Surface Water Quality and Response to Monitoring:

For the Comprehensive Stormwater Network Discharge Consent Annual Report – 2023

Prepared to meet the requirements of CRC231955

Christchurch City Council

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Internal Document Review and Approval

	Name	Title	Date
Prepared By	Katie Noakes	Principal Waterways Ecologist	02/09/2024
Prepared By	Emily Tredinnick	Healthy Water Bodies Facilitator	02/09/2024
Reviewed By	Joe Harrison	Healthy Water Bodies Specialist	03/092024

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Acronyms and Abbreviations

ATL	Attribute Target Level
CBA	Cost-Benefit Analysis
Council	Christchurch City Council
CSNDC	Comprehensive Stormwater Network Discharge Consent
ECan	Environment Canterbury Regional Council
EMP	Environmental Monitoring Programme
ESCP	Erosion Sediment Control Plan
ICCM	Instream Contaminant Concentration Model
IDS	Infrastructure Design Standards
IGSC	Interim Global Stormwater Consent
LWRP	Land and Water Regional Plan
MEDUSA	Modelled Estimates of Discharges for Urban Stormwater Assessments
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
PAH	Polycyclic aromatic hydrocarbons
QMCI	Quantitative Macroinvertebrate Index
SDMP	Sediment Discharge Management Plan
SMP	Stormwater Management Plan
TPRP	Technical Peer Review Panel
TSS	Total Suspended Solids
TWWM	Targeted Wet Weather Monitoring
WWDG	Waterways Wetlands Design Guide

1. Purpose of this Document

The Christchurch City Council (Council) officially submitted its Comprehensive Stormwater Network Discharge Consent Annual Report to Environment Canterbury (ECan) on the 27 June 2024 as required by Condition 61 of the Consent. Due to delays in processing and analysing surface water quality and ecology data, the Council was not able to include this information within the Annual Report. This supplementary report includes a summary of the "Surface Water Quality Report" and "Condition 59 Response to Monitoring Report" for the 2023 calendar year.

2. Surface Water Quality

2.1. Surface water quality monitoring

Surface water quality monitoring was carried out for the 2023 monitoring year, in accordance with Chapter 5 of the EMP. A full report is attached in Appendix E.

In summary:

- Monthly water samples were collected from 51 sites in Banks Peninsula (Stream Reserve Drain, Balguerie Stream, and Aylmers Stream), Ōtākaro-Avon River, Ōpāwaho-Heathcote River, Huritini-Halswell River, Pūharakekenui-Styx River, Ōtūkaikino River, Linwood Canal, and coastal waters (Ihutai – Avon-Heathcote Estuary, Lyttelton Port, Cass Bay, and Akaroa Harbour). Eleven sites in the Pūharakekenui-Styx River catchment were monitored by the Styx Living Laboratory Trust. Two wet weather monitoring events were also conducted in the Pūharakekenui-Styx River catchment;
- Approximately 35,000 tests were conducted during 2021-2023 for the Council monthly monitoring, with over 26,000 of these allowing the assessment of each waterway site against relevant guideline levels;
- The priority parameters to address for freshwater sites include faecal indicator bacteria (as indicated by *Escherichia coli*), sediment, dissolved copper, phosphorus (Dissolved Reactive Phosphorus) and dissolved zinc. The coastal sites generally had issues with dissolved copper and zinc contamination, as well as high turbidity and enterococci;
- Based on the WQI, Banks Peninsula recorded 'poor' water quality, the Ōpāwaho-Heathcote River and Huritini-Halswell River catchments recorded 'fair' water quality, and the Ōtākaro-Avon River, Pūharakekenui-Styx, and Ōtūkaikino River catchments recorded 'good' water quality.
- The Ōtūkaikino River recorded the best overall water quality out of all the catchments. The best site for water quality was jointly Wairarapa

Stream, Waimairi Stream and Avon at Mona Vale, followed by Ōtūkaikino at Scout Camp, and Avon at Manchester St. The catchment recording the worst water quality was the Banks Peninsula waterways. The worst site for water quality was Curletts at Motorway, followed by Curlett upstream of Heathcote River, and Aylmers Stream;

- Trends analysis showed that water quality at the sites has mostly remained steady over time since monitoring began in the early to mid-2000s;
- Wet weather monitoring concentrations varied compared to the monthly monitoring. Of note, copper, lead, zinc and BOD5 were higher during wet weather monitoring;
- The waterways requiring particular water quality management are Curletts Road Stream, Aylmers Stream, Nottingham Stream, Lower Heathcote and Addington Brook.
- Several recommendations are provided in the report. In particular:
    - Nottingham Stream, Lower Heathcote, Alymers Stream and Curlett Stream are prioritised for contaminant source control and treatment;
    - Stormwater treatment in Banks Peninsula is prioritised and investigated as part of the Banks Peninsula Stormwater Management Plan;
    - Construction of the Council stormwater wetlands in Belfast (Ōtūkaikino River catchment) is prioritised;
    - Erosion and sediment control measures continue to be implemented; and
    - Tasks under the Action Plan for the Council Community Outcome for Healthy Water Bodies are implemented.

2.2. Instream Sediment Quality and Aquatic Ecology

Instream sediment quality and aquatic ecology monitoring has been included in the 2024 annual report, however, the information is included here for context on overall waterway health. For the 2023 monitoring year, the following was carried out in accordance with Chapters 6 and 7 of the EMP;

- Five-yearly aquatic ecology (habitat, macroinvertebrates, and fish) and instream sediment monitoring in the Pūharakekenui – Styx River (14 sites) (Appendix D of 2024 Annual Report);

- Monthly fine sediment monitoring (17 sites) (Appendix F of 2024 Annual Report); and
- Annual aquatic ecology monitoring in Cashmere Stream (2 sites), Wilsons Stream (2 sites), and Balguerie Steam (1 site, desktop assessment of ECan data only) (Appendix D of 2024 Annual Report).

Of note from the monitoring:

- Riparian habitat largely comprised of exotic trees and grasses in the Pūharakekenui - Styx River catchment. Riparian conditions had improved at some sites with willow removal occurring and being replaced with native planting, however, at some sites willow cover had increased since 2018;
- Instream habitat quality in the Pūharakekenui - Styx River catchment was moderate and variable across sites. Sediment depth and cover was higher in 2023 with substrates being dominated by fine sediments, larger substrates were present at most sites but were covered by fine sediment. Instream habitat conditions remained the same over time, however, some sites were wider and deeper with higher cover of fine sediment than previous years;
- Macrophyte cover at Pūharakekenui - Styx River sites was low at most sites, with one site exceeding the consent target level. There were no obvious changes in macrophyte cover at the annual sites. Filamentous algae were rare, or absent from most five-yearly and annual sites in 2023;
- Concentrations of common stormwater contaminants in sediments generally met the guideline levels at most sites in the Pūharakekenui - Styx River catchment, apart from a marked increase in zinc at Richards Bridge (STYX07);
- The macroinvertebrate community was dominated by pollution-tolerant taxa at most five-yearly and annual sites. The presence of sensitive EPT taxa has reduced over time. Of note is the loss of notable EPT taxa from the upper catchment. Quantitative Macroinvertebrate Community Index (QMCI) scores declined over time at some at Pūharakekenui - Styx River sites. This was largely attributed to changes in instream physical habitat from increases in sediment depth and cover, resulting in a change in macroinvertebrate communities;
- The fish community in both the Pūharakekenui - Styx River, Wilsons Drain and Cashmere Stream catchments were dominated by indigenous species that are commonly found in Christchurch's waterways. Common bullies and shortfin eels were the most commonly encountered species, but longfin eels, inanga, upland bully, giant bully and brown trout were

also found. Of note Kanakaka – lamprey was found at one Pūharakekenui – Styx River site;

- Fine sediment cover was high and exceeded consent target levels at 11 of the 17 monitoring sites. Curlett Road Stream Upstream of the Ōpāwaho-Heathcote River confluence had the highest median cover across all 17 sites. Pūharakekenui-Styx River at Main North Road had the lowest median cover across all 17 sites;
- Trend analysis for fine sediment cover showed that 13 of the 17 sites did not have any meaningful trends identified over the last three years. However, four sites had meaningful decreasing trends recorded. These were the Pūharakekenui-Styx River at Styx Mill Conservation Reserve, Ōpāwaho-Heathcote River at Rose Street & at Ferniehurst Street and Huritini-Halswell River Nottingham Stream at Candys Road. No increasing trends were recorded; and
- Overall, some measures of ecosystem health (e.g., sediment depth, macrophyte cover, Macroinvertebrate Community Index, QMCI, and Average Score Per Metric) at sites in the Pūharakekenui – Styx River, Wilsons and Cashmere Stream catchments are worse than previous years, indicating degradation.

2.3. Mana Whenua Values

For the 2023 monitoring year, mana whenua monitoring was carried out at eight sites within the Pūharakekenui – Styx River catchment in accordance with Chapter 8 of the EMP. The monitoring report can be viewed in Appendix G of the Annual Report.

Overall, this monitoring indicated that the Pūharakekenui – Styx River catchment has slightly below or at moderate cultural health values. The results from the 2023 survey showed a slight improvement of overall health scores compared to the 2012 survey. Insufficient indigenous riparian planting and the prevalence of invasive weed species was identified as a key concern throughout the catchment, as well as adjacent agricultural land use. Key recommendations from the monitoring were the removal of exotic weed species from the margins, and an increase in stock fencing and indigenous riparian margins should be consistent with recommended setbacks. E. coli was identified as the contaminant of concern with two sites exceeding the Canterbury LWRP guideline.

The average State of Takiwa score from the monitored sites was 2.8. The average score from the Cultural Health Assessment survey was 3. None of the eight sites met the ATL of ‘5’ under Schedule 7 of the CSNDC.

2.4. Holistic Assessmenment

A 2023 summary of surface water quality, instream sediment, aquatic ecology, fine sediment, and mana whenua values monitoring at sites where monitoring overlaps, is provided in Table 1 below.

There is some variation in monitoring aspects at these sites. For example, poor water quality did not always reflect poor instream sediment quality. However, some similarities were noted across the monitoring that included changes to riparian and instream habitat quality and bacterial contamination.

Table 1: *Summary of surface water quality, instream sediment quality, aquatic ecology, and mana whenua values at waterway sites where monitoring overlaps. ATL = Attribute Target Level; BOD5 = Biochemical Oxygen Demand; DIN = Dissolved Inorganic Nitrogen; DRP = Dissolved Reactive Phosphorus; EPT = the total number of taxa within the "pollution sensitive" orders Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies); E. coli = Escherichia coli; QMCI = Quantitative Macroinvertebrate Index; TSS = Total Suspended Solids.*

Site	Surface water quality	Wet weather	Instream sediment quality	Aquatic Ecology	Fine sediment	Mana whenua values
STYX12: Styx River at Styx Conservation Reserve	N/A	N/A	ATL's met	High shading, willow encroachment, moderate-low macrophyte cover, high fine sediment. Exceeded fine sediment cover. Did not meet QMCI. Bully, brown trout, longfin eel, shortfin eel.	ATL met	N/A
STYX03: Styx River at Main North Rd	WQI: Good Contaminants of concern: Zinc, *e.coli*, conductivity, turbidity	Guideline exceedances in copper, zinc, conductivity, turbidity, BOD_5, DRP, *e.coli*,	ATL's met	Moderate shading, no algae, low macrophyte cover, moderate fine sediment. Did not meet QMCI.	ATL met	N/A

STYX05: Kā Pūtahi Creek at Belfast Rd	WQI: Fair Contaminants of concern: *E. coli,* conductivity, turbidity, DRP	Guideline exceedances in copper, zinc, conductivity, turbidity, $BOD_{5,}$ DRP, *e.coli*,	Zinc ATL exceeded	N/A	N/A	N/A
STYX04: Kā Pūtahi Creek at Blakes Rd	WQI: Good Contaminants of concern: Zinc, *E. coli,* conductivity, turbidity, DRP, DO	Guideline exceedances in copper, zinc, lead, TSS, turbidity, $BOD_{5,}$ DRP, *e.coli*,	Zinc ATL exceeded	N/A	ATL exceeded	ATL not met Concerns: farming on riparian margins, willow infestation
STYX09: Kā Pūtahi Creek at Ouruhia Reserve	N/A	N/A	N/A	Moderate shading, low algae, moderate low macrophyte cover, high fine sediment. Did not meet QMCI.	ATL exceeded	ATL not met Concerns: *e.coli*, arsenic, zinc, weed species, insufficient riparian margins, sediment
STYX06: Styx River at Marshland Rd Bridge	WQI: Good Contaminants of concern: *E. coli,* conductivity, turbidity, DRP	Guideline exceedances in copper, zinc, conductivity, TSS, turbidity, $BOD_{5,}$ DRP, *e.coli*,	ATL's met	Low shading, no algae, high macrophyte cover, high fine sediment. Did not meet QMCI.	N/A	ATL not met Concerns: zinc, weed riparian species, insufficient riparian margins

STYX07: Styx River at Richards Bridge/ Teapes Rd	WQI: Good Contaminants of concern: *E. coli,* conductivity, turbidity, DRP	N/A	Zinc ATL exceeded	Low to moderate shading, no algae, high macrophyte cover, high fine sediment. Did not meet QMCI.	N/A	ATL not met Concerns: heavily farmed in riparian margins, fences too close, insufficient planted riparian margins
STYX08: Styx River at Kaianga Rd/ Harbour Rd Bridge	WQI: Good Contaminants of concern: *E. coli,* conductivity, turbidity, DRP, DO	N/A	ATL's met	Low-moderate shading, no algae, high fine sediment. Did not meet DO guideline. Did not meet QMCI.	N/A	ATL not met Concerns: arsenic, zinc, high site modification, willow infestation

2.5. Comparison to Attribute Target Levels

Table 2 and 3 below provide a collation of whether all of the Receiving Environment Objectives and Attribute Target Levels for Waterways (Schedule 7) and Coastal Areas (Schedule 8), respectively, have been met for the 2022 monitoring year.

In summary:

- The following ATL's in Schedule 7 were met at most sites:
    - Macrophyte and algae cover;
    - Copper, zinc, lead, and PAHs in instream sediment; and
    - Dissolved lead and TSS in surface water.
- The following ATLs in Schedule 7 were not met at most sites:
    - Mana whenua values;
    - QMCI; and
    - Fine sediment cover.
- The following ATLs in Schedule 8 were met at most sites:
    - TSS and lead in surface water.

Table 2: *Assessment against Comprehensive Stormwater Network Discharge Consent Schedule 7 (Waterways) Attribute Target Levels (ATLs) for 2023 monitoring year. PAHs = Polycyclic aromatic hydrocarbons; QMCI = Quantitative Macroinvertebrate Community Index; TSS = Total Suspended Solids.*

Objective	Attribute	Attribute Target Level	Monitoring Report	Outcome
Adverse effects on ecological values do not occur due to stormwater inputs	QMCI	Lower limit QMCI scores: Spring-fed – plains – urban waterways: 3.5 Spring-fed – plains waterways: 5 Banks Peninsula waterways: 5	Pūharakekenui – Styx River five-yearly and annual aquatic ecology monitoring: Appendix D of Annual Report	Five yearly: Not met at 10 of the 12 sites Annual: Not met at 4 of 5 sites (Balguerie Stream met the ATL)
Adverse effects on water clarity and aquatic biota do not occur due to sediment inputs	Fine sediment (<2 mm diameter) percent cover of stream bed TSS concentrations in surface water	Upper limit fine sediment percent cover of stream bed: 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 No statistically significant increase in TSS concentrations	Pūharakekenui – Styx River five-yearly and annual aquatic ecology monitoring: Appendix D Monthly fine sediment cover: Appendix F of Annual Report	Five yearly: fine sediment cover not met at 8 of the 9 sites Annual monitoring: fine sediment cover not met at 4 of the 5 sites Monthly fine sediment cover: not met at 11 of the 17 sites. Monthly TSS: Statistical increase recorded at 6 sites - Curletts, Akaroa Harbour, Halswell at Tai Tapu, Steamwharf Stream, Wilsons Stream,

Adverse effects on aquatic biota do not occur due to copper, lead and zinc inputs in surface water	Zinc, copper and lead concentrations in surface water	Upper limit concentration of dissolved zinc: Ōtākaro-Avon River catchment: 0.02951 mg/L Ōpāwaho-Heathcote River catchment: 0.0396 mg/L Cashmere Stream: 0.00634 mg/L Huritini-Halswell River catchment: 0.01743 mg/L Pūharakekenui-Styx River catchment: 0.01172 mg/L Ōtukaikino River catchment: 0.00912 mg/L Stream Reserve Drain & Aylmers Stream (Banks Peninsula): ≤0.00293 mg/L Balguerie Stream (Banks Peninsula): ≤0.00254 mg/L Upper limit concentration of dissolved copper: Ōtākaro-Avon and Ōpāwaho-Heathcote River catchments: 0.0018 mg/L Huritini-Halswell, Pūharakekenui-Styx and	Monthly surface water quality monitoring: Appendix E to this report	Zinc: not met at 16 of the 50 monitoring sites, statistical increase at three sites (Nottingham Stream, Heathcote at Ferrymead and Tunnel Roads). Copper: not met at 15 of 50 sites Lead: Not met at 1 of the 50 sites (Aylmers Stream)

		Ōtūkaikino River catchments: 0.0014 mg/L Cashmere Stream and Banks Peninsula waterways: 0.001 mg/L Upper limit concentration of dissolved lead: Ōtākaro-Avon River catchment: 0.01539 mg/L Ōpāwaho-Heathcote River catchment: 0.02388 mg/L Cashmere Stream: 0.00427 mg/L Huritini-Halswell River catchment: 0.01089 mg/L Pūharakekenui-Styx River catchment: 0.00601 mg/L Ōtūkaikino River catchment: 0.00414 mg/L Stream Reserve Drain & Aylmers Stream (Banks Peninsula): ≤0.00135 mg/L Balguerie Stream (Banks Peninsula): ≤0.00109mg/L No statistically significant increase in copper, lead and zinc concentrations		
Excessive growth of macrophytes and	Total macrophyte and filamentous	Upper limit total macrophyte cover of stream bed:	Pūharakekenui – Styx River five-	Five-yearly macrophyte data: not met at 1 of the 9 sites

filamentous algae does not occur due to nutrient inputs	algae cover (>20 mm length) cover of stream bed	Spring-fed – plains – urban waterways: 60% Spring-fed – plains waterways: 50% Banks Peninsula waterways: 30% Upper limit filamentous algae cover of the stream bed: Spring-fed – plains – urban waterways: 60% Spring-fed – plains waterways: 50% Banks Peninsula waterways: 20%	yearly and annual aquatic ecology monitoring: Appendix D of Annual Report	Annual macrophyte data: not met at 2 of 4 sites Five-yearly algae data: met at all of the 9 sites Annual algae data: met at all sites
Adverse effects on aquatic biota do now occur due to zinc, copper, lead and PAHs in instream sediment	Zinc, copper, lead and PAHs concentrations in instream sediment	Upper limit concentration of total recoverable metals for all classifications: Copper = 65 mg/kg dry weight Lead = 50 mg/kg dry weight Zinc = 200 mg/kg dry weight Total PAHs = 410 mg/kg dry weight No statistically significant increase in copper, lead, zinc and Total PAHs	Pūharakekenui – Styx River five-yearly and annual aquatic ecology monitoring: Appendix D of Annual Report	Zinc: not met at 3 of the 8 sites Lead: met at all 8 sites Copper: met at all 8 sites Total PAHs: met at all 8 sites
Adverse effects on Mana Whenua values do not occur due to stormwater inputs	Waterway Cultural Health Index and State of Takiwā scores	Lower limit averaged Waterway Cultural Health Index and State of Takiwā scores for all waterway classifications: 5	Pūharakekenui – Styx River mana whenua vales monitoring:	Not met at any of the eight sites.

			Appendix G of Annual Report	

Table 3: *Assessment against Comprehensive Stormwater Network Discharge Consent Schedule 8 (Coastal Waters) Attribute Target Levels (ATLs) for 2023 monitoring year. PAHs = Polycyclic aromatic hydrocarbons; TSS = Total Suspended Solids. Includes tidal waterway sites of Avon at Bridge Street, Heathcote at Ferrymead Bridge, Heathcote at Tunnel Road, and Linwood Canal, which are assessed against coastal ATL due to high salinity levels.*

Objective	**Attribute**	**Attribute Target Level**	**Monitoring Report**	**Outcome**
Adverse effects on water clarity and aquatic biota do not occur due to sediment inputs	TSS concentrations in surface water	No statistically significant increase in TSS concentrations	Monthly surface water quality monitoring report: Appendix E	Not met at 1 of the 8 sites (Akaroa Harbour)
Adverse effects on aquatic biota do not occur due to copper, lead and zinc inputs in surface water	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): Copper: 0.0013 mg/L Lead: 0.0044 mg/L Zinc: 0.008 mg/L No statistically significant increase in copper, lead and zinc concentrations.	Monthly surface water quality monitoring report: Appendix E	Copper: not met at 3 of the 8 sites (Heathcote at Ferrymead Bridge, Heathcote at Tunnel Rd, Akaroa Harbour) Lead: Met at all 8 sites Zinc: Not met at 5 of the 8 sites. Statistical increase in zinc recorded at 2 of the 8 sites (Heathcote at Ferrymead Bridge, Heathcote at Tunnel Rd)

3. Condition 59 – Responses to monitoring summary

Condition 59 requires the Council to report on any results which identify that TSS, copper, lead, and zinc Attribute Target Levels in surface water, as set out in Schedules 7 and 8, and Escherichia coli, copper, lead, and zinc in groundwater, as set out in Schedule 9, are not being met. This year's Condition 59 report can be viewed in Appendix H of the annual report.

Where these levels are exceeded, the Council is required to engage with ECan and conduct investigations into these exceedances during the year following monitoring. The results of these investigations are to be reported in the following year's CSNDC annual report.

This report (Appendix H) details the next steps to determine whether these exceedances of ATLs are due to stormwater discharges authorised under this resource consent and proposed remediation with associated timelines.

4. Schedules 7 (Waterways) and 8 (Coastal Waters)

The 2020 - 2022 surface water monitoring reports have been covered in the 2023 Condition 59 report. This annual report and Condition 59 report covers the sites identified in the 2022 monitoring year. In 2022, 36 out of the 50 monitoring sites did not meet at least one of these ATLs. As this is a large number of sites, three sites were recommended as priorities for investigation, due to each site not just exceeding guideline levels for the given parameter, but also because of an increasing trend in concentrations. These sites were Curletts at Motorway in the Ōpāwaho-Heathcote River catchment, Addington Brook in the Ōtākaro-Avon River catchment, and Nottingham at Candys Rd in the Huritini-Halswell River catchment. These sites were prioritised for investigation for the last two years and identified in the previous Condition 59 report. The 2020-2022 investigations did not provide sufficient evidence for remediation purposes, and so these sites remained to be the focus of further investigation for 2023. The Ōpāwaho – Heathcote River at Ferrymead Bridge was not prioritised in 2022 but has been included in this year's Condition 59 report as investigations have progressed at this site.

In the 2023 Condition 59 report, copper, zinc, and TSS issues at the three priority sites are most likely due partly to stormwater discharges authorised under the CSNDC. However, there are also likely other illicit (e.g., dry-weather) discharges not authorised under the consent that may be impacting contaminant levels. To address the impacts from stormwater, a number of remediation actions were proposed. This included gathering more data on where contaminants are coming from and recommended monitoring in the lower Ōpāwaho-Heathcote River and Nottingham Stream and further targeted wet weather monitoring in Curletts Stream. Dry weather monitoring was also proposed within Curlett Stream and Addington Brook to identify non-stormwater illicit discharges.

These monitoring plans have been finalised and these are provided in Appendix L, M and N of the Annual Report. In summary:

- Nottingham Stream monitoring plan (Appendix L) proposes wet weather monitoring at 11 sites throughout the catchment with varying priority;
- A dry weather monitoring plan has been developed for Addington Brook (Appendix N) and proposes monitoring at seven sites within the catchment to obtain a minimum of four weeks of continuous data. A stormwater treatment device is undergoing detailed design in Addington Brook enhancement works in the lower catchment have recently been completed. Construction has impacted monitoring for the short term;
- A dry and wet weather monitoring plan has been developed for Curletts Stream (Appendix M). In total, this proposes 17 sites to be monitored throughout the catchment; and
- A targeted wet weather monitoring plan has been developed for the Lower Ōpāwaho-Heathcote Catchment (Appendix L). A total of seven sites with varying priority were proposed to be monitored between Tunnel Rd and Ferrymead Bridge.

Monitoring will be undertaken this year and reported on in next year's annual report. This year's surface water quality report (Appendix E) identified 25 sites did not meet at least one of the ATLs for TSS, copper or zinc. These sites were further prioritised to Nottingham Stream at Candys Road in the Huritni-Halswell catchment, and Heathcote River at Ferrymead Bridge and Tunnel Road in the Ōpāwaho-Heathcote River catchment. Two of these sites have been previously prioritised for investigations and progress on those will be reported on in next year's annual report. This is the first time Heathcote River at Tunnel Road has been prioritised and will be discussed in next year's Condition 59 report.

5. Appendices

Appendix E : Surface Water Quality

Appendix H : Condition 59 Responses to Monitoring