

Note: The following tracked changes relate to the Hearing Group 1 matters. Any provisions that are in light grey text are matters that are to be addressed in F&G evidence in subsequent hearing groups. Text in dark blue relates to provisions that are not supported but are to be addressed in the evidence of others

Activity and Resource Policies

Discharge of Contaminants to Land or to Water

4.9 There are no direct discharges to surface water bodies or groundwater of:

- (a) untreated ~~sewage~~; wastewater or bio-solids;
- (b) solid ~~waste~~ or hazardous waste or solid animal waste;
- (c) animal effluent ~~from an effluent storage facility or a stock holding area~~;
- (d) organic waste or leachate from storage of organic material; and
- (e) ~~untreated industrial or trade waste; or~~
- ~~(e)(f) hazardous substances.~~

4.10 ~~Any~~For other discharges of contaminants to surface waterbodies, ~~or~~ groundwater or onto or into land where the contaminant may enter water must be managed so that:-

4.10(a) ~~the effects of any discharge are minimised by the use of measures that:~~

- ~~(a)(i)~~ first, avoids the production of the contaminant;
- ~~(b)(ii)~~ secondly, reuses, recovers or recycles the contaminant;
- ~~(c)(iii)~~ thirdly, ~~minimises~~~~reduce~~ the volume or amount of the discharge; ~~and~~
- ~~(d)(iv)~~ finally, wherever practical utilises ~~land-based treatment, a wetland constructed to treat contaminants or a designed treatment system prior to discharge; and~~
- (b) the discharge of contaminants to surface water meets the receiving water standards in Schedule 5;
- (c) the discharge will not exceed any nutrient allowance in Section 5 or Sections 6-15 of this Plan;
- (d) the discharge, in combination with all other discharges, will not cause the limits for the water body as specified in Table 1 or in Sections 6-15 of this Plan to be exceeded or further over-allocation to occur.
- (e) In the case of discharges into or onto land, the discharge will not result in the accumulation of pathogens, or persistent or toxic contaminants that would render the land unsuitable for agriculture, commercial, domestic or recreational use
- ~~(i) not raise groundwater levels so that land drainage is impeded; and~~
- ~~(ii)(f) The discharge will not have any adverse effects on the drinking water quality of the surface water or groundwater, including any risk to public health.~~
- (g) Except as provided for in Policy 4.11, in the case of discharges into or onto land, the method, application rate, frequency and duration of the discharge shall be designed to ensure that the discharge will not exceed:
 - (i) the natural capacity of the soil to treat or remove the contaminant; and
 - (ii) the available water storage capacity of the soil

4.11 Where the requirements of Policy 4.10(g) are not able to be met due to the characteristics of the land into or onto which the discharge is to occur and there is no reasonably practicable alternative discharge location or method:

- (a) the best practicable option to ensure the size of any contaminant plume is as small as is reasonably practicable, and
- (b) there is sufficient distance between the point of discharge, any other discharge and drinking water supplies to allow for the natural decay or attenuation of pathogenic micro-organisms in the contaminant plume; and
- (c) The discharge will not raise groundwater levels so that land drainage is impeded; and
- (d) The requirements of Policy 4.10, except (g), must be met.
- ~~(e) -~~

4.11 ~~Any discharge of a contaminant into or onto land where it may enter groundwater shall:~~

- ~~(a) not exceed the natural capacity of the soil to treat or remove the contaminant; and~~
- ~~(a) not exceed available water storage capacity of the soil; and~~
- ~~(i) not result in the accumulation of pathogens, or a persistent or toxic contaminant that would render the land unsuitable for agriculture, commercial, domestic or recreational use or water unsuitable as a source of potable~~

water or for agriculture;

~~(b) —~~

~~(c)(b) where this is not practicable:~~

- ~~(i) — meet any nutrient allowance in Sections 6-15 of this Plan;~~
- ~~(ii) — utilise the best practicable option to ensure the size of any contaminant plume is as small as is reasonably practicable, and there is sufficient distance between the point of discharge, any other discharge and drinking water supplies to allow for the natural decay or attenuation of pathogenic micro-organisms in the contaminant plume;~~
- ~~(iii)(i) — not result in the accumulation of pathogens, or a persistent or toxic contaminant that would render the land unsuitable for agriculture, commercial, domestic or recreational use or water unsuitable as a source of potable water or for agriculture;~~
- ~~(iv)(ii) — not raise groundwater levels so that land drainage is impeded; and~~
- ~~(v) not have any adverse effects on the drinking water quality of the groundwater, including any risk to public health.~~

Stormwater and Community Wastewater Systems

- 4.12 In urban areas, the adverse effects on water quality, aquatic ecosystems, existing uses and values of water and public health from the cumulative effects of sewage, wastewater, industrial or trade waste or stormwater discharges are avoided by:
- (a) all sewage, industrial or trade waste being discharged into a reticulated wastewater system and associated community wastewater treatment system, where available;
 - (b) the implementation of contingency measures to minimise the risk of a discharge from a wastewater reticulation system or treatment facility to surface water in the event of a system failure or overloading of the system or facility beyond its design capacity; and
 - (c) any reticulated stormwater or wastewater ~~reticulation~~ system installed after 11 August 2012 being designed and managed to avoid sewage discharge into surface water.
- 4.13 Any ~~public~~ reticulated stormwater system for any urban area shall be managed in accordance with a stormwater management plan that addresses the following matters:
- (a) the management of all discharges of stormwater into the stormwater system;
 - (b) for any ~~public~~ reticulated stormwater system established after 11 August 2012, including any extension to any existing ~~public~~ reticulated stormwater system, the discharge of stormwater being subject to a land-based treatment system or wetland treatment prior to any discharge to a lake or river;

- (c) how any discharge of stormwater, treated or untreated, into water or onto land where it may enter water ~~meets-contributes to achieving~~ the water quality ~~limits and provides for the environmental~~ outcomes for that waterbody set out in Sections 6-15 or Table 1 (whichever applies); and
- (d) The management of the discharge of stormwater from sites involving the use, storage or disposal of hazardous substances.

4.14 Stormwater run-off volumes and peak flows are managed so that they do not cause or exacerbate the risk of inundation, erosion or damage to water bodies, property or infrastructure downstream.

Earthworks, Land Excavation and Deposition of Material into Land over Aquifers

- 4.15 The discharge of sediment and other contaminants to surface water from earthworks, including roading, works in the bed of a river or lake, land development or construction, is avoided, and if this is not achievable, the best practicable option is used to minimise the discharge of sediment to water, which may include restrictions on the timing or method of undertaking the activity. Where a discharge of sediment cannot be avoided, the discharge must meet the receiving water quality standard in Schedule 5 and must not cause a breach of the fine sediment limit in Table 1. –
- 4.16 The discharge of contaminants to groundwater from earthworks, excavation, waste collection or disposal sites and contaminated sites is avoided or minimised by ensuring that:
- (a) activities are sited, designed and managed to avoid the contamination of groundwater;
 - (b) existing or closed landfills and contaminated sites are managed and monitored to minimise any contamination of groundwater; and
 - (c) there is sufficient thickness of undisturbed sediment in the confining layer over the Coastal Confined Aquifer System to prevent the entry of contaminants into the aquifer.

Soil Stability

- 4.17 On erosion-prone land, any medium and large-scale earthworks, harvesting of forestry or other clearance of vegetation is undertaken in a manner which minimises the exposure of soil to erosion, controls sediment run-off and re-establishes vegetation cover as quickly as possible.
- 4.18 In the Hill and High Country, the use of vegetation burning as a land management tool avoids:
- (a) induced soil erosion;
 - (b) the destruction of natural wetlands or other sites or areas of significant indigenous biodiversity value or cultural significance to Ngāi Tahu; or
 - (c) the removal of resilient and intact vegetation cover, resulting in land becoming susceptible to the establishment of plant pest species.

4.19 Sedimentation of waterbodies as a result of land clearance, earthworks and cultivation is ~~prevented-avoided or minimised~~^{s42A} by the adoption of control methods and technologies, such as^{s42A} maintaining continuous vegetation cover adjacent to waterbodies, or capturing surface run-off to remove sediment and other contaminants or via methods such as direct drilling crops and cultivation that follows the contours of a paddock^{s42A}. Where a discharge of sediment cannot be avoided, the discharge must meet the receiving water quality standards in Schedule 5 and must not cause a breach of the fine sediment limit in Table 1..

Protect Sources of Human Drinking Water

- 4.20 Any water source used for drinking water supply is protected from any discharge of contaminants that may have any actual or potential effect on the quality of the drinking water supply including its taste, clarity and smell and group and community water supplies are protected so that they align with the CWMS drinking water targets and meet the Drinking-water Standards for New Zealand.

Hazardous Substances & Hazardous Activities

- 4.21 The discharge of a hazardous substance to water, or onto or into land where it may enter water, to control a plant or animal pest or other unwanted organism only occurs:
- (a) if the substance is registered under the Hazardous Substances and New Organisms Act 1996 for use against the target organism;
 - (b) if adverse effects on non-target organisms, Ngāi Tahu cultural values, or the use and consumption of water by

- humans or livestock are avoided as far as practicable; and
- (c) where good management practices are used to minimise the risk of accidental discharge to water.

- 4.22 Activities involving the use, storage or discharge of hazardous substances will be undertaken using best practicable measures to:
- (a) as a first priority, avoid the discharge (including accidental spillage) of hazardous substances onto land or into water, including reticulated stormwater systems; and
 - (b) as a second priority, to ensure, where there is a residual risk of a discharge of hazardous substances including any accidental spillage, it is contained on-site and does not enter surface water bodies, groundwater or stormwater systems.
- 4.23 Any discharges of hazardous substances from contaminated land, including existing and closed landfills, shall be managed to ensure there are no adverse effects on people's health or safety, on human or stock drinking water supplies, or on surface water.
- 4.24 Landfills and other waste collection or disposal sites are designed and sited to avoid the contamination of groundwater or surface water either through the direct discharge of hazardous substances to water or the leaching of contaminants into or onto land where they may enter water.
- 4.25 New cemeteries are not located in areas where they may be subject to inundation from surface water bodies or in areas with groundwater less than 3 m below the ground surface.

Livestock Exclusion from Water Bodies

- 4.26 To avoid damage to the banks of waterbodies, sedimentation and disturbance of the water body, direct discharge of contaminants, and degradation of aquatic ecosystems:
- (a) intensively farmed stock is excluded from water bodies and wetlands; and
 - (b) stock is excluded from sensitive sites; and
 - (c) access to banks and beds by other stock is limited to stock species that prefer to avoid water and at stocking rates that avoid evident damage.

Discharges of Animal Effluent

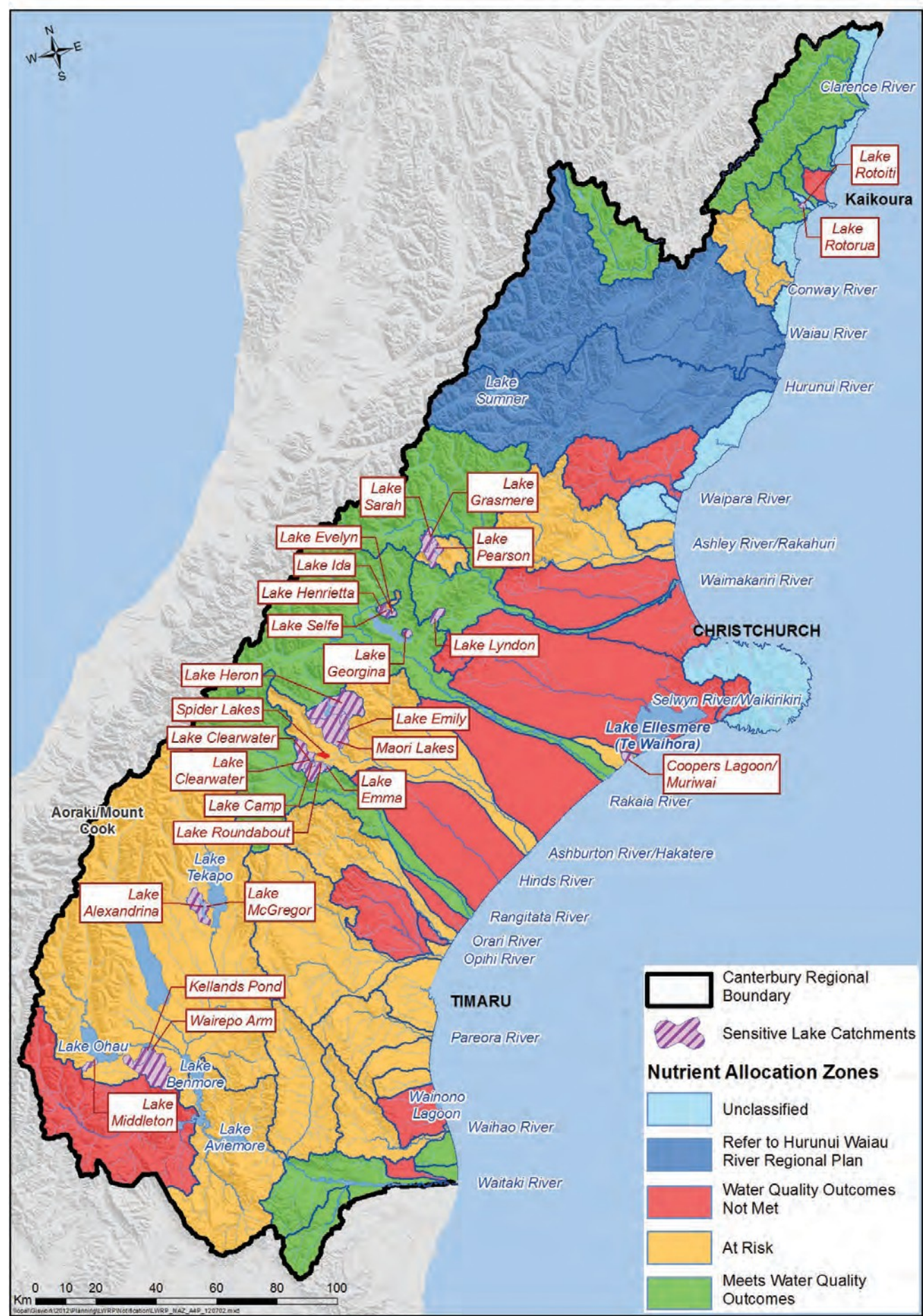
- 4.27 Any system to store, treat and dispose of animal effluent onto land has sufficient storage capacity to avoid the need to dispose of effluent when soil moisture or weather conditions may result in effluent run-off into surface water or leaching into groundwater; and to avoid fugitive discharges in the case of equipment or system failure.

Nutrient Discharges – General

- 4.28 The loss of nitrogen to water is minimised through first, raising awareness of the nitrogen losses from farming by requiring record-keeping on existing farms, secondly, supporting the use of industry articulated good practice and finally, introducing, through plan changes to Sections 6-15 of this Plan, nutrient discharge allowances to achieve collaboratively agreed catchment-based water quality outcomes.
- 4.29 Priority will be given to collaborative catchment management processes to introduce plan changes to set nutrient discharge allowances where regional water quality outcomes are not being met, as shown on the Planning Maps, and in the interim risks to the environment from the loss of nitrogen to water will be managed through compliance with industry articulated good practice or, in the absence of any such articulation, granting, subject to conditions, or refusing applications for resource consents.

Nutrient Discharges – Region-wide Policies

- 4.30 Until 1 July 2017 the loss of nitrogen to water from existing farming activities will be minimised by raising awareness of the actions and activities that give rise to these discharges and the effects of these discharges on the environment and as a result of nitrogen discharges being recorded by each farming enterprise.
- 4.31 Minimise the loss of nitrogen to water from any change in farming activities in an area coloured red on the Planning Maps, by demonstrating the nitrogen loss from the proposed activity, when assessed in combination with the effects of other land uses or discharges, will not prevent the water quality outcomes of Policy 4.1 being achieved or the nitrogen discharges from the property are a significant and enduring reduction from existing levels.



Nutrient Zones

- 4.32 To minimise the risk of the outcomes in Policy 4.1 not being achieved, where there is no industry articulated good industry practice nitrogen discharge limit for a particular industry sector included in this Plan prior to 1 July 2017 then all farming activities in that industry sector will be required to obtain a resource consent to continue the farming activity and any proposal will be required to demonstrate the nitrogen loss from the proposed activity, when assessed in combination with the effects of other land uses or discharges, will not prevent the water quality outcomes of Policy 4.1 being achieved or the nitrogen discharges from the property are a significant and enduring reduction from existing levels.
- 4.33 Prior to 1 July 2017, to minimise the risk of the outcomes in Policy 4.1 not being achieved the loss of nitrogen to water from any change in farming activities in an area coloured green, orange or light blue on the Planning Maps, will be managed through resource consent conditions requiring, as a minimum, the preparation and implementation of a farm environment plan and the regular audit of that plan.

Nutrient Zones

- 4.34 Prior to 1 July 2017, to minimise the loss of nitrogen to water from any change in farming activities in an area coloured red or within a Lake Zone as shown on the Planning Maps, an applicant for resource consent must demonstrate that the nitrogen loss from the proposed activity, when assessed in combination with the effects of other land uses or discharges, will not prevent the water quality outcomes of Policy 4.1 being achieved and show that the nitrogen discharges from the property are a significant and enduring reduction from existing levels.
- 4.35 To minimise the loss of nitrogen to water prior to 1 July 2017, where the land owner holds an existing water permit to take and use water, or is a shareholder in an irrigation scheme, and there are conditions on the water permit that address nutrient management, any change in farming activities will be enabled subject to requirements to prepare and implement a farm environment plan, the regular audit of that plan and to record, on a per enterprise basis, nitrogen discharges.
- 4.36 Irrespective of the nutrient allocation status of a catchment as shown on the Planning Maps, to allow the following discharges:
- (a) wastewater discharge from a marae;
 - (b) community wastewater treatment schemes; or
 - (c) wastewater discharge from a hospital, a school or other education institution.

Nutrient Discharges – Sub Regional Chapters

- 4.37 All activities shall achieve the nutrient load limit and nutrient allowance for the catchment in Sections 6-15 of this Plan.
- 4.38 If the measured or predicted nutrient load from land uses and discharges exceeds the nutrient load limit for the catchment in Sections 6-15 of this Plan, the loss to water of nutrients from land uses in the catchment will be reduced to achieve the nutrient load limit for the catchment.

Damming and Diversion of Water Bodies

- 4.39 Wetlands in the beds and margins of lakes and rivers are managed as an integral part of lakes and rivers, while recognizing that natural wetlands have significant biodiversity, ecosystem services, and life-supporting capacity values in their own right that must be protected.
- Note: Abstraction, earthworks or structures occurring in wetlands, are ~~not~~ subject to ~~any~~ additional rules that manage wetlands.*
- 4.40 In hāpua, coastal lakes, lagoons and natural wetlands the damming, diversion or taking of water is limited to the temporary diversion of water as part of maintaining infrastructure, pest management, or habitat restoration or enhancement work, or the artificial opening of hāpua to assist in fish migration, achieving other conservation outcomes, customary uses, or to avoid land inundation.

- 4.41 The damming or diversion of any alpine or hill-fed river does not adversely affect:
- (a) values of significance to Ngāi Tahu^[1] associated with the mainstem;
 - (b) the passage of floods and freshes needed to maintain river processes, ecosystem health and the removal of vegetation encroaching onto the bed of the mainstem;
 - (c) sediment transport within the river and to the coast;
 - (d) fish passage; ~~and~~
 - (e) downstream water quality; ~~or~~;
 - (f) ~~the achievement of the freshwater objectives and environmental outcomes identified in Objective 3.5A and Schedule XX~~
- 4.42 Any alteration to the level of any natural lake that is unmodified as at 11 August 2012 is within its natural range (averaged over not less than five years).
- 4.43 The adverse effects of in-stream damming:
- (a) on high naturalness waterbodies identified in Sections 6-15 ~~or in Schedule XX~~ ~~shall~~ must be avoided; and
 - ~~(a)(b)~~ on the biodiversity values of wetlands must be avoided; and
 - ~~(b)(c)~~ on any other river complies with the environmental flow and allocation regime for that catchment and any adverse effects from the damming on flow variability in the river, sediment flows and nourishment of the coast, aquatic ecosystems, fish passage, indigenous flora and fauna, the habitats of trout and salmon, the habitat of nesting birds in braided rivers, any sites or values of significance to Ngāi Tahu, and any recreational or amenity values are, as a first priority, avoided or, where unable to be avoided, are remedied or mitigated.
- 4.44 Small-scale diversions of water within the beds of lakes, ~~or~~ or rivers ~~or adjoining wetlands~~ are provided for as part of:
- (a) establishing, maintaining or repairing infrastructure or habitats;
 - (b) removing gravel or other earthworks; or
 - (c) undertaking minor flood or erosion control or repair works and the diversion is occurring within the boundaries of an individual's property and there are no potential adverse effects on any other person, their property, or any ecological, cultural, recreational or amenity values of the fresh water body.
- 4.45 Any dam or infrastructure for the storage of water is sited, designed, constructed and operated to minimise any risk of overspill, leakage, slips or other dam failure, provides for the diversion of floodwaters, and any associated risk of inundation or other adverse effects on people, communities or their property.

Abstraction of Water

- 4.46 Enable the taking of water for group or community drinking water supplies by not requiring compliance with any minimum or residual flow or partial restriction conditions and the environmental flow and allocation regime or groundwater allocation block, provided the water supply is managed to restrict the use of water from those supplies during periods of low flow or water levels.
- 4.46A Any abstraction of surface water or stream depleting ground water both singularly and in combination with all other abstractions, complies with any environmental flow and allocation regime for that fresh water body in Sections 6-15 of the Plan, or ~~Table 4~~ Policy 4.1AA (whichever is appropriate)
- 4.46B Water is allocated in a fair and equitable manner with all abstractors taking water in accordance with an environmental flow or water level and allocation regime or within a groundwater allocation block being subject to the same conditions in relation to minimum flows, partial restrictions, and requiring a specified maximum annual or seasonal volume and rate of take.
- 4.47 Where the rate of take or volume of water consented for abstraction from a catchment exceeds the environmental flow or water level and water allocation regime for surface water or stream depleting groundwater, or the groundwater allocation limit for that catchment, any further allocation of water is limited to:
- (a) any abstraction necessary to meet community drinking and stockwater requirements; and
 - (b) the replacement of existing resource consents at the same or a lesser rate of take and the same or a lesser annual or seasonal volume, provided there are significant and enduring improvements in the efficiency of water use and reductions in any adverse effects.

- 4.48 Existing hydro-generation and irrigation schemes are recognised as a part of the existing environment for the term of their consents. In ~~re-consenting~~considering new consents for such schemes, it is expected that there will be improvements in the efficiency of water use and conveyance assessed over the life of the consent and reductions in any adverse effects on flows and levels in water bodies in order to maximise the term of the consent.

- 4.49 The abstraction of groundwater outside of any groundwater allocation zone in Sections 6-15, may occur only if the applicant can demonstrate that:
- (a) the groundwater is not stream depleting groundwater, or does not have a long-term low-level hydraulic connection to any surface water body which is fully or over-allocated for abstraction;
 - (b) the groundwater is not hydraulically connected to any groundwater allocation zone in Sections 6-15 of this Plan which is fully or over-allocated for abstraction;
 - (c) the groundwater abstraction will not alter the hydraulic pressure or gradient of any other aquifer; ~~and~~
 - ~~(d)~~ (d) the cumulative average rate of abstraction does not exceed the estimated rate of recharge of the aquifer, and-
 - ~~(e)~~ (e) Any other adverse effects on the environment will be no more than minor.
- 4.50 Any change to a resource consent to abstract surface water for irrigation as a “run-of-river” take to a “take to storage”, is subject to the following conditions to mitigate any adverse effects:
- (a) a seasonal or annual allocation limit;
 - (b) a maximum instantaneous rate of take;
 - (c) a higher minimum flow, if this is required to sustain ecosystem, natural character or recreation values; and
 - (d) any required cessation required to maintain flow variability and freshes in the river.
- 4.51 In addition to the requirements in the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010, for any new water permit, replacement of an expiring water permit, transfer or review of an existing permit to take water at a rate of more than 30 L/s shall include a condition requiring water use records to be telemetered to the CRC or its nominated agent.
- 4.52 The discharge of water resulting from moving water from one catchment or water body to another does not:
- (a) facilitate the transfer of fish species, plant pests or unwanted organisms into catchments where they are not already present;
 - (b) adversely affect Ngāi Tahu values;
 - (c) adversely affect the natural character of the receiving water;
 - (d) adversely affect existing drinking water treatment systems to the extent that they are no longer able to effectively treat the water to achieve the standards set out in the Drinking-water Standards for New Zealand; and
 - ~~(e)~~ (e) adversely affect fish migration.
 - ~~(f)~~ (f) Adversely affect freshwater objectives or environmental outcomes identified in Objective 3.5A or Schedule XX
 - ~~(g)~~ (g) Adversely affect significant sites identified in Schedule 17
- 4.53 Where water is introduced from outside the catchment, the additional surface water flows are not available for abstraction unless a new or revised environmental flow and allocation regime is introduced through a plan change.
- 4.54 Any abstraction of groundwater does not result in cross-contamination between aquifers or water-bearing layers that results in, or may result in, adverse effects on water quality.
- 4.55 Non-consumptive groundwater takes, including the taking of heat from or adding heat to groundwater, will not be subject to any groundwater allocation zone limits, and will generally be supported, provided the water either remains in the aquifer, or is returned to the same aquifer within 24hrs and is protected from contamination.
- 4.56 The use of bores or galleries, including decommissioned bores, does not result in the contamination of surface water or groundwater through backflow of water, or surface water and contaminants entering bores or galleries.
- 4.57 There is no backflow of contaminants from any equipment or infrastructure which is used to both irrigate land and apply effluent, agri-chemicals or nutrients.
- 4.58 The direct cumulative interference effect from new groundwater takes on existing groundwater takes is minimised by limiting the drawdown of any existing bore within a 2 km radius to no more than 20% of the available drawdown.

- 4.59 Surface water intakes or galleries are sited so that they do not interfere with nor divert surface flow away from other existing lawfully established surface water intakes or galleries or flow recorder sites.

- 4.60 Any abstraction of surface water or stream depleting groundwater is subject to conditions specifying:
- (a) the maximum instantaneous rate of take;
 - (b) a maximum volume based on reasonable use over the period the water is required;
 - (c) a minimum flow at which abstraction ceases in accordance with the relevant flow and allocation limits;
 - (d) the area or property within which the water is to be used;
 - (e) the location of the take;
 - (f) the prevention of fish entering any intake;
 - ~~(f)(g) the prevention of risks to people recreational users from any intake or diversion structures in the bed;~~ and
 - ~~(g)(h) when partial restrictions (when rivers are flowing above the minimum or residual flow limit but below the full allocation block) come into force.~~
- 4.61 To prevent the flow falling below ~~a minimum flow~~ the environmental flow and water level limits for the catchment, due to abstraction, partial restriction regimes for surface waters shall:
- (a) have a single flow monitoring point for the whole catchment that all abstractors are referenced to, which is not subject to abstraction or, if subject to abstraction, then accurate modeling can determine natural flows with additional flow monitoring points that some or all abstractors are subject to, should the hydrology of the surface water body justify it;
 - (b) provide for groups of water permit holders in the same sub-catchment to share water when takes are operating under partial restrictions; and
 - (c) unless specified in a relevant sub-regional section, be based on a stepped or pro rata restriction regime that applies equally to all takes within an allocation block and does not induce the flow at any relevant part of a river to fall below the ~~minimum flow due to~~ environmental flow or water level limit to abstraction.
- 4.62 Any abstraction of groundwater is subject to conditions specifying:
- (a) the maximum instantaneous rate of take;
 - (b) a maximum seasonal volume based on reasonable use over the period the water is required;
 - (c) the area or property within which the water is to be used;
 - (d) the location of the abstraction;
 - (e) any minimum groundwater levels at which abstraction ceases if specified in Sections 6-15; and
 - (f) any other conditions to regulate the rate or volume of water that may be abstracted relative to the estimated volume of groundwater stored in a groundwater zone, if specified in Sections 6-15.
- 4.63 Where existing abstractors do not have a maximum seasonal or annual allocation, to impose ~~these~~ conditions specified in Policy 4.62 when any of the following occur:
- (a) resource consent conditions are changed;
 - (b) water permits are transferred;
 - (c) existing resource consents to abstract water expire and are renewed; or
 - (d) the consent authority determines a review of consent conditions is required to impose seasonal or annual volumes in a catchment, or to give effect to minimum flow environmental flow or water level and allocation regimes such as those which may be introduced through plan changes to Sections 6-15 or which are specified in Policy 4.1AA.

Flow Sensitive Catchments

- 4.64 Reduced effects arising from the interception of rainfall run-off on surface water flows in the flow sensitive catchments listed in Sections 6-15 is achieved by controlling the area, density and species of trees planted, except where tree-planting is required to control deep-seated soil erosion, provided that any subsequent increase in base flow of such catchments shall not be then available for allocation for abstractive use.

Site Dewatering

- 4.65 Localised land subsidence or other significant effects on the flows or levels of surface water or groundwater from the dewatering of construction sites or other sites, is avoided by limiting the rate or duration of pumping or other appropriate mitigation measures.

Efficient Use of Water

- 4.66 The rate, volume and seasonal duration for which water may be taken will be reasonable for the intended use.
- 4.67 Water abstraction for irrigation is managed so that:
- (a) winter flows are available for abstraction to storage, while ensuring ecosystem recovery; and
 - (b) abstraction is for the summer (Oct-Apr) irrigation season, unless specified otherwise in Sections 6-15 or in a resource consent.
- 4.68 Water allocated to a consent holder for abstraction, but which is not used over the time period specified in the water permit, is not further allocated through the granting of an additional or back-up water permit.
- 4.69 Water used for irrigation is applied using good-practice that achieves an irrigation application efficiency of not less than 80%.
- 4.70 Systems to convey or apply water are designed to maximise efficient use of water, including the improvement over time of existing systems, except where there will be an adverse effect on ecosystems or existing abstractors from a loss of recharge.

Transfer of Water Permits

- 4.71 Reduction in water use in over-allocated catchments, improvement in the efficiency of water use, and encouragement of more effective storage and distribution of water in order to meet economic and social outcomes will be achieved through managed transfers of water take and use permits.
- 4.72 Enable the transfer of water permits to take or use water, provided:
- (a) the transfer of water is occurring within the same surface water catchment or sub-catchment, or the same groundwater zone, as defined in this plan;
 - (b) the same or a lesser amount of water is being taken or used; and
 - (c) the effects of the take and use of water are the same or less.
- 4.73 In an over-allocated surface water catchment or groundwater zone, enable the transfer of water permits to take or use water where water is moving to an irrigation scheme, and in all other instances, enable the transfer of water provided there is a surrender of a proportion of the allocated water to the water body and it is not re-allocated.

Sharing Water in Times of Restriction

- 4.74 Enable water permit holders who choose to enter written agreements with other water permit holders in the same catchment or sub-catchment to temporarily share all or part of the water take authorised by their water permits during times of restrictions, provided:
- (a) all water permits are subject to conditions that specify a maximum rate of take and a daily, seasonal and/or annual volume;
 - (b) metering and telemetry of data in accordance with Policy 4.51 is undertaken for all takes;
 - (c) all water permits are subject to common restriction conditions, or any discrepancies in restriction conditions are addressed in the written agreement.

(e)

Consent Duration, Lapse Periods and Giving Effect to Water Permits

- 4.75 Resource consents to abstract water shall be given effect to within two years unless a longer lapse period is justified to give effect to the consent due to the scale or complexity of the activity. For the purpose of this policy, "given effect to" requires the installation of infrastructure, water meter or flow measuring device and use of the water as proposed.
- 4.76 Resource consents for the use of land for farming activities and the associated discharge of nutrients in catchments that are coloured red on the Planning Maps and resource consents for water take and use in catchments or

groundwater allocation zones that are over-allocated will generally be subject to a 5 year duration if the land use and associated nutrient discharges or water take and use may impede the ability of the community to find an integrated solution to manage water quality and the over-allocation of water.

Hydrocarbon Exploration or Production, Including "Fracking"

- 4.77 Groundwater or surface water contamination resulting from the use of chemicals, materials or additives or the escape of hydrocarbons during the exploration for, or extraction of, hydrocarbons in solid, liquid or gaseous forms is avoided.
- 4.78 Any bore penetrating bedrock is cased to prevent any potential contaminants leaking into the overlying aquifers and, when decommissioned, the release of contaminants from the bedrock into the overlying aquifers; and any entry of contaminants from the land surface into the well or bore is prevented.

Wetlands and Riparian Margins

- 4.79 Any take, use, damming or diversion of water, any discharge of contaminants onto land or into water, or any earthworks, structures, planting, vegetation removal or other land uses within a natural wetland boundary, do not adversely affect the significant indigenous biodiversity values of natural wetlands, hāpua, coastal lakes and lagoons, except for:
- (a) a temporary and minor adverse effect where that activity is part of installing or maintaining infrastructure, pest management, or habitat restoration or enhancement work; or
 - (b) the artificial opening of hāpua, coastal lakes or lagoons to assist in fish migration or achieving other conservation outcomes, customary uses, or to avoid land inundation.
- 4.80 Modification of natural wetlands, hāpua, coastal lakes and lagoons may occur if the activity is necessary to provide for the installation of infrastructure and any significant effects are offset by other improvement or expansion of the same wetland, hāpua, coastal lake or lagoon.
- 4.81 Restoration or enhancement of wetlands is encouraged provided it does not give rise to any adverse effects on other lawfully established activities, including any adverse effects on the reliability of supply of water for existing abstractors, or any inundation or erosion of other people's property.
- 4.82 Wetlands and riparian planting are developed as integral parts of land drainage, discharges to land and water and stormwater networks in both rural and urban areas, to reduce the effects of those activities on water quality and to enhance indigenous biodiversity and amenity values.
- 4.83 Water quality, indigenous biodiversity and ecosystem health in lakes, rivers, natural wetlands, hāpua, coastal lakes and lagoons are enhanced through establishing or restoring riparian planting.

Activities in Beds of Lakes and Rivers

- 4.84 Earthworks and structures in the beds or margins of lakes, rivers, natural wetlands, hāpua, coastal lakes and, lagoons:
- (a) maintain the character and variable channel characteristics of braided rivers;
 - (b) protect sites and areas of significant indigenous biodiversity values, habitat values (including of sites identified in Schedule 17) or of cultural significance to Ngāi Tahu [2]; and
 - (c) Protect values the freshwater objectives and environmental outcomes identified in Objective 3.5 and Schedule XX; and
 - (b)(d) Do not pose a risk to other users of the water body; and
 - (c)(e) do not preclude any existing lawful access to the bed of the lake, river, natural wetland hāpua, coastal lake, or lagoon for recreational, customary use, or flood control purposes.
- 4.85 Plant species listed in the Biosecurity NZ Unwanted Organisms Register or the Regional Pest Management Strategy are not introduced or planted in the beds or margins of lakes, rivers, hāpua, coastal lakes and lagoons, or in wetlands.
- 4.86 Earthworks, structures, or the planting or removal of vegetation (other than by spraying) in the beds of lakes, rivers, hāpua, coastal lakes and lagoons, or within a wetland boundary do not occur in flowing or standing water unless any effects on water quality, ecosystems, biodiversity, safety, or the amenity, recreational or cultural values will be minor or the effects of diverting water are more significant than the effects of the activity occurring in flowing or standing water.
- 4.87 Earthworks, structures (including flood control structures), vegetation planting or removal, or other activities in the

beds of lakes or rivers, do not restrict flood flows in any river, or create or exacerbate erosion of, or, on completion, reduce the total quantum of habitat available in, the bed or banks of any river or the bed or margins of any lake.

- 4.88 Any modification of the levels of lakes which are artificially managed does not create or exacerbate significant shoreline erosion. This policy does not apply to the artificial opening of hāpua, coastal lakes or lagoons to the sea.
- 4.89 Land uses, and other activities in the beds or margins of lakes and rivers, do not adversely affect the stability or functioning of lawfully established erosion control or flood protection works or infrastructure.

Gravel Extraction

- 4.90 Recognise the value of gravel extraction for regionally significant infrastructure, for economic activity, to develop and enhance water bodies and their values, and for the re- build of Christchurch and enable the maximum extraction from land without affecting groundwater quality and require remediation to avoid the risk of contamination.
- 4.91 For all gravel removal from the beds of rivers:
- (a) the rate of gravel extraction does not exceed the rate of gravel recharge, except where stored gravel is available for extraction and in that case short-term extraction of stored gravel may occur at a rate that exceeds gravel recharge rates only to the point that gravel levels reach gravel recharge rates; and
 - (b) the activity is undertaken in ways which do not induce erosion, adversely affect water quality, significant indigenous biodiversity, disturb wildlife habitat or sites of cultural significance to Ngāi Tahu, or affect access and recreational values.

Natural Hazards

- 4.92 The consequential effects of seismic activity are recognised and timely and appropriate responses to such activity are facilitated.
- 4.93 Temporary adverse effects from activities required for recovery from a natural hazard event are managed to minimise the duration and scale of any adverse effects and maximise the overall benefits of the activity to the recovery.
- 4.94 In urban areas, where groundwater hydrology has changed as a result of seismic activity, including new springs and altered groundwater levels, allow site-specific remediation to occur. (This page is intentionally blank)
- 4.95 The potential effect of natural hazards are minimized by protecting the effectiveness of natural hazard protection infrastructure, wetlands and hāpua, and maintaining vegetation and minimising earthworks on land that has significant erosion potential.
- 4.50 The risk of flooding, erosion of land or damage to structures is not exacerbated by:
- (a) the diversion of water,
 - (b) erection, placement or failure of structures,
 - (c) the removal of gravel or other alteration to the bed of a lake, wetland or river, or
 - (d) earthworks or vegetation disturbance on land adjacent to the beds of water bodies.

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