

CSNDC APPLICANT'S CONDITIONS 5TH NOVEMBER 2018

July 2018 Application	Change	Source of Change	Reason for Change
Annual Exceedance Probability (AEP) is the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 40 cubic metres per second has an AEP of 2%, it means there is a 2% chance (i.e. one-in-fifty) of a peak flood discharge of 40 cubic metres a second or larger being equalled or exceeded in any year. AEP is the inverse of return period expressed as a percentage.			
area of disturbance means an area where site clearance or earthworks are actively taking place and where the land has not been stabilised.			
CSNDC means the Christchurch City Council Comprehensive Stormwater Network Discharge Consent.			
Christchurch Contaminant Load Model (C-CLM) means the Golder Associates (NZ) Ltd 2018 Christchurch Contaminant Load Model (C-CLM). The C-CLM report is attached to this resource consent as Schedule 2.			
critical duration means the time taken during a storm event for peak water levels to be reached in the receiving waters			
design storm is the theoretical rainfall event that an analysis is based on for a particular probability. The design storm is based on certain assumptions, including rainfall distribution and intensity, and the storm rainfall profile shape for the critical duration.			
development site means any individual area within a site or sites that is undergoing construction and/or earthworks activities but excludes sealed pavement repair where base course is not exposed.			
device means a street or property-scale installation for the purpose of removing contaminants from stormwater in a situation where storage capacity is limited. Examples include a rain garden or a proprietary treatment system.			
EMP means Environmental Monitoring Programme.			
existing site means any site that discharges its stormwater into the CCC stormwater network at the date of commencement of this resource consent.			
Extra-Over Detention means attenuating sufficient stormwater to control peak flow rates from a developed site back to pre-developed flow rates for storms up to and including the critical 2 percent annual exceedance probability design storm event.			
facility means a (usually large) constructed means of holding or attenuating stormwater for the purpose of reducing discharge rates or removing contaminants. Examples include a sedimentation basin, a constructed wetland, a wet pond an attenuation basin and/or an infiltration basin.			
first flush means either: a) the stormwater runoff generated from the first 25 millimetres of rain falling on impervious areas of a site, or b) the stormwater flow rate generated from up to 5mm/hr rainfall intensity on impervious areas of a site; or c) the stormwater runoff generated from the first 20 millimetres of rain falling on impervious areas of a site discharging to rain gardens or tree pits.			

	flat land means any land where the average slope across the site is 5 degrees or less.			
	greenfield means agricultural, forest or grass land previously undeveloped for urban purposes (construction of residential or industrial subdivision, buildings, roads and associated services).			
		Add a new definition for Hardstand, such as: hardstand means the addition of a hard or compacted surface like roofs, pavement or gravel; or the addition of a more compacted surface, like paving over pre-existing soil or gravel.	Oil Companies submission. Brian Norton EIC [183].	Was proposed by Mr Norton to address an Oil Companies submission point. Oil Companies evidence recommended deletion.
	high-use site means a site that: (a) has an expected average daily traffic (ADT) count equal to or greater than 250 vehicles per day; or (b) is used for petroleum storage or transfer in excess of 5,000 litres per year, not including delivered heating oil; or (c) is used for storage or maintenance of 10 or more heavy vehicles (trucks, buses, trains, heavy equipment, etc.).			
	hill land means any land where the average slope across the site exceeds 5 degrees.			
	industrial site means: (a) any premises used for the manufacturing, assembly, wholesaling or storage of products or the processing of raw materials and other ancillary activities; or (b) any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste-management purposes, or used for composting organic materials; or (c) any other premises from which a contaminant is discharged in connection with any industrial or trade process—but does not include any land under agricultural production.			
	LWRP means Canterbury Land and Water Regional Plan.			
	papatipu rūnanga means the six Ngāi Tahu Papatipu Rūnanga within the Christchurch area, namely: Te Ngāi Tūāhuriri Rūnanga, Te Hapū o Ngāti Wheke/Rāpaki Rūnanga, Te Rūnanga o Koukourārata, Ōnuku Rūnanga, Wairewa Rūnanga, and Te Taumutu Rūnanga.	papatipu rūnanga means the six Ngāi Tahu Papatipu Rūnanga within the Christchurch area, namely: Te Ngāi Tūāhuriri Rūnanga, Te Hapū o Ngāti Wheke/Rāpaki Rūnanga, Te Rūnanga o Koukourārata, Ōnuku Rūnanga, Wairewa Rūnanga, and Te Taumutu Rūnanga, <u>as represented by Mahaanui Kurataiao Ltd or its successor organisation.</u>	Council initiative.	Recommended by Mr Pauling (not in EIC).
	Partial Detention means storage within first flush basins plus additional storage through flooding of wetland areas to an average depth of 500mm discharging over a minimum of 96 hours for the critical 2 percent annual exceedance probability design storm event.			
	QMCI means Quantitative Macroinvertebrate Community Index.			
	re-development site means a change to a developed site or a site activity that results in a stormwater discharge that is not the same in scale, intensity or character to the discharge that existed prior to the commencement of this consent.	re-development site means a change to a developed site or a site activity that results in a stormwater discharge that <u>has the potential to increase is not the same in the</u> scale, intensity or <u>contaminant content of character to</u> the	Amendments in response to Oil Companies evidence.	Amendments in response to Oil Companies evidence.

		discharge that existed prior to the commencement of this consent.		
	site means an allotment title or other legally defined parcel of land held in a single certificate of title and any balance land or adjacent land with title(s) held by the same owner or ownership with an affiliated interest. In the case of greenfield and re-development, site means the area of land defined by the boundaries of proposed land disturbance.			
	SMP means Stormwater Management Plan.			
	stabilised means an area of land sufficiently covered by erosion-resistant material such as grass, mulch, weed matting, bark, sand/aggregate, or paving by asphalt, concrete, paver blocks, etc., in order to prevent erosion of the underlying soil.			
	stage of development means a part of a development area which is completed prior to any other stage of that development commencing. A stage of development is deemed to be finished following the completion of construction activities and when the development area has been stabilised.			
	stormwater means runoff from rainfall that has been collected, channelled, diverted, intensified or accelerated by human modification of the land surface or runoff from the external surface of any structure as a result of precipitation and may contain contaminants. This definition excludes discharges of spilled or deliberately released hazardous substances and/or washdown activities.			
	stormwater network means waterways identified in a SMP and also includes the reticulated piped network, kerb and channel, sumps, pipes, manholes, rapid soakage chambers and any stormwater conveyance and mitigation system for which Christchurch City Council are responsible for operation and maintenance.	stormwater network means <u>waterways identified in a SMP the Ōtākaro/ Avon River, Huritini/ Halswell River, Ōpāwaho/ Heathcote River, Ōtūkaikino River and the Pūharakekenui/ Styx River and their tributaries</u> and also includes the reticulated piped network, kerb and channel, sumps, pipes, manholes, rapid soakage chambers and any stormwater conveyance and mitigation system for which Christchurch City Council are responsible for operation and maintenance.	Brian Norton EiC, responding to submissions.	Improve clarity.
	surface water means water in waterways, lakes, wetlands, springs, or coastal waters, but excludes groundwater and atmospheric water.			
	SWIM means the Joint Stormwater Management Issues Working Group, or its successor. The SWIM is a forum of senior managers of Christchurch City Council and Canterbury Regional Council established to meet the outcome of on-going communication as detailed in the "Stormwater Management Protocol ¹ ."			
	TSS means Total Suspended Solids.			
	ACTIVITY			
	Purpose and Location			
1	This consent permits the discharge onto or into land or into surface water of stormwater which:			
	a. is generated from existing sites, greenfield development sites and re-development sites within the territorial boundaries of the Christchurch City Council, and is discharged into the Christchurch City Council stormwater network, but excludes those areas outside of Banks Peninsula settlement areas; or			
	b. enters the Christchurch City Council stormwater network from outside of the City boundary; or			

¹ A Joint Christchurch City Council and Environment Canterbury Stormwater Management Protocol (March 2006, Revised September 2008 and November 2010)

	c. is generated from roofs of individual existing sites, greenfield development sites and re-developments sites and is discharged onto or into land within the site; or	c. is generated from roofs of individual existing sites, greenfield development sites and re-developments sites and is discharged onto or into land within the site; or	Internal Council discussion.	Clarity/grammer.
	d. is generated from hard-standing areas of individual existing residential sites, greenfield development and re-development sites and is discharged onto or into land within the site.	d. is generated from hard-standing areas of individual existing residential sites, residential and non-residential greenfield development and residential and non-residential re-development sites and is discharged onto or into land within the site. <u>Advice Note: For the avoidance of doubt, this consent does not authorise existing discharges into land from non-residential hardstand areas via private stormwater systems.</u>	Internal Council discussion.	To assist users; for clarity.
	Exclusions			
2	There shall be no discharge to land or surface water from the following unless expressly authorised by Canterbury Regional Council and Christchurch City Council:			
	a. Any site or development area on the Canterbury Regional Council's Listed Land Use Register that is considered by Christchurch City Council to pose an unacceptably high risk of surface water or groundwater contamination;	a. Any new activity or re-development in a site or development area on the Canterbury Regional Council's Listed Land Use Register that is considered by Christchurch City Council to pose an unacceptably high risk of surface water or groundwater contamination;	Internal Council discussions.	Addition intended to address submitter concerns with uncertainty of the phrase "unacceptable high risk" for existing activity on LLUR sites. AND this addition should meet the CIAL concern in the letter to Council. Can be further discussed whether other changes are needed to clarify "unacceptable risk"
	b. Any stage of development with a total area of disturbance exceeding 5 hectares on flat land or 1 hectare on hill land; and	b. Any stage of during the construction of a development site with a total area of disturbance exceeding 5 hectares on flat land or 1 hectare on hill land; and	Internal Council discussions.	For clarity.
	c. Any site listed on the attached Schedule 1 'Sites excluded from the Christchurch City Council Comprehensive Stormwater Network Discharge Consent'.	c. Any site listed on the attached Schedule 1 'Sites excluded from the Christchurch City Council Comprehensive Stormwater Network Discharge Consent' <u>(i) at commencement of this consent; or (ii) as a result of the process set out in condition 3 below, or (iii) as a result of the process set out in condition 41, or (iv) by variation of this consent.</u>	Internal Council discussions.	For clarity.
3	Discharge from the sites excluded by Condition 2 will be within the scope of this consent on 1 January 2025, or when current discharge permits expire for those sites, whichever is the latest.	Discharge into the Christchurch City Council stormwater network from the sites excluded by Condition 2 are will be within the scope of authorised under this consent on 1 January 2025, or when current discharge permits expire or are surrendered for those sites, whichever is the latest, unless through the transitional arrangements set out below, or through the audits described in condition 41, the consent holder determines that the site poses an unacceptably high risk of surface water or groundwater contamination. The transitional arrangements are:	Internal Council discussions. Recommended so that the CCC still has a choice to continue to exclude from coverage discharges to land on sites in 2 a, b or c above. Also in accordance with Policy 4.16A, changes proposed to provide for the	For clarity. Corrects what was always intended by the applicant. In response to matters raised in Officer's Report regarding this change. This is referenced

		<p><u>(a) Within 6 months of this consent being in legal effect, the consent holder will engage with the Canterbury Regional Council to obtain full details of all of the consented activities excluded from this consent until 2025, including information on site activities, conditions and compliance records;</u></p> <p><u>(b) On the date on which the previously excluded site comes within the scope of this consent, the discharge from the previously excluded site into the stormwater network shall be subject to standards that result in the same or better environmental outcomes for the quality and quantity of the discharge as those that were in the relevant site specific resource consent issued by the Canterbury Regional Council;</u></p> <p><u>(c) Within 3 years of this consent being in legal effect, the consent holder will deliver to the Canterbury Regional Council a Transition Plan for the excluded sites that includes, but is not limited to:</u></p> <p><u>(i) a description of the regulatory methods that will be used by the consent holder to ensure that previously excluded sites will be subject to standards that achieve required environmental outcomes as described in condition 3(b);</u></p> <p><u>(ii) a description of how a risk matrix will be used for risk rating and to identify particular high risks and how they will be managed and audited;</u></p> <p><u>(iii) a description of site specific monitoring plans for particular sites rated high in the risk matrix;</u></p> <p><u>(iv) a description of the process that the consent holder will use to determine, in collaboration with CRC and through engagement with affected site operators, whether a site will remain excluded from authorisation under this consent due to it posing an unacceptably high risk of surface water or groundwater contamination.</u></p> <p><u>Add a provision that privately owned and operated discharges to land remain excluded.</u></p>	<p>appropriate management of transition of 'high risk' sites from Environment Canterbury to Council.</p> <p>Brian Norton EiC [136]</p> <p>Brian Norton EiC [147]</p>	<p>throughout the Officer's Report, but in particular: Paragraphs 276 – 281 and 308 Paragraph 1036 (b) and (c)</p> <p>Amendments to address concerns raised in the Officer's Report: Paragraph 268 (a) – (b).</p>
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		<u>To be discussed: Additional provision that provides ability for the Council to continue to exclude some sites.</u>																							
	Advice note: Discharge into the Christchurch City Council stormwater network will still require approval from Christchurch City Council, as owner and operator of the stormwater network, at the expiry of discharge permits for the sites noted above, or from 1 January 2025, whichever is the latest.																								
		<u>Advice Note: The consent holder will still have the ability to seek a Variation of the resource consent. That may be used to exclude high risk sites and/or to exclude discharges into waterways from private stormwater pipes.</u>	Internal Council discussions.	Clarifies that it is still possible that sites will be excluded by the consent but that this will require a variation under section 127 of the RMA. Reflects issues raised in submissions, and in response to section 42A report.																					
Stormwater Management Plans																									
4	The consent holder shall, in consultation with papatipu rūnanga and the Christchurch-West Melton and Banks Peninsula Zone Committees (or successor organisations), develop, and as necessary update Stormwater Management Plans (SMPs) in accordance with the programme set out in Table 1.	The consent holder shall, in consultation with papatipu rūnanga and the Christchurch-West Melton and Banks Peninsula Zone Committees (or successor organisations), develop, and as necessary update Stormwater Management Plans (SMPs) in accordance with the programme set out in Table 1 <u>and submit each SMP to Canterbury Regional Council for certification that it contains the matters required by condition 6 and is consistent with the purpose of SMPs in condition 5. Certification will be by the RMA Compliance and Enforcement Manager of the Canterbury Regional Council.</u>	Council discussions and s42A report.	For clarity and in response to submissions and s42A on the process, provides for certification of new SMPs.																					
Table 1: SMP Programme																									
<table border="1"> <thead> <tr> <th>Catchment</th> <th>Date SMP Operative</th> <th>Date Submitted to Canterbury Regional Council</th> <th>Date for 10 Year Review</th> </tr> </thead> <tbody> <tr> <td>Ōtākaro/ Avon River Area Christchurch</td> <td></td> <td>30 June 2015</td> <td>30 June 2025</td> </tr> <tr> <td>Pūharakekenui/ Styx River Area Christchurch</td> <td>30 June 2014</td> <td></td> <td>30 June 2024</td> </tr> <tr> <td>Huritini/ Halswell River Area Christchurch</td> <td>30 June 2016</td> <td></td> <td>30 June 2026</td> </tr> <tr> <td>Ōpāwaho/ Heathcote River Area Christchurch</td> <td></td> <td>30 June 2019</td> <td>30 June 2029</td> </tr> </tbody> </table>				Catchment	Date SMP Operative	Date Submitted to Canterbury Regional Council	Date for 10 Year Review	Ōtākaro/ Avon River Area Christchurch		30 June 2015	30 June 2025	Pūharakekenui/ Styx River Area Christchurch	30 June 2014		30 June 2024	Huritini/ Halswell River Area Christchurch	30 June 2016		30 June 2026	Ōpāwaho/ Heathcote River Area Christchurch		30 June 2019	30 June 2029	Change to reporting dates for 2 existing SMPs:	In response to Officer's Report [paragraphs 414 and 423] concerns about the completed SMPs not containing all of the items required under the proposed consent conditions. David Adamson and Graham Harrington EIC.
Catchment	Date SMP Operative	Date Submitted to Canterbury Regional Council	Date for 10 Year Review																						
Ōtākaro/ Avon River Area Christchurch		30 June 2015	30 June 2025																						
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Catchment	Date for 10 Year Review																								
Pūharakekenui/ Styx River Area Christchurch	30 June 202 3 ⁴																								
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	Estuary and Coastal Area Christchurch		20 December 2019	20 December 2029			
	Outer Area Christchurch		30 June 2020	30 June 2030			
	Te Pātaka o Pākaihautū/ Banks Peninsula Settlements		20 December 2020	20 December 2030			
5	The purpose of the SMPs is to:						
	a. Demonstrate the means by which the quality of stormwater discharges will be progressively improved towards meeting the Receiving Environment Objectives and Attribute Target Levels for waterways, coastal waters, groundwater and springs, and water quantity, set out in the conditions of this consent and in Schedules 4 to 7;						
	b. Demonstrate the means by which the stormwater contribution to groundwater and spring-fed stream flows will continue by discharge of stormwater to land infiltration systems where reasonably practicable;						
	c. Demonstrate the means by which Christchurch City Council stormwater infiltration facilities constructed by, or on behalf of, the consent holder, after the commencement of this consent shall be designed, located and operated to avoid, remedy or mitigate adverse effects of groundwater mounding on other land in anything more frequent than the critical 2 percent Annual Exceedance Probability Event.						
	d. Plan the works authorised by this consent;						
	e. Implement the conditions of this consent as they apply to each catchment.						
6	SMPs submitted to Canterbury Regional Council after the operative date of this consent shall include but not be limited to the following information:						
	a. Specific guidelines for implementation of stormwater management within the catchment to achieve the purpose of SMPs;						
	b. A definition of the extent of the stormwater infrastructure, including any portions of waterways, that forms the stormwater network within the catchment for the purposes of this consent;						
	c. A description of statutory and non-statutory planning mechanisms to achieve compliance with the conditions of this consent including the requirement to improve discharge water quality. These mechanisms will include (but are not limited to):						
	i. Relevant objectives, policies, standards and rules in the Christchurch District Plan;						
	ii. Relevant bylaws;						
	iii. Relevant strategies, codes, standards and guidelines;						
	d. Mitigation methods to achieve compliance with the conditions of this consent including the requirement to improve discharge water quality. These methods may include (but are not limited to):				d. Mitigation methods to achieve compliance with the conditions of this consent, including the requirement to improve discharge water quality under Conditions 20 and 21 . These methods may include (but are not limited to):	Following discussions with CRC staff.	Provides greater clarity and certainty for site-specific management.
	i. Stormwater mitigation facilities and devices;				i. Stormwater mitigation facilities and devices;		
	ii. Erosion and sediment control guidelines;				ii. Erosion and sediment control guidelines;		
	iii. Education and awareness initiatives on source control systems and site management programmes;						

	<ul style="list-style-type: none"> iv. Support for third party initiatives on source control reduction methods; v. Prioritising stormwater treatment in catchments that discharge: in proximity to areas of high ecological or cultural value, such as habitat for threatened species and/or in areas with high contaminant loads; 	<ul style="list-style-type: none"> iii. Education and awareness initiatives on source control systems and site management programmes; iv. Support for third party initiatives on source control reduction methods; v. Prioritising stormwater treatment in catchments that discharge: in proximity to areas of high ecological or cultural value, such as habitat for threatened species, <u>or Areas of Significant Natural Value under the Regional Coastal Environment Plan (Canterbury Regional Council, 2012)</u>, and/or in areas with high contaminant loads; 	In response to Paragraph 66 of Dr Bolton-Ritchie's s42A report. Covered in Belinda Margetts evidence.	Addresses concerns that significant areas will be prioritised
	e. Locations and identification of Christchurch City Council water quality and water quantity mitigation facilities and devices;	e. Locations and identification of Christchurch City Council water quality and water quantity mitigation facilities and devices; <u>including a description and justification for separation distances between treatment devices and any contaminated land</u>	Peter Callander evidence.	
	f. Identification of areas reserved for future development;			Provides clarity of process for the submitter and other land owners if their land is affected. Mr Harrington's evidence provides explanation as to why this is an acceptable solution.
	g. Identification of areas subject to known flood hazards;			
	h. An interpretation of environmental & cultural monitoring and how this information has been used to develop water quality mitigation methods and practices;			
	i. Results from and interpretation of water quantity and quality modelling;	i. Results from and interpretation of water quantity and quality modelling, <u>including identification of sub-catchments with high levels of contaminants;</u>		
	j. Consideration of any effects of the diversion and discharge of stormwater on baseflow in streams and springs;	<u>Insert a new "j" and change numbering</u> <u>j. Mapping of existing information from Canterbury Regional Council and the consent holder showing locations where discrete spring vents occur;</u> <u>k.</u> Consideration of any effects of the diversion and discharge of stormwater on baseflow in streams and springs;	Sought by CIAL	
	k. A cultural impact assessment;			
	l. A summary of outcomes resulting from any collaboration with papatipu rūnanga on SMP development;			
	m. An assessment of the effectiveness of water quality or quantity mitigation methods established under previous SMPs and identification of any changes in methods or designs resulting from the assessment; and			
	n. A summary of feedback obtained in accordance with Condition 7 and if / how that feedback has been incorporated into the SMP.	o. A summary of feedback obtained in accordance with Condition 7 and if / how that feedback has been incorporated into the SMP. <u>Add:</u> <u>p. If the consent holder intends to use land not owned or managed by the consent holder for stormwater management, a description of the</u>		

		<p><u>specific consultation undertaken with the affected land owner;</u></p> <p><u>g. Identification of key locations in addition to those identified in Schedule 7 where modelled assessments of water levels shall be made for the critical 2% AEP event and any other relevant return interval. For each additional key location, appropriate water level reductions or tolerances for increases shall be set according to the SMP objectives and shall be reported with the model update results required under Condition 48;</u></p> <p><u>r. Assessment of the risk of bird strike for any large public facilities within 3 kilometres of the airport;</u></p> <p><u>s. A description of any relevant options assessments undertaken; and</u></p> <p><u>t. An assessment of the potential change to the overall water balance to the management area arising from the change in pervious area and the stormwater management systems that are implemented.</u></p>	<p>In Response to Mr Law's proposals for additional modelled monitoring points</p> <p>In response to CIAL submission</p> <p>From discussions with Ecan experts Ms Stevenson</p> <p>In response to discussion with Mr Etheridge (Ecan)</p>	<p>Council considers that additional monitoring points should be only as needed to meet objectives identified in the SMP process</p> <p>Council agrees to address bird strike risks</p> <p>This is a normal process</p> <p>Councils agrees to address this matter</p>
7	<p>Prior to submitting a SMP or any amendment to a SMP to the Canterbury Regional Council, the consent holder shall provide a draft copy to the following parties inviting feedback within a timeframe of not less than 40 working days:</p>	<p>Prior to submitting a SMP or any amendment to a SMP, <u>other than one making minor changes and corrections,</u> to the Canterbury Regional Council, the consent holder shall provide a draft copy to the following parties inviting feedback within a timeframe of not less than 40 working days:</p>	<p>In response to submissions [Avon-Ōtākaro Network, Ōpāwaho Heathcote River Network, the Department of Conservation, the Ministry of Education (when Ministry land is affected) and New Zealand Steel Limited] and Officer's Report [paragraph 197] requesting more consultation with other parties on the development of SMPs.</p>	<p>Council does not consider it to be necessary to include extra provision for the public in development and review of all SMPs. The most appropriate way for public involvement is through established public channels, the relevant Community Board or Zone Committee.</p> <p>However, Council proposes amending the condition to specify that this process is to begin in the early development stages of an SMP.</p>
	<p>a. papatipu rūnanga; b. The relevant Zone Committee(s) (or successor organisation); and c. The relevant Community Board(s) (or successor organisation)</p>	<p>a. <u>In early development stages for a possible SMP, provide a briefing and invite comments from:</u></p> <p>i. <u>papatipu rūnanga;</u></p> <p>ii. <u>The relevant Zone Committee(s) (or successor organisation); and</u></p> <p>iii. <u>The relevant Community Board(s) (or successor organisation); and</u></p> <p>iv. <u>Department of Conservation</u></p>		

		<p>b. <u>Following completion of a draft SMP, the consent holder shall</u> provide a draft copy to the following parties inviting feedback within a timeframe of not less than 40 working days:</p> <ul style="list-style-type: none"> i. papatipu rūnanga; ii. The relevant Zone Committee(s) (or successor organisation); and iii. The relevant Community Board(s) (or successor organisation); iv. <u>Department of Conservation.</u> 		
		<u>The consent holder will obtain a peer review of the draft SMP from independent experts, attach a copy of the peer review to the draft SMP, and have a description within the SMP of the consent holder's response to that peer review.</u>	In response to Officer's Report [paragraph 206] seeking independent review of SMPs. David Adamson EIC.	Provide certainty SMPs will be appropriate.
	<i>Advice Note: The Christchurch City Council intend for development of the SMPs to be a collaborative process with input from key stakeholders. During development of SMPs, papatipu rūnanga, CWMS Zone Committees and Canterbury Regional Council technical staff will be invited to all technical presentations and will have opportunity to review and comment on draft SMP documents. Presentations will be made at public meetings of both the Banks Peninsula and Christchurch-West Melton Zone Committees. Once all documented feedback has been considered and addressed, the finalised SMP documentation will be submitted to the Canterbury Regional Council.</i>			
8	The consent holder shall review the content of the SMPs to assess whether changes to the SMPs will better achieve their purpose. The programme for that review is as set out in Table 1 above.	The consent holder shall review the content of the SMPs to assess whether changes to the SMPs will better achieve their purpose. The programme for that review is as set out in Table 1 above. <u>The times in Table 1 are maximums. Reviews may be more frequent.</u>	As a result of discussions between CRC and CCC staff.	As a result of discussions between CRC and CCC staff.
9	The consent holder shall amend the SMPs as it considers necessary including the use of any new technologies, new opportunities for additional treatment (such as for infill areas or retro-fit) or new constraints on treatment due to changed developer plans, new regulatory tools and processes or updated industry best practice for stormwater treatment, including the type, size and location of treatment facilities, and their timing for implementation.	The consent holder shall amend the SMPs as it considers necessary including the use of any new technologies, new opportunities for additional treatment (such as for infill areas or retro-fit) or new constraints on treatment due to changed developer plans, new regulatory tools and processes, <u>outcomes of investigations and trials in conditions 37 and 38</u> , or updated industry best practice for stormwater treatment, including the type, size and location of treatment facilities, and their timing for implementation.	Internal Council discussions.	Incorporate feedback loop.
10	The consent holder shall amend the SMPs as it considers necessary to respond to the results of the Christchurch Contaminant Load Model (C-CLM), or results of monitoring, including any investigations or outcomes in relation to the responses to modelling and monitoring under Conditions 49 - 51.			
11	Any amendments to SMPs may not replace the previous version until the amendments have been certified by the RMA Compliance and Enforcement Manager of the Canterbury Regional Council as achieving the purposes of the SMP, as set out in Condition 5.			
	Implementation Plan			

12	An Implementation Plan shall be prepared by the consent holder, after 12 months but no more than 18 months after this consent commences, to give effect to the SMPs and made available to Canterbury Regional Council and papatipu rūnanga on request. This plan shall be reviewed by the consent holder every 3 years, with reference to the Christchurch City Council Long Term Plan.	<u>The purpose of an Implementation Plan is to give effect to SMPs and to include the matters set out in condition 13.</u> An Implementation Plan shall be: a. prepared by the consent holder, <u>through engagement with papatipu rūnanga under condition 15(a)</u> , after 12 months but no more than 18 months after this consent commences; <u>and</u> b. <u>Updated to give effect to new SMPs within 12 months of new SMPs becoming operative;</u> c. <u>Reviewed by the consent holder every 3 years, with reference to the Christchurch City Council Long Term Plan; and</u> d. to give effect to the SMPs and <u>Be</u> made available to Canterbury Regional Council and papatipu rūnanga on request. <u>This plan shall be reviewed by the consent holder every 3 years, with reference to the Christchurch City Council Long Term Plan.</u>	Council proposed (not in evidence)	Purpose: to accept two changes requested by Mahaanui. Consequential change was to amend the layout of the condition.
13	The Implementation Plan shall include but not be limited to:	A description and justification for separation distances between treatment devices and any contaminated land;	S42A and Mr Callander EIC [91].	Added to condition 6(e).
	a. A list of proposed stormwater mitigation methods and devices;	a. A list <u>and map</u> of proposed stormwater mitigation methods and devices;		
	b. A programme of stormwater works for Christchurch City Council and private development;			
	c. A plan for regulatory, investigative, educational and preventative activities or programmes relating to stormwater discharges;	c. A plan for regulatory, investigative, educational and preventative activities or programmes relating to stormwater discharges, <u>including activities undertaken under conditions 37 and 38;</u>	Council proposed (not in evidence)	For clarity, requested by Mahaanui.
	d. Details of budgets for capital works or resourcing that is linked to the Christchurch City Council Long Term Plan; and	d. Details of budgets for capital works or resourcing that is linked to the Christchurch City Council Long Term Plan; <u>and</u>		
	e. Reporting on any testing or water quality monitoring undertaken that is used to check the performance of facilities or to inform prioritisation of areas for mitigation.	Reporting on any testing or water quality monitoring undertaken that is used to check the performance of facilities or to inform prioritisation of areas for mitigation.	Brian Norton EIC [205]	"I agree with Ms Stevenson that the more appropriate location for the results of investigations undertaken under this programme would be within the Annual Report rather than the Implementation Plan. I consider that this is sufficiently addressed by Condition 53(n) as this requires that results from any investigations undertaken under Condition 37 be included in the annual report. To clarify and avoid duplication, I recommend that Condition 13(e) be deleted".
14	The Implementation Plan may also include details of maximum stormwater contaminant concentrations that Christchurch City Council, as owner and	The Implementation Plan may also include details of maximum stormwater contaminant concentrations that	Brian Norton EIC [169].	As such details are site-specific they belong in authorisations

	operator of the stormwater network, will accept into the Christchurch City Council network.	Christchurch City Council, as owner and operator of the stormwater network, will accept into the Christchurch City Council network.		under the Bylaw to discharge into the Council's network, not in the Implementation Plan.												
	Engagement with Papatipu Rūnanga															
15	The consent holder shall engage with papatipu rūnanga:															
	a. In the development and review of the SMPs required under Conditions 4 and 8 to 10, and the development of the Implementation Plan required under Conditions 12, 13 and 14;	a. In the development and review of the SMPs required under Conditions 4 and 8 to 10 11, and the development of the Implementation Plan required under Conditions 12, 13 and 14;	Typo.	Typo.												
	b. At concept design stage for the installation of stormwater treatment facilities and devices with regard to wāhi tapu and taonga;															
	c. By providing quarterly reports to Mahaanui Kurataiao Ltd on stormwater developments, projects and monitoring under this resource consent;															
		<u>insert</u> <u>c. By providing the outcomes of Condition 49 and 50 on responses to modelling;</u> <u>d. By providing the outcomes of Condition 51 on responses to monitoring.</u> <u>Numbering changes</u>	Recommended by Mr Pauling (not in evidence).	To inform papatipu rūnanga.												
	d. By holding an annual meeting with Mahaanui Kurataiao Ltd to discuss stormwater works under this consent, and papatipu rūnanga input predicted for the next 12 month period.															
	<i>Advice Note: The Christchurch City Council is committed to working in partnership with papatipu rūnanga through the implementation of the CSNDC. This is aimed at achieving the goals of the consent and providing for the ongoing involvement of mana whenua as well as identifying and reflecting mana whenua values and interests in the management of stormwater. While the partnership approach needs to be confirmed with papatipu rūnanga, it may involve the establishment and resourcing of a joint CCC/papatipu rūnanga Stormwater Working Party along with relevant technical support involving Mahaanui Kurataiao Ltd as well as Te Rūnanga o Ngāi Tahu. It is envisioned that the working party would meet not less than annually and provide a forum for advising on CSNDC implementation.</i>															
	STANDARDS AND RESTRICTIONS															
	Stormwater Contaminant Load Modelling															
16	The consent holder will install stormwater mitigation facilities and devices that achieve the reductions in contaminant load specified in Table 2 below as measured by the Golder Associates (NZ) Ltd 2018 Christchurch Contaminant Load Model (C-CLM) report which is attached to this resource consent as Schedule 2:	Mr Parsons proposes adding the qualification that the consent holder will use "reasonable endeavours" to achieve these targets.	Mr Parsons' EIC [12].	The applicant does not follow his recommendation to make that change.												
	Table 2: Reductions in stormwater contaminant load															
	<table border="1"> <thead> <tr> <th></th> <th>Contaminant load compared to no treatment as at 2018</th> <th>5 years from 2018 compared to no treatment</th> <th>10 years from 2018 compared to no treatment</th> <th>25 years from 2018 compared to no treatment</th> <th>35 years from 2018 compared to no treatment</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Contaminant load compared to no treatment as at 2018	5 years from 2018 compared to no treatment	10 years from 2018 compared to no treatment	25 years from 2018 compared to no treatment	35 years from 2018 compared to no treatment									
	Contaminant load compared to no treatment as at 2018	5 years from 2018 compared to no treatment	10 years from 2018 compared to no treatment	25 years from 2018 compared to no treatment	35 years from 2018 compared to no treatment											

			(as at 2023)	(as at 2028)	(as at 2043)	(as at 2053)				
	TSS	12 %	21 %	25 %	27 %	29 %				
	Total Zinc	10 %	15 %	18 %	20 %	21 %				
	Total Copper	16 %	23 %	28 %	30 %	31 %				
17	The base case against which reductions are to be assessed is the modelled untreated contaminant load.									
18	The C-CLM will be run at five yearly intervals starting in 2023 for comparison with the targets set in Table 2 above and reported to Canterbury Regional Council in the annual report for those years.									
	<p><i>Advice note:</i> The C-CLM is the primary means of assessing the relative reduction in contaminant loads for copper, zinc and TSS which would enter the receiving environment as a result of the structural measures used by the Council.</p> <p>A range of alternative contaminant modelling technologies may be used for research purposes or to assist with stormwater management and contaminant load reductions. These could include (but are not limited to) event-based models and methods of assessing predicted improvement in receiving environment water quality, if or when such tools become available.</p>									
	Water Quality and Quantity Standards									
19	For any development or redevelopment within a catchment which does not have a certified SMP, stormwater quality and quantity mitigation shall meet the General City conditions as specified in Schedule 3.									
20	The consent holder shall use reasonable endeavours to mitigate the effects of the discharge of stormwater on surface water quality, instream sediment quality, aquatic ecology health and mana whenua values. The extent of mitigation of effects shall be measured by the Receiving Environment Objectives and Attribute Target Levels monitoring described in Schedules 4 and 5.						The consent holder shall use reasonably practicable measures reasonable endeavours to mitigate the effects of the discharge of stormwater on surface water quality, instream sediment quality, aquatic ecology health and mana whenua values. The extent of mitigation of effects shall be measured by the Receiving Environment Objectives and Attribute Target Levels monitoring described in Schedules 4 and 5.	S42a report.	To give certainty of commitment.	
21	The consent holder shall use reasonable endeavours to mitigate the effects of the discharge of stormwater on groundwater and spring water quality. The extent of mitigation of effects shall be measured by the Receiving Environment Objectives and Attribute Target Levels monitoring described in Schedule 6.						The consent holder shall use reasonably practicable measures reasonable endeavours to mitigate the effects of the discharge of stormwater on groundwater and spring water quality. The extent of mitigation of effects shall be measured by the Receiving Environment Objectives and Attribute Target Levels monitoring described in Schedule 6.	S42a report.	To give certainty of commitment.	
22	The consent holder shall use reasonable endeavours to mitigate the effects of the discharge of stormwater on water quantity. The extent of mitigation of effects shall be measured by the Receiving Environment Objectives and Attribute Target Levels monitoring described in Schedule 7.						The consent holder shall use reasonable endeavours reasonably practicable measures to mitigate the effects of the discharge of stormwater on water quantity. The extent of mitigation of effects shall be measured against achievement of by the Receiving Environment Objectives and Attribute Target Levels monitoring described in Schedule 7.	Graham Harrington / Jane West [88]: Officer's Report recommends amendments to proposed Condition 22 [paragraph 453]. Mr Harrington has also addressed these recommendations in his evidence and concludes that in principle he can support		

			the requirement at paragraph 453 (d), which is to measure the extent of mitigation required by implementing measures that result in achieving the attribute target levels for water quantity. Mr Harrington clarifies that he does not support changes to Schedule 7 but he proposed the above addition to condition 6 that any new modelled or monitoring points be identified and introduced as part of SMP development and/or reviews.	
23	The consent holder shall use reasonable endeavours to ensure that construction phase stormwater quality mitigation is implemented for all development sites prior to commencement of stripping of vegetation or earthworks on the site.	The consent holder shall use reasonable endeavours reasonably practicable measures to ensure that construction phase stormwater quality mitigation is implemented for all development sites prior to commencement of stripping of vegetation or earthworks on the site.	S42a report.	To give certainty of commitment.
24	The consent holder shall use reasonable endeavours to ensure that operational phase stormwater quality and quantity mitigation is implemented for all development and re-development (where required) prior to issuing certification under the relevant legislation.	The consent holder shall use reasonable endeavours reasonably practicable measures to ensure that operational phase stormwater quality and quantity mitigation is implemented for all development and re-development (where required) prior to issuing certification under the relevant legislation.	S42a report.	To give certainty of commitment.
25	The consent holder shall provide retrofit water quality and quantity mitigation for existing development where practicable.			
	Design of Facilities and Devices			
26	Water quality and quantity mitigation facilities and devices shall be designed in general accordance with the Christchurch City Council's Waterways and Wetlands Drainage Guide, Infrastructure Design Standard, Construction Standard Specifications, Christchurch Rain Garden Design Criteria, Christchurch Stormwater Tree Pit Design Criteria and Stormfilter™ Design Rainfall Intensity Criterion Report or their respective successor document(s).	Water quality and quantity mitigation facilities and devices shall be designed in general accordance with the Christchurch City Council's Waterways, and Wetlands and Drainage Guide, Infrastructure Design Standard, Construction Standard Specifications, Christchurch Rain Garden Design Criteria, Christchurch Stormwater Tree Pit Design Criteria and Stormfilter™ Design Rainfall Intensity Criterion Report or their respective successor document(s).	Council discussion.	Grammer.
27	The consent holder shall ensure that all stormwater quality mitigation facilities and devices servicing greenfield development after commencement of this consent are designed to treat the first flush.			
28	For all water quality mitigation facilities and devices constructed after commencement of this consent to service re-development, or retrofit water quality mitigation facilities for existing development, reasonable endeavours shall be taken to design facilities that treat the first flush.			
29	All stormwater mitigation facilities and devices constructed after commencement of this consent shall meet any other specific requirements as specified within the Implementation Plan.			
30	Christchurch City Council stormwater infiltration facilities constructed after the commencement of the consent shall be located to maintain the following separation distances from domestic drinking water supply wells that exist prior to the construction of the infiltration facility:	Christchurch City Council stormwater infiltration facilities constructed after the commencement of the consent shall be located to maintain the following separation distances from domestic and community drinking water supply wells that exist prior to the construction of the infiltration facility:	s42a report.	Provide clarity.

	a. Infiltration devices shall maintain a separation distance of 2000 m when located up-gradient of domestic drinking water supply wells; and	<u>a. Infiltration devices that only discharge roof water from a single building or that discharge stormwater generated from an impervious area less than 2,000 m² (including roof area), shall maintain a separation distance from any drinking-water supply well outside of a zone equivalent to the protection areas specified in Table S1A of Schedule 1 of the Canterbury Land and Water Regional Plan, unless, in the case of private drinking water bores, the consent holder has made a reticulated water supply available to the property.</u>	s42 a report.	Applicant proposes this change, recommended by Mr Callander following discussion with s42A writers.
	b. Infiltration devices shall maintain a separation distance of 500 m when located down-gradient or cross-gradient of domestic drinking water supply wells;	<u>b. Infiltration devices for larger discharges than those described in a) above shall maintain a separation distance of 2000 m when located up-gradient of domestic drinking water supply wells; and Infiltration devices shall maintain a separation distance of 500 m when located down-gradient or cross-gradient of domestic drinking water supply wells, unless, in the case of private drinking water bores, the consent holder has made a reticulated water supply available to the property;</u>	s42a report	Applicant proposes this change, recommended by Mr Callander following discussion with s42A writers.
	c. Or as an alternative to a) and b), a shorter separation distance may be utilised based on an assessment of site specific information undertaken by the consent holder and certified that it will not have an adverse effect on a domestic drinking water supply well by the Canterbury Regional Council, RMA Monitoring and Compliance Manager.	c. Or as an alternative to a) and b), a shorter separation distance may be utilised based on an assessment of site specific information undertaken by the consent holder and certified that it will not have an adverse effect on a domestic drinking water supply well by the Canterbury Regional Council, RMA Monitoring and Compliance Manager.		
		<u>d. Within 24 months of this consent becoming operative, a site specific assessment of contamination risk and appropriate mitigation shall also be undertaken for any existing stormwater infiltration basins that do not comply with the separation distances defined in b) above. This assessment will be provided to the Canterbury Regional Council, RMA Monitoring and Compliance Manager for certification that it will not have an adverse effect on a domestic drinking water supply well.</u>	s42a report.	Applicant proposes this change, recommended by Mr Callander following discussion with s42A writers.
31	Christchurch City Council stormwater mitigation facilities constructed after the commencement of this consent shall have secondary flow paths to the downstream stormwater network.			

32	Christchurch City Council stormwater mitigation facilities constructed after commencement of this consent shall include best practice features designed to capture and contain as much as reasonably practicable any spills of contaminants entering the stormwater facility.																									
33	Design of stormwater mitigation facilities serving sub-catchments greater than 20 hectares shall include computer modelling for detailed hydraulic analysis. The outlet hydrograph for the two percent AEP critical duration design storm generated by modelling of the final design for these facilities shall then be used in the water quantity model for the corresponding river catchment to demonstrate consistency with water quantity objectives in the SMP.																									
34	All Christchurch City Council stormwater mitigation facilities and devices constructed after commencement of this consent shall have an Operations and Maintenance Manual which shall be made available on request.																									
Other Actions by the Consent Holder																										
35	The consent holder shall investigate and implement methods to improve the management of stormwater quality and reduce stormwater effects on the receiving environment (stormwater quality investigation).																									
36	The purpose of the stormwater quality investigation is to:																									
	a. Monitor the performance of selected stormwater treatment facilities and devices;																									
	b. Assess the potential for the application of new technologies and management strategies;																									
	c. Investigate using various models and techniques of water quality improvement strategies and options.																									
37	The consent holder shall undertake the actions set out in Table 3 below for the investigation required by condition 35 above:																									
Table 3: Stormwater Quality Investigation																										
<table border="1"> <thead> <tr> <th>Stormwater Quality Investigation Actions</th> <th>Action Start Date</th> <th>Action Completion Date</th> </tr> </thead> <tbody> <tr> <td>1. Conduct a study to investigate the feasibility of developing an instream contaminant concentration model. Consideration to be given to: - How applicable the model will be to - (a) Water quality management generally (b) CSNDC specifically - Timelines - Costs - What data CCC would need to collect</td> <td>Dec - 18</td> <td>Oct-19</td> </tr> <tr> <td>2. Develop instream contaminant concentration model if the consent holder considers that the feasibility study in 1. provides sufficient merit.</td> <td>Nov-19</td> <td>Nov-21</td> </tr> <tr> <td>3. If the instream contaminant concentration model is developed, carry out investigations and monitoring to validate and refine assumptions</td> <td>Feb-22</td> <td>Ongoing</td> </tr> </tbody> </table>		Stormwater Quality Investigation Actions	Action Start Date	Action Completion Date	1. Conduct a study to investigate the feasibility of developing an instream contaminant concentration model. Consideration to be given to: - How applicable the model will be to - (a) Water quality management generally (b) CSNDC specifically - Timelines - Costs - What data CCC would need to collect	Dec - 18	Oct-19	2. Develop instream contaminant concentration model if the consent holder considers that the feasibility study in 1. provides sufficient merit.	Nov-19	Nov-21	3. If the instream contaminant concentration model is developed, carry out investigations and monitoring to validate and refine assumptions	Feb-22	Ongoing	<table border="1"> <thead> <tr> <th>Stormwater Quality Investigation Actions</th> <th>Action Start Date</th> <th>Action Completion Date</th> </tr> </thead> <tbody> <tr> <td>1. Conduct a study to investigate the feasibility of developing an instream contaminant concentration model. Consideration to be given to: - How applicable the model will be to - (a) Water quality management generally (b) CSNDC specifically - Timelines - Costs - What data CCC would need to collect</td> <td>Dec - 18</td> <td>Oct-19</td> </tr> <tr> <td>2. Develop instream contaminant concentration</td> <td>Nov-19</td> <td>Nov-21</td> </tr> </tbody> </table>		Stormwater Quality Investigation Actions	Action Start Date	Action Completion Date	1. Conduct a study to investigate the feasibility of developing an instream contaminant concentration model. Consideration to be given to: - How applicable the model will be to - (a) Water quality management generally (b) CSNDC specifically - Timelines - Costs - What data CCC would need to collect	Dec - 18	Oct-19	2. Develop instream contaminant concentration	Nov-19	Nov-21	s42a report. New item at bottom: S42A report, Dr Margetts' evidence	To give certainty what Council is committing to, provide feedback loops and to have achievable timelines. New item at bottom: To address concerns in S42a report around wet weather monitoring
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2. Develop instream contaminant concentration	Nov-19	Nov-21																								

within the model, to improve the accuracy of model predictions.			model if the consent holder considers that the feasibility study in 1. provides sufficient merit determines it feasible.				
4. Conduct a feasibility study to establish the existing knowledge base and investigate the feasibility of robustly predicting the responses of the receiving environment to changes in network contaminant loads and resulting in-stream concentrations. Consideration to be given to how and when the receiving environment might respond to changes in contaminant concentrations, how much work would be involved to predict results, what sort of models are possible, how would monitoring to obtain real world results be carried out, how long would it take the biological community to respond (i.e. lag effects), and gaps of knowledge.	Dec - 18	Jun -20	3. If the instream contaminant concentration model is developed, carry out investigations and monitoring to validate and refine assumptions within the model, to improve the accuracy of model predictions. <u>New 4 (and renumber subsequent numbers): Use the improved instream contaminant model output in to inform the research programme on quantifying expected responses in the receiving environment (action number 5 of this table) and the investigation of alternative modelling tools (action number 6 this table). Apply the model output, along with other stormwater modelling and monitoring data being gathered, to inform the planning and design of stormwater systems and facilities, including in the development of Implementation Plans and reviews of SMPs, Infrastructure Design Standard and Waterways, Wetlands and Drainage Guide.</u>	Feb-22	Ongoing		
5. If the consent holder considers that the feasibility study under 4. shows sufficient merit, and the Council considers it warranted, instigate a programme of research, monitoring and/or modelling to quantify expected responses in the receiving environment. For example: Undertake selected monitoring of discharges at “end of pipe”, into the receiving environment to assist model development and calibration	Jul-20	Ongoing					
6. Investigate the impacts of applying alternative modelling tools (including ‘deterministic’ models) to characterise the relationship between contaminant loads, concentrations and the receiving environment, and the processes which influence that relationship. Such tools may include the MEDUSA and MUSIC modelling tools.	Mar-19	Jun-22					
7. Conduct a study to investigate the feasibility and techniques for addressing adverse effects of stormwater sediment discharges on receiving environments. This will include consideration of sediment cover of the bed, and copper, lead, zinc and PAHs contamination.	Sep-18	Oct-19					
8. Instigate a remediation programme if the consent holder considers that the stormwater sediment discharge investigation in item 7. indicates sufficient merit.	Nov-19	Ongoing	4. Conduct a feasibility study to establish the existing knowledge base and investigate the feasibility of robustly predicting the responses of the receiving environment to changes in network contaminant loads and resulting in-stream concentrations.	Dec-18 Jun-19	Jun-2 10		
9. Conduct a monitoring programme for assessing the actual contaminant-reduction performance of selected stormwater treatment facilities and devices. Apply the results of the study in determining the feasibility and selection of	Sep-18	Ongoing	Consideration to be given to how and when the receiving environment might respond to				

<p>proposed treatment facilities and devices, and to improve the level of certainty of performance values relating to TSS, zinc and copper in contaminant load modelling. Report findings and outcomes in annual report to CRC.</p>			<p>changes in contaminant concentrations, how much work would be involved to predict results, what sort of models are possible, how would monitoring to obtain real world results be carried out, how long would it take the biological community to respond (i.e. lag effects), and gaps of knowledge.</p>				
			<p>5. If the consent holder considers determines that it is feasible the feasibility study under 4. Shows sufficient merit, and the Council considers it warranted, instigate a programme of research, monitoring and/or modelling to quantify expected responses in the receiving environment. For example: Undertake selected monitoring of discharges at “end of pipe”, into the receiving environment to assist model development and calibration</p> <p>Add a new item (and renumber subsequent ones):</p> <p><u>Use the outcomes to inform the Council’s broad waterway improvement programme, and along with other stormwater modelling and monitoring data being gathered, to inform the planning and design of stormwater systems and facilities, including in the development of Implementation Plans and reviews of SMPs, IDS and WWDG</u></p>	<p>Jul-21⁰</p>	<p>Ongoing</p>		
			<p>6. Investigate the impacts of applying alternative modelling tools (including ‘deterministic’ models) to characterise the relationship between contaminant loads, concentrations and the receiving environment, and the processes which influence that relationship. Such tools may include the</p>	<p>Mar-19</p>	<p>Jun-22</p>		

		MEDUSA and MUSIC modelling tools.				
		7. Conduct a study to investigate the feasibility and of techniques for addressing/remediating adverse effects of stormwater sediment discharges on receiving environments. This will include consideration of sediment cover of the bed, and copper, lead, zinc and PAHs contamination.	Sep-18 Jun-19	Oct-19 Jun-20		
		8. Instigate a remediation programme if the consent holder considers/determines that it is feasible, instigate an in-stream sediment remediation programme the stormwater sediment discharge investigation in item 7. indicates sufficient merit.	Nov-19 Jul-20	Ongoing		
		9. Conduct a monitoring programme for assessing Monitor the actual contaminant- TSS, zinc and copper reduction performance of selected stormwater treatment facilities and devices in order. Apply the results of the study in determining the feasibility and selection of proposed treatment facilities and devices, and to improve the level of certainty of performance values relating to TSS, zinc and copper in contaminant load modelling. Report findings and outcomes in annual report to CRC. Add new item: Apply the monitoring output, along with other stormwater modelling and monitoring data being gathered, to inform the planning and design of stormwater systems and facilities, including in the	Sep-18	Ongoing		

		<p><u>development of Implementation Plans and reviews of SMPs, IDS and WWDG.</u></p>				
		<p><u>Add new item:</u> <u>Carry out targeted wet weather monitoring of surface water in selected receiving environments, to improve knowledge of the state of the receiving environment, contaminant inputs and treatment efficiency, and to inform mitigation options under the SMPs. Selected areas may include new stormwater developments and retrofits, and known existing hotspots of contaminants. Sampling shall focus on detailed methods to characterise inputs, such as the use of auto-sampling, rather than grab sampling.</u></p>	<u>Jun-19</u>	<u>Ongoing</u>		
38	The consent holder shall also undertake the actions set out in Table 4 below:					
	Table 4: Other Actions by Consent Holder					

<u>Other Actions</u>	Activity Start Date	Activity Completion Date	<u>Other Actions</u>	Activity Start Date	Activity Completion Date	Oil Companies submission. Brian Norton EIC [192].	
<p>Source Control</p> <ol style="list-style-type: none"> Lodge a submission to central government seeking national measures and industry standards to reduce the discharge of contaminants including zinc and copper from metal roofs. Prepare and submit for Council approval a cost/benefit analysis of options with recommendations for carrying out a targeted trial for contaminant reduction from increased level of selective street sweeping and sump cleaning (For consideration as part of Council Annual Planning process for AP2021). Carry out trials for increased targeted/selective street sweeping and sump cleaning if Council resolves to do so under 2 above. Prepare and submit for Council approval a cost/benefit analysis of issues and options of alternate methods of stormwater treatment and discharge with recommendations for carrying out trials. Including consideration of Managed Aquifer Recharge/Discharge (For consideration as part of Council Annual Planning process for AP2021). Carry out trials for alternate methods of stormwater treatment and discharge if Council resolves to do so under 4 above. If the consent holder considers it warranted as a result of the trials in item 3, increased frequency of street sweeping of selected areas. If the consent holder considers it warranted as a result of the trials in item 5, increased frequency of sump cleaning at selected locations. Instigate, in the building consent approval and inspection process, a requirement for and process for approval and inspection of erosion and sediment control measures prior to site clearances commencing and throughout the construction process. 	<p>Feb-19</p> <p>Sep -18</p> <p>Jul-20</p> <p>Dec-18</p> <p>Nov-19</p> <p>Jul-19</p> <p>Jul-20</p> <p>Jul-19</p>	<p>Dec-19</p> <p>Dec-19</p> <p>Jun-22</p> <p>Oct-19</p> <p>Jun-22</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>	<p>Source Control</p> <ol style="list-style-type: none"> Lodge a submission to central government within 18 months of giving effect to this consent seeking national measures and industry standards to reduce the discharge of contaminants including zinc and copper from metal roofs, car tyres and brake pads. Prepare and submit for Council approval Conduct a cost/benefit analysis of options with recommendations for carrying out a targeted trial for contaminant reduction from increased level of selective street sweeping and sump cleaning (For consideration as part of Council Annual Planning process for AP2021). If the consent holder determines that the cost/benefit analysis shows that it is warranted, cCarry out trials for increased targeted/selective street sweeping and sump cleaning if Council resolves to do so under 2 above. Prepare and submit for Council approval Conduct a cost/benefit analysis of issues and options of alternate methods of stormwater treatment and discharge with recommendations for carrying out trials. Including consideration of redirection to sewer and Managed Aquifer 	<p>Feb-19</p> <p>Sep -18</p> <p>Jul-20</p> <p>Dec-18</p>	<p>Dec-19</p> <p>Dec-19</p> <p>Jun-22</p> <p>Oct-19</p>		

9. Operational inspection of a sample of stormwater treatment and/or retention devices on non-industrial sites.	Jul-20	Ongoing	Recharge/Discharge (For consideration as part of Council Annual Planning process for AP2021).				
<p>Communication, Education and Awareness</p> <p>Make reasonable endeavours to establish a community water engagement programme involving Council, Canterbury Regional Council, Ngai Tahu, DoC, MfE, Universities, and Community Groups with the objective of encouraging awareness and community actions to reduce stormwater contaminant discharges and improve waterways through source control and behaviour change.</p> <p>Possible initiatives of the community water engagement programme are:</p> <ul style="list-style-type: none"> • Providing information for property owners on quick actions that they can undertake around the home to stop contaminants from entering stormwater (based on 2017 Community Waterway Survey findings conducted by Christchurch City Council). • Implement a sustainable behaviour change programme. Actions aimed at stopping contaminants getting into the stormwater network, such as: sediment, litter, bacterial contaminants. • Undertaking a wider educational programme for schools. 	Jul-19	Ongoing	<p>5. <u>If the consent holder determines that the cost/benefit analysis shows that it is warranted, c</u>arry out trials for alternate methods of stormwater treatment and discharge <u>if Council resolves to do so under 4 above.</u></p> <p><u>Add new item (and renumber subsequent items accordingly):</u></p> <p><u>Apply the results of trials on street sweeping, sump cleaning and alternate methods of stormwater treatment (actions 3 and 5 above), along with results from other stormwater modelling and monitoring data being gathered, to the planning and design of stormwater systems and facilities, including in the development of Implementation Plans and reviews of SMPs, IDS and WWDG.</u></p>	Nov-19	Jun-22		
			6. If the consent holder <u>considers determines</u> it warranted as a result of the trials in item 3 <u>above</u> , increased frequency of street sweeping of selected areas.	Jul-19	Ongoing		
			7. If the consent holder <u>considers determines</u> it warranted as a result of the trials in item <u>53 above</u> , increased frequency of sump cleaning at selected locations.	Jul-20	Ongoing		
			8. Instigate, in the building consent approval and inspection process, a	Jul-19	Ongoing		

		<p>requirement for and process for approval and inspection of erosion and sediment control measures prior to site clearances commencing and throughout the construction process.</p>			<p>Change sought in DoC submission.</p>		
		<p>9. Operational inspection of a sample of stormwater treatment and/or retention devices on non-industrial sites.</p>	<p>Jul-20</p>	<p>Ongoing</p>			
		<p>Communication, Education and Awareness</p> <p>Make reasonable endeavours to establish a community water engagement programme involving Council, Canterbury Regional Council, Ngai Tahu, DoC, MfE, Universities, industry representatives and Community Groups with the objective of encouraging awareness and community actions to reduce stormwater contaminant discharges and improve waterways through source control and behaviour change.</p> <p>Possible initiatives of the community water engagement programme are:</p> <ul style="list-style-type: none"> • Providing information for property owners on quick actions that they can undertake around the home to stop contaminants from entering stormwater (based on 2017 Community Waterway Survey findings conducted by Christchurch City Council). • Implement a sustainable behaviour change programme. Actions aimed at stopping contaminants getting into the stormwater network, 	<p>Jul-19</p>	<p>Ongoing</p>			

		<p>such as: sediment, litter, bacterial contaminants.</p> <ul style="list-style-type: none">• Undertaking a wider educational programme for schools.• <u>Educating dog owners about effects of faecal matter;</u>• <u>Seeking industry behaviour change.</u>			<p>Sought in DoC submission.</p>	
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Erosion and Sediment Control			
39	An Erosion and Sediment Control Plan (ESCP) shall be prepared and implemented for the construction phase stormwater discharge from any development area in general accordance with Canterbury Regional Council's <i>Erosion and Sediment Control Guidelines for the Canterbury Region, 2007 (Report R06/23 or successor document)</i> .	An site specific Erosion and Sediment Control Plan (ESCP) shall be prepared and implemented for the construction phase stormwater discharge from any development area in general accordance with Canterbury Regional Council's <i>Erosion and Sediment Control Guidelines for the Canterbury Region, 2007 (Report R06/23 or successor document)</i> .	
40	Copies of ESCPs submitted to or prepared by/for the consent holder shall be made available on request.		
		<p>Add 3 new conditions:</p> <p><i>The consent holder shall develop a Sediment Discharge Management Plan (SDMP) and present it for certification to the RMA Compliance and Enforcement Manager of the Canterbury Regional Council within twelve months of the operative date of this consent. Certification will be whether the SDMP is consistent with the purpose and required content of the SDMP.</i></p> <p><i>The purpose of the SDMP is to manage discharges of stormwater from development sites as far as is reasonably practicable to</i></p> <p><i>(1) mitigate adverse effects on water clarity and aquatic biota, and</i></p> <p><i>(2) allow the fine sediment and TSS Attribute Target Levels for waterways and coastal areas within Schedules 4 and 5 to be met.</i></p> <p><i>The SDMP shall include, but not be limited to, the following means to achieve the purpose:</i></p> <ul style="list-style-type: none"> <i>i. A risk matrix to determine TSS limits for the discharge of stormwater into the Christchurch City Council Stormwater Network from individual sites, depending on such factors as likely concentrations and volumes of sediment in the discharge, whether the discharge will be treated downstream by a Council treatment facility prior to reaching the receiving environment, and the sensitivity of the receiving environment;</i> <i>ii. A description of the process for how TSS limits will be included in authorisations for discharges into the network from individual sites;</i> <i>iii. A description of the process for how the consent holder will monitor sites and monitor management of sites to ensure TSS limits are achieved;</i> <i>iv. Details on how records will be kept (such as site TSS limits, compliance monitoring and enforcement action),</i> 	Mr Norton and Mr Tipper propose differing conditions for this purpose in their evidence. This is the applicant's proposed condition framework for the same purpose. Addresses concerns in s42A report regarding development phase TSS discharges. .

		<p><i>with records made available to the Canterbury Regional Council on request.</i></p> <p>The consent holder may review and amend the SDMP so as to better achieve the purpose of the plan and in response to any updates to the relevant Attribute Target Levels. Any amendments to the SDMP shall not replace the previous version until the plan has been certified by the RMA compliance and Enforcement Manager of the Canterbury Regional Council as being consistent with the purpose and required content of the SMP.</p>		
	Industrial Site Management			
41	The consent holder shall, in collaboration with the Canterbury Regional Council:	The consent holder shall, in collaboration with the Canterbury Regional Council:	S42A report and Brian Norton EiC.	
	a. Undertake a desktop based identification of industrial sites, ranking sites for risk relative to stormwater discharge and identify the industrial sites that pose the highest risk;	a. Undertake Maintain a desktop based identification of industrial sites, ranking sites for risk relative to stormwater discharge and identify the industrial sites that pose the highest risk;		
	b. Audit a rolling list of at least 10 of the highest risk sites in the city and report progress on an annual basis;	<p>b. Audit at least 15 sites per year, of which at least 10 sites are ranked as posing high risk, and of which at least 5 will be determined at the consent holder's discretion during the year, as needs arise, so as to address:</p> <p>i Sites with known or suspected contamination or risk;</p> <p>ii Re-audits of previously mitigated sites;</p> <p>iii Sites undergoing re-developments.</p> <p>rolling list of at least 10 of the highest risk sites in the city and report progress on an annual basis;</p>		
	c. Identify any industrial sites that pose an unacceptably high risk and add them to Schedule 1 of this consent. The consent holder cannot add any more sites to Schedule 1 of this consent after 1 January 2025.	<p>Identify any industrial sites that pose an unacceptably high risk and add them to Schedule 1 of this consent. The consent holder cannot add any more sites to Schedule 1 of this consent after 1 January 2025.</p> <p>c.If the audit process and monitoring of a site determines that the site is presenting an unacceptably high risk to the receiving environment the consent holder shall inform the site owner and operator and notify the Canterbury Regional Council : Attention: RMA Compliance and Enforcement Manager of that concern.</p>	C and d added to provide more involvement and certainty in this process for the site operators. Deleted reference the consent holder being unable to add more sites to schedule 1 after 2025, as a result of s42A report recommendation that this ability remain.	
		<p>d. If the consent holder considers, following further engagement with the site operator and the CRC, that the site is not appropriately mitigating that unacceptably high risk, the consent holder may determine to add the site to schedule 1 and notify the CRC that it has added the site to schedule 1.</p>		
	MONITORING AND REPORTING			

	Environmental Monitoring Programme			
42	The consent holder shall implement the EMP attached to this consent, with the purpose of monitoring whether the Receiving Environment Objectives and Attribute Target Levels are being met.			
43	The consent holder may review and amend the EMP for the purposes of better monitoring and to determine whether the Receiving Environment Objectives and Attribute Target Levels are being met.			
44	Any amendments to the EMP may not replace the previous version until the EMP has been certified by the RMA Compliance and Enforcement Manager of the Canterbury Regional Council as complying with the requirements of Condition 43.	Any amendments to the EMP may not replace the previous version until the EMP has been certified by the RMA Compliance and Enforcement Manager of the Canterbury Regional Council as complying with the requirements of Condition 43 42 .	Council discussions.	To address incorrect numbering.
45	The Attribute Target Levels in Schedule 3 for hardness modified copper, lead and zinc in Banks Peninsula surface water shall be calculated for each monitored waterway following the collection of one year of monitoring data. Hardness modified values for copper, lead and zinc for all sites within the EMP shall also be reviewed every five years, with the first review being undertaken in 2023. Hardness modified values shall be calculated using the ANZECC (2000) methodology, as outlined in the EMP. Should a new method of modifying metals become appropriate, this new methodology and any subsequent change in Attribute Target Levels shall be applied. Updated values will be incorporated into the EMP as an amendment, in accordance with Condition 43.	The Attribute Target Levels in Schedule 34 for hardness modified copper, lead and zinc in Banks Peninsula surface water shall be calculated for each monitored waterway following the collection of one year of monitoring data. Hardness modified values for copper, lead and zinc for all sites within the EMP shall also be reviewed every five years, with the first review being undertaken in 2023 2020 . Hardness modified values shall be calculated using the ANZECC (2000) methodology, as outlined in the EMP. Should a new method of modifying metals become appropriate, this new methodology and any subsequent change in Attribute Target Levels shall be applied. Updated values will be incorporated into the EMP as an amendment, in accordance with Condition 43.	S42A report, Dr Margetts' evidence	To address concerns around the work being undertaken as soon as possible
46	The Attribute Target Levels in Schedules 3 to 5 are from relevant regional and national guideline levels. Should these guideline levels be updated, the Attribute Target Levels shall be updated to reflect this. Updated values will be incorporated into the EMP as an amendment, certified in accordance with Condition 43.	The Attribute Target Levels in Schedules 34 to 45 are from relevant regional and national guideline levels. Should these guideline levels be updated, the Attribute Target Levels shall be updated to reflect this. Updated values will be incorporated into the EMP as an amendment, certified in accordance with Condition 43.	Council discussions.	To address incorrect numbering.
47	The Attribute Target Levels in Schedules 3 and 4 for the Waterway Cultural Health Index, Marine Cultural Health Index and State of Takiwā scores, as well as the associated mana whenua monitoring sites and methodology in the EMP, shall be developed in collaboration with papatipu rūnanga. Once these scores, sites and monitoring methods are confirmed, monitoring for these mana whenua objectives shall commence. Updated information will be incorporated into the EMP as an amendment, in accordance with Condition 43.	The Attribute Target Levels in Schedules 34 and 45 for the Waterway Cultural Health Index, Marine Cultural Health Index and State of Takiwā scores, as well as the associated mana whenua values monitoring sites and methodology in the EMP, shall be developed in collaboration with papatipu rūnanga. Once these scores, sites and monitoring methods are confirmed, monitoring for these mana whenua objectives mana whenua values monitoring shall commence. Updated information will be incorporated into the EMP as an amendment, in accordance with Condition 43 by August 2020 .	Jane West EIC	To provide certainty. Date is result of timing that Dr Margetts considers necessary for the person in the new role at Mahaanui.
48	The water quantity/flood model(s) for the Pūharakekenui/ Styx, Ōtakaro/ Avon, Ōpāwaho/ Heathcote River and Huritini/ Halswell Rivers shall be updated as necessary to reflect changes in development patterns or modelling parameters every 5 years starting with the 2019 annual report. The results of model updates and a description of how they demonstrate compliance with Schedule 7 shall be included in the annual report required under Condition 53.	The water quantity/flood model(s) for the Pūharakekenui/ Styx, Ōtakaro/ Avon, Ōpāwaho/ Heathcote River and Huritini/ Halswell Rivers shall be updated as necessary to reflect changes in development patterns or modelling parameters every 5 years starting with the 2019 annual report. The results of model updates and a description of how they demonstrate compliance with Schedule 7 shall be included in the annual report required under Condition 53.		
	Responses to Modelling			

49	Where the C-CLM results show that the percentage contaminant reductions required by Table 2 in Condition 16 are not met, the consent holder will be in breach of this consent, and will undertake the following:			
	a. Investigate the reasons for not achieving the modelled contaminant load reductions and describe what measures will be implemented (if necessary) to improve stormwater discharge quality;			
	b. Assess whether reasonable endeavours to mitigate the adverse effects of stormwater have been carried out;			
	c. If the assessment in (b) determines that reasonable endeavours have not been carried out, assess options for correction / remediation to mitigate any adverse effects, and provide a timeline for the correction / remediation (if necessary);			
	d. Prepare a report, provided to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, detailing the matters set out in (a) to (c) above.	Prepare a report, provided to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and papatipu rūnanga (via Mahaanui Kurataiao Ltd) , detailing the matters set out in (a) to (c) above.	Change agreed with Mahaanui.	To allow information exchange.
50	If, upon submittal of the report, where required by Condition 49, agreement between Christchurch City Council and Canterbury Regional Council cannot be reached regarding any aspects, the consent holder shall consult with the SWIM group, or successor group, in accordance with the Joint Christchurch City Council and Canterbury Regional Council Stormwater Management Protocol or subsequent revisions to the Protocol, and in accordance with any agreements entered into between the consent holder and papatipu rūnanga; and implement any actions or changes identified as necessary by the SWIM group, or successor group, through the consultation.			
	<i>Advice note: Discussions should be undertaken with the Canterbury Regional Council prior to and following investigations, to try and establish agreed approaches prior to submitting the report.</i>			
	Responses to Monitoring			
51	If the monitoring results identify that the following Attribute Target Levels are not being met:	If the monitoring results identify that the following Attribute Target Levels are not being met:		
	a. TSS, copper, lead and zinc in surface water, as set out in Schedules 4 and 5;			
	b. copper, lead and zinc in groundwater, as set out in Schedule 6;	b. <u>Escherichia coli</u> , copper, lead and zinc in groundwater, as set out in Schedule 6;	s42a report. Peter Callander and Jane West [83].	
	the consent holder shall: c. Perform an investigation to identify whether this is due to the effects of stormwater network discharges;	the consent holder shall: c. <u>Engage with Environment Canterbury about and Pperform an investigation to identify whether this is due to the effects of stormwater network discharges, with site investigations prioritised for areas with high levels of contaminants, or sensitive or high value receiving environments;</u>	s42A , Dr Margetts and Jane West.	
	d. Compile the results of such an investigation into a report to be submitted to the Canterbury Regional Council.	d. Compile the results of such an investigation into a report to be submitted to the Canterbury Regional Council and papatipu rūnanga (via Mahaanui Kurataiao Ltd);:	Change agreed with Mahaanui.	
	e. The report shall include, at a minimum: i. An evaluation of whether the monitoring results are due to stormwater network discharges or not; ii. An assessment of options for correction/remediation (if effects are likely due to stormwater network discharges);			

	iii. A timeline of implementation of corrective action/remediation (if necessary).			
	f. If, upon submittal of the above report, agreement between Christchurch City Council and Canterbury Regional Council cannot be reached regarding any aspects of the report referenced in Condition (e) above, the consent holder shall consult with the SWIM group, or successor group, in accordance with the Joint Christchurch City Council and Canterbury Regional Council Stormwater Management Protocol or subsequent revisions to the Protocol, and in accordance with any agreements entered into between the consent holder and papatipu rūnanga; and			
		Insert new: <u>The sites triggering an investigation for a given monitoring year will be identified in the annual report referred to in Condition 53, and the subsequent investigation report will be provided with the following annual monitoring report twelve months later;</u>	s42a report, Dr Margetts EIC.	To clarify timelines for reporting.
	g. Implement any actions or changes identified as necessary by the SWIM group, or successor group, through the consultation under Condition 51(f) above.			
	Reporting			
52	The consent holder shall maintain relevant records including, but not limited to, detailed design drawings and reports, details of site specific assessments undertaken, maps and any engineering design and construction certificates issued for any water quality or quantity mitigation facilities constructed. These records are to be made available to Canterbury Regional Council on request.			
53	The consent holder shall provide an annual report to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, Banks Peninsula and Christchurch-West Melton Zone Committees, and papatipu rūnanga (via Mahaanui Kurataiao Ltd) by 30 June each year. This report will also be made available on the Christchurch City Council website. The report shall include, where appropriate:			Note lettering needs correct both in July 2018 version and here.
	a. A summary of the outcomes of monitoring, in accordance with Conditions 20, 21, 22, 37 and 42;	a. A summary of the outcomes of monitoring, <u>investigations and other actions</u> , in accordance with Conditions 20, 21, 22, , 37, <u>38, and, 42 and the one-off report required by Condition 47. This summary shall be presented in such a way as to assess compliance with the resource consent conditions and trigger the responses required;</u>	Agreed with Mahaanui. s42a report, Dr Margetts EIC.	To provide certainty that compliance assessments will be possible.
	b. A summary of the C-CLM and results;			
	c. A summary of any discussions, consultation or responses carried out under Conditions 49 - 51;			
	d. A summary of Canterbury Regional Council records of consent compliance and where any non-compliances of this consent occurred;			
	e. A summary of flood modelling results (if applicable) for development in greenfield areas;			
	f. The supply of updates to Schedule 1 where required;			
	g. An update on the timetable for construction and activation of Christchurch City Council stormwater mitigation systems for each SMP area, and/or any changes to the implementation of SMP requirements;			
	h. Records of developments authorised under this consent;			

	i. Report on any collaboration with papatipu rūnanga and any activities relating to the protection or enhancement of cultural values;	i. Report on any collaboration with papatipu rūnanga and any activities relating to the protection or enhancement of cultural <u>mana whenua</u> values;	Council discussions.	For clarity.
	j. A summary of the stormwater quality investigations undertaken during the year;			
	k. A summary of any additional monitoring or investigations undertaken beyond those specified in the EMP, including those undertaken on industrial sites, that have been initiated to inform the consent holder on stormwater management effectiveness.	k. A summary of any additional monitoring or investigations undertaken beyond those specified in the EMP, including those undertaken on industrial sites <u>in accordance with Condition 41</u> , that have been initiated to inform the consent holder on stormwater management effectiveness;	S42A Ms West [249].	
		And new: <u>i. Reporting of the alignment of the consent with the Christchurch West Melton sub-regional section.</u> <u>m. Any changes to the regulatory framework that may warrant changes to the SMPs.</u> <u>n. Any complaints or monitoring regarding springs.</u>		Arising from s42A report.
	ADMINISTRATION AND DURATION			
54	The consent holder shall engage with papatipu rūnanga to collaboratively consider the Conditions on a 5-yearly basis from the date of granting of this consent.			
55	The Canterbury Regional Council may, on any of the last five days of March or September each year, serve notice of its intention to review the conditions of this consent for the purposes of:			
	a. Dealing with any adverse effect on the environment which may arise from the exercise of this consent;			
	b. Complying with the requirements of a relevant rule in an operative regional plan.			
		Add a new: <u>c. within 5 years of the Christchurch West Melton sub-regional section being notified/operative.</u>	Ms West EiC [188].	
56	The duration of the consent is 25 years.			
	References ANZECC (Australian and New Zealand Environment and Conservation Council, ANZECC, and Agriculture and Resource Management Council of Australia and New Zealand, ARMCANZ), 2000. Australian and New Zealand guidelines for fresh and marine water quality. Volume 1: The guidelines. ANZECC & ARMCANZ, Artarmon, New South Wales. Crowe, A. & Hay, J. 2004. Effects of fine sediment on river biota. Report No. 951, prepared for Motueka Integrated Catchment Management Programme. Cawthron Institute, Nelson. Canterbury Regional Council (2012). Regional Coastal Environment Plan for the Canterbury Region – Volume 1 (amended 20 September 2012). Canterbury Regional Council. Canterbury Regional Council (2017). Canterbury Land and Water Regional Plan - Volume 1 (August 2017). Canterbury Regional Council, Christchurch.	Canterbury Regional Council (2017). Canterbury Land and Water Regional Plan - Volume 1 (August 2017 <u>May 2018</u>). Canterbury Regional Council, Christchurch. <u>Stuart, L.S., Batley, G.E. & Chariton, A.A. (2000). Revision of the ANZECC/ARMCANZ sediment quality guidelines. CSIRO Land and Water Science Report 08/07, prepared for the Department of Sustainability, Environment, Water, Population and Communities. CSIRO, Canberra, Australia.</u>	Council discussions.	To update with correct info.

	<p>Harding, J.S., 2005. Impacts of metals and mining on stream communities, in <i>Metal Contaminants in New Zealand</i>, T.A. Moore, A. Black, J.A. Centeno, J.S. Harding & D.A. Trumm (Editors), p. 343-357. Resolutionz press, Christchurch.</p> <p>Ryan, P.A., 1991. Environmental effects of sediment on New Zealand streams: a review. <i>New Zealand Journal of Marine and Freshwater Research</i> 25: 207-221.</p>			
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Schedule 1: Sites excluded from the Christchurch City Council Comprehensive Discharge Consent

Sites excluded from the South West SMP Area

Street Address	Street Number	Legal Description	CCC Prupi
Alloy Street	2	Lot 2 DP 64248	704537
Ballarat Way	2	Lot 1 DP 466471	618251
Ballarat Way	10	Lot 2 DP 466471	618252
Blenheim Road	412	Part Lot 3 DP 15178	466207
Blenheim Road	4/455	Lot 1 DP 489573	923053
Branston Street	96	Lot 2 DP 352288	587825
Canterbury Street	7	Lot 10 DP 2899, Lot 9 DP 2899, Lot 11 DP 2899, Lot 12 DP 2899, Lot 1 DP 21916	716119
Carmen Road	106G	Lot 3 DP 338441	582584
Chappie Place	17	Lot 1 DP 443257	908779
Halswell Junction Road	515	Lot 2 DP 358423, Lot 3 DP 358423	587860, 587861
Hayton Road	115	Lot 3 DP 353897	585855
Hayton Road	137	Lot 2 DP 343321	584430
Hayton Road	79 & 79A	Lot 1 DP 481286, Lot 2 DP 481286	924341, 924342
Main South Road	222	Lot 1 DP 14716, Lot 1 DP 51993	750576
Main South Road	243 & 245	Pt Lot 2 DP 6604, RS 39034, Lot 1 DP 78344, Lot 2 DP 78344	516213, 520964, 408547, 510731
McAlpine Street	18	Lot 8 DP 36831	429004
McAlpine Street	67	Lot 9 DP 30936	428578
Parkhouse Road	59	Lot 1 DP 25818	485608
Springs Road	254	Lot 1 DP 358423	587859
Waterloo Road	60	Lot 1 DP 80063	407540
Wigram Close	15	Lot 1 DP 51889, Lot 2 DP 324467	504628, 579847
Wigram Road	120	Lot 2 DP 493335	625647
Wigram Road	122	Lot 4 DP 475888	621028
Wigram Road	120A	Lot 1 DP 493335	625646
Wilmers Road	10	Lot 4 DP 20669	817675
Wilmers Road	50	Lot 5 DP 447519	615860
Partial Site Exclusions			
Street Address	Street Number	Legal Description	CCC Prupi
Carmen Road	112	Section 27 SO 459717	629404
Halswell Junction Road	600	Lot 7 DP 404845	609872
Harvard Avenue	45	Lot 1 DP 81480	565026
Main South Road	282	Lot 10 DP 1391	750597

Sites excluded from the Pūharakekenui/Styx SMP Area

Street Address	Street Number	Legal Description	CCC Prupi
Barnes Road	79-87	Lot 1 DP 346683	586324
Belfast Road	30	Lot 2 DP 37063	425217
Broughs Road	6	LOT 15 DP 36871	814749
Broughs Road	7	LOT 2 DP 36871	714473
Broughs Road	15	LOT 3 DP 36871	804901
Broughs Road	23	LOT 4 DP 36871	874832
Cavendish Road	150	Lot 2 DP 401108	609557
Cavendish Road	158	Lot 1 DP 360822	587685
Dickeys Road	13	Pt Lot 1 DP 23890, Lot 1 DP 25116	437651, 438723
Export Avenue	1	LOT 6 DP 83863	861839
Export Avenue	2	LOT 2 DP 304904	861835
Export Avenue	3	LOT 5 DP 83863	861838
Export Avenue	6	LOT 3 DP 83863	861836
Export Avenue	8	LOT 4 DP 83863	861837
Johns Road	480	Sec 62 SO 460822	620075
Johns Road	530	PT LOT 1 DP 51000	870081
Johns Road	544	PT LOT 1 DP 23615	857821
Johns Road	550	Sec 8 SO 494743, Sec 21 SO 494743	628638, 628647
Johns Road	568	LOT 2 DP 51000	832492
Johns Road	600	PT RS 40862	870083
Logistic Drive	10	LOT 10 DP 375764	891559
Logistic Drive	11	LOT 9 DP 375764	891558
Logistic Drive	12	LOT 1 DP 412022	900821
Logistic Drive	14	LOT 12 DP 375764, LOT 2	900822
Logistic Drive	15	LOT 8 DP 375764	891557
Logistic Drive	16	LOT 13 DP 375764	891562
Logistic Drive	17	LOT 7 DP 375764	891556
Logistic Drive	18	LOT 100 DP 412877	900774
Logistic Drive	19	LOT 6 DP 375764	891555
Logistic Drive	20	LOT 101 DP 412877	900775
Logistic Drive	21	LOT 5 DP 375764	891554
Logistic Drive	23	LOT 4 DP 375764	891553
Logistic Drive	24	LOT 102 DP 412877	900776
Logistic Drive	25	LOT 3 DP 375764	891552
Logistic Drive	26	LOT 103 DP 412877	900777
Logistic Drive	27	LOT 2 DP 375764	891551
Logistic Drive	28	LOT 104 DP 412877	900778
Logistic Drive	29	LOT 1 DP 375764	891550
Logistic Drive	31	LOT 17 DP 375764	891566
Logistic Drive	15L	LOT 19 DP 375764	891573
Logistic Drive	29L	LOT 20 DP 375764	891574
Lower Styx Road	361	Lot 1 DP 508689	629529
Mcleans Island Road	2	LOT 16 DP 375764	891565
Mcleans Island Road	12	LOT 15 DP 375764	891564

Mcleans Island Road	14	LOT 1 DP 304904	865337
Mcleans Island Road	16	LOT 2 DP 79639	754142
Nathan Place	1	PT LOT 2 DP 55072	870082
Nathan Place	7	LOT 3 DP 55072	864585
Nathan Place	11	LOT 1 DP 70619	864584
Radcliffe Road	301	Lot 4 DP 313448	584569
Sawyers Arms Road	527	LOT 1 DP 55072	836526
Sawyers Arms Road	530	PT LOT 1 DP 51000	870081
Sawyers Arms Road	533	LOT 1 DP 45800	858525
Sawyers Arms Road	540	LOT 1 DP 36870	817420
Sawyers Arms Road	565	LOT 2 DP 64781	771301
Sawyers Arms Road	575	LOT 1 DP 64781	771302
Spencerville Road	25	Lot 2 DP 53987	419068
Turners Road	50	Lot 3 DP 83312	568085
Wairakei Road	656	Lot 1 DP 6411	414964

Schedule 2: Christchurch Contaminant Load Model

Schedule 3: General City Conditions – Water Quality and Quantity

This table indicates minimum requirements to enable discharges under this consent from greenfield developments and re-developments in areas not yet covered by a Stormwater Management Plan. Until 1 January 2025, for any development where the Christchurch City Council (CCC) considers there are factors that require Canterbury Regional Council input it can choose to not accept a proposed discharge to its network, and therefore a consent from the Regional Council would be required. The CCC may also require a higher standard than is represented in the table below in order to mitigate effects on the network or if any special conditions exist.

Source of Stormwater Discharge(s)	SMALL SITES Total area of disturbance does not exceed 1,000m ²	LARGE SITES Total area of disturbance equals, or is greater than 1,000m ²
From/during land disturbance activities	Erosion and Sediment Control Plan is required	Erosion and Sediment Control Plan is required
From new / re-development residential roof and hardstand areas	<p>No discharge onto or into land where average site slope exceeds 5 degrees</p> <p>Sumps collecting runoff from new hardstand areas shall be fitted with submerged or trapped outlets wherever practicable</p> <p>An assessment of water quantity effects and provision of on-site stormwater storage or network upgrade may be required for sites in the flat**</p> <p>On-site rain water storage is required for new and redevelopment sites on the hills</p>	<p>No discharge onto or into land where average site slope exceeds 5 degrees</p> <p>First flush treatment is required for stormwater runoff from new hardstand areas in excess of 150m² and buildings with copper or uncoated galvanised metal roofs or guttering/spouting*</p> <p>An assessment of water quantity effects and provision of on-site stormwater storage or network upgrade may be required for sites in the flat**</p> <p>On-site rain water storage is required for new and redevelopment sites on the hills</p>
From new / re-development non-residential roof and hardstand areas	<p>No discharge onto or into land where average site slope exceeds 5 degrees</p> <p>First flush treatment is required for stormwater runoff from new hardstand areas in excess of 150m², buildings with copper or uncoated galvanised roofs or guttering/spouting and high-use sites</p> <p>An assessment of water quantity effects and provision of on-site stormwater storage or network upgrade may be required**</p> <p>Site management and spill procedures required for sites that engage in hazardous activities***</p>	<p>No discharge onto or into land where average site slope exceeds 5 degrees</p> <p>First flush treatment is required for stormwater runoff from new hardstand areas in excess of 150m², buildings with copper or uncoated galvanised roofs or guttering/spouting and high-use sites</p> <p>An assessment of water quantity effects and provision of on-site stormwater storage or network upgrade may be required**</p> <p>Site management and spill procedures required for sites that engage in hazardous activities***</p>

* CCC has discretion to waive the requirement for first flush treatment of hardstand areas on large residential sites where the amount of pollution-generating hardstand being added is considered to have less than minor effect. "Uncoated" means without a painted or enamelled coating.

** Quantity assessment and mitigation - The effects of the discharge on CCC stormwater network capacity and/or the extent or duration of flooding on downstream properties are to be assessed. Where CCC considers an increase (including cumulative increases) has a more than minor effect, onsite stormwater attenuation or stormwater network upgrade shall be provided. The details of storage volume and peak discharges or network capacity required to mitigate effects on flooding or network capacity constraints shall be determined by the Christchurch City Council Planning Engineer.

*** Site management and spill procedures – Procedures are to be implemented to prevent the discharge of hazardous substances or spilled contaminants discharging into any land or surface waters via any conveyance path.

Schedule 4: Receiving Environment Objectives and Attribute Target Levels for Waterways -

- **The EMP outlines the methodology for the monitoring of Attributes and how these will be compared against Attribute Target Levels**
- TBC-A = To Be Confirmed once a full year of monitoring allows hardness modified values to be calculated, in accordance with Condition 45.
- TBC-B = To Be Confirmed following engagement with papatipu rūnanga, through an update to the EMP, in accordance with Condition 47.

Objective	Attribute	Attribute Target Level	Basis for Target
Enhance ecological values <u>Ecological values are at acceptable levels</u>	QMCI	Lower limit QMCI scores: <ul style="list-style-type: none"> • Spring-fed – plains – urban waterways: 3.5 • Spring-fed – plains waterways: 5 • Banks Peninsula waterways: 5 	QMCI is an indicator of aquatic ecological health, with higher numbers indicative of better quality habitats, due to a higher abundance of more sensitive species. QMCI scores are taken from the guidelines in Table 1a of the LWRP (Canterbury Regional Council, 2017 8). This metric is designed for wadeable sites and should therefore be used with caution for non-wadeable sites. These targets can be achieved through reducing contaminant loads and waterway restoration.
Decrease sediment input to prevent adverse effects on water clarity and aquatic biota <u>Adverse effects on water clarity and aquatic biota do not occur due to sediment inputs</u>	Fine sediment (<2 mm diameter) percent cover of stream bed TSS concentrations in surface water	Upper limit fine sediment percent cover of stream bed: <ul style="list-style-type: none"> • Spring-fed – plains – urban waterways: 30% • Spring-fed – plains waterways: 20% • Banks Peninsula waterways: 20% Upper limit concentration of TSS in surface water: 25 mg/L during base flow, and 100 mg/L during wet weather No statistically significant increase in TSS concentrations <u>in surface water</u>	Sediment (particularly from construction) can decrease the clarity of the water, and can negatively affect the photosynthesis of plants and therefore primary productivity within streams, interfere with feeding through the smothering of food supply, and can clog suitable habitat for species. The se <u>sediment cover</u> Target Levels are taken from the standards for the original Styx and South-West Stormwater Management Plan consents, and are based on Table 1a of the LWRP (Canterbury Regional Council, 2017 8). These targets should be used with caution at sites that likely naturally have soft-bottom channels. These targets can be achieved through reducing contaminant loads (particularly using erosion and sediment control) and instream sediment removal.
Reduce copper, lead and zinc levels in surface water to prevent adverse effects on aquatic biota <u>Adverse effects on aquatic biota do not occur due to copper, lead and zinc inputs in surface water</u>	Zinc, copper and lead concentrations in surface water	Upper limit concentration of dissolved zinc: <ul style="list-style-type: none"> • Ōtākaro/ Avon River catchment: 0.0297 mg/L • Ōpāwaho/ Heathcote River catchment: 0.04526 mg/L • <u>Cashmere Stream: 0.00724 mg/L</u> • Huritini/ Halswell River catchment: 0.01919 mg/L • Pūharakekenui/ Styx River catchment: 0.01214 mg/L • Ōtūkaikino River catchment: 0.00868 mg/L • Linwood Canal: 0.146 mg/L • Banks Peninsula catchments: TBC-A Upper limit concentration of dissolved copper: <ul style="list-style-type: none"> • Ōtākaro/ Avon River catchment: 0.00356 mg/L • Ōpāwaho/ Heathcote River catchment: 0.00543 mg/L • <u>Cashmere Stream: 0.00302 mg/L</u> • Huritini/ Halswell River catchment: 0.00336 mg/L • Pūharakekenui/ Styx River catchment: 0.00212 mg/L • Ōtūkaikino River catchment: 0.00152 mg/L • Linwood Canal: 0.0175 mg/L • Banks Peninsula catchments: TBC-A 	These metals can be toxic to aquatic organisms, negatively affecting such things as fecundity, maturation, respiration, physical structure and behaviour. The CCC has developed these hardness modified trigger values in accordance with the methodology in the 'Australian and New Zealand Environment and Conservation Council, and Agriculture and Resource Management Council of Australia and New Zealand' (ANZECC, 2000) guidelines, and the species protection level relevant to each waterway in the LWRP (Canterbury Regional Council, 2017 8). This calculation document can be provided on request. These targets can be achieved primarily through reducing contaminant loads.

Objective	Attribute	Attribute Target Level	Basis for Target
		<p>Upper limit concentration of dissolved lead:</p> <ul style="list-style-type: none"> • Ōtākaro/ Avon River catchment: 0.01554 mg/L • Ōpāwaho/ Heathcote River catchment: 0.02916 mg/L • Cashmere Stream: 0.00521 mg/L • Huritini/ Halswell River catchment: 0.01257 mg/L • Pūharakekenui/ Styx River catchment: 0.00634 mg/L • Ōtūkaikino River catchment: 0.00384 mg/L • Linwood Canal: 0.167 mg/L • Banks Peninsula catchments: TBC-A <p>No statistically significant increase in copper, lead and zinc concentrations</p>	
<p>Reduce nutrient levels to limit excessive growth of macrophytes and filamentous algae <u>Excessive growth of macrophytes and filamentous algae does not occur due to nutrient inputs</u></p>	<p>Total macrophyte and filamentous algae (>20 mm length) cover of stream bed</p>	<p>Upper limit total macrophyte cover of the stream bed:</p> <ul style="list-style-type: none"> • Spring-fed – plains – urban waterways: 60% • Spring-fed – plains waterways: 50% • Banks Peninsula waterways: 30% <p>Upper limit filamentous algae cover of the stream bed:</p> <ul style="list-style-type: none"> • Spring-fed – plains – urban waterways: 30% • Spring-fed – plains waterways: 30% • Banks Peninsula waterways: 20% 	<p>Macrophyte and algae cover are indicators of the quality of aquatic habitat. Targets are taken from Table 1a of the LWRP (Canterbury Regional Council, 20178). Improvement towards these targets can be achieved by reduction in nutrient concentrations and riparian planting to shade the waterways.</p>
<p>Improve instream sediment quality to prevent adverse effects on aquatic biota <u>Adverse effects on aquatic biota do not occur due to zinc, copper, lead and PAHs in instream sediment</u></p>	<p>Zinc, copper, and lead and PAHs concentrations in instream sediment</p>	<p>Upper limit concentration of total recoverable metals for all classifications:</p> <ul style="list-style-type: none"> • Copper = 65 mg/kg dry weight • Lead = 50 mg/kg dry weight • Zinc = 200 mg/kg dry weight • Total PAHs = 4 10 mg/kg dry weight <p><u>No statistically significant increase in copper, lead, zinc and Total PAHs</u></p>	<p>Metals can bind to sediment and remain in waterways, potentially negatively affecting biota. These trigger values are based on the ISQG-low ANZECC (2000) guidelines (Stuart et al., 2013). These targets can be achieved through reducing contaminant loads and instream sediment removal.</p>
<p>Enhance mana whenua freshwater values <u>Mana whenua freshwater values are at acceptable levels</u></p>	<p>Waterway Cultural Health Index and State of Takiwā scores</p>	<p>Lower limit averaged Waterway Cultural Health Index and State of Takiwā scores for all classifications:</p> <ul style="list-style-type: none"> • Spring-fed – plains – urban waterways: TBC-B • Spring-fed – plains waterways: TBC-B Banks Peninsula waterways: TBC-B 	<p>The Waterway Cultural Health Index assesses cultural values and indicators of environmental health, such as mahinga kai (food gathering). These indices are on a scale of 1 - 5, with higher scores indicative of greater cultural values. No guidelines are available currently for the different types of waterways, so these targets will be developed specifically for this consent, with higher targets for waterways with higher values. These targets can be achieved through reducing contaminant loads and habitat restoration.</p>

Schedule 5: Receiving Environment Objectives and Attribute Target Levels for Coastal Waters

- The EMP outlines the methodology for the monitoring of Attributes and how these will be compared against Attribute Target Levels
- TBC-B = To Be Confirmed following consultation with papatipu rūnanga, through an update to the EMP, in accordance with Condition 47.

Objective	Attribute	Attribute Target Level	Basis for Target
Reduce sediment input to prevent adverse effects on water clarity and aquatic biota <u>Adverse effects on water clarity and aquatic biota do not occur due to sediment inputs</u>	TSS concentrations in surface water	No statistically significant increase in TSS concentrations	Elevated levels of TSS in the water column decrease the clarity of the water and can adversely affect aquatic plants, invertebrates and fish (Crowe & Hay, 2004; Ryan, 1991). For example, sediment can affect photosynthesis of plants and therefore primary productivity, interfere with feeding through the smothering of food supply, and can clog suitable habitat for species (Crowe & Hay, 2004; Ryan, 1991). <u>There is no guideline available for this parameter, so no change in concentrations is proposed to be conservative.</u> The target will be achieved by reducing contaminant loads (particularly using erosion and sediment control measures).
Decrease copper, lead and zinc levels in water to prevent adverse effects on aquatic biota <u>Adverse effects on aquatic biota do not occur due to copper, lead and zinc inputs in surface water</u>	Copper, lead and zinc concentrations in surface water	Maximum dissolved metal concentrations for all classes (with the exception of the Operational Area of the Port of Lyttelton): <ul style="list-style-type: none"> • Copper: 0.005 <u>0.0013</u> mg/L • Lead: 0.005 <u>0.0044</u> mg/L • Zinc: 0.05 <u>0.015</u> mg/L <p>No statistically significant increase in copper, lead and zinc concentrations <u>(with the exception of the Operational Area of the Port of Lyttelton)</u></p>	Metals, in particular, copper, lead and zinc, can be toxic to aquatic organisms, negatively affecting such things as fecundity, maturation, respiration, physical structure and behaviour (Harding, 2005). Site specific criteria are set out in the Regional Coastal Environment Plan for the Canterbury Region (Canterbury Regional Council, 2012). The plan specifically details that this guideline is not relevant for the Operational Area of the Port of Lyttelton. <u>These targets are taken from the ANZECC (2000) guidelines for the protection of 95% of species.</u> This <u>Operational Area of the Port of Lyttelton area</u> is affected by direct discharges from boats that will make monitoring of the effects of stormwater difficult, <u>therefore the targets are not applicable to this area.</u> These targets will be achieved by reducing contaminant loads.
Enhance mana whenua coastal values <u>Mana whenua coastal values are at acceptable levels</u>	Marine Cultural Health Index and State of Takiwā scores	Minimum averaged Marine Cultural Health Index and State of Takiwā scores for all classes: <ul style="list-style-type: none"> • TBC-B 	The Marine Cultural Health Index and State of Takiwā scores assesses cultural values and indicators of environmental health, such as mahinga kai (food gathering). These indices are on a scale of 1 - 5, with higher scores indicative of greater cultural values. No guidelines are available currently for coastal areas, so this target will be developed specifically for this consent. These targets can be achieved through reducing contaminant loads.

Schedule 6: Receiving Environment Objectives and Attribute Target Levels for Groundwater and Springs

- The EMP outlines the methodology for the monitoring of Attributes and how these will be compared against Attribute Target Levels

Objective	Attribute	Attribute Target Level	Basis for Target
<i>Protect drinking water quality</i>	Copper, lead, zinc and <i>Escherichia coli</i> concentrations in drinking water	<p>Concentration to not exceed:</p> <ul style="list-style-type: none"> • Dissolved Copper: 0.5 mg/L • Dissolved Lead: 0.0025 mg/L • Dissolved Zinc: 0.375 mg/L <p>No statistically significant increase in the concentration of <i>Escherichia coli</i> at drinking water supply wells</p>	<p>The most important use of Christchurch groundwater is the supply of the urban reticulated drinking water supply. Contaminants in stormwater that infiltrate into the ground could impact on the quality of water supply wells and/or springs. The compliance criteria for a potable and wholesome water supply are specified in the Drinking-Water Standards for New Zealand 2005 (Revised 2008). Metals and <i>E.coli</i> were chosen for these targets, as these are contaminants present in stormwater. The target values for copper and lead are a quarter of the Maximum Acceptable Value (MAV) or Guideline Value (GV) taken from the Drinking Water Standards for New Zealand 2005 (revised 2008). This is to ensure investigations occur before the water quality limits in the LWRP are exceeded, which are that concentrations are not to exceed 50% of the MAV. An equivalent criteria has also been applied to the zinc target, which is not included in the LWRP water quality limits, but has a guideline in the drinking water standards.</p>
<i>Avoid widespread adverse effects on shallow groundwater quality</i>	Electrical conductivity in groundwater	<ul style="list-style-type: none"> • No statistically significant increase in electrical conductivity 	<p>Contaminants in stormwater that infiltrate into the ground could impact on groundwater quality. Long term groundwater quality at monitoring wells is undertaken by Canterbury Regional Council. Those monitoring points that occur within the urban area could be impacted by CCC stormwater management activities. Electrical conductivity is to be used as an indicator for identifying <u>any general</u> changes in <u>groundwater quality related to recharge</u> metals (particularly copper, lead, zinc).</p>

Schedule 7: Receiving Environment Attribute Target Levels for Water Quantity

<u>MODELLED CATCHMENTS</u>			
<p><u>Attribute Target Level: Flood levels for the 2% AEP for the assessment year critical duration event shall not increase more than the Maximum Increase listed below when compared to the modelled 20% AEP for the baseline year impervious scenario critical duration, as determined using CCC flood models. The baseline year scenario and assessment year scenario shall be identical except for changes to the impervious area, mitigation measures and the inclusion of any new network(s) that has arisen between the dates of the two scenarios and within the city limits. All non-variant scenario parameters shall be as at the assessment year scenario. The critical duration shall be assessed at the monitoring location of the attribute target level.</u></p>			
<u>Receiving Environment</u>	<u>Monitoring Location</u>	<u>Baseline Year</u>	<u>Maximum Increase (mm)</u>
<u>Ōtākaro/ Avon River</u>	<u>Gloucester Street Bridge</u>	<u>2014</u>	<u>50</u>
<u>Pūharakekenui/ Styx River</u>	<u>Harbour Road Bridge</u>	<u>2012</u>	<u>100 +/- 20%</u>
<u>Ōpāwaho/ Heathcote River</u>	<u>Ferniehurst Street</u>	<u>1991</u>	<u>30</u>
<u>Huritini/ Halswell River</u>	<u>Minsons Drain confluence*</u>	<u>2016</u>	<u>0</u>
<u>NON-MODELLED CATCHMENTS</u>			
<u>Receiving Environment</u>	<u>Attribute Target Level</u>	<u>Basis for Target</u>	<u>Notes</u>
Ōtūkaikino River	Discharges from all new greenfield development into the Christchurch City Council network are mitigated using the "Partial Detention" strategy outlined in the Pūharakekenui/ Styx SMP <u>until such time as a monitoring location can be set during review of the SMP</u>	As measured through the CCC discharge authorisation compliance process for Resource and Building Consents <u>until such time as an Baseline Year can be set during review of the SMP</u>	CCC does not monitor or model flooding in the Ōtūkaikino River <u>has just begun monitoring the Ōtūkaikino at Dickeys Road Bridge. Council does not currently model flooding in the Ōtūkaikino River.</u> Flooding occurs primarily due to backwater effects in the Waimakariri River. Therefore, a best practice approach to mitigation of development will be implemented <u>until such time as Maximum Increase can be set during review of the SMP.</u>
Banks Peninsula (Various)	Discharges from all new greenfield development within settlement areas of Te Pātaka o Pākaihautū/ Banks Peninsula into the Christchurch City Council Network are mitigated using the "Extra-Over Detention" strategy	As measured through the CCC discharge authorisation compliance process for Resource and Building Consents	Receiving environments within Te Pātaka o Pākaihautū/ Banks Peninsula Settlements are primarily coastal. The strategy behind "Extra-Over Detention" is to mitigate peak flows from development sites back to pre-development flow rates in order to mitigate effects of flooding and waterway channel erosion. Therefore, a best practice approach to mitigation of development will be implemented.

*** The Minsons Drain confluence with the Huritini/Halswell River represents the southerly extent of inputs from Christchurch City catchments, but also contains discharges from Selwyn District. Inputs from catchments outside of the city shall be isolated in the CCC stormwater model for compliance assessment purposes.**