and discharge ***stormwater; and***

(d) If not constructed prior to 23 October 2001, the ***dam*** is required for the purpose of controlling sediment discharges from cultivated land.

The ARC will exercise its control under Rule 6.5.55 over the following matters:

(a) ***Dam*** design, construction, operating and ***maintenance*** requirements;

(b) Effects on any wetland, ***wähi tapu*** or ***archaeological site***;

(c) Monitoring and reporting requirements;

(d) Duration of the consent; and

(e) Timing and nature of reviews of consent conditions.

6.5.56 The ***damming*** of water with, and the use of an existing ***dam*** as at 23 October 2001 on the bed of a ***Permanent river or stream*** within the ***Urban Areas*** for the purposes of controlling and treating ***stormwater*** is a Controlled Activity, subject to the following standards and terms:

(a) The ***dam*** is required in order to meet the conditions of a consent to divert and discharge ***stormwater*** required under Chapter 5 of this plan and is not covered by Rule 6.5.52.

The ARC will exercise its control under Rule 6.5.56 over the following matters:

(a) *Dam* operating and *maintenance* requirements;

(b) Monitoring and reporting requirements;

(c) Duration of the consent; and

(d) Timing and nature of reviews of consent conditions.

Non notification

Applications for controlled activities shall be considered without public notification or the need to serve notice of the application on affected persons in accordance with Sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

6.5.57 The *damming* of water with, and the use, erection or placement of a new *dam* on the bed of a Type 3, 4, 5, or 6 *Urban River or Stream* for the purposes of controlling and treating *stormwater* is a Controlled Activity, subject to the following standards and terms:

(a) The *dam* is required in order to meet the conditions of a consent to divert and discharge *stormwater* under Rules 5.5.10, 5.5.11 or 5.5.12;

(b) The *dam* will be owned, constructed and maintained by a *TA*, a *stormwater or wastewater Network Utility Operator*, or a *Highway Network Operator*.

The ARC will exercise its control under Rule 6.5.57 over the following matters:

(a) The location, design, construction, operation, and *maintenance* of the *dam* in terms of:

  (i) Effects on freshwater biota, including the passage of fish;

  (ii) Effects on downstream flow regimes, including low flows;

  (iii) Adverse effects of the *damming* on water quality;

  (iv) The potential effects of *dam* failure including effects on people and communities;

  (v) Effects on flooding, erosion, stream bank or bed aggregation and land stability;

  (vi) Effects on the habitat of fauna and flora, including wetlands;

  (vii) Cumulative effects arising from the scale, location or number of *dams* in the catchment;

  (viii) Effects on *natural character*, the relationship of Maori with water, sites, *wähi tapu* and *taonga*, and *amenity* values;

(b) Monitoring and reporting requirements;

(c) Duration of the consent; and

(d) Timing and nature of reviews of consent conditions.

Restricted Discretionary Activities

6.5.58 The *damming* of water with an *off-stream dam* that is not covered by Rules 6.5.51 or 6.5.55 is a Restricted Discretionary Activity.

The ARC will restrict the exercise of its discretion under Rule 6.5.58 to the following matters:

(a) Location of the *dam*;

(b) *Dam* design, construction, operating and *maintenance* requirements;

(c) Effects of the dammed water on sub-surface or *surface water* levels, land stability and *drainage* on adjacent properties;

(d) Effects on the habitat of fauna and flora, including wetlands and terrestrial habitats;

(e) Effects on people and communities, including the potential effects of *dam* failure;

(g) Effects on *natural character*, the relationship of Maori with water, sites, *wähi tapu* and *taonga*, and *amenity* values;

(h) Monitoring and reporting requirements;

(i) Duration of the consent;

(j) Timing and nature of reviews of consent conditions; and

(k) For *dams* constructed for *stormwater* management purposes within the *Urban Areas*, the consistency of the *dam* location and design with the proposed methods and works of any *integrated catchment management plan* required as part of a resource consent to divert and discharge *stormwater* under Chapter 5 of this Plan.

6.5.59 The *damming* of water with and the use, erection or placement of a new *dam* on the bed of a Type 3, 4, 5, or 6 *Urban stream* for the purposes of controlling and treating *stormwater* not covered by Rule 6.5.57 is a Restricted Discretionary Activity, subject to the following standards and terms:

(a) The *dam* is required in order to meet the conditions of a consent to divert and discharge *stormwater* required under Rules 5.5.10, 5.5.11 or 5.5.12 in Chapter 5 of this plan.

The ARC will restrict the exercise of its discretion under Rule 6.5.59 to the following matters:

(a) The location, design, construction, operation, and *maintenance* of the *dam* in terms of:

(i) Effects on freshwater biota, including the passage of fish;

(ii) Effects on downstream flow regimes, including low flows;

(iii) Effects on existing lawfully established water users upstream and downstream of the *dam*;

(iv) Adverse effects of the *damming* on water quality;

(v) The potential effects of *dam* failure including effects on people and communities;

(vi) Effects on flooding, erosion, stream bank or bed aggradation and land stability;

(vii) Effects on the habitat of fauna and flora, including wetlands;

(viii) Cumulative effects arising from the scale, location or number of *dams* in the catchment;

(ix) Effects on *natural character*, the relationship of Maori with water, sites,

wähi tapu and *taonga*, and *amenity* values;

(b) The requirement for a bond;

(c) Monitoring and reporting requirements;

(d) Duration of the consent; and

(e) Timing and nature of reviews of consent conditions.

6.5.60 The damming of water as a result of the upgrading or *maintenance*, including increasing the storage capacity, of an existing *dam* on the bed of a *Permanent river or stream* in a Water Supply Management Area, is a Restricted Discretionary Activity, subject to the following standards and terms:

(a) the *damming* is as a result of upgrading or maintenance in accordance with Rule 7.5.11 of this Plan; and

(b) the *damming* is for *municipal water supply* purposes;

The ARC will restrict the exercise of its discretion under Rule 6.5.60 to the following matters:

(a) The location, design, construction, and operation of the dam in terms of the actual and potential effects of any additional damming on:

(i) Freshwater biota, including the passage of fish;

(ii) Downstream water levels and flow regimes, including low flows;

(iii) Existing lawfully established water users upstream and downstream of the *dam*;

(iv) Water quality;

(v) Potential effects of *dam* failure including effects on people and communities;

(vi) Flooding, erosion, stream bank or bed aggradation and land stability;

(vii) The habitat of fauna and flora, including wetlands;

(viii) *Natural character* and *amenity* values;

(ix) The relationship of Maori with water, sites, *wähi tapu* and *taonga*;

(b) Cumulative effects arising from the additional *damming* in conjunction with the scale, location and number of *dams* in the catchment;

(c) The positive effects of the additional *damming* in terms of the ability to provide for the region's *municipal water supply*;

(d) Monitoring and reporting requirements;

(e) Duration of the consent; and

(f) Timing and nature of review of consent conditions.

Non notification

Applications for restricted discretionary activities shall be considered without public notification or the need to serve notice of the application on affected persons in accordance with Sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

Discretionary Activities

6.5.61 The temporary ***damming*** of water with, and the use, erection or placement of a ***dam*** on the bed of a ***Permanent river or stream*** for the purpose of enabling works in the bed of a river, that does not comply with Rule 6.5.54 is a Discretionary Activity.

6.5.62 The ***damming*** of water with, and the use of an existing ***dam*** on the bed of a ***Permanent river or stream*** that does not comply with Rules 6.5.52 and 6.5.56 is a Discretionary Activity.

6.5.63 The ***damming*** of water with, and the use, erection or placement of a ***dam*** on the bed of a ***Permanent river or stream*** for the purpose of controlling water levels for the measurement of river or stream flow that does not comply with Rule 6.5.53 is a Discretionary Activity.

6.5.64 The ***damming*** of water with, and the use, erection or placement of a ***dam*** on the bed of a ***Permanent river or stream, lake*** or wetland for the purpose of ***lake*** level or wetland restoration and/or maintenance is a Discretionary Activity.

(For Rules 6.5.61 – 6.5.64 see also Policies 6.4.1 – 6.4.2 and 6.4.41 - 6.4.48)

6.5.65 The ***damming*** of water for the purpose of ***municipal water supply*** with, and the use, erection or placement of a ***dam*** constructed on or after 23 October 2001 on the bed of a ***Permanent river or stream*** that is not in a Natural Stream or Wetland Management Area in a Water Supply Management Area is a Discretionary Activity.

Non-complying Activities

6.5.66 The ***damming*** of water with, and the use, erection or placement of a ***dam*** on the bed of a ***Permanent river or stream, lake*** or wetland that is not otherwise provided for in any other rule in this chapter is a Non-complying Activity.

6.5.67 The ***damming*** of water for the purpose of ***municipal water supply*** with, and the use, erection or placement of a ***dam*** constructed on or after 23 October 2001 on the bed of a ***Permanent river or stream*** in a Natural Stream or Wetland Management Area in a Water Supply Management Area is a Non-complying Activity.

6.5.68 The ***damming*** of water for the purpose of ***municipal water supply*** with, and the use, erection or placement of an ***off-stream dam*** constructed on or after 23 October 2001 in a Wetland Management Area in a Water Supply Management Area is a Non-complying Activity.

Prohibited Activities

6.5.69 The ***damming*** of water with, and the use, erection or placement of a ***dam*** constructed on or after 23 October 2001 on the bed of a ***Permanent river or stream***, ***lake*** or wetland in a Natural Stream or Wetland Management Area (other than for the purpose of ***lake*** level or wetland restoration and/or maintenance or for the purpose of ***municipal water supply*** in a Water Supply Management Area or a Proposed Future Water Supply Area) is a Prohibited Activity.

6.5.70 The ***damming*** of water with an ***off-stream dam*** constructed on or after 23 October 2001 in a Wetland Management Area (other than for the purpose of wetland restoration and/or maintenance or for the purpose of ***municipal water supply*** in a Water supply Management Area or a Proposed Future Water Supply Area) is a Prohibited Activity.

Taking and Using Water Impounded by Dams

Note: The following rules relate to water taken and used for purposes other than provided for by Section 14(3)(b) (reasonable domestic needs or reasonable needs for animal drinking) of the RMA and Rules 6.5.1 and 6.5.2 of this Plan.

Permitted Activities

6.5.71 The taking and use of water from an ***off-stream dam*** is a Permitted Activity, subject to the following conditions:

(a) No lawfully established taking of ***surface water*** shall be adversely affected; and

(b) For any taking and use of water commencing on or after 23 October 2001, notice on the prescribed form shall be received by the ARC at least 15 working days before exercising this authority.

6.5.72 The taking and use of no more than 5 m^3/day of water from an existing lawfully established ***dam*** on a ***Permanent river or stream*** is a Permitted Activity, subject to the following conditions:

(a) The ***water intake structure*** shall be designed and constructed so that

(i) the maximum water velocity into the entry point of the intake structure is no greater than 0.3 metres per second;

(ii) the intake screen mesh spacings are no greater in one dimension than 1.5 millimetres; and

(iii) the intake screen is located no less than 0.5 metres instream from the water's edge.

(b) Notice on the prescribed form shall be received by the Auckland Regional Council at least 15 working days before exercising this permitted activity.

*Note: The prescribed form referred to in the Permitted Activity rules to **take** water can be obtained by contacting the Auckland Regional Council or by visiting the ARC's website (www.arc.govt.nz).*

Controlled Activities

6.5.73 The taking and use of no more than 100m^3/day water from an existing ***dam*** on a ***Permanent river or stream*** during the six month period May 1 to October 31 is a Controlled Activity, subject to the following standards and terms:

(a) The taking is not from a ***dam*** in a Wetland, Natural Stream or High Use Stream Management Area;

(b) The ***water intake structure*** shall be designed and constructed so that

(i) the maximum water velocity into the entry point of the intake structure is no greater than 0.3 metres per second;

(ii) the intake screen mesh spacings are no greater in one dimension than 1.5 millimetres; and

(iii) the intake screen is located no less than 0.5 metres instream from the water's edge; and

(c) No lawfully established taking of ***surface water*** shall be adversely affected.

6.5.74 The ARC will exercise its control over the following matters in Rule 6.5.73:

(a) The maximum rate of ***take***;

(b) The requirement to provide for downstream flow regimes, including low flows;

(c) The requirement to provide for flows to maintain ***fish passage***;

(d) The monitoring and reporting requirements;

(e) The duration of the consent; and

(f) The timing and nature of reviews of consent conditions.

Non notification

Applications for controlled activities shall be considered without public notification or the need to serve notice of the application on affected persons in accordance with Sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

Discretionary Activities

6.5.75 The taking and use of water from any ***dam*** that does not comply with Rules 6.5.71, 6.5.72 or 6.5.73 or is not provided for by another rule in this chapter is a Discretionary Activity.

(For Rule 6.5.75 see also Policies 6.4.1 – 6.4.25)

Diverting Groundwater

Permitted Activities

6.5.76 The diversion of ***groundwater*** in an ***unconfined aquifer*** caused by changing the permeability of the ***aquifer*** at the location of the works by trenching, digging or tunnelling is a Permitted Activity, subject to the following conditions:

(a) The diversion shall not change the water level regime or direction of flow of the ***aquifer*** after completion of the works; and

(b) Any resulting settlement shall not cause adverse effects on buildings, structures and services.

Restricted Discretionary Activities

6.5.77 The diversion of ***groundwater*** not covered by Rule 6.5.76 is a Restricted Discretionary Activity.

The ARC will restrict the exercise of its discretion under Rule 6.5.77 to the following matters:

(a) The effects on the flow regime required for the life-supporting capacity of waterbodies including:

  (i) stream flow requirements;

  (ii) levels and flows in wetlands; and

  (iii) ***lake*** levels.

(b) Any adverse effects on existing lawful ***groundwater*** users, including

  (i) lawful ***groundwater diversion***;

  (ii) lawful ***groundwater takes***.

(c) Any adverse effects on building owners and arising from the potential for ground settlement that may result in significant damage to structures, buildings, and services;

(d) The potential for adverse effects arising from surface flooding;

(e) Cumulative effects that may arise from the scale, location and/or number of ***groundwater diversions*** in the same area;

(f) Discharge of ***groundwater*** containing sediment and other contaminants;

(g) Any adverse effects on the heritage values of sites, including archaeological significance;

(h) Any adverse effects on ecosystem habitat, both terrestrial and freshwater;

(i) The duration of the consent;

(j) The monitoring and reporting requirements;

(k) The timing and nature of reviews of consent conditions;

(l) The requirement for and conditions of a financial contribution and/or bond; and

(m) The requirement for a monitoring and contingency plan/contingency and remedial action plan.

Non notification

Applications for restricted discretionary activities shall be considered without public notification or the need to serve notice of the application on affected persons in accordance with sections 95A(3) and 95B(2) of the RMA, unless in the opinion of the ARC there are special circumstances justifying public notification in accordance with Section 95A(4) of the RMA.

6.6 Other Methods

6.6.1 The ARC will develop and implement an education strategy about matters including but not limited to:

(a) ***Fish passage*** measures;

(b) Efficient use and water conservation;

(c) The implications of inadequate riparian management (absence of riparian vegetation and stock trampling of stream margins) and point source and non-point source discharges on ***water availability***;

(d) The adverse effects of ***damming*** water bodies and the need to use alternative sources of water;

(e) The ARC's Dam Safety Guidelines ARC Technical Publication 109, June 2000;

(f) The potential adverse effects of inadequate construction, operation, ***maintenance*** and ***decommissioning*** of ***bores***; and

(g) Tangata whenua issues.

6.6.2 The ARC will develop Intake Structure guidelines.

6.6.3 The ARC will develop a Water Conservation Strategy.

6.6.4 The ARC will promote the carrying out of ***water audits*** for the purpose of ensuring the efficient use of water.

6.6.5 From time to time the ARC may prepare a Catchment Management Plan and/or Water Resource Assessment Report (as provided for in the ARPS) for a catchment or sub-catchment in order to promote the objectives of this plan. The Catchment Management Plan or Water Resource Assessment Report may provide the section 32 analysis for introducing a variation to this plan.

6.6.6 The ARC will develop and implement a strategy for identifying and addressing the adverse effects of existing ***dams*** in the Auckland Region, and in particular ***dams*** which:

(a) have been constructed without authorisation; or

(b) fail to comply with conditions, standards and terms of rules or resource consent conditions; or

(c) may be inadequate due to changed environmental knowledge.

Implementation of the strategy may require a variation or change to this plan.

6.6.7 The ARC will initiate and support Water User Groups to assist with allocations during times of restrictions, and Catchment Care Groups.

6.6.8 The ARC will develop these Other Methods in conjunction with water users and other stakeholders.

6.6.9 The ARC will consult with Environment Waikato over opportunities for developing joint approaches to cross-boundary ***surface water*** and ***groundwater*** management.

6.6.10 The ARC will undertake investigations into

(a) the intrinsic value (ecology and biodiversity),

(b) contribution to hydrology of ***Permanent rivers or streams***, and

(c) contaminant retention, removal and processing of ***Intermittent streams***.

6.7 Anticipated Environmental Results

There are two main aspects to the environmental results anticipated from implementation of the policies and methods in relation to water allocation.

The first relates to the instream values of water bodies by ensuring that there is adequate water within them to sustain their life supporting capacity. Reference also needs to be made to those results in Chapter 5 Discharges to Land or Water.

The second aspect is the ability to abstract and or/use it for a range of activities.

6.7.1 The life supporting capacity and instream values of wetlands, ***lakes***, rivers and streams are maintained, particularly in those management areas where there are existing high values such as the Wetland, Natural Lake, Natural Stream and Urban Stream (Types 1, 2 and 3) Management Areas.

6.7.2 ***Aquifer*** water level regimes and quality are maintained sufficient to avoid any adverse effects from a reduction in spring and ***base flow*** to rivers and streams, the degradation of freshwater ecosystem and wetlands, the degradation of water quality through ***saltwater intrusion*** and contaminant transport, loss of recharge to adjacent ***aquifers, aquifer*** consolidation and the reduction in the temperature of geothermal waters. This applies to all ***aquifers***, but in particular those in High Use Aquifer Management Areas.

6.7.3 The potential of waterbodies (surface and ground) to provide water for present and future generations is maintained.

6.7.4 The benefits derived from the consumptive use of the available water, including geothermal water, are maximised, by providing for the health, social, and economic needs of a growing regional population.

6.7.5 Improved provision for the migration of freshwater fish.

6.7.6 The number and risk of ***dam*** failures is minimised.

6.7.7 The adverse effects of any ***groundwater diversion*** and ***take*** in terms of land/building instability are avoided, remedied or mitigated.

6.7.8 The relationship of tangata whenua with water is recognised and provided for in the management of the taking, use, ***damming*** and diverting of water and avoiding damage to ***wāhi tapu*** sites from ***drilling***.