Christchurch City Council

ENVIRONMENT AND INFRASTRUCTURE COMMITTEE AGENDA

THURSDAY 8 AUGUST 2013

AT 9AM

IN COMMITTEE ROOM 1, SECOND FLOOR, CIVIC OFFICES, 53 HEREFORD STREET

Committee: Councillor Claudia Reid (Chair)
Councillors Sally Buck, Jimmy Chen, Barry Corbett, Aaron Keown, and Sue Wells

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PART A - MATTERS REQUIRING A COUNCIL DECISION
PART B - REPORTS FOR INFORMATION
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3. INFRASTRUCTURE REBUILD MONTHLY REPORT

General Manager responsible:	General Manager Capital Programme
Officer responsible:	Infrastructure Rebuild Client Manager
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PURPOSE OF REPORT

1. To provide the Environment and Infrastructure Committee with a monthly update on the infrastructure rebuild.

EXECUTIVE SUMMARY

2. At its April 2011 meeting, Council gave approval for an Alliance to be formed to deliver the reinstatement of the City's damaged infrastructure. It was also agreed that the Chief Executive would report regularly to the Council on progress with regard to the reinstatement work.

3. The report (Attachment A) is the 19th of what will be a regular monthly report that is provided to the Environment and Infrastructure Committee, Council and the Canterbury Earthquake Recovery Authority (CERA).

STAFF RECOMMENDATION

It is recommended that the Environment and Infrastructure Committee recommends that the Council:

(a) Receives the Infrastructure Rebuild Monthly Report for July 2013.

Christchurch City Council

New Zealand Government

INFRASTRUCTURE REBUILD PROGRESS REPORT

JULY 2013

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6.2 NON-SCIRT Work Activity

1. INTRODUCTION

The purpose of this report is to provide Council, CERA and NZTA an update on the horizontal infrastructure rebuild. For this month, and going forward, progress on all horizontal infrastructure rebuild work is reported. This includes the work activity being delivered by SCIRT (section 4.1) and work being delivered under business as usual (BAU) mechanisms (section 4.2).

2. ACTIVITIES FOR THE MONTH

Despite the wet weather events in June, SCIRT delivered over $37M of work in the month. Total year end delivery for SCIRT rebuild related activities is therefore $459.1M. This was within the annual plan total budget but below the revised performance target of $490M for the year. SCIRT also delivered over $35.7M of Council business as usual projects for the year. Delivery in the field was slightly below forecasted for June due to the excessive wet weather events.

The funding agreement between Crown and Council was finalised in June with respective contributions for the Horizontal Infrastructure Programme confirmed. Work is ongoing to implement the agreed arrangement and the revised Three Year Plan budgets will be reported against going forward from 1st July.

Strategic communications around the progress to date and traffic issues related to the rebuild is continuing. A focus over the next few weeks will be around the upcoming rebuild work in the Central City, which is ramping up from October. Significant coordination between all parties involved with work in the Central City is also ongoing.

There have been a number of developments with regard to the roll-out of new pressure wastewater systems over the month. Due to the continual developments an updated memo will be provided for the Environment and Infrastructure Committee to consider ahead of the meeting on the 1st of August.

Coordination between Council, SCIRT and the Coastal Pathway Group is also progressing. Some additional works on the Causeway and Main Road 3 Laning are being confirmed as part of the rebuild. Other similar opportunities to integrate works with future SCIRT rebuild projects are also being considered. The mechanism for delivering the majority of the Coastal Pathway Project is also being developed in collaboration with the Coastal Pathway Group now that significant Council funding has been confirmed in the Three Year Plan.

The quarterly Community Board updates on the Infrastructure Rebuild are also underway.

3. FINANCIALS

Below is a summary of the financials for the horizontal infrastructure rebuild.

This report includes a breakdown for the current financial year to date as per Council Annual plan and the agreed SCIRT performance target in section 3.1 and actual life to date costs against the overall infrastructure rebuild estimate (plus additional projects) in section 3.2. For the purpose of this report all indirect costs have been allocated based on the updated overhead allocation methodology.

3.1 Infrastructure rebuild activities actual year to date costs

3.1.1 Actual year to date costs - Council infrastructure rebuild activities

Table 1.1 below summarises the year to date costs of Council infrastructure rebuild activities. These activities are delivered by SCIRT as well as through business as usual mechanisms.

Council 2012/13 infrastructure rebuild budget is $553m, consist of base annual plan ($521.9m), carry forwards from 2011/12 ($21.6m) and approved plan changes ($9.5m) made during the year. The activities are $70.5m under budget at year end.

Table 1.1 Council infrastructure rebuild activities, actual year to date costs reported against Council budget

FINANCE AS AT 30 June 2013

Council Infrastructure Rebuild Programme

Activity	2012/13 CCC Budget *	Actual Cost YTD	Year End Forecast	Year End Forecast Variance
SCIRT				
Road Network	$ 147,667,000	$ 88,106,485	$ 88,106,485	$ 59,560,515
Wastewater Collection	$ 235,174,000	$ 321,735,478	$ 321,735,478	($ 86,561,478)
Water Supply	$ 55,473,000	$ 13,373,010	$ 13,373,010	$ 42,099,990
Waterways & Land Drainage	$ 22,978,107	$ 22,011,333	$ 22,011,333	$ 966,774
COUNCIL INFRASTRUCTURE REBUILD PROGRAMME BY SCIRT	**$ 461,292,107**	**$ 445,226,306**	**$ 445,226,306**	**$ 16,065,801**
Non SCIRT				
Road Network	$ 1,456,542	$ 1,665,583	$ 1,665,583	($ 209,041)
Wastewater Collection	$ -	$ 1,971,010	$ 1,971,010	($ 1,971,010)
Parks & Open Spaces	$ 9,754,101	$ 4,831,218	$ 4,831,218	$ 4,922,883
Refuse Minimisation & Disposal	$ 11,111,615	$ 4,696,568	$ 4,696,568	$ 6,415,047
Wastewater Treatment & Disposal	$ 29,398,854	$ 18,159,965	$ 18,159,965	$ 11,238,889
Water Supply	$ 34,425,173	$ 3,281,842	$ 3,281,842	$ 31,143,331
Waterways & Land Drainage	$ 5,579,000	$ 2,645,939	$ 2,645,939	$ 2,933,061
COUNCIL INFRASTRUCTURE REBUILD PROGRAMME BY OTHERS	**$ 91,725,285**	**$ 37,252,125**	**$ 37,252,125**	**$ 54,473,160**
TOTAL COUNCIL INFRASTRUCTURE REBUILD PROGRAMME	**$ 553,017,392**	**$ 482,478,431**	**$ 482,478,431**	**$ 70,538,961**

*** CCC Budget Reconciliation**	
2012/13 CCC Annual Plan	$ 521,900,000
Carry Forwards ex 2011/12	$ 21,586,522
2012/13 Approved Plan Changes	($ 2,822,000)
Budget transferred from improvements allowance	$ 12,352,870
2012/13 CCC Budget	**$ 553,017,392**

3.1.2 Actual year to date costs - Infrastructure rebuild activities being undertaken by SCIRT

Table 1.2 below presents actual year to date costs for Council and NZTA rebuild activities being undertaken by SCIRT. The costs include retention payable of $6.2m and are reported against SCIRT performance target.

Current SCIRT performance target is $490m, including Council rebuild activities ($482.1m) and NZTA State Highway rebuild activities ($8.0m). The SCIRT performance target for Council rebuild activities varies from Council annual plan as the target is based on subsequent cash flow forecast.

Table 1.2 Rebuild activities performed by SCIRT, year to date costs reported against SCIRT performance target

FINANCE AS AT 30 June 2013

Infrastructure Rebuild Programme by SCIRT

Activity	2012/13 SCIRT Performance Target	Actual Cost YTD *	Year End Forecast	Year End Forecast Variance
Road Network	$ 52,993,876	$ 89,017,593	$ 89,017,593	($ 36,023,717)
Wastewater Collection	$ 333,067,993	$ 325,223,397	$ 325,223,397	$ 7,844,596
Water Supply	$ 32,344,152	$ 13,602,575	$ 13,602,575	$ 18,741,577
Waterways & Land Drainage	$ 63,668,825	$ 22,644,646	$ 22,644,646	$ 41,024,179
NZTA Highways	$ 7,975,407	$ 8,645,954	$ 8,645,954	($ 670,546)
TOTAL INFRASTRUCTURE REBUILD PROGRAMME BY SCIR	**$ 490,050,253**	**$ 459,134,165**	**$ 459,134,165**	**$ 30,916,089**

* including retention payable of $6,153,405

3.2 Overall Infrastructure Rebuild estimate - actual life to date costs

Current estimate for the overall rebuild of the City's horizontal infrastructure is $2.015 billion (excluding contingency and escalation), plus $16.4m project budget not included in the horizontal infrastructure cost estimate. In addition to the above there is an estimate of $25m for NZTA State Highways rebuild. For the purpose of this monthly progress report the current overall estimate reported against is therefore $2.057 billion.

3.2.1 SCIRT actual life to date against estimate

Table 2.1 includes the overall life to date costs against the current estimate for the SCIRT performed rebuild of the City's infrastructure. SCIRT is performing $1.7b of Council infrastructure rebuild, plus $25m NZTA Highways rebuild.

Table 2.1 SCIRT Actual life to date costs against estimate

SCIRT								
Activity	Description	Estimate	Actual Cost 2010/11	Actual Cost 2011/12	Actual Cost 2012/13 *	Total Actual Cost LTD	Forecast Total Spend	Programme Variance
Road Network	Roading	$ 814,857,143	$ 6,684,772	$ 46,758,817	$ 89,017,593	$ 142,461,182	$ 814,857,143	$ -
Wastewater Collection	Wastewater	$ 714,095,238	$ 14,028,332	$ 151,734,886	$ 325,223,397	$ 490,986,615	$ 714,095,238	$ -
Water Supply	Water Supply	$ 128,142,857	$ 922,776	$ 30,727,289	$ 13,602,575	$ 45,252,640	$ 128,142,857	$ -
Waterways & Land Drainage	Stormwater	$ 69,000,000	$ 2,541,392	$ 15,076,603	$ 22,644,646	$ 40,262,642	$ 69,000,000	$ -
NZTA Highways		$ 25,000,000	$ 311,712	$ 1,982,200	$ 8,645,954	$ 10,939,866	$ 25,000,000	$ -
TOTAL		**$ 1,751,095,238**	**$ 24,488,984**	**$ 246,279,796**	**$ 459,134,165**	**$ 729,902,944**	**$ 1,751,095,238**	**$ -**

* including retention payable of $6,153,405

3.2.2 Non-SCIRT actual life to date against estimate

Table 2.2 includes the overall life to date costs against the current estimate for infrastructure rebuild activities being delivered by Council business as usual mechanisms. This table also includes $16.4m budget from Earthquake Building/Infrastructure Shortfall Allowance for the Waste Water Treatment Plant.

Table 2.2 Non-SCIRT Actual life to date costs against estimate

Non SCIRT								
Activity	Description	Estimate	Actual Cost 2010/11	Actual Cost 2011/12	Actual Cost 2012/13	Total Actual Cost LTD	Forecast Total Spend	Programme Variance
Road Network	Roading	$ 77,761,905	$ 848,201	$ 692,114	$ 1,665,583	$ 3,205,898	$ 77,761,905	$ -
Wastewater Collection	Wastewater	$ -	$ 1,634,066	$ 13,757,590	$ 1,971,010	$ 17,362,667	$ -	$ -
Parks & Open Spaces	Greenspace	$ 56,952,381	$ 611,310	$ 1,835,060	$ 4,831,218	$ 7,277,588	$ 56,952,381	$ -
Refuse Minimisation & Disposal	Solid Waste	$ 8,761,905	$ 2,076,017	$ 3,091,587	$ 4,696,568	$ 9,864,172	$ 8,761,905	$ -
Wastewater Treatment & Disposal	WW Treatment Plant	$ 96,356,381	$ 4,488,038	$ 13,249,043	$ 18,159,965	$ 35,897,046	$ 96,356,381	$ -
Water Supply	Water Supply	$ 24,095,238	$ 4,266,124	$ 830,545	$ 3,281,842	$ 8,378,511	$ 24,095,238	$ -
Waterways & Land Drainage	Stormwater	$ 41,619,048		$ 13,960,259	$ 2,645,939	$ 16,606,198	$ 41,619,048	$ -
TOTAL		**$ 305,546,857**	**$ 13,923,757**	**$ 47,416,198**	**$ 37,252,125**	**$ 98,592,080**	**$ 305,546,857**	**$ -**

4. COMMUNICATIONS

4.1 Strategic Communications

One of the key communications issues continues to be ensuring residents can access information about roadworks and the impacts on traffic across the city. A perspectives piece ran in The Press on 8 July, giving background to how traffic management works in the city and also explaining how SCIRT work fits in with the Council and NZTA's ongoing road maintenance programmes.

Communications about these issues also includes promotion of the website www.transportforchristchurch.govt.nz and mobile app. The Council and NZTA continue to work together to address these issues and communications with the public are increasing.

There has been ongoing media interest in the roll-out of new pressure wastewater systems, including coverage following a media release on the MWH review of Council's processes, which backed the decision to install the new systems in Parklands East. There is also likely to be interest in the Hearings Panel for objections to the new system, set to be held on 16 July. Two applications have been made with the High Court for judicial review of the process, and the Council is working through these. Applications for interim relief (to stop the roll-out of the new systems) were withdrawn in both cases, where the Council agreed with residents to stop work in their immediate area.

2.2 Operational Communications

SCIRT continues to have a significant presence in the community, with a total 1623 work notices now issued on various projects. During May, SCIRT distributed three e-newsletters, 49 tweets, attended 39 meetings, and ran 11 advertisements. The communication team responded to 690 calls to hotlines and 218 emails.

Work is ongoing to develop a business pack to give to businesses that SCIRT engages with while work is going on in their immediate area. It is expected that greater engagement with businesses will be required as SCIRT work increased in the Central City, and work is being done now to prepare a communications plan to address this.

Community engagement activities for pressure wastewater are progressing well, with good sign up rates in most catchments.

2.3 Talking points for the month ahead

Specific talking points this month remain similar to last month:

- We're making good progress on the rebuild: around 112 projects valued at $440 million are under construction right now.
- Our roads are getting busier as the rebuild ramps up and we all need to play our part to keep things moving – plan your journey online at www.transportforchristchurch.govt.nz.
- Many of our old wastewater networks failed in the earthquakes and residents were left without flushing toilets for months – the rebuild is introducing new technologies, such as pressure and vacuum sewers, to ensure the system is strong enough to withstand any future earthquakes.
- As the Central City cordons are reduced this month, SCIRT will be able to begin infrastructure repairs in the CBD. Work hasn't started until now because we didn't want to slow down the demolition by closing roads to allow for infrastructure rebuild work to be carried out.

5. ENVIRONMENT

5.1 Key Outcomes

- Wet weather and snow during the month caused difficult conditions on SCIRT sites. Despite the amount of rain erosion and sediment controls held up well and there were no complaints of sediment discharges. The wet weather caused many WW overflows. These discharges were covered by the CCC wet weather overflow consent.

5.2 Upcoming Priorities

- Roll out the changes to the Environmental KRA.
- Continue to target zero sewer overflows related to construction.

5.3 Environmental Statistics

Description	June 2013	LTD
Environmental Hazards	201	2,007
Environmental Opportunities	780	4,244
Environmental Team Initiatives	6	122
Community Organised Events	-	39
Number of Environmental Incidents	32	570

Data from SCIRT Operational report – July 2013

6. PROGRAMME

6.1 SCIRT Work Activity

6.1.1 Achievement Report

The progress report for this month includes an achievement report which outlines progress made by the construction projects against key metrics for each asset type.

Asset Type	Unit	Network Total	Identified Damaged	% Of Total	Completed	% Of Damaged	Completed in June
WASTEWATER							
Reticulation	KM	1,613	659	41%	175	27%	12.3
Pump Station	No	164	69	83%	41	30%	-
WATER SUPPLY							
Reticulation	KM	2,843	69	2%	41	59%	-
Pump Station	No	107	103	96%	8	8%	-
Reservoirs	No	113	113	100%	3	3%	-
STORM WATER							
Reticulation	KM	329	26	8%	11	43%	0.3
Pump Station	No	38	15	39%	2	14%	-
ROADING							
Roading	m^2	11,671,807	1,320,375	11%	243,050	18%	14,109
Storm water	KM	621	135	22%	26	19%	0.12
Bridges	No	224	244	100%	11	5%	-
Retaining Walls	No	490	141	29%	-	0%	-

All data for the SCIRT Work Activity Section was sent from SCIRT – Received July 2013

6.1.2 Number of Ongoing SCIRT Projects

The following table is a summary of the programme pipeline as at June 30th 2013. It shows how many projects and the total value at each stage of the project lifecycle.

Project Lifecycle Stage	May Estimate	June Estimate	May Estimated Construction Cost	June Estimated Construction Cost
Investigation (Asset Assessment)	13	17	$233.9m	$115,7m
Concept Design	107	90	$702.6m	$343,5m
Detailed Design	84	72	$388.6m	$346,6m
Construction	176	164	$713.8m	$665,6m
Handover	272	282	205.5m	$164,2m
Grand Total	**652**	**625**	**$1,972.5m**	**$1,635.6m**

Data sent from SCIRT – Received July 2013

In the table above, the previous monthly report totals have also been included to show the change in activity.

6.1.3 Ongoing Projects by Ward

6.1.3.1 Introduction

The progress report this month includes a summary of all SCIRT projects that are currently either in detailed design or construction separated on a Ward basis. A separate table has been included specifically for projects either in detailed design or construction within the central city (within the four avenues). This has been created to assist in the coordination with the Central City Recovery Plan and vertical infrastructure rebuild going forward.

For projects in construction – estimated construction cost (Target Outturn Cost) has been included together with actual Life to Date Costs as at the end of June 2013.

6.1.3.2 Burwood / Pegasus

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10620	Pages Rd Bridge	Repair to Pages Rd Bridge, including road network connecting to roundabout on North end of bridge.
10796	NZTA Anzac Bridge Repairs	Ground improvements, removal of landward bridge spans, demolish and rebuild abutments, repair piers, approaches and underpasses
11020	Keyes Road Catchment - New Brighton and Frosts Road - Roading Stormwater and Water Supply (WS,SW,RD)	Repair of Earthwork damage to Stormwater, Roading and Water Supply for the Areas including Frosts Road, Travis Drive, Bower Avenue, Palmers Road and Baker Street. Stormwater issues may be affected by the adjacent New Brighton Road Project.
11032	Parklands East (RD, SW, WS)	Repairs to roading, stormwater and water supply assets.
11033	Parklands West (RD, SW, WS)	Repairs to roading, stormwater and water supply assets
11034	Parklands South (RD, WS, SW)	Repairs to roading, stormwater and water supply assets
11035	North New Brighton and North Shore (RD, WS,SW)	Repairs to roading, stormwater and water supply assets
11041	Burwood East Wastewater (WW)	Replacement of the Wastewater System in the Burwood East Area
11042	Burwood West Wastewater & Trunk Sewers (WW)	Replacement of Wastewater system within the Burwood West Area
11070	New Brighton - Bridge St New Stormwater PS - (SW)	New stormwater pump station to serve the new stormwater basin in the PS37 Estuary North catchment. Linked to project 10840
11071	NE4 - Aranui North (RD, SW, WS)	Repairs to roading, stormwater and water supply assets.
11072	NE4 - Aranui South (RD, SW, WS)	Repairs to roading, stormwater and water supply assets.
11074	NE4 - Aranui Central West (RD, SW, WS)	Repairs to roading, stormwater and water supply assets.

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DETAILED DESIGN		
Reference	**Project**	**Project Description**
11075	NE4 - Aranui Central East (RD, SW, WS)	Repairs to roading, stormwater and water supply assets.
11078	NZTA - SH74 Bexley Road (RD, SW, WS)	Repairs to roading, stormwater and water supply assets.
11082	PS136 - Overflow replacement (WW)	Upgrade of damaged catchment overflow into Avon river. This project is integrated with the replacements of PS63 (project 10415) and PS36 (project 10694)
11108	Clifton Hill / Moncks Bay Repair (WW,WS,SW,RD)	Full one pass repair of all assets WW,SW,WS and RD. Concept reports completed under 10924 and 10925
11109	NE-1, NE-2 - Southshore south of Beatty St (RD,SW,WS)	One pass rebuild of all assets (RD,SW,WS). Linked to project 10869 for concept report
11110	NE-3 - New Brighton repairs (RD,SW,WS)	Repair of all assets RD, SW and WS. Concept design completed under project 10869.
11111	NE-1, NE-2 - Southshore, proposed 3 new Pump Stations (SW)	Proposed design and construction of 3 new SW Pump Stations. Concept report completed under project 10869.
11122	Burwood North (WS,SW,RD)	Repair and replacement of WS, SW and RD assets with this boundary. Concept Report completed under PRJ 10866. Work to be completed in conjunction with PRJ 11118.
11123	Burwood South (WS,SW,RD)	Repair and replacement of WS, SW and RD assets with this boundary. Concept Report completed under PRJ 10866.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10314	Keyes Road Catchment (WW, WS)	Repair and/or reinstatement of wastewater system.	26/03/2012	19/07/2013	$10,515,000	$10,014,349
10318	PS37 North Catchment (WW)	Wastewater repairs and renewal for northern half of PS37 catchment. Includes one new pump station and approximately 100 pressure sewer pumps.	30/04/2012	19/07/2013	$7,553,000	$7,193,330
10415	PS 128 (formerly PS 63) (PS)	New replacement PS63 at Beach Road. This project is linked to 10926 for the approximately 4Km long 700mm pressure main.	01/10/2012	03/02/2014	$8,240,000	$3,759,455
10416	PS37 (PS)	Repairs to existing PS37, including new pump intakes and repairs to yards.	12/08/2013	29/10/2013	$926,000	$724,756
10429	Estuary Rd Carriageway, PS37 to Bridge Street Catchment (WS,SW,RD)	Repairs to roads, stormwater and water in Estuary Road between Bridge Street and Beatty Street.	01/10/2012	16/08/2013	$2,492,000	$2,373,171
10430	PS28 - Catchment	PS 28 catchment services residential and industrial land loosely bounded by Pages Rd, Cuffs Rd, Wainoni Rd and Shortland St in the suburb of Wainoni. Other pockets of land are also serviced including 650 m of Wainoni Rd north of Shortland St and 240 m of Breezes Rd, an area west of Wainoni Rd including a portion of Avonside Dr, Newport St, Tenby Pl and Emlyn Pl, 350 m of Wainoni Rd south of Cuffs Rd and an area south of Pages Rd including Price Pl, 180 m of Kearneys Rd and Mecca Pl.	24/07/2012	19/03/2014	$15,141,000	$9,070,681
10553	Avondale Road Bridge Works (RD)	Retrofit repair to bridge involving new abutments, piles, wingwalls and associated road approaches and services.	24/09/2012	12/02/2014	$2,768,000	$2,163,505
10557	Gayhurst Road Roading (RD)	Design for road reconstruction to repair moderate to severe earthquake damage to carriageway, kerb and channel, and footpaths from Dallington Bridge northwards to Mundys Road. This project will	16/07/2012	05/11/2013	$2,905,000	$2,244,076

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
		become part of PS108 Catchment Phase 1 Roading, Storm Water and Water Supply. This work follows wastewater repairs/replacement.				
10585	PS25 - Catchment Vacuum Solution (WW)	Wastewater design for Pumping station 25 Catchment. This area includes sections of Banks Ave and Achillies Street that will be diverted into PS 108. This area also includes the Strathmore Gardens area. The majority of the catchment requires replacement of WW lines.	19/04/2013	19/03/2014	$6,723,000	$3,067,138
10694	PS36 Renewal (WW)	New PS36 to replace existing PS36. New station capacity approximately 900 L/S. This project covers all design for the project and construction for above ground activities. A related project covers 2M of below ground construction works required.	01/06/2012	27/01/2014	$12,885,000	$7,988,888
10705	Owles Tce (WW)	Project released from hold March 2012.	06/11/2012	22/11/2013	$7,386,000	$3,633,858
10724	Bridge St bridge and approaches	Replace damaged bridge abutments and approaches with new structure including roadworks and services reinstatement.	21/08/2012	29/07/2014	$10,021,000	$5,994,291
10765	PS 108 New Pump Station	Minor new pump station.	15/10/2012	22/08/2013	$1,222,000	$1,163,502
10786	PS 108 Catchment Stormwater, Water Supply and Roading Renewals (SW,WS,RD)	Design for repair (some full reconstruction) of minor to severe earthquake damage to carriageways, kerbs and channels, and footpaths with associated storm water and water supply works in 11 streets situated immediately to the east and west of Gayhurst Rd from McBratneys Rd northwards to Mundys Rd. This work will follow construction of wastewater repairs/replacement.	10/10/2012	03/10/2013	$1,926,000	$1,389,457
10801	PS108 Phase 2 Roading and Storm Water Renewals (RD,SW,WS)	Design for repair (some full reconstruction) of minor to severe earthquake damage to carriageways, kerbs and channels, and footpaths with associated storm water and water supply works in 10 streets	15/02/2013	07/10/2013	$2,746,000	$1,481,735

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
		situated immediately to the east and west of Gayhurst Rd - generally south of Strathfield Ave in the west and McBratneys Rd in the east. This work will follow construction of wastewater repairs/replacement.				
10802	PS54 Stage 1 - Northern Roading Renewals Incl Breezes Road	Road design for 8 roads in Avondale. New pipe systems are needed in multiple roads requiring asset managers understanding and buy-in. Includes stormwater full dynamic modelling with probable need to restore capacity by optioneering new components (new basin and/or pump upgrading).	10/09/2012	03/10/2013	$4,450,000	$4,238,288
10808	PS25 Catchment RD SW and WS Repairs (WS,SW,RD)	Design for repair (some surface reconstruction) of minor to moderate earthquake damage to carriageways, kerbs and channels, and footpaths with some associated storm water and water supply works in 12 streets situated in the New Brighton Rd/Marshland Rd area adjacent to The Palms Shopping Mall. This work will follow construction of wastewater repairs/replacement.	07/10/2013	29/07/2014	$881,000	$111,945
10809	PS28 Catchment RD SW and WS Repairs (WS,SW,RD)	Design for repair (some full reconstruction) of minor to severe earthquake damage to carriageways, kerbs and channels, and footpaths with some associated stormwater and water supply works in streets situated in the area from Woodham Rd/Pages Rd north to Wainoni Rd/Breezes Rd. This work will follow construction of wastewater repairs/replacement.	29/07/2013	12/08/2014	$5,830,000	$702,397
10819	Keyes Road Catchment (RD,SW)	Repair and reinstatement of roads and underground services (excluding wastewater).	29/05/2013	24/04/2014	$2,558,000	$705,065

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10861	New Brighton, South New Brighton & Southshore NE1, NE2 & NE3 Area Rebuild (WW)	Overall Catchment scope to link multiple projects and release projects on hold for a full one pass rebuild of the above area. Includes WW elements. Projects for construction to the value of $15M are expected from this concept study.	01/05/2013	23/06/2014	$15,247,000	$1,396,257
10896	Minor Works - Demolition of Porrit Park and Snells Footbridges, PS26 and PS27 Pump Stations	Demolition and make safe work for Porrit Park Footbridge, Snells Footbridge, PS26 and PS27. Rebuild of the bridges to be undertaken in separate standard projects.	24/08/2012	30/08/2013	$261,000	$248,400
10898	Minor Works - Medway Footbridge Removal	Removal and make safe of the footbridge. Store off site until a decision is made regarding the structure	11/02/2013	17/10/2013	$117,000	$111,627
10921	North Parade & Banks Ave Wastewater Pressure System (WW)	Separation of catchment works included in 10812, 10585 and 10800 for a defined project area for the construction of a new pressure system.	02/04/2013	02/09/2013	$759,000	$597,217
10926	PM 63 (WW)	The 700mm pressure main 63 will run for 4km generally following the route of Anzac Drive from Parklands to Bexley. It will connect to pump station 63 which is being designed and constructed under the project number 10415.	07/01/2013	18/10/2013	$7,301,000	$6,148,888
10932	PM136 New Pressure Main for PS36 (WW)	Construction of an additional Pressure Main from Pump Station 36 to provide resilience in the system. The existing asset will remain as PM 36 and the new pressure main will be known as PM 136.	17/06/2013	20/12/2013	$4,829,000	$1,603,796
10946	PS25 Replacement VS5001 (WW, PS)	Replacement of the existing wet well pump station that is fed by the existing gravity sewer network with a vacuum pump station that will be fed by the	10/07/2013	16/10/2014	$4,278,000	$527,500

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
		new vacuum sewer network.				
10956	NZTA - Travis Road & Anzac Drive Repairs - Stage 1 (RD)	Repairs to the State Highway Stage 1	25/03/2013	25/08/2013	$1,263,000	$1,202,696
10965	Aranui Catchment NE4 Pressure Sewerage System - East Avondale (WW)	Construction of a pressure sewerage system including individual pump station units in private property, laterals, boundary kits and pressure mains. The pressure main from the catchment then runs along Anzac Drive and discharges to a new inlet manhole (by others) near the junction of Anzac Drive and Bexley Road.	24/06/2013	06/06/2014	$6,606,000	$323,085
10977	NE13 - Parklands East Wastewater Catchment Repairs (Project #1 Area) (WW)	Replacement of the Wastewater system in the Parklands East area. Project split, now linked to 11099.	02/04/2013	11/09/2014	$7,743,000	$1,487,197
11043	Burwood Pressure Main 54 (WW)	Replacement of Pressure Main 54 within the Burwood Area	02/09/2013	12/03/2014	$906,000	$36,200
11099	NE13 - Parklands East WW Catchment Repairs (Project#2) (WW)	WW rebuild within the Parklands East catchment. Project #2 Area linked to Project 10977	02/04/2013	04/12/2014	$9,006,000	$21,171

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6.1.3.3 Fendalton / Waimairi

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10968	Bridge Repair - Carlton Mill Footbridge - F110 (RD)	Bridge inspection and deign of repairs for damage sustained during earthquakes. Limited geotechnical investigation, analysis and reporting.
10970	Bridge Repair - Helmores Lane - R124 (RD)	Bridge inspection and design of repairs for damage sustained during earthquakes. Limited geotechnical investigation, depending on planned structural mitigation.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10425	Glandovey/Bryndwr Cluster	Design for repair to severe earthquake damage to wastewater and minor damage to carriageways, kerbs and channels, and footpaths (severity yet to be confirmed) storm water and water supply. This cluster incorporates the 9 streets immediately adjacent to and including Glandovey Road between the Wairarapa Stream and Strowan Road	10/12/2012	16/08/2013	$2,856,000	$2,663,685
10485	Merivale WW	Approximately 9km of WW gravity system, one new pump station.	14/05/2012	28/08/2013	$20,712,000	$19,725,259
10575	Papanui Rd - Knowles to May (WW)	The area has been broken into wastewater sub-catchments in order to determine the best catchment wide solution. 10575 therefore includes Browns Rd north of Mansfield Ave, McDougal Ave east of Murray Pl, Murray Pl, Innes Rd between Papanui Rd and Browns Rd, Heaton St east of Circuit St, Papanui Rd between Innes Rd and Mays Rd, approximately 230 m of the eastern end of Knowles St, Weston Rd and Chapter St, Approximately 280 m of the western end of	17/05/2012	04/04/2014	$4,998,000	$4,915,328

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CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
		Normans Rd and 150 m of the eastern end of Mays Rd. The seismic events caused some liquefaction and land settlement in parts of the sub- catchment.				
10595	Wairakei Road (WW)	Replacement of the deep 225 mm sewer main and the construction of new 150 mm sewer rider mains over the deep main. The wastewater works are from Aorangi Street to Idris Road.	02/08/2012	19/07/2013	$1,852,000	$1,763,740
10839	Merivale Catchment (RD,SW,WS)	Linked to #10485 for the RD SW and WS elements of the One Pass Projects	18/02/2013	23/08/2013	$883,000	$514,190
10852	Minor Works - Casebrook Block	Minor footpath, and pavement repairs	24/05/2012	19/07/2013	$226,000	$218,423
10884	Merivale Pumping Station (PS)	New Pumping station for the Merivale Catchment Project. Linked to Project #10485.	23/11/2012	28/08/2013	$895,000	$534,148

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6.1.3.4 Central City

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10466	R109 Fitz Twin Bridges	Ground improvements and major structural repair/bridge replacement of twin bridges
10469	R702 Moorhouse Ave Overbridge	Major structural repair works
10952	Central City South of the Avon - Central Core Wastewater (WW)	Repair of the wastewater network within the Central City new CBD area
10954	Central City South of the Avon - Eastern Area Wastewater (WW)	Repairs to the wastewater network east of the eastern frame
10966	Bridge Repair - Armagh Street - R122 (RD)	Bridge inspection and design of repairs for damage sustained during the earthquakes. Limited geotechnical investigation, analyses and reporting.
11023	Bridge Repair - Area 2 Central - Stanmore Rd (R108) and Aldwins Rd (R820) (BR)	Assessment and repair of 2 moderately damaged bridges
11087	Central City South of the Avon - North Core Wastewater (WW)	Repair of the wastewater network within the Central City Core area north of Hereford St. Linked with project 10952.
11088	Central City - PS2 and PM2 Upgrade (WW)	Integration of wastewater pump station upgrade design with Projects 10844, 11067 and 10986 to complete the Central City wastewater re-build (4-Ave work north and west of the Avon River) and co-ordinate timing of design and construction with Projects 10890 Bridge Repair Package 02 - Central Area (Durham Street Bridge Repairs) and 10952 Central City South of the Avon - Wastewater

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10401	Moorhouse Brick Barrel 01 (SW)	Repair of a failed stormwater Brick Barrel pipe on Moorehouse Ave under the Colombo St over bridge	25/03/2013	23/08/2013	$642,000	$611,733
10464	F106 Antigua Street Footbridge	Replacement of existing structure, or incorporate historical elements into major repair works	13/05/2013	04/02/2014	$650,000	$321,615
10465	F105 Bridge of Remembrance	Major structural repair works	04/07/2013	19/11/2014	$629,000	$208,996
10467	R114 Colombo St (North) Bridge (RD)	Major structural repair works Northern Colombo St, over the Avon, heritage bridge near intersection of Oxford Tce & Colombo St.	01/07/2013	31/03/2014	$2,581,000	$325,173
10482	Triumphal Arch	All works related to both temporary bracing to arch to support the structure and all permanent repair works. In CBD, Heritage structure.	01/05/2013	19/11/2014	$3,319,000	$874,388
10844	Central City Pump Station PS2 Catchment (WW)	Repair/replacement of wastewater system in the north west of the CBD. Excludes WW Brick barrel which is considered under Project 10845.	01/02/2013	23/04/2014	$7,280,000	$3,755,293
10845	Central City - Brick Barrel Assessment, Relining and Repairs	Full assessment, relining and repair works for the Brick Barrel Trunk network within the CBD Catchment. Includes all WW and SW Brick Barrels. A separate Project has been created for the Kilmore St Brick Barrel and concept / detailed design should be undertaken in conjunction with this work.	21/05/2012	31/07/2013	$18,687,000	$16,779,137
10934	Wairakei Diversion - Local Reticulation & Roading repairs (WW,SW,WS,RD)	Repair of any other damaged infrastructure along the route of the new Wairakei Diversion.	01/08/2013	10/10/2014	$4,188,000	$215,739
10986	Central City Kilmore Street Catchment Area (WW)	Repair/replacement of wastewater system in the north west of the CBD. Excludes WW Brick barrel which is considered under Project 10845. Project Split. Linked to Project 11098 (Project #2)	15/01/2013	29/09/2014	$12,492,000	$4,284,076
11067	PS0129 Chester Street West (PS)	New pump station linked with project 10986	01/06/2013	04/10/2013	$1,283,000	$244,714

6.1.3.5 Hagley / Ferrymead (*excludes central city)

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10347	Gayhurst Rd Bridge (BR)	NEW bridge involving new abutments, piles, wingwalls and associated road approaches and services.
10563	Retaining Wall Area 2 - Clifton Retaining Walls	Design and delivery of the repairs required to retaining walls.
10611	Monks Spur 1 Pump Station (PS)	Relocate PS to Barnett Park and rebuild short length of pressure main
10631	Clifton No.1 Pump Station and Clifton No 1 to Clifton No.2 Watermain (WS)	Repair of Clifton 1 Reservoir and renewal/relocation of the watermain and pump station. Existing route within areas of large land movement and rockfall inundation areas. Pump station is undamaged but at high risk if cliff face collapse therefore a resilience issue. PS location may need funding decision from CCC.
10795	PS57 McCormacks Bay Rd Pump Station Repairs (PS)	Repairs to building at existing pump station.
10826	Monks Spur No 2 Reservoir Repairs (WS)	Moncks Spur 2 Reservoir suffered damage to block work and concrete damage. CPG have recommended ring beams are added to the structure during the repair
10902	Bridge Repair Package 04 - Southern Area	Repair of 13 bridges within the southern area of the city.
10907	Site 226 Soleares Ave	Stabilisation of rock face and re instatement of the access road damaged in Feb 2011 earthquake
10942	Menlo Terrace - Waste Water Sewer Renewal (WW)	Renewal of the 100mm dia. WW pipe serving Menlo Terrace. Works need to coincide with the rebuild of the properties.
10997	Avonside Linwood Stage 3 (WW,WS,SW,RD)	One pass approach renewing wastewater, roading and stormwater assets within stage three of the Avonside Linwood Catchment. Standard project resulting from Catchment Studies 10875 and 10876.

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DETAILED DESIGN		
Reference	**Project**	**Project Description**
11057	Catchment Study - CE-3, CE-4 Philipstown & Linwood (RD,SW,WS)	Full catchment rebuild - RD,SW,WS elements
11079	PS15 North (WS,SW,RD)	Water, storm water, and roading repairs.
11080	PS15 South (WS,SW,RD)	Water, storm water and roading repairs and renewals
11081	NZTA Bromley and Woolston State Highways (RD)	Dyers Road (SH74), Palinurus Road (SH74A), and Rutherford Street (SH74A).
11107	Redcliffs/McCormacks Bay + PS031 (WW,SW,WS,RD)	One pass repair for all assets WW, WS,SW and RD. Concept design completed under 10925 (WW) and 10924 (RD,SW,WS)
11113	VanAsch and Catherine St Bridge Repairs (BR)	Bridge repairs / replacement
11121	Bromley & Woolston PS15 North Area 2(WW)	Repair and rebuild of wastewater reticulation and trunk main assets. Concept report has been completed under PRJ 10916.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
11027	Main Road Causeway Stage 2 - Seawall Renewal (RW)	Renewal of seawall along causeway	29/04/2013	04/11/2013	$1,203,000	$229,739
10303	Site 229 Mt Pleasant Rd Retaining Wall (RW)	60m replacement retaining wall and road reinstatement, in Mt Pleasant	14/08/2013	20/12/2013	$458,000	$124,410
10306	PM11 Randolph (WW)	3.6km, 1.2m dia WW pressure main	05/03/2012	31/07/2013	$19,568,000	$18,635,767

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10307	173 Maffeys Road Retaining Wall (RW)	Repair of retaining wall in Maffeys Rd, along with associated buried services	08/10/2012	19/11/2013	$1,906,000	$1,815,077
10317	Heberden Ave Permanent Solution (WW)	New gravity sewer diversion to replace broken sewer down Scarborough Cliffs.	07/10/2013	14/11/2013	$510,000	$485,397
10405	Stadium Package 01 (WS SW WS RD)	Repair of road and all buried services along a section of Ferry Rd and Moorehouse Ave, near the AMI stadium	15/07/2013	01/08/2014	$4,279,000	$559,993
10449	SE16- St Johns Wastewater Rebuild Area 1 (WW)	Linked to New Project 11097	02/09/2013	05/08/2015	$7,041,000	$462,364
10450	Woolston South 1 - Pressure Sewerage System Area	Provision of a permanent pressure sewer or enhanced gravity system to replace damaged WW reticulation. Project was first known as Riley Crescent but this caused confusion as it includes a wider area than just this street.	01/05/2013	07/02/2014	$2,189,000	$156,304
10459	Lower Richmond-Stanmore to Fitzgerald (WW)	Approximately 5km of WW, gravity system; requiring 2 new pump stations	20/03/2012	13/08/2013	$13,812,000	$13,154,191
10462	Rockface stabilisation above Mt Pleasant 1 Reservoir (RW)	Rockface stabilisation above reservoir, road widening including transport safety barrier	14/03/2013	09/12/2013	$956,000	$582,863
10472	Charleston	Approx 2.9km WW enhanced gravity system, 1 new pump station; 0.3km SW; 8600m2 carriageway reconstruction, and 1830m2 localised repairs	07/05/2012	29/08/2013	$4,576,000	$4,357,846
10483	Lower Richmond (Southern Section) WS,SW,RD	Full reconstruction of intersection (80m), and localised repairs on remaining streets; 86m of SW replacement	21/08/2012	30/10/2013	$316,000	$144,263

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CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10498	Woolston South 1	5km WW gravity system and 1 new pump station with associated rising main, and individual pressure pumps for industrial properties; roading repair works with design for 1 road; approximately 350m new WS, and currently unknown extent of SW NZTA SH74 split into project 11117.	11/02/2013	17/12/2014	$9,734,000	$3,257,436
10579	PS5 - Catchment (West of river)	Pump Station 5 catchment originally serviced an area either side of the Avon River at the northern end of Linwood Avenue and south eastern edge of lower Richmond. Pump Station 5 was badly affected in the series of earthquakes. A proposal to split the PS5 catchment either side of the river to enable removal of pump station from close proximity of the river has received informal agreement among CCC Asset and technical representatives. This project relates to the reinstatement of sewer services to the portion of the original PS5 catchment to the west of the Avon River.	15/10/2012	06/09/2013	$2,325,000	$1,849,783
10582	PS8 - Catchment	Design for repair to severe earthquake damage to wastewaster within Pump Station 8 catchment green zone. The green zone is located to the north-west of the Avon River and generally bounded by Flesher Ave to the east and south, Chrystal St to the west and Medway St to the north.	04/02/2013	21/10/2013	$2,974,000	$1,610,291
10584	PS27 Catchment Area (WW)	Assessment and repairs/relay of wastewater services in the catchment of the old pump station 27 on Avonside Drive.	15/01/2013	26/07/2013	$2,163,000	$2,060,442
10634	Main Road (Mt Pleasant - Beachville) Sumner Causeway (RD)	Repairs to main road causeway including replacement of estuary seawall and minor cross culverts and carriageway repairs.	29/04/2013	31/10/2013	$1,207,000	$453,477

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10798	NZTA Port Hills Overpass Bridges (RD)	Pier column refinement, subject to ground investigation results	06/07/2013	13/11/2014	$1,512,000	$121,840
10799	NZTA Horotane Overpass Bridges (RD)	Propping system between piers, subject to ground investigation results	22/11/2012	26/11/2013	$1,614,000	$898,954
10820	McCormacks Bay Reservoir Stages 3,4 and 5	Tank 1 and 2 and access reinstatement.	28/05/2012	02/08/2013	$1,619,000	$1,542,078
10832	PS15 - Alport Place Pump Station Replacement (PS)	Construct a new Pump Station, tie in works, odour control system and demolition of existing PS15.	05/08/2013	19/12/2014	$10,256,000	$1,649,035
10841	Charleston Catchment Area (RD,SW,WS)	Linked to Project 10472 WW for the RD SW and WS elements.	26/10/2012	17/10/2013	$1,447,000	$962,702
10843	Lower Richmond Catchment RD SW WS	Linked to #10459 for the RD SW and WS elements of the project	25/01/2013	25/09/2013	$1,495,000	$992,177
10850	Cannon Hill Cres Retaining Walls (RW)	Renewal of 2 collapsed retaining walls on Cannon Hill Road	15/04/2013	22/07/2013	$664,000	$622,984
10854	PS5 Catchment (WS,SW,RD)	Roading, Water Supply and Storm Water elements for a one pass rebuild of the PS5 WW Catchment area	09/09/2013	26/03/2014	$1,781,000	$738,234
10855	PS8 Catchment (WS,SW,RD)	Water Supply, Storm Water and Roading elements for the one pass rebuild of the PS8 WW Catchment	21/11/2012	21/03/2014	$2,326,000	$665,559
10860	PS18 Rebuild SE11 North (WW)	Full area rebuild of the northern area of the PS18 catchment - WW element. Expected projects in the region of $10M should result.	12/02/2013	11/11/2014	$12,758,000	$3,678,097
10862	Lower Richmond Pump Stations - Avalon and Haywood	Pump station construction in conjunction with the Richmond project.	01/11/2012	19/07/2013	$1,626,000	$1,548,893

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10863	Charleston Waste Water Pump Station	Pumps Station Construction	03/09/2012	31/07/2013	$561,000	$541,463
10868	PS 18 Rebuild SE11 North (WS,SW,RD)	Full area rebuild of the northern area of the PS18 catchment - RD,SW & WS elements. Linked to 10860. Construction projects in the region of $10M expected from this concept report.	01/10/2013	01/04/2015	$1,761,000	$1,134,871
10895	PM11 Randolph Phase 5 (WW)	All remaining design works for the design and delivery of the 3.6km, 1.2m waste water pressure main. This is a CCC business as usual project and is the fifth phase. Phases one to four are included under project number 10306.	25/02/2013	14/04/2014	$2,117,000	$710,953
10908	CCC - The Causeway, Main Road Sumner, Culvert Replacement (SW)	Renewal of the culvert structure, linked to the Causeway project #10634. CCC BAU Project.	29/04/2013	15/10/2013	$1,435,000	$524,004
10911	Fast Track - Te Awakura Terrace Stormwater Repairs (SW)	Investigation of this badly damaged asset for repair or potential relining. Due to the condition, this work needs to be fast tracked through the SCIRT process, requested by the CCC.	03/12/2012	04/10/2013	$193,000	$183,497
10927	Retaining Wall - 1 to 3 Maffeys Road (RW)	Repair of the retaining wall at 1-3 Maffeys Road. Linked to 10307	13/05/2013	16/09/2013	$401,000	$166,608
10931	Retaining Wall - Site 182 & 183 - Glenstrae Road (RW)	Repair of the retaining wall	12/06/2013	13/08/2013	$216,000	$205,571
10943	PS 124 Replacement Pump Station for PS5 (PS)	Pump Station 5 catchment originally serviced an area either side of the Avon River at the northern end of Linwood Avenue and south eastern edge of lower Richmond. Pump Station 5 was badly affected	11/07/2013	02/12/2013	$751,000	$197,373

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
		in the series of earthquakes. The wastewater portion of this area is covered by project 10579. This project is for the required replacement pump station works only.				
10980	NZTA - Dyers Road Repairs (Metro Pl to Bridge St) (RD)	Repairs to the State Highway between Metro Place and Bridge Street (through the treatment ponds area).	02/04/2013	31/10/2013	$941,000	$593,812
10995	Avonside Linwood Stage 1 (WW,SW,WS,RD)	One pass approach renewing wastewater, roading and stormwater assets within stage one of the Avonside Linwood Catchment. Standard project resulting from Catchment Studies 10875 and 10876.	10/09/2013	15/04/2015	$9,748,000	$467,126
11027	Main Road Causeway Stage 2 - Seawall Renewal (RW)	Renewal of seawall along causeway	29/04/2013	04/11/2013	$1,203,000	$229,739

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6.1.3.6 Lyttelton / Mt Herbert

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10423	Sumner Road Retaining Wall -101 (RW)	Retaining wall repair in Sumner. Project design undertaken by AECOM and project now on hold.
10704	Retaining Wall Area 5 - Dyers Pass Lower to Governors Bay Rd (RW, RD, WW, SW, WS)	Design and delivery of the repairs required to retaining walls, roading, wastewater, stormwater and water supply (one-pass).
10981	Retaining Wall Area 1 - Lyttelton 1A Brittan Terrace (RW)	Design and construction of multiple soil retaining walls from Lyttelton town centre west towards Diamond Harbour Blvd.
10982	Retaining Wall Area 1 - Lyttelton 1B Hawkhurst Road (RW)	Design of multiple soil retaining walls from along Hawkhurst Road between London Street and Selwyn Road.
10983	Retaining Wall Area 1 - Lyttelton 2A Cunningham Terrance (RW)	Design of multiple soil retaining walls along Cunning Terrace.
11005	Retaining Wall Area 1 - Simeon Quay (RW)	Stabilise face or provide new retaining wall at Simeon Quay, Lyttelton
11083	Fast Track - Godley Quay Shoulder repair (RD)	Repair road shoulder, footpath and fence on down slope. This has a high risk of failure due to the location on the transport route. Heavy vehicles use this route to access port and fuel storage areas.

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CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10399	RW Package 07 - Lyttlelton Stone	Design three replacement retaining walls on London Street, St Davids Street and Ticehurst Road, Lyttelton. The walls are up to 4m high and are of high heritage value. Two of these walls (London Street and St Davids Street) are located within the white zone.	16/08/2012	12/09/2013	$947,000	$902,315
10400	RW Package 08 - Lyttelton on-stone (RW)	Design five replacement retaining walls on London Street, Canterbury Street, Hawkhurst Road and Ticehurst Road. Sections of these walls are of high heritage value. The walls on London Street and Canterbury Street are located within the white zone.	11/06/2012	21/10/2013	$1,003,000	$955,710
10475	Site 079 Coleridge/Dublin St Ret. Walls	200m replacement retaining wall and road reinstatement in Lyttelton	30/09/2013	01/08/2014	$1,607,000	$129,263
10905	Sumner Rd Retaining Wall L - Stage 2 Wall and Stage 1 and 2 Roads (RW, RD)	Stage two of new 450m long modular block retaining wall.	07/01/2013	22/10/2013	$2,054,000	$1,467,648
10906	Sumner Rd Retaining Wall L - Stage 3 and 4 Walls and Roads (RW)	Stage three and four of new 450m long modular block retaining wall. Detailed Design estimated end date 30 May. ($2M)	22/10/2013	09/09/2014	$1,629,000	$45,871
10399	RW Package 07 - Lyttlelton Stone	Design three replacement retaining walls on London Street, St Davids Street and Ticehurst Road, Lyttelton. The walls are up to 4m high and are of high heritage value. Two of these walls (London Street and St Davids Street) are located within the white zone.	16/08/2012	12/09/2013	$947,000	$902,315

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6.1.3.7 Riccarton / Wigram

DETAILED DESIGN		
Reference	**Project**	**Project Description**
11106	WS Reservoir 1102 - Dunbars Rd (WS)	Repair of the WS reservoir and associated buildings. Reservoir roof has moved and cracked, therefore has a high risk of water contamination.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10409	Halswell WW Package 03	Repair wastewater along a section of Halswell Rd, O''Halloran Dr, & within private properties behind Muir Ave.	02/07/2012	26/08/2013	$2,736,000	$2,605,922
10768	CCC - Wilmers Road Water Pumping Station (WS, PS)	New water source and pumping station to cater for projected growth in the western area of Christchurch.	30/04/2012	26/07/2013	$5,027,000	$4,787,501
10831	CCC - PS60 (PS)	Upgrade of pump station 60 and pressure main 60 to ensure increased flows can be managed in the short term.	02/09/2013	11/10/2013	$95,000	$90,614
10920	CCC - PS105 Pump Station (WW, PS)	Construction of PS105, a CCC Capital Works Project. Linked to Project #10793 for critical path construction scheduling.	17/09/2012	14/02/2014	$5,821,000	$4,173,676

6.1.3.8 Shirley / Papanui

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10858	Minor Works - Pump Station Demolition and Repairs (WW)	Minor repair works to slightly damaged Pump Stations that require no major works during the rebuild programme. Demolition of 3 PS buildings to make safe in Red Zones. Project led by the delivery team with a SCIRT Design input and coordination. Close liaison with CCC Operations team (Graeme Black) required throughout the project.
10915	Catchment Study - Shirley NW2 (SW,WS,RD)	Full catchment rebuild - SW,WS & RD Elements
11046	Bridge Repairs - Area 3 North - Spencerville Brookland (BR)	Repair works on 3 bridges - R404 Spencerville Rd, R402 Earlham St, R103 Wainoni Rd
11131	Richmond (WS,SW,RD)	Road, land drainage and water supply network remediation in the Pump Station 7 catchment. Concept completed under PRJ 10811.
11132	Shirley south (WS,SW,RD)	Road, land drainage and water supply network remediation in the Pump Station 7 catchment. Concept report completed under PRJ 10811

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
11051	Shirley NW-2 Pressure and Vacuum Sewer (WW)	Design and construction of two pressure sewer sub catchments and one vaccum sub catchment. Concept design and Gravity elements included within project 10914.	02/09/2013	08/07/2014	$3,969,000	$53,860
10457	Purchas & Madras (Bealey - Edgeware)	WW, SW and roading repairs. Includes traffic calming on Purchas St to conform with IDS and City Plan requirements for Local Road widths.	08/11/2011	17/07/2013	$6,079,000	$5,789,278

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10534	Innes & Knowles - subcatchment	The local wastewater reticulation on Innes Rd and Knowles St between Philpotts Rd and Bretts Rd suffered earthquake induced damage during the recent seismic events. Some liquefaction and land settlement was recorded in the area. Investigations continue however much of the network is made up of Earthenware pipe laid during the 1920's and 1930's. This material has not performed well in other areas therefore it is anticipated some form of repair or replacement will be required for the majority of the network.	10/08/2012	20/12/2013	$10,870,000	$8,606,197
10535	Rutland Rd - subcatchment	Wastewater repair along a single street east of Papanui. This project area is lightly to be revised.	10/04/2012	30/08/2013	$1,854,000	$1,766,091
10814	PS7 Catchment Phase 3 Waste Water Renewal	Wastewater network remediation in the Pump Station 7 catchment which is situated in Shirley, centred upon Stapleton's Road and Shirley Road which bisect the catchment. (Area 3 of 4, north western quarter of catchment)	23/07/2012	15/08/2013	$6,792,000	$6,468,973
10816	PS7 Catchment Phase 4 Waste Water Renewals	Wastewater network remediation in the Pump Station 7 catchment which is situated in Shirley, centred upon Stapleton's Road and Shirley Road which bisect the catchment. (Area 4 of 4, central/western quarter of catchment)	11/03/2013	21/01/2014	$3,728,000	$1,569,843
10886	Innes & Knowles Pump Station 118 and 119 (PS)	New pump station for the waste water reticulation system in the region of Innes Rd and Knowles St. This projects covers the pump station only, with the waste water system being undertaken under the SCIRT project number 10534.	21/01/2013	26/08/2013	$1,249,000	$1,189,140
10899	Minor Works - Lower Styx Road & Turners Road	Pavement repairs	08/10/2012	17/07/2013	$164,000	$140,888

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10930	PS7 Phase 3 Pump Station Shirley Road (PS)	New wastewater Pump Station in the PS7 catchment which is situated in Shirley, centred upon Stapletons Road and Shirley Road which bisect the catchment (area 3 of 4, north western quarter of catchment).	31/07/2012	22/08/2013	$1,386,000	$1,319,690
10935	Colombo Street Wastewater Upgrade and Repair (WW)	The existing 375mm wastewater line along Colombo Street is damaged, and requires replacement. It is proposed that the 375mm wastewater line will be replaced with a 600mm main to also provide the ability to divert flow from the Northern Relief for maintenance, reconstruction and maintenance of service during interruption of service	22/04/2013	31/01/2014	$2,495,000	$449,614
10944	Edgeware Road (WS, SW, RD)	Road and Storm water repair following WW project 10536	23/10/2012	17/12/2013	$2,476,000	$1,012,568
10974	PS121 and Rising Main - Guild Street (PS7 Phase 4 Catchment PS)	New pump station (PS121) and rising main to service the newly formed PS121 catchment formerly part of PS7 catchment. Linked to project 10816.	21/01/2013	17/07/2013	$814,000	$775,082

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6.1.3.9 Spreydon / Heathcote

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10888	Hillmorton & Hoonhay S-7 (WW)	Full one pass rebuild of this catchment area - Waste Water Element
10949	Catchment Study - S6 Spreydon & Somerfield (RD,SW,WS)	Full one pass rebuild of the S6 catchment area - RD,SW,WS elements
10950	Catchment Study - CS1 Sydenham (WW)	Full one pass rebuild of the CS1 Catchment area - WW elements
10958	Catchment Study - S5 Beckenham/Waltham/Opawa (RD,SW,WS,RW)	Catchment study for the one pass rebuild of the S5 area (RD, SW, WS, RW Elements)
11114	Fifield Terrace Footbridge Repairs (BR)	Footbridge Repairs
11124	Spreydon North (WW)	Repair and renewal of wastewater. Concept completed under project 10948
11125	Spreydon (WW)	Repair and renewal of wastewater reticulation. Concept completed under project 10948.
11126	Somerfield (WW)	Repair and renewal of wastewater reticulation. Concept report completed under PRJ 10948
11127	Beckenham and Opawa (WW) + PS20 (PS)	Repair and renewal of wastewater assets and PS20. Concept report completed under PRJ10957
11128	PS20 Trunk Mains (WW)	Repair and renewal of wastewater trunk mains. Concept report completed under PRJ 10948 and 10957.
11129	Huntsbury Hill (WW)	Repair and renewal of wastewater assets. Concept report completed under PRJ 10957.
11130	Beckenham South (WW)	Repair and renewal of wastewater assets. Concept report completed under PRJ 10957
11133	Central South - East (WW,WS,SW,RD)	Repair and renewal of all assets within this boundary. Concept design completed under PRJ 11031 and 11030.
11134	Central South - West (WW,SW,WS,RD)	Repair and renewal of all existing assets within boundary. Concept report completed under PRJ 11030 and 11031.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10310	Milton St and Frankleigh St Wastewater Reconstruction (WW)	Repair of road and all buried services along Milton and Frankleigh Streets, including the section of Lyttelton either side of the intersection	07/02/2013	15/11/2013	$4,353,000	$3,510,666
10311	Antigua St / Burke St Arterial Roads (WW,WS,SW,RD)	Repair of road and all buried services along Antigua St (between Moorehouse & Brougham) and Burke St (between Selwyn & Montreal)	18/04/2012	19/08/2013	$4,763,000	$4,535,718
10398	Somerfield Package 01 (WW,SW,RD,WS)	Repair and reconstruction of all assets within a small catchment block.	19/11/2012	27/09/2013	$4,439,000	$2,670,326
10407	St Martins Package 02 (WW,WS,SW,RD)	Repair of road and all buried services within the St Martins loop, north of Centraurus Rd.	20/08/2012	02/12/2013	$10,187,000	$9,702,269
10520	Hoon Hay Package 01	Repair of road and all buried services along a section of Hoon Hay Rd (between Halswell & Sparks), including Penny ln, Weir Pl, McBeath Ave, Muirson Ave & Greenpark St.	16/07/2012	13/09/2013	$8,981,000	$8,553,625
10793	CCC - Pressure Main 105 BAU Project (WW)	Delivery of the pressure main element of this CCC BAU project.	16/07/2012	29/07/2013	$17,278,000	$16,455,099
10797	NZTA Heathcote/Opawa Bridge Repairs	Ground improvements, and underpinning and lifting (jacking) of the abutments	26/11/2012	08/10/2013	$2,564,000	$1,691,638

6.1.4 Projects Complete by Ward

The following section outlines the projects within each ward that have been completed since SCIRT was established on 1st September 2011. It includes both a summary of numbers of projects as well as a list of specific projects. It is anticipated that the completed projects for the last quarter will be reported on a monthly basis.

Ward	May Number of Projects	June Number of Projects	May Projects Life To Date Cost	June Projects Life To Date Cost
Burwood-Pegasus	101	103	$48,589,688	$58,390,910
Fendalton-Waimari	6	5	$5,517,102	$596,233
Central City	12	12	$8,614,669	$8,640,944
Hagley-Ferrymead	81	83	$33,391,289	$34,501,800
Lyttelton-Mt Herbert	7	9	$7,390,800	$9,275,020
Riccarton-Wigram	9	9	$5,603,840	$5,640,190
Shirley-Papanui	26	27	$15,780,873	$21,892,023
Spreydon-Heathcote	26	30	$22,446,073	$23,615,496
Total	**268**	**278**	**$147,334,333**	**$162,552,617**

Data sent from SCIRT – Received July 2013

In the table above, the previous monthly report totals have also been included to show the change in activity.

6.1.4.1 List of Projects Complete by Ward

Ward	Reference	Project	Project Life to Date Cost
Burwood-Pegasus	**10312**	Rowes/Tomrich Street Watermain	$264,995
	10315	Ferner Street - Emergency Works (WW)	$226,236
	10321	PM 51 Emergency Repair	$1,510
	10325	Cresswell Avenue - Watermains (WS)	$148,731
	10327	Pembroke Street	$146,897
	10328	De Ville Place (WS)	$107,810
	10331	PM 39 - Gayhurst Road	$1,606,084
	10332	PM54 - Niven-Avonside	$375,476
	10335	PS54 - Catchment	$6,837,141
	10336	Kingsford & Liggins Streets including withdrawn project 10885 (WS)	$204,574
	10338	Wainoni Road (WW EW - Ottawa to Avonside)	$908,330
	10339	Woodham Road (Temp Repairs)	$4,236,571
	10340	Ottawa Road Sewer Emergency Repair	$517,444
	10343	PM16 - Oakmont Green	$4,287
	10346	Fleete Street - Emergency Repair	$9,791
	10349	PS39 - Birchfield Avenue WW EW	$235,120
	10351	Ardrossan Street - Temp. Solution	$347,571
	10355	Landy Street	$19,322
	10359	PS54 - Niven Street (WW)	$62,282
	10363	PS 108 Catchment (old PS39 Catchment)	$5,280,497
	10364	Shortland Street	$345,061
	10366	McBratneys Road (WS)	$17,612
	10376	PM 28	$1,499,953
	10384	Pacific_Tedder Watermain Replacement	$529,142
	10421	Estuary Rd Carriageway, PS37 to Bridge Street Catchment (WW)	$2,625,415
	10440	PS 25C	$703,935
	10443	PM 38 Beach Rd	$571,784
	10484	Pump Station 25 connection repair	$8,977
	10532	Cnr Pages & Cuff - Emergency Repair	$2,705,903
	10547	New Brighton Road	$46,450
	10576	PM 106 - Woolley	$4,364
	10577	PS 106 - Woolley	$751,610
	10604	PM 45 (WW)	$324,352
	10605	Sylvia Street Watermain (WS)	$134,753
	10606	Chadlington Street Water Mains	$38,448

Ward	Reference	Project	Project Life to Date Cost
	10607	PM 37 (WW)	$1,908,942
	10608	PM 35	$1,087,993
	10614	Aldershot Street watermain (WS)	$255,415
	10615	Willryan Avenue Watermain (WS)	$241,522
	10616	Flemington and Ascot Ave Watermains (WS)	$529,188
	10617	PM 46	$57,783
	10621	Chartwell Street Water Mains	$385,049
	10638	630 Pages Road 450mm (WW)	$25,397
	10639	23 Leaver Tce WW	$62,983
	10641	Kirner St WW	$21,497
	10645	Inwoods Close 450mm WW	$119,924
	10647	Travis Rd Watermains and Submains (WS)	$217,197
	10649	Corhampton Street Watermains and Submains (WS)	$261,372
	10650	Water Main on Bridge Street Bridge (WS)	$162,761
	10651	Keyes Road Watermain (WS)	$196,965
	10664	Saltaire (Bower to Marriots Rd) (WS)	$69,544
	10665	Sinclair (Keyes to Rawson) - WS	$251,723
	10669	Palmers Road PS Stabilisation	$16,065
	10670	Major flooding Pratt St.	$295,425
	10671	Owles Tce Temp. (WW)	$114,950
	10676	Marine Parade Watermain (WS)	$153,534
	10681	Bower Avenue Watermain and Submains (WS)	$472,589
	10682	Briarmont Street watermain (WS)	$88,373
	10683	Cowes St Watermain and Submains (WS)	$107,955
	10684	Gresham Terrace Watermain and Submains (WS)	$161,638
	10685	Inverell Pl Watermain and Submains (WS)	$63,648
	10686	Orrick St Watermain and Submains (WS)	$84,547
	10688	Blake St Watermain (WS)	$344,751
	10689	Pegasus Ave Watermain	$169,225
	10690	Bassett St Watermain (WS)	$225,196
	10691	Falcon St Watermain (WS)	$180,935
	10692	Beach Rd Watermain	$138,848
	10695	Allstone Watermain (WS)	$90,800
	10696	Marriotts Road Watermain	$36,064
	10700	Hulverstone Drive Emergency Repair	$22,188
	10702	Rawhiti Water Well Stormwater	$147,524

Ward	Reference	Project	Project Life to Date Cost
		Outfall	
	10706	Bowhill Watermain (WS)	$150,344
	10708	Rookwood Ave Watermain (WS)	$174,096
	10711	Waitaki St Temp. Sewer (PS)	$3,360
	10714	Kate Sheppard Emergency Repair (Barkers Lane Temp Works) (WW)	$187,764
	10723	Merrington Cres Watermain (WS)	$184,198
	10728	Rowan Ave Emergency Work WW	$458,135
	10744	PS 36 Gravity Main (Pages Rd)	$226,756
	10749	Beach Rd Gravity Sewer (WW)	$67,291
	10752	Desal plant long term storage (WS)	$79,908
	10756	PM39 Temp Overland Pipe (PM)	$7,828
	10760	Pages Road	$69,558
	10769	Keyes Pumping Station (WS)	$3,487,415
	10789	Woodham Road Water Supply Pumping Line Renewal (WS)	$85,025
	10794	Pratt Street (Keyes Road) Water Main from Pumping Station	$223,093
	10800	PS 108 Phase 2 Waste Water	$4,567,129
	10803	PS54 Stage 1 Southern Roading Renewals (South of Breezes Road)	$1,179,014
	10806	Pages & Cuffs Emergency Repair Roading (RD)	$482,744
	10833	Fast Track - PS36 Sewerage Overflow Repairs Pages/Waitaki (WW)	$28,163
	10834	Minor Works - Stage 1 Schools	$7,871
	10838	Minor Works - Banks Avenue	$131,568
	10846	Water Main Replacement Projects Vivan St, Admirals Way, Pine Ave (WS)	$921,558
	10859	CCC - Private Laterals Keyes Road (WW)	$55,341
	10865	Catchment Study - Burwood Rebuild NE8 (WW) - 11040, 11041, 11042, 11043	$312,366
	10866	Catchment Study - Burwood Catchment Rebuild NE8 (WS,SW,RD) (Split 11118, 11122, 11123)	$692,456
	10869	Catchment Study - New Brighton, South New Brighton & Southshore NE1, NE2, & NE3 (WS,SW,RD) (Split to projects 11109, 11110, 11111)	$680,138
	10873	Catchment Study - PS36 Catchment, Area NE4 split into 10959-65 (WW)	$382,803

Ward	Reference	Project	Project Life to Date Cost
	10874	Catchment Study - PS36 Catchment, Area NE4 (RD,SW,WS)	$1,201,916
	10882	Emergency Work - Beatty Street	$218,694
	10903	Catchment Study - Parklands & North New Brighton split into 10975-78 NE12, NE13 (WW)	$417,981
	10904	Catchment Study - Parklands & North New Brighton (RD,WS,SW) spilt to 11032, 11033, 11034, 11035	$923,899
	10928	Emergency Works - Merrington Crescent (WW)	$117,623
	10973	Water Supply - Lamorna Road Renewal (WS)	$46,937
Fendalton-Waimari	**10354**	Papanui Road - Emergency Work	$54,652
	10480	R126 Monavale Footbridge	$37,775
	10590	Thornycroft Street - Pri4 (WS)	$127,548
	10857	Minor Works - Bridge Minor Works Project Package 02	$169,963
	10894	Fendalton Bridge Repair Package - Minor Repairs (RD)	$206,295
Central City	**10445**	Fitzgerald Ave Wall and Roading	$5,216,997
	10447	Fitzgerald Ave Temp Sewer Replacement (WW)	$22,117
	10506	Hagley Syphon	$647,951
	10726	Stormwater Pump Station 203	$44,715
	10764	PM 3 Temporary Repair (Complex Emergency) (WW)	$55,524
	10790	Liverpool Street Water Main (CBD)	$115,675
	10867	Fitzgerald Ave Retaining Wall Footpath	$729,369
	10880	Kilmore St Brick Barrel Repair - Emergency Work (WW)	$190,334
	10893	Minor Works- Bridge Minor Works Project Package 01 Bridging	$162,134
	10936	Fast Track - Central City - New Regent Street Wastewater Repair (WW,WS,SW,RD)	$941,011
	10941	Minor Works - 789 Colombo Street (WS)	$41,528
	10985	Central City - Kilmore Street Catchment Area SW Brick Barrel (SW)	$473,590
Hagley-Ferrymead	**10301**	CCC - Tanner Street Replacement Well (WS)	$15,792
	10319	St Martins Package 01 (WW) Wilsons Rd South, St Martins Rd and Gamblins Rd	$1,390,836

Ward	Reference	Project	Project Life to Date Cost
	10326	Retreat Road (WW)	$686,204
	10333	PM 57 - Replacement (Stage 2 March)	$2,075,207
	10337	Avonside - WW Trunk Sewer	$205,110
	10341	River Road - Siphon (WW)	$677,934
	10350	Avonside Drive/Retreat - Gravity Sewer Repair (WW)	$93,588
	10352	Avonside Drive/Morris Bowie - Gravity Sewer Temp. Solution (WW)	$86,006
	10353	294 Avonside Drive - Temp. Solution	$241,562
	10356	Woodham Rd (PS5 east of river)	$3,217,699
	10358	PS57 - McCormacks Bay Rd Sewer Overflow Renewal	$168,592
	10361	PS54 Catchment Temp. Solutions	$924,921
	10362	PS5 - Glade (WW)	$545
	10372	Dacre Street	$128,612
	10386	St Andrews Hill Rd Sewer (Major Hornbrook)	$70,591
	10391	Stevens St Watermain	$165,913
	10402	Moorhouse SW BB 02	$73,019
	10403	Barbour St Water (WS)	$147,111
	10406	226 Main Road SW	$4,627
	10411	Clifton Reservoir 3	$405,569
	10417	Upper Balmoral Reservoir	$481,323
	10418	Lyttelton Dyers Road Pump Station (WS, PS)	$7,029
	10422	PM 31 Renewal Works (WW)	$1,605,479
	10428	RW Mt Pleasant Rd Wall 156 (RW)	$225,911
	10431	PS15 Alport	$1,383,442
	10434	PS 12 Smith	$547,533
	10441	Ferry Road 873	$366,749
	10442	PS15 Gould Cres Overflow Structure	$214,274
	10448	PM 12	$710
	10451	Manning-Ferry	$17,158
	10452	WW No Service Grafton	$134,202
	10454	225 Linwood Ave	$74,062
	10458	31 Stanmore Road	$49,606
	10463	Hamner Street - waste water relay	$72,948
	10471	33 River Terrace	$38,939
	10473	Wickham St Watermain Replacement (WS)	$307,303
	10478	F805 McCormacks Bay 1 Footbridge	$10,689
	10479	F806 McCormacks Bay 2	$8,722

Ward	Reference	Project	Project Life to Date Cost
		Footbridge	
	10481	R223 Heathcote Barrage	$9,929
	10496	PS13 Tilford	$10,687
	10497	PS 10 Linwood WW	$14,699
	10499	Saxon Street Waste Water	$15,687
	10537	Patten Street	$638,519
	10539	Brittan Street (WW)	$578,779
	10541	PS 11 - Randolf	$883,279
	10548	Gloucester Street	$1,353,293
	10578	PS 107	$1,057,607
	10586	PM 107	$273,496
	10609	PM 47	$24,815
	10612	McCormacks Bay Reservoir No 2-2	$1,036,950
	10613	Mt Pleasant Reservoir 2/2	$107,113
	10618	Beachville Road Pressure + Gravity Main	$478,131
	10629	McCormacks Bay Rd WR mains and submains (WS)	$2,191,720
	10644	55 Clark St WW	$10,041
	10666	Head Street - Esplanade to Nayland (WS)	$79,566
	10677	Beachville Watermain (WS)	$250,873
	10679	Moncks Spur No. 3	$281,613
	10680	Clifton No. 4 Reservoir	$377,684
	10687	Wakefield Ave Watermain (WS)	$156,967
	10716	PM 34 Sumner - Replacement	$1,666,881
	10729	WW, Gravity Bridal Path and Cannon	$304,698
	10739	Heberden Ave Temporary Solution (WW)	$109,222
	10746	Ruru Ave Repair PM 11	$42,191
	10747	Bromley Waste Water Treatment	$25,345
	10753	WW No Service Glendevere (WW)	$2,081
	10763	Moncks Bay Walkway - Temp Repairs	$45,416
	10770	Linwood Ave / Humphrys Dr Retaining Wall Emergency Permanent Repairs (RW)	$520,887
	10772	Monks Bay Main Road Emergency Repair (WW)	$15,503
	10774	Swanns Road Bridge - Crossing the Avon River between Richmond and Avonside (RD)	$85,453
	10779	CCC - Linwood Avenue Water Main	$456,743
	10782	15 Dunoon Place Emergency Stabilisation / Sewer Repair	$179,641
	10792	Truro Street Emergency Waste Water Sewer Renewal (Van Asch	$221,899

Ward	Reference	Project	Project Life to Date Cost
		School)	
	10822	McCormacks Bay Reservoir Stage 2 Walls	$1,258,665
	10830	Minor Works - Bridge Minor Works Project Package 01 Roading	$82,736
	10835	Minor Works - Avonside Girls High School	$80,299
	10836	PS27 Catchment Area (RD)	$71,183
	10853	McCormacks Bay Reservoirs - Rock Face Protection Work	$1,192,381
	10864	Woodham Road (SW,RD,WS)	$515,922
	10875	Catchment Study - Avonside & Linwood Area CE-5,6,7,9,10,11,12 (WW)	$73,385
	10876	Catchment Study - Avonside & Linwood Area CE5,6,7,9,10,11,12 (RD, SW & WS)	$237,672
	10924	Catchment Study - Ferrymead to Sumner SE4 & SE6 (RD,WS,SW) (Split into 11107, 11108, 10979)	$218,066
	10925	Catchment Study - Ferrymead to Sumner SE4 & SE6 (WW) (Split to 11107, 11108, 10979)	$526,932
	11022	Emergency Repair - Southern Relief Sewer - Worcester Street (WW)	$411,634
Lyttelton-Mt Herbert	**10394**	RW Package 05 - Canterbury Stone Walls (RW)	$2,006,393
	10424	Sumner Rd Retaining Wall L (RW)	$2,396,409
	10427	035 Cunningham Tce Retaining Wall (RW)	$2,514,793
	10511	RW Package 06 - Selwyn and Ross	$275,354
	10636	Priority Roads - Governors Bay Road Rebuild (RD)	$475,842
	10672	Sutton Quay Retaining wall 441 (RW)	$41,391
	10818	NZTA Norwich & Gladstone Quay State Highway Repair (RD, WW, SW, WS)	$1,476,001
	10878	Minor Works - Cunningham Terrace & Sumner Rd Temp Access Works (RD)	$37,427
	10940	Retaining Walls - Delivery Plan Area 4	$51,412
Riccarton-Wigram	**10309**	Halswell Minor Roading Works - All Areas	$338,682
	10380	Halswell WW Package 02	$2,104,576
	10383	PS73 Kennedys Bush	$160,912
	10387	Townshend Crescent Wastewater	$48,809

Ward	Reference	Project	Project Life to Date Cost
	10389	Sparks Rd Watermain	$177,705
	10392	Halswell WW Package 1 (WW)	$2,093,825
	10408	Glovers Street water (WS)	$148,096
	10909	Minor Works - Port Hills Package 01	$393,588
	10912	Sparks Road Pavement Repairs	$173,997
Shirley-Papanui	**10308**	Riselaw Street (WS)	$92,150
	10313	PM 6 - Harrison St	$221,306
	10322	Ranfurly Street (WS)	$118,878
	10323	Chrystal Street (WS)	$83,953
	10329	Hope Street	$146,273
	10330	Orontes Street - WS	$90,091
	10334	PM 7 - Stapletons Road	$244,594
	10344	Edgeware Road - Emergency Works	$2,940,463
	10345	Nancy Ave / Weston Road	$16,297
	10348	Shirley Road - Wastewater (Emergency Repair) (WW)	$8,629
	10369	Orion Street	$41,907
	10435	Temporary Gravity Sewer Lower Styx Road	$1,092,835
	10437	PM 40 Marshlands	$585,684
	10439	Heyders 29-65 (WW)	$320,151
	10446	Brooklands Roading - Temporary Repairs	$364,289
	10453	PS78 Heyders (PS)	$50,363
	10460	449 Durham Street North	$313,618
	10536	Edgeware Rd - WW	$1,904,106
	10555	Madras Street / Forfar Wastewater (WW)	$607,608
	10581	Catchment Study - PS7 (10810, 10811, 10812, 10813, 10814, 10815, 10816, 10817)	$141,301
	10805	Madras Street Road, Storm Water & Water Supply Repairs	$387,708
	10810	PS7 Catchment Phase 1 Waste Water Renewal	$4,297,366
	10811	Catchment Study - Richmond & Shirley (RD,SW,WS)	$1,205,189
	10812	PS7 Catchment Phase 2 Waste Water Renewal	$6,011,749
	10837	Minor Works - Shirley Boys High School	$115,425
	10851	Minor Works - Marshland Road & Belfast Road	$376,431
Spreydon-Heathcote	**10320**	Murray Aynsley Reservoir 2 (WS)	$155,007

Ward	Reference	Project	Project Life to Date Cost
	10379	Fisher Ave & Eastern Tce Syphon (WW)	$1,588,681
	10381	Rydal St (WW)	$939,464
	10385	Bewdley Evesham and Dellow	$2,876,011
	10390	Centaurus Rd Watermain (WS)	$145,968
	10393	Smartlea WW Emergency Repair	$109,989
	10396	75 Wilsons Emergency Repair	$825
	10397	Glenelg Spur 01	$166,597
	10404	Hollis Ave Water (WS)	$178,856
	10410	Hollis Ave WW	$975,396
	10432	PS19 Beckford	$3,201
	10433	PS20 Locarno	$49,164
	10476	F207 Aynsley Tce Footbridge	$23,100
	10477	F212 Sloan Tce Footbridge	$15,899
	10545	PS19 - Syphon	$357
	10597	Huntsbury Reservoir (WS)	$4,684,686
	10717	Colombo St (South) Bridge - Concept only, no construction work undertaken (RD)	$80,730
	10745	CCC - Sydenham Stn Replace Wells (WS)	$236,486
	10755	PS19 Fifield - 171 Fifield - Sheetpiling protection of riverbank	$114,715
	10785	Holliss Ave / Glamis Place - All Services (WW,WS,SW,RD)	$340,684
	10787	Rydal Street Water Supply, Storm Water and Roading Renewals (SW,WS, RD)	$429,943
	10821	Huntsbury Reservoir Tank No 2 & demolition	$5,611,613
	10829	CCC - Victoria Reservoir Replacement (WS)	$1,549,818
	10913	Retaining Wall - Site 349 Major Aitken Road (RW,WW,SW,WS,RD)	$96,726
	10948	Catchment Study - S6 Spreydon & Somerfield (WW)	$1,438,552
	10957	Catchment Study - S5 Beckenham /Waltham/Opawa (WW)	$682,252
	10988	Retaining Wall Area 4 - Hackthorne 1+2 (RW)	$76,407
	11030	Catchment Study - Central South CS-2 and CS-3 (RD, SW, WS) - Spilt to 11133 and 11134	$331,786
	11031	Catchment Study - Central South CS-2 and CS-3 (WW) Split to projects 11133 and 11134	$709,717
	11116	NZTA SH76 and SH74 Roading Repairs (RD)	$2,867

Data sent from SCIRT – Received July 2013

6.2 NON-SCIRT Work Activity

6.2.1 Introduction

The following section of the report included a progress report against infrastructure and other associated rebuild projects that are not being delivered by SCIRT. It includes a report on progress on Greenspace projects, Christchurch Wastewater Treatment Plant and Organics Processing Plant, Burwood Landfill and Water Supply Wells.

6.2.2 Greenspace

Ward	Work Package Number	Project	Description	Number of projects in package	Phase	Estimated Construction Start	Estimated Construction Finish	Estimated Cost
Banks Peninsula Wards	WP0000551	PARKS Marine Structures Assessments	Marine Structures Assessments	10	COMPLETE	01/08/2011	30/11/2011	$50,000
Burwood Pegasus	WP0000257	PARKS CEAF 1.2 B/P CAPEX	Bexley, Avondale and Burwood Parks hard surfacing renewals	5	COMPLETE	01/09/2011	31/10/2011	$100,400
	WP0000258	PARKS CEAF 1.2 B/P OPEX	Hard surface repairs	10	COMPLETE	01/10/2011	29/02/2012	$141,500
	WP0000284	PARKS CEAF 2.6 TRAVIS CAPEX	Hard surface renewals	5	COMPLETE	01/12/2011	29/02/2012	$340,500
	WP0000285	PARKS CEAF 2.7 AVON PARK CAPEX	Hard surface renewals	2	COMPLETE	01/03/2012	30/06/2013	$63,850
City wide	WP0000177	PARKS Playground Softfall - CAPEX	Replacement of contaminated softfall to playgrounds	28	COMPLETE	01/08/2011	30/11/2011	$365,755
	WP0000205	PARKS Sports Fields Repair - Moderate	Repairs to sports turf	19	COMPLETE	01/05/2011	31/07/2011	$244,000
	WP0000206	PARKS Playground Softfall - OPEX	Repairs to playground undersurfacing	7	COMPLETE	01/08/2011	20/12/2011	$53,200
	WP0000207	PARKS Sports Fields Repair - Minor	Repairs to sports turf	23	COMPLETE	01/05/2011	31/07/2011	$122,550
	WP0000269	PARKS CEAF 2.2 S/P,F/W,R/W,L/M OPEX	Hard surface and minor structural repairs	9	COMPLETE	01/03/2012	31/05/2012	$86,500
	WP0000312	PARKS Hard Surface Nthn & Sthn - OPEX	Hard surface repairs	44	COMPLETE	01/03/2012	30/04/2013	$247,400
	WP0000313	PARKS Hard Surfaces Nthn & Sthn CAPEX	Hard surface renewals	14	COMPLETE	01/03/2012	30/04/2013	$224,000
	WP0000318	PARKS Hard Surfaces Eastern CAPEX	Hard surface renewals	17	COMPLETE	01/03/2012	30/04/2013	$451,781
	WP0000321	PARKS Hard Surface Eastern - OPEX	Hard surface repairs	69	COMPLETE	01/03/2012	30/04/2013	$452,410
	WP0000323	PARKS City Wide Turf Repairs - OPEX	Repairs to non sports turf surfaces	102	COMPLETE	01/11/2011	31/05/2012	$324,400
	WP0000571	PARKS 2012 Sports	Repairs to sports turf 2011/12	43	COMPLETE	01/09/2011	31/03/2012	$677,814

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Ward	Work Package Number	Project	Description	Number of projects in package	Phase	Estimated Construction Start	Estimated Construction Finish	Estimated Cost
		Fields Repairs						
	WP0000768	PARKS Mature Tree Replacements	Tree renewals at Hagley Park and Sth Brighton Domain	2	COMPLETE	01/03/2012	30/06/2013	$100,000
	WP0000782	Ponds	Repairs to small ponds and outflows in parks	2	COMPLETE			$11,000
	WP0000784	Cemeteries - Operational	Repairs and make safe work to headstones in Operational cemeteries	18	COMPLETE	01/12/2011	30/06/2013	$250,000
Hagley Ferrymead	WP0000252	PARKS Victoria Lake CAPEX	Relining Victoria lake	1	COMPLETE	01/07/2011	29/02/2012	$500,000
	WP0000253	PARKS CEAF 1.3 Hagley Pk/Bot.Gdns CAPEX	Hard surface and playground undersurfacing renewals	4	COMPLETE	01/09/2011	29/02/2012	$183,000
	WP0000254	PARKS CEAF 1.4 Hagley Pk North CAPEX	Irrigation and Turf renewals	2	COMPLETE	01/07/2011	31/07/2011	$30,000
	WP0000263	PARKS CEAF 1.6 H/F CAPEX	Hard surface renewals	5	COMPLETE	01/10/2011	29/02/2012	$230,500
	WP0000264	PARKS CEAF 1.6 H/F OPEX	Hard surface, track and minor structure repairs	18	COMPLETE	01/10/2011	29/02/2012	$107,000
	WP0000265	PARKS CEAF 1.8 BOT. GARDENS CAPEX	Playground undersurfacing repairs	1	COMPLETE	01/10/2011	29/02/2012	$50,000
	WP0000287	PARKS CEAF 2.9 VICTORIA SQUARE CAPEX	Hard surface, track and minor structure renewals	5	COMPLETE	01/12/2012	30/06/2013	$217,000
	WP0000288	PARKS CEAF 2.10 CENTRAL CITY PARKS CAPEX	Hard surface renewals	2	COMPLETE	XXXX	XXXX	$13,000
	WP0000767	PARKS Sumner/Scarborough Restoration	Hard surface renewals	8	COMPLETE	01/12/2011	30/04/2013	$167,650
Shirley Papanui	WP0000255	PARKS CEAF 1.5 Groynes CAPEX	Car Park, Driveway, Turf, Track and Jetty renewals	6	COMPLETE	01/08/2011	30/09/2011	$96,000
	WP0000268	PARKS CEAF 2.1 English Park CAPEX	Car Park renewal	1	COMPLETE	01/08/2011	30/10/2011	$247,500
	WP0000277	PARKS CEAF 2.3 S/P OPEX	Hard surface and track repairs	5	COMPLETE	01/03/2012	31/05/2012	$20,500

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Ward	Work Package Number	Project	Description	Number of projects in package	Phase	Estimated Construction Start	Estimated Construction Finish	Estimated Cost
	WP0000278	PARKS CEAF 2.3 S/P CAPEX	Hard surface renewals	3	COMPLETE	01/03/2012	31/05/2012	$100,000
	WP0000778	Roto Kohatu	Repairs to bankworks at Roto Kohatu Reserve	1	COMPLETE	01/02/2011	30/04/2011	$200,000
Spreydon Heathcote	WP0000279	PARKS CEAF 2.4 S/H OPEX	Hard surface and minor structural repairs	11	COMPLETE	01/11/2011	31/03/2012	$152,115
	N/A	Green Asset package	Cracks and slumping in turf	15	COMPLETE			$20,250
		ACC: Auckland City Council grant						
		CEAF: Canterbury Earthquake Appeal fund						
		NOTE: Canterbury Earthquake Appeal Fund projects are billed directly to Dept. Internal Affairs.						
		CCC labour costs to design, project manage and supervise these projects are charged to 721/120 codes depending on the asset type						
		Status Summary						
				303	**Investigation**	**$11,351,403**		
				72	**Build**	**$2,373,400**		
				517	**Complete**	**$6,641,575**		
				147	**On Hold**	**$4,631,700**		
						$24,998,078		

Data from Asset and Network Planning Unit, Christchurch City Council

6.2.3 Wastewater Treatment Plant and Organics Processing Plant

Project	Description	Phase	Estimated Construction Start	Estimated Construction End	Estimated Cost
Clarifiers	C4 - New structural bottom - CIPP repair to influent pipe - Modify Arms to suit new structure. C3 - New structural bottom - CIPP repairs to influent pipe. - Modify Arms to suit new structure C1 - New structural bottom - CIPP repair to influent pipe - Modify Arms to suit new Structure	Complete Complete Complete	Nov 11 24 Jan 12 July 12	3 Feb 12 30 June 12 28 Feb 13	$9,432,768
Civil & Structural	• Paving • C2 water • Crack repairs to structures. • Reclad Digester 2 • PST & Grit Tank Repairs • SCT Tank Repairs	Complete Complete Complete Complete Complete Construction	Oct 11 Oct 11 April 11 Sept 11 Aug 12 Jan 13	Sept 12 Feb 12 Nov 12 Dec 11 Feb 13 July 13	$4,914,760
CWTP Contaminated Sand Disposal Point	• Repair after hours access road & improve for increased traffic movements. • Repair and strengthen dump point into Lagoon 2.	Complete Complete	Oct 12 Oct 12	Jan 13 Jan 13	$1,500,000
Oxidation Ponds	• Transfer structures 1-4 • Transfer Structure 4-5. • Pond banks strengthen and reinstate to design levels. • Estuary outfall structure • Dyers Road transfer structure	Complete Complete Complete Complete Construction	Oct 11 Dec 11 Jan 12 July 12 Oct 12	Feb 12 Mar 12 Feb 13 Dec 12 May 13	$16,250,000
Galleries	• South Gallery – drainage and structural *Proposed repair strategy unsuccessful, redesign underway* • North Gallery – drainage & joints • Diagonal Gallery – drainage & joints • Pump Stn A – drainage & joints • Sludge Rm A – drainage & joints	Design Complete Complete Design Design	TBA June 12 Jan 13 May 13 May 13	TBA Jan 13 Mar 13 Aug 13 Aug 13	$1,353,550

Project	Description	Phase	Estimated Construction Start	Estimated Construction End	Estimated Cost
CWTP Trickling Filters Stage 1	• External Repairs to Trickling Filter 1 • External Repairs to Trickling Filter 2	Design/ Procurement Design/ Procurement	July 13 July 13	Dec 13 Dec 13	$6,850,000
Stage 2	• Investigate and repair any damage to Trickling Filter internal structure	Loss Adjusters	2020		
Mechanical & General Repairs	• Digesters 2 • Digesters 1 • Digester 4 • Digester 3 • Digesters 5 • Digester 6 • Buffer Tank • Primary Sedimentation Tanks • Bio- Solids Holding Tank	Complete Construction Investigation Investigation Investigation Investigation Complete Complete Loss Adjusters	Oct 11 Nov 12 May 13 Aug 13 Jan 14 July 14 Nov 11 June 11 TBA	April 13 July 13 Sept 13 Jan 13 July 14 Dec 14 Jan 12 July 12 TBA	$6,600,000
Organics Processing Plant	• Demolish & Reconstruct Tunnels • Repair & Strengthen Process Hall • Repair Hard Standing	Construction	Mar 12	Oct 13	$9,518,133
Facilities	• Laboratory • Control Room • Workshops • Offices/ Cafeteria/ Mtg Room	Design Design Investigation Design	TBA TBA TBA TBA	TBA TBA TBA TBA	$6,000,000
Outlet Structure	• Replace Broken Outlet Pipes • New Outlet Structure • Decommission Broken Pipes	Construction	Mar 13	Sept 13	$2,300,000
	TOTAL				**$64,719,211**

Data from Project Management Unit, Christchurch City Council

In the table above, the bolded text identifies a change in activity since the previous monthly report.

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6.2.4 Burwood Landfill

Project	Description	Material Received (tonnes)	Material Processed (tonnes)	Phase	Estimated Construction Start	Estimated Construction End	Estimated Cost
Burwood Landfill Liquefaction and Infrastructure Rebuild Waste Disposal	• Prepare areas for disposal • Operate and maintain disposal site • Restoration and landscaping • Resource consent application • Consultation documents to affected parties • Consultation Feedback documents to affected parties • Consents granted	**394,700**	**394,700**	Complete Operation Operation Completed Complete Complete Complete	Feb 11 Feb 11 Jan 12 Jan 12 Apr 12 Jun 12 Jul 12	Jan 12 Dec 17 Dec 17 Aug 12 Jul 12 Jul 12 Sep 12	Self Funded
Burwood Landfill Residual Demolition Waste Disposal	• Design of new cell for residual waste • Cell construction • Operate and maintain disposal site • Restoration and landscaping • Resource consent application • Consultation documents to affected parties • Consultation Feedback documents to affected parties • Consents granted	0	0	Complete Construction **Operating** Design Complete Complete Complete Complete	Oct 11 Mar 12 Mar 13 Jul 17 Oct 11 Apr 12 Jul 12 Jul 12	Jun 12 Mar 13 Dec 17 Dec 17 Aug 12 Jul 12 August 12 Sep 12	To be funded by Transwaste Canterbury
Burwood Resource Recovery Park Demolition Sorting and Processing Facility	• Construct areas for storage of material and associated roading • Design of sorting plant • Construction of sorting plant • Sorting operation • Rehabilitation and landscaping • Resource consent application • Consultation documents to affected parties • Consultation Feedback documents to affected parties • Consents granted	**395,000**	0	Complete Complete Commenced **Operating** Design Completed Completed Completed Completed	Feb 11 Mar 11 Jul 12 Mar 13 Jul 17 Oct 11 Apr 12 Jun 12 Jul 12	Jun 11 Jun 12 Mar 13 Dec 17 Dec 17 Aug 12 Jul 12 Jul 12 Sep 12	To be funded by Transwaste Canterbury
	TOTAL	**789,700**	**394,700**				

Data from City Water and Waste Unit, Christchurch City Council

6.2.5 Wells

The damage to wells has been reported separately from the remainder of the non-SCIRT infrastructure rebuild because much of the wells repair work is reactionary due to the ongoing aftershocks.

Forward programming is limited by the reactionary work and the operational requirements of the water supply network, meaning that each package of work is programmed "on the fly" on a prioritised basis before it is issued.

The programme of work must be kept flexible in order to keep as many damaged wells operational as possible while at the same time moving forward with the repair and replacement programme. Only a limited number of wells can be taken out of service at one time to avoid affecting the demand on water supply network, and to minimise water restrictions.

	May At Ground Level	June At Ground Level	May Below Ground Level	June Below Ground Level	May Totals	June Totals
Total number of active wells					154	137
Wells yet to be repaired+*	28	29	20	22	48	51
Cost Estimate all repairs+	$4,692,000	$4,692,000	$19,476,000	$19,477,000	$24,168,000	$24,169,000
Wells repaired to date+*	78	78	118	118	191	191
Cost to date+	$3,594,268	$3,655,297	$8,670,411	8,976,967	$11,903,321	$12,632,264

Data from Capital Delivery Team, Christchurch City Council

\+ includes replacement wells

* some wells are damaged both at and below ground level

Christchurch City Council
City Environment Group

Memorandum

Date: **19 July 2013**

From: **Will Doughty, Infrastructure Rebuild Leader**
Ross Herrett, Operations – Technical Support and Liaison Manager

To: **Environment and Infrastructure Committee**

Re: **Cycleways – how is/will the cycleway programme be integrated with the SCIRT repair programme and are there potential cost savings?**

The proposed priority cycleway projects location map has been over laid onto SCIRT's Rebuild Construction map and there were many locations where there is an opportunity for work to be included together.

The issue is that there are several SCIRT repair projects along a proposed cycle route and these projects are programmed separately, with different timings. They are highly dependent on the level of EQ damage and repair to that section of road.

Generally, repairs to the road are small scale, involving surface reinstatement following wastewater, water supply or stormwater pipe repairs, with limited kerbing reinstatement opportunities.

CCC staff planning the cycleways will continue to meet with SCIRT designers to coordinate the programmes as they continue to be developed, to assess where there are opportunities to coordinate and gain efficiencies.

Where there are kerb realignments to accommodate the proposed cycleway, they should be constructed concurrently with the SCIRT repairs. It may be necessary for CCC to complete the new cycleway markings and surface infrastructure for the proposed cycle route later, when the SCIRT repairs are fully complete along the whole cycleway route.

The following proposed cycleways have little or minimal repair areas affected by SCIRT:

- Hornby to City Rail corridor route.
- Northern Rail Corridor route.
- Airport to City route.
- Heathcote Rail corridor route.
- Little River route.

CCC staff will review the new cycleway projects in conjunction with the SCIRT programme and will look to implement the projects that have the least interference from SCIRT works. We aim to progress them early in the cycleways delivery programme.

Where CCC projects have been incorporated within SCIRT work in the past there have been cost savings, such as the Main Rd 3-laning and Causeway project, where the causeway width was widened to accommodate the Coastal Pathway. Each project will be assessed on its merits for inclusion within the SCIRT Rebuild programme.

Christchurch City Council
City Environment Group

Memorandum

Date: **19 July 2013**

From: **Adam Taylor, Senior Transport Planner**
Richard Holland, Team Leader Network Planning Transport

To: **Environment and Infrastructure Committee**

Re: **Intersection Improvements – Programme in the Three Year Plan plus the rationale used for prioritisation**

Introduction

Prioritisation of all capital projects is undertaken using the Capital Programme Management System (CPMS). This weighs up all projects city-wide in terms of their priority.

All potential projects are entered into CPMS and assigned a rating (either Significant, Moderate, Small, Indirect or None) based on the Community Outcomes, as set out in the 2013-2022 Community Outcomes for Christchurch, a number of which relate to transport projects.

The attached table indicates the projects brought forward under the 3 Year Plan and provides a brief indication of the key issues which influenced their scoring in CPMS.

Of critical importance for many projects was the way in which they contributed to the aims and objectives of the Built Environment Recovery Plan (BERP), now the Draft Land Use Recovery Plan (LURP), ensuring support of the residential land-use changes associated with greenfield development in the North and South-West of the city.

Other projects are proposed to support, and in some cases to manage, the impacts of NZTA's Roads of National Significance programmes.

Councillors were given a full list of all the projects in CPMS as part of the decision-making process for the Long Term Plan. Community Boards contributed at an early stage by indicating which project that they would like to see incorporated into the LTP. Given the earthquake recovery and the infrastructure renewals programme, the emphasis has been on the three waters, with transport taking a lower priority once the deep infrastructure renewals in the streets have been completed.

Intersection Prioritisation – TYP 2013-2016

Roading Projects	Timing	Reason
Northern Arterial Extension	2014-2016 (investigation only)	New primary road link to connect the NZTA Northern Arterial to Cranford Street
Cranford Street Upgrade	2014-2016 (investigation only)	Upgrading the route to 4 lanes to accommodate increased traffic from the Northern Arterial
Northern Arterial Links	2014-2016 (investigation only)	Possible secondary link needed to mitigate transport effects on Cranford Street of Northern Arterial.
Marshland / Prestons	2014-2015	Proposed signalisation of intersection, crucial to development progressing at Prestons PC30, and safety concerns with the current layout.
Lower Styx / Marshland	2014-2015	Crucial to development progressing at Prestons PC30
Mairehau / Marshland	2014-2015	Signalisation of intersection, crucial to development progressing at Prestons PC30 and also impacted upon by proposals to redevelop Burwood Hospital
Burwood / Mairehau	2014-2015	Signalisation of intersection, crucial to development progressing at Prestons PC30 and also affected by proposals to redevelop Burwood Hospital
Greers / Northcote / Sawyers Arms	2014-2016	Intersection upgrade to ensure that both existing capacity concerns and future traffic growth (due in part to NZTA Western Corridor work and also to increased traffic volumes to/from the west of the city) can be managed. Also linked to the Northcote Road 4 laning (see below)
Gardiners / Sawyers Arms	2014	Safety issues require this intersection to be signalised, as the 2nd stage of a two stage upgrade (first stage already constructed). Intersection performance is also impacted upon by NZTA Western Corridor work and new development to the North of the intersection.
Northcote Road 4 Laning	2014-2016	Identified for improvement to ensure capacity can be optimised, due in part to NZTA Western Corridor work, and also to the increased traffic using the QE2/Northcote/Greers/Grahams corridor. Will be undertaken in conjunction with Greers / Northcote / Sawyers Arms intersection improvement .

Sawyers Arms Corridor Improvements	2014-2015	To improve pedestrian and cycle linkages in the context of increased traffic levels along the route, caused by traffic growth, development and NZTA's Western Corridor work.
Wigram Road Extension	2014-2016	Associated with development progressing at Longhurst PC60
Awatea Route Upgrade	2014-2015	Associated with development progressing at Wigram Skies **PC** and Awatea PC
Wigram Magdala Link	2015-2016	New bridge, essential to ensure SW land use development can access the city and surrounding network.
Annex / Birmingham / Wrights Route Upgrade	2014-2016	Essential to ensuring the downstream transport network provides a good level of service when the Wigram-Magdala Link is built (see above). This project also has linkages with the western orbital Major Cycleway.
Wairakei / Wooldridge	2015	Roundabout to be upgraded to signals to manage existing capacity issues in association with development progressing at Tates PC73
Glandovey / Idris	2014	Identified for improvement to ensure capacity can be optimised and delays can be reduced at one of the key capacity constraints in the Fendalton area.
Brougham / Burlington	2014	Identified for improvement to ensure cyclists can utilise the intersection safely.
Aldwins / Linwood	2014 (investigation only)	Safety issues identified at this site. Investigations will allow costs to be identified to apply for funding in the next Long Term Plan.

5. PROHIBITED TIMES ON ROADS – POLICY EFFICACY REVIEW

General Manager responsible:	General Manager City Environment Group, DDI 941-8608
Officer responsible:	Unit Manager Transport and Greenspace
Author:	Ryan Rolston, CTOC - Network Engineer and Ruth Littlewood, Senior Policy Analyst

PURPOSE OF REPORT

1. This report reviews the Prohibited Times on Roads Policy. The Council, at its meeting of 12 May 2011 resolved that the Burwood / Pegasus Community Board and the Council "receive a report from staff on the efficacy of the Prohibited Times on Roads Policy adopted by the Council in 2010". This report considers the value and purpose of the 2010 Policy which provides guidance as to which roads should be included in a Register of 'Prohibited Times on Roads'. The 2010 Prohibited Times on Roads Policy is **Attachment 1** to this report.

BACKGROUND

2. In April 2010 the Council adopted the Prohibited Times on Roads Policy. The purpose of the Policy is to provide a consistent and clear approach to the implementation of Clause 15 Prohibited Times on Roads of the Traffic and Parking Bylaw 2008 and a framework for assessing and processing requests for roads to be added to a Prohibited Times on Roads Register (the Register).

3. Following adoption of the Policy, the Community Boards received staff reports and reviewed the list of roads on the Register that were within their respective Board areas. The primary purpose of the review was to ensure that a consistent city wide approach was taken for the two main types of roads on the Register; those roads within industrial areas and the rural roads. As a result of the reviews, the Council by resolution confirmed a number of changes to the Register. In addition, the Burwood / Pegasus Community Board in one of its recommendations to the Council, sought a report on the Prohibited Times on Roads Policy. In May 2011, the Council, resolved that the Board and the Council "receive a report from staff on the efficacy of the Prohibited Times on Roads policy".

4. This report reviews the general efficacy of the Prohibited Times on Roads Policy; it does not address the application of the Policy to specific roads in the Register or review Clause 15 of the bylaw under which the Policy 'sits'. It is noted that Clause 15 will be reviewed as part of an overall review of the Traffic and Parking Bylaw scheduled for 2016/17.

EXECUTIVE SUMMARY

5. The purpose of this report is to review the efficacy of the Prohibited Times on Roads Policy. In reviewing the Policy, staff have had regard to its purpose as a framework Policy to help implement Clause 15 of the Traffic and Parking Bylaw 2008. In particular staff have assessed the appropriateness of the Policy's criteria for including a road on the Register. The Policy lists the matters to be considered including:

   (a) there is a known problem (complaints received) relating to congregation, car noise, speeding or other dangerous or nuisance behaviour;

   (b) the problem has persisted for a considerable period;

   (c) other forms of enforcement action has been carried out but still the problem persists;

   (d) the street must be classified as a Local Road;

   (e) the Implications of the New Zealand Bill of Rights Act 1990 have been considered;

   (f) the Police and property owners must support the street being included on the Register.

5 Cont'd

6. When a road is listed on the Register, light vehicles are prohibited from being on the road overnight, generally from 10pm to 5am. Exceptions apply to property owners and other legitimate users. The restrictions are enforced by the Police, with breaches of the prohibition being subject to a fine of $750. It is also noted that under the bylaw "Every person who breaches clause 15 commits an offence and is liable on summary conviction to a fine not exceeding $20,000".

7. Discussions with the Police have indicated that there are ongoing problems with boy racers despite a downward trend over the last two years, as indicated by the number of offences shown on **Figure 1** below. The earthquakes do not appear to have had a significant bearing on the number of offences. There has been a consistent spike in offending each February over the last three years, which coincides with the Rotary and Fast Fours car enthusiast show.

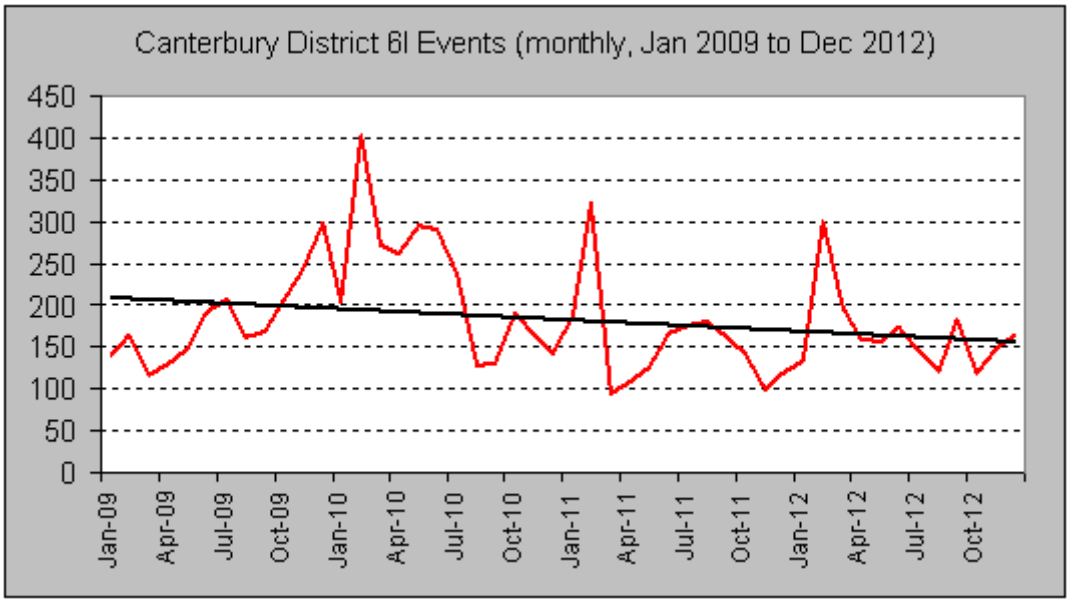


Figure 1: Reported Monthly Boy Racer Offences 2009-2012

8. The Council's customer enquiry system has been used to identify boy racer related complaints from 2009 to 2013. It was found that there are very few boy racer related complaints to the Council, less than one percent of those reported to the Police.

9. There are presently 49 roads on the Register of Prohibited Times of Roads. Inspections of 29 of these were carried out to identify evidence of boy racer activity. It was found that 18 of the 29 inspected had tyre marks indicating relatively recent burnouts, which equates to some 75 percent. This shows that there are ongoing problems with boy racers on roads contained on the Register.

10. Inspector Al Stewart, Road Policing Manager, was contacted to discuss the value of the Policy and the Register of Prohibited Times on Roads. From an enforcement perspective, the Police greatly support the bylaw and the Policy criteria for including roads on the Register. Frequently, when the Police receive complaints of boy racer activity, the offending has stopped by the time the Police can respond, even if in many instances an obvious culprit is still present. However if the location of the offending is a road on the Register, the Police are still able to fine offenders for a breach of the bylaw and this greatly assists the Police in holding offenders to account for their actions.

11. Inspector Stewart indicated that problems with boy racers are persistent, but that it is very difficult to predict the time and location of their activity. This means it is both difficult and resource intensive to monitor problem streets actively to observe boy racer offences. The Prohibited Times on Road Register enables the Police to reactively police problem streets effectively and efficiently.

5 Cont'd

12. The majority of roads on the Prohibited Times on Roads Register are classified as Local Roads. There are several exceptions (Dickies Road, Kainga Road, Lower Styx Road, McLeans Island Road, and Spencerville Road) which were registered prior to the adoption of the Policy that limits the consideration of Prohibited Times on Roads to Local Roads only. These isolated rural roads have no through traffic function and it is considered that they continue to be valid exceptions to the present Policy.

13. At the time that the Policy was adopted, the Council resolved "t*hat the existing "Prohibited Times on Roads" be reassessed into the two categories"* (10pm-5am Thurs-Mon in residential areas and 10pm-5am seven days a week in industrial areas) *"and a report be presented to the Council to align the days and times of the prohibitions on the existing roads*". The resolution of revised Prohibited Times on Roads times and days to align with the Policy has occurred in a piecemeal fashion as a result of changes to the times and days being recommended to the Council via the various Community Boards. It is recommended that all existing Prohibited Times on Roads are re-resolved as part of this report to fulfil the original Council resolution and for ease of future reference. It is noted that Chattertons Road and Dawsons Road are located on the Selwyn District Council boundary and special times are required for consistency with Selwyn's Prohibited Times on Roads Register and existing signage.

14. There is no evidence to suggest that significant boy racer activity is occurring outside the times at which the vehicle prohibitions apply, or that there is an issue around the identification of legitimate road users during these times. It is therefore considered that that times specified in the Policy are appropriate.

15. In summary, Council staff and the Police consider that the Prohibited Times on Roads Policy provides an appropriate framework and consistent and clear criteria for the inclusion of streets on the Register of Prohibited Times of Roads. While adding a street to the Register is unlikely to remove the attractiveness of that street for boy racer activity, the Register is an effective and efficient tool to assist Police in enforcing boy racer activity when it occurs.

FINANCIAL IMPLICATIONS

16. None - no changes are recommended to the Policy.

Do the Recommendations of this Report Align with 2009-19 LTCCP budgets?

17. As above.

LEGAL CONSIDERATIONS

18. Clause 15 (1) of the Christchurch City Council Traffic and Parking Bylaw 2008 provides that "The Council may by resolution specify any road or part of a road and the days and times during which motor vehicles weighing less than 3,500 kilograms are prohibited from being used on the road or part of that road or roads".

19. The installation of any restriction signs and/ or markings must comply with the Land Transport Rule: Traffic Control Devices 2004.

Have you considered the legal implications of the issue under consideration?

20. As above.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

21. Yes, aligns with Transport and Greenspace Unit's activities by contributing to the Council's Community Outcomes in relation to Safety.

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

22. As above.

5 Cont'd

ALIGNMENT WITH STRATEGIES

23. Aligns with the Christchurch Transport Strategic Plan 2012-2042.

Do the recommendations align with the Council's strategies?

24. As above.

CONSULTATION FULFILMENT

23. The New Zealand Police have been consulted on this matter.

STAFF RECOMMENDATION

That the Environment and Infrastructure Committee recommend that the Council approves that:

(a) This report on the efficacy of the Prohibited Times on Roads Policy be received.

(b) All existing resolutions prohibiting motor vehicles weighing less than 3,500 kilograms from being operated on a Christchurch City road, pursuant to the Christchurch City Council Traffic Parking Bylaw 2008, Clause 15, be revoked.

(c) Pursuant to the Christchurch City Council Traffic Parking Bylaw 2008, Clause 15, motor vehicles weighing less than 3,500 kilograms are prohibited from being operated at the following days and times:

(i) 10pm Thursday to 5am Friday;

(ii) 10pm Friday to 5am Saturday;

(iii) 10pm Saturday to 5am Sunday;

(iv) 10pm Sunday to 5am Monday;

(v) 10pm on any day which immediately precedes a statutory holiday to 5am on the statutory holiday; and

(vi) from 10pm on any statutory holiday to 5am the following day.

on the following roads:

Avonhead Road (between Ron Guthrey Road and Grays Road)

Barters Road (northwest of Waterloo Road)

Conservators Road

Corringa Road

Dickeys Road

Grays Road (between Avonhead Road and Ryans Road)

Guys Road (between School Road and Conservators Road)

Hasketts Road

Jessons Road

Kainga Road

5 Cont'd

Leggett Road

Lower Styx Road

Miners Road

McLeans Island Road (between Chattertons Road and Pound Road)

McTeigue Road

Roberts Road (between Brunner Street and Pound Road)

Ryans Road (from Russley Road to Guys Road)

Savills Road

School Road (Yaldhurst)

Spencerville Road

Wilmers Road

(d) Pursuant to the Christchurch City Council Traffic Parking Bylaw 2008, Clause 15, motor vehicles weighing less than 3,500 kilograms are prohibited from being operated from 10pm on any day to 5am the following day on the following roads:

Anchorage Way

Ballarat Way

Calgary Place

Canada Crescent

Chinook Place

Columbia Avenue

Connaught Drive

Craft Place

Dakota Crescent

Edmonton Road

Gerald Connolly Place

Green Lane

Hazeldean Road (between Grove Road and Montreal Street)

Hickory Place

Hammersmith Drive

Klondyke Drive

Kotzikas Place

5 Cont'd

Michelle Road

Mountview Place

Paragon Place

Prairie Place

Print Place

Produce Place

Sonter Road

Timothy Place

Wigram Close

Yukon Place

(e) Pursuant to the Christchurch City Council Traffic Parking Bylaw 2008, Clause 15, motor vehicles weighing less than 3,500 kilograms are prohibited from being operated from 9pm on any day to 5am the following day on the following roads:

Chattertons Road

Dawsons Road (between West Coast Road (SH73) and Jones Road)

Prohibited Times on Roads

Introduction
The purpose of this policy is to set out the framework for assessing and processing requests for roads to be added to the Prohibited Times on Roads Register as set out in Clause 15 of the CCC Traffic and Parking Bylaw 2008. This is to ensure a transparent and consistent approach in applying this policy.

Scope and Definitions
This policy only apply to roads under the care, control and management of the Christchurch City Council and does not apply to roads which are State Highways unless an agreement have been entered into to apply this policy on State Highways. Clause 15 aims to mitigate the adverse effect of street racing and its associated behaviours.

Where a "Prohibited Times on Roads" request is for well-defined industrial areas with no through function, the prohibition should be seven days a week, from 10pm to 5am the following morning.

Where a "Prohibited Times on Roads" request is for an area where people live or where the roads have a through function then the prohibition is to apply only during limited times, in particular: – Thursday to Friday 10pm-5am; Friday to Saturday 10pm-5am; Saturday to Sunday 10pm-5am; Sunday to Monday 10pm-5am; and from 10pm on the day preceding any public holiday until 5am on that statutory holiday; and from 10pm on the public holiday to 5am the following morning.

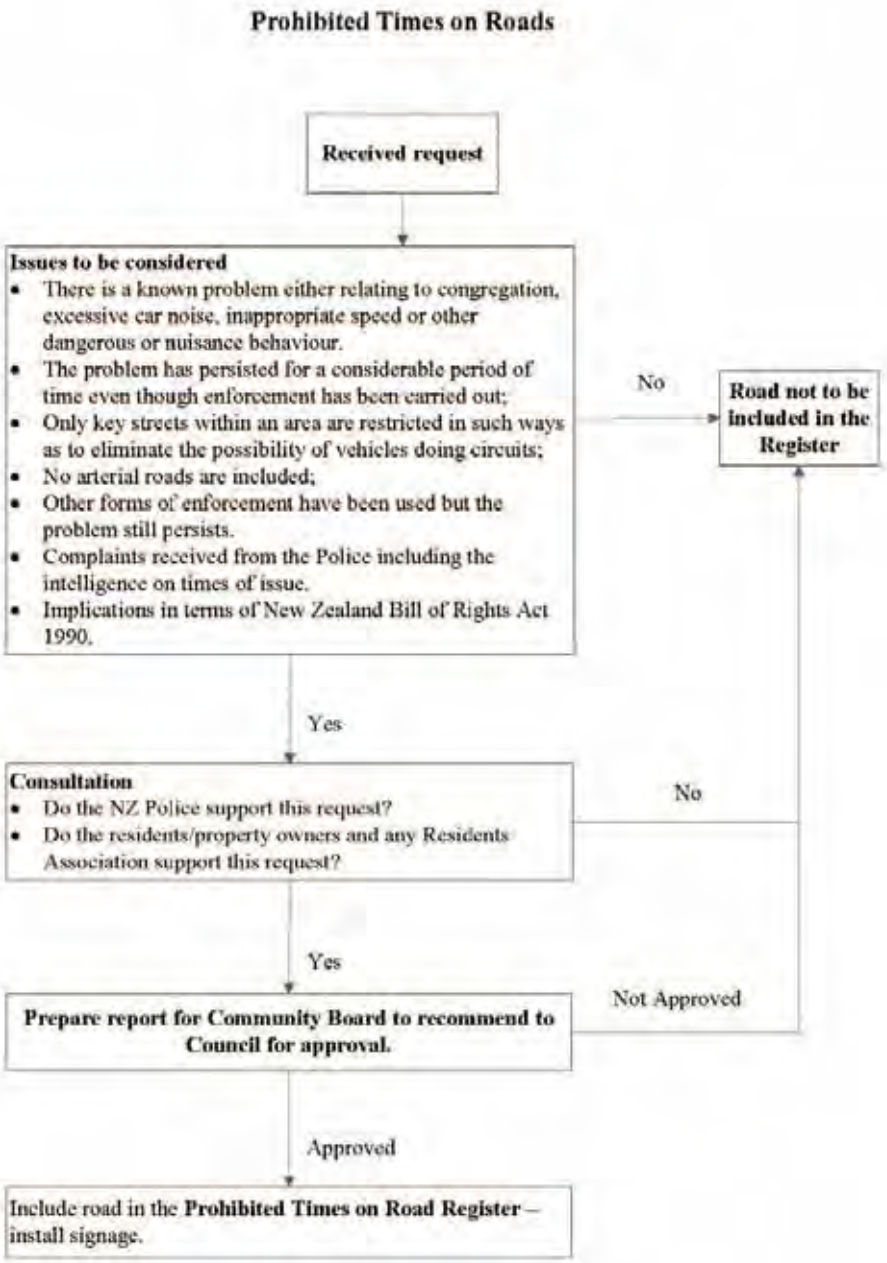
Alignment
This policy should be used in conjunction with Clause 15 of the CCC Traffic and Parking Bylaw 2008.

Policy details
The flow chart attached sets out the process when assessing/considering a request.

Delegations
No delegations have been given in relation to approving whether a road will be added to the Prohibited Times on Roads Register. The authority remains with the Council.

Approval Date
22 April 2010

Owner
Network Operations and Traffic Systems team, Transport and Greenspace Unit.



Flowchart Amended by Council, 22 April 2010

(b) That the issues to be considered section of the flowchart (Attachment 2 to the agenda) in the "Prohibited Times on Roads" policy be amended so that the second bullet point reads "The problem has persisted for a considerable period of time, even though other enforcement has been carried out."

(c) That the issues to be considered section of the flowchart in the "Prohibited Times on Roads" policy be amended so that the fourth bullet point reads "No arterial roads, or collector roads, are included."

6. TRIAL BICYCLE SHARE SCHEME

General Manager responsible:	General Manager City Environment Group, DDI 941-8608
Officer responsible:	Unit Manager Transport and Greenspace
Author:	Paul Burden, Road Corridor Operations Manager

PURPOSE OF REPORT

1. The purpose of this report is to review the concept of a bicycle share scheme.

BACKGROUND

2. Bicycle Ventures Ltd is the local partner for NextBike, a bicycle sharing system with 15,000 bicycles in cities around the world.

3. Bicycle Ventures Ltd has had a number of discussions with Council staff regarding integrating a public bicycle system into the inner city public transport network.

4. A recent site visit by Bicycle Ventures Ltd, with a typical bicycle that could be used, generated a lot of interest from staff and some elected members in the bicycles. It was suggested these could be used by the Council in a workplace bike share program. This could also be a catalyst for a public scheme.

5. The Council already operates bicycles in a pool available for staff use, however these are used very infrequently and consideration needs to be given to how to increase the usage of bicycles as a viable alternative transport mode.

EXECUTIVE SUMMARY

6. The purpose of this report is to review the concept of a bicycle share scheme for Council staff. The report specifically references the proposal on offer from Bicycle Ventures Ltd (refer **Attachment 1**).

7. The staff bicycle share scheme is considered the first step in the right direction toward a public scheme in the future. Having the bicycles visible and getting people familiar with the concept and the technology may smooth the way for a public scheme. Robert Henderson from Bicycle Ventures Ltd refers to this proposal as "S*etting an example for others to follow and demonstrating the technology.*"

8. While the Council currently has bicycles available (pool bikes), the bicycle share concept is different in that:

   (a) Bicycles are available 24 hours, seven days a week using an automated rental system.

   (b) Bicycles would be placed at the entrance(s) to the Civic Offices making them a quick, convenient and viable transportation option.

   (c) Bicycles are capable of carrying branding and advertising.

   (d) Bicycles are a visible signal of the organisation's sustainability commitment.

   (e) Bicycles are regularly maintained and checked by the provider, and repairs attended to at no cost.

9. While the bicycle share scheme is usually a public scheme the initial offer is targeted at Christchurch City Council staff, that may not have otherwise considered cycling as a means of transport. As the largest employer in the locality many staff cycle to and from work, this scheme is aimed more at staff travelling to external meetings or site visits where quick transport is required door to door.

10. There are two options that could be considered. The first option is a 'low tech' system incorporating customised bicycle racks. Council staff would register with NextBikes and use an online system to rent the bicycles. Once the bicycles are returned the user must go online

again and check the bicycle in as returned. The second 'higher tech' option incorporates a solar powered rental station that allows fast rentals of the bicycles and automatically detects returns, thereby negating the need to go online to check the bicycles back in as returned. The rental terminal allows for customer cards. Each staff member that registers would be sent a branded bicycle share access card to speed up the rental process.

11. A helmet is included with each bicycle lock at the rack. When you release the bicycle the helmet is released. The helmet is sanitised as part of the maintenance regime.

12. Normally with the NextBike system when you register it asks for a credit card. However, with a work based scheme such as that on offer to the Christchurch City Council, when staff register with their Council email address it sends them a verification email and activates their account with no credit card needing to be entered. There would be a maximum period for which the bicycle can be taken out to ensure availability is optimised.

13. The low tech option adds an extra step in the process whereas the higher tech option is more user friendly, convenient and favoured by Bicycle Ventures Ltd. The higher tech option is likely to be more successful at the Council providing greater convenience than the existing pool bike option.

14. The bicycles also provide an advertising opportunity. This could be used to promote Council events or could be sold to offset the monthly rental costs (refer paragraph 20).

15. In 2012 Canterbury District Health Board (CDHB) trialled three NextBikes across their sites. They used the low tech non-electronic racks. The report found the following:

    (a) An estimated cost saving to CDHB of $205 per bike per month (savings from staff using other forms of transport e.g. taxis and pool cars).

    (b) Many users reported that getting exercise positively benefited their physical and mental health.

    (c) Users felt refreshed and ready for work again after being on the bike which may improve productivity, moral and attendance.

    (d) The report concluded the provision of NextBikes had substantial potential.

16. NextBikes also have bicycles in the University of Canterbury Halls of Residence, where the bikes are free to use for a maximum of 24 hours. This is the low tech option, but Bicycle Ventures Ltd report that the scheme is working well. Tait Electronics have indicated that they will install the scheme at a later date and Bicycle Ventures Ltd also report strong interest from Christchurch International Airport Company.

17. Should the Council decide to implement the proposal, then the concept and technology will require internal marketing to encourage use by staff.

18. The current pool bicycles are seldom used (approximately 15 bookings per month on average). Should the scheme be implemented, Bicycle Ventures Ltd would provide usage data to quantify the success of the scheme.

19. Although the NextBike proposal may increase the use of staff choosing cycling as an alternative and viable transport mode for work related trips, there are other methods that may produce similar results. A fleet electric bike supplier has also made recent contact with Council staff. Adding a couple of electric bikes to the existing fleet may widen the pool of users.

FINANCIAL IMPLICATIONS

20. The solar powered NextBike rental terminal, electronic bicycle racks, installation and setup will cost $6,100 plus a monthly charge of $150 for ongoing maintenance and operation. (This is not the purchase cost of the terminal). The cost of renting the bikes is $90 per bike per month and includes all maintenance costs. The first year cost of a single station with two bikes would be approximately $10,000 and around $4,000 each year thereafter. Changes to the advertising

boards are $70 per bike. The first year costs will be accommodated from existing operational budgets. Future budgets will be altered to accommodate the ongoing operational costs.

Do the Recommendations of this Report Align with Three Year Plan budgets?

21. As above. The first year costs will be accommodated from existing operational budgets. Future budgets will be altered to accommodate the ongoing operational costs.

LEGAL CONSIDERATIONS

22. Council have an overarching obligation defined in the OAG guidelines and Procurement Policy to spend public funds wisely and ensure that we are achieving value for money. We also have an obligation to ensure that the Council are being fair, open and transparent with the market. Generally we would go to an open market, unless there is good documented rationale to support another course of action that achieved the same outcome of value for money.

23. Given the initial expenditure of around $10,000, and because this is a trial then we could enter into direct negotiation with the supplier.

24. To do this, Council would need to ensure that:

    (a) Any lease agreement is legally reviewed.

    (b) The Council are not under any obligation to lease further requirements.

    (c) That it is clear to the supplier that if this does result in a wider requirement across the CBD for community / public use then an RFP would be required (probably an EOI to short list, then a selected RFP) that achieves value for money, is open and transparent, and considers fully the total cost of ownership of asset.

Have you considered the legal implications of the issue under consideration?

25. As above.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

26. Yes, aligns with Transport and Greenspace Unit's activities by contributing to the Council's Community Outcomes in relation to sustainability.

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

27. As above.

ALIGNMENT WITH STRATEGIES

28. Aligns with the Christchurch Transport Strategic Plan 2012-2042.

Do the recommendations align with the Council's strategies?

29. As above.

CONSULTATION FULFILMENT

30. Nil.

STAFF RECOMMENDATION

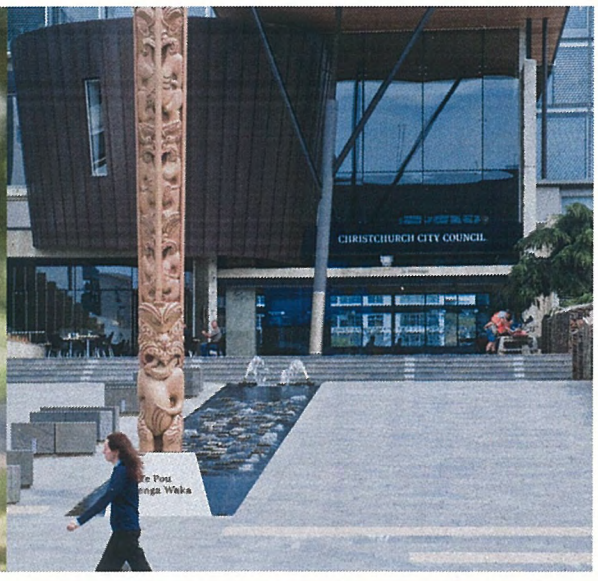
That the Committee:

(a) Support a trial of this scheme for an initial cost of $10,000 and an annual operating cost of $4,000 for 5 years.

(b) Note that if the scheme results in wider support, the Council will issue an RFP.

STAFF BICYCLE SHARE

Christchurch City Council



PROPOSAL

Background

Bicycle Ventures Ltd is the local partner for NextBike – a bicycle sharing system with 15,000 bikes in cities around the world.

Bicycle Ventures has had a number of discussions with CCC staff regarding integrating a public bike system into the inner city public transport network.

A recent site visit with a bike generated a lot of interest from staff in the bikes themselves. It was suggested these could be used by Christchurch City Council staff in a workplace bike share program.

A bike share differs from current "pool bikes" in a number of ways.
-Bikes are available 24/7 using an automated rental system
-Bikes are typically placed at building entrances. This makes them a quick, viable, transport option.
-The bikes are a branded, visible signal of the organisations sustainability commitment.
-Bikes are maintained and checked weekly by mechanics. This ensures maximum reliability. Any breakages are attended to at no additional cost.

BicycleVentures

About the Bicycles

World leading bike share technology

NextBikes are available globally in some of the world's largest bicycle hire schemes.

The bicycles have been designed with a focus on advertising, riding comfort and low maintenance.

All bicycles come with helmet, bike lock and carrier basket.

The sitting position on the bike is very comfortable, and the chain guard and mud-guards mean that the bike can be ridden no matter how wet the roads are.

The bikes are controlled by web based management software that enables easy communication with riders; maintenance schedules and helps to ensure bicycle security. - There is no requirement for staff to spend time managing the program or checking on bikes.

BicycleVentures

Two Options

Two* Bikes (Low tech option)

Bicycle Ventures currently has two bikes available which it could implement with custom racks for the Christchurch City Council at a discounted pricing. The racks are designed to only accept the NextBikes and are typically placed near an entrance to make them a viable transport option. Staff register with NextBike and use the online or mobile system to rent the bikes. Once they have finished riding they must login and "return" the bike.

**Additional bikes and low tech racks can be included however a lead time will apply.*

NextBike low-tech racks (non-electronic).

Solar Powered Rental Station (High tech option)

The NextBike rental terminal is a solar powered rental station that allows fast rentals of the bikes and automatically detects returns – negating the need to login and return the bike.

The rental terminal allows for customer cards. Each CCC staff member that registers would be sent a branded bike share access card to speed up the rental process.

An example fo
the rebuilding
Christchurch

The solar powered rental stations are a highly visible commitment to world class cycling infrastructure and is a good fit with the green-star rated building.

It is proposed one rental station would be placed at the Worcester street side of the building.

The rental terminal can be extended at any stage to increase the number of bikes available.

Bicycle Ventures would provide the Infrastructure and offer the bikes at a discounted rate as a demonstration of the concept for the new Christchurch.

A lead-time will apply to the electronic rental terminal and bikes. This would be fast tracked to ensure the earliest possibly launch date.

Solar powered NextBike rental terminal with return detection and staff access cards.

BicycleVentures

Use by staff

Registration

Typically the Nextbike system requires the user to register a credit card for security. However we would setup a system specifically for CCC staff:

- Staff register using their CCC email address
- The system identifies them as an employee and sends a verification email.
- Once verified their account is forced active without the need for a credit card.

If their account does incur charges – eg they take a bike for 2 weeks or loose the bike then the customers account is locked until a credit card is added.

Renting/Returning

Once registered the riders can book a bicycle anytime

- To book a bike riders can either:
  - ring an automated phone service,
  - book the bicycle online
  - use their mobile web browser
  - use the iphone app.
  - Use the rental terminal
- Riders are given the lock code for the bike. This is also sent to them as a SMS message.
- When the bicycle is returned to the rental station the rider repeats the process to say it has been returned.

While rented the rider may lock the bike to any conventional bike stand. At the end of the hire the bike must be returned to a rental station.

Bicycle Ventures can provide clear written instructions for communicating the system to staff. Bicycle Ventures would also assist with initial marketing to staff.

Using the iphone app to "scan" a bike for a quick rental

NextBike mobile web app and website

BicycleVentures

Free to ride

The proposal would be for staff to be able to use the bikes for free. However we would still implement a maximum free time per rental to ensure staff members do not rent the bikes indefinitely. This could be anywhere from a few hours to 24hrs+ to allow staff to take the bikes home. This would be decided in conjunction with the CCC and can be modified in the future. Outside this time frame normal charges would apply. Bicycle Ventures would refund any accidental charges.

Advertising

Not only would the bikes provide a service to staff but they are also a great, and cost effective, advertising medium. This could be used by the CCC to advertise council programs eg upcoming events.

Advertising that cannot be switched off, turned over, or thrown away.

NextBikes are ridden in areas with lots of foot traffic and are highly visible. Over 60% of pedestrians remember seeing NextBike media versus 32% for other outdoor media.

The bikes are a unique, eye-catching medium resulting in a high degree of cut-through. Whether the bikes are being ridden or are waiting in rental stations they are always visible.

A report by the Christchurch District Health Board in 2012 found the advertising on the bikes to be very cost effective when compared to other out of home media such as bus shelters.

The advertising panel is on both sides of the bike and offers a total of 0.5m2 of advertising space. The panels are extremely durable and easy to change.

BicycleVentures

Bicycle Ventures would provide graphic design template files for the advertising panels and work with CCC's chosen designer where required.

Workplace Benefits

2012 CDHB Trial:

In 2012 the Canterbury District Health Board trialled three NextBikes across their sites.

- The report into this trial indicated estimated a cost saving to the CDHB of $205 per bike per month. This was based on saved costs from staff using the bike share instead of other forms of transport (eg taxi's and pool cars).
- Many users reported getting exercise – which will have a positive effect on their physical and mental health.
- Users felt refreshed and ready for work again after being on the bike. It was suggested this will benefit the employer by improving employee productivity, morale and attendance.
- It concluded the provision of NextBikes had the potential for substantial net benefits for the CDHB

"Potential for substantial ne benefits"

BicycleVentures

Maintenance

A fully maintained fleet of staff bicycles

It is important to provide a fleet of bicycles which are in top condition, frequently maintained and available at all times. This means staff can rely on the bicycle as a transport option and are not expected to maintain the bikes themselves. Bicycle Ventures provides the NextBike system with frequent maintenance (at least once a week), free spare parts, and on-going support to riders.

Weekly Maintenance:
Bicycle Ventures would conduct weekly maintenance of the bikes. This maintenance includes a general mechanical check, lock changes and a general clean (including sanitising the helmet). We also aim to repair any reported damages within 24hrs.

Damages:
Bicycle Ventures would be responsible for replacing damaged and stolen parts unless the damages were caused by reckless usage.

Insurance:
Bicycle Ventures carries $1,000,000 worth of public liability insurance and $250,000 worth of statutory liability insurance. The bikes are uninsured against theft as it is uneconomic to do so. However replacement costs are factored into the pricing structure.

Usage Data

Bicycle Ventures would provide usage data to CCC to quantify the ongoing success of the scheme.

Pricing

Pricing has been prepared on the following assumptions:

-Custom NextBike Racks, installed.

-Weekly Maintenance, cleaning and lock code changes

-Spare parts, helmets, insurance and repairs.

-NextBike rental management system

-CCC staff to undertake graphic design work

-All prices exclude GST

Bicycles

$90 per bicycle per month.

NB Two bicycles and racks available for immediate installation

Pricing includes initial ad-board printing and details as above.

To add a solar powered, electronic, rental terminal:

Set-up Cost:

$6100 per terminal

Monthly Cost:

$150 per month

Monthly charge for maintenance, provision of the system, and on-going supply of access cards to CCC staff.

Additional Ad-Board Changes

$70 per Bicycle

Pricing includes printing and application (at cost). Previous campaigns can be re-applied at a cheaper rate.

BicycleVentures

For Further Information Contact

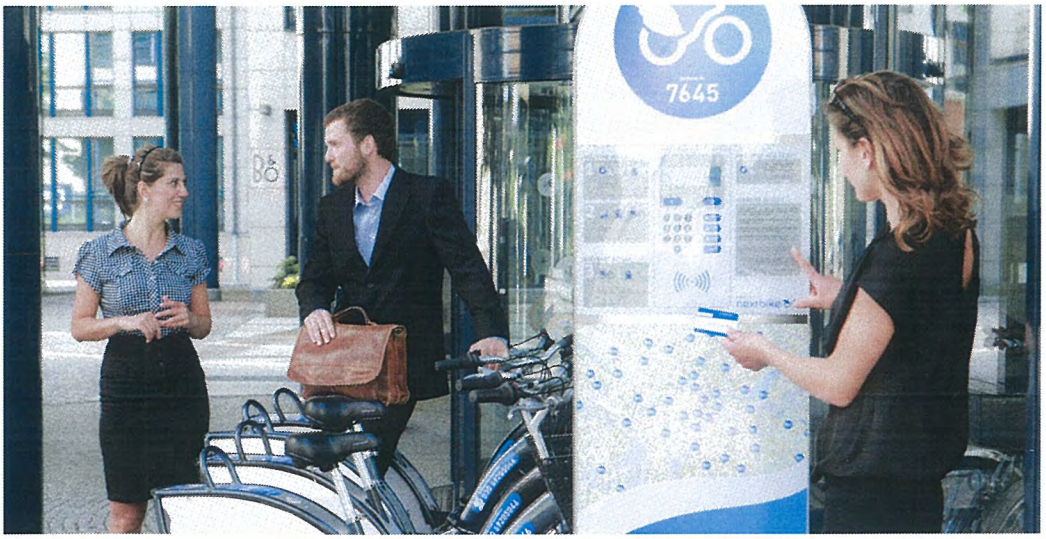
Robert Henderson

Managing Director

Bicycle Ventures Limited

Phone: 0274676669

Email: rob@bicycleventures.co.nz



BicycleVentures

ENVIRONMENT AND INFRASTRUCTURE COMMITTEE

RESOLUTION TO EXCLUDE THE PUBLIC

Section 48, Local Government Official Information and Meetings Act 1987.

I move that the public be excluded from the following parts of the proceedings of this meeting, namely item(s) 8 and 9.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter and the specific grounds under Section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

ITEM NO.		GENERAL SUBJECT OF EACH MATTER TO BE CONSIDERED	REASON FOR PASSING THIS RESOLUTION IN RELATION TO EACH MATTER	GROUND(S) UNDER SECTION 48(1) FOR THE PASSING OF THIS RESOLUTION
PART A	8.	PROPERTY PURCHASE PRESTONS ROAD	) GOOD REASON TO) WITHHOLD EXISTS) UNDER SECTION 7)	SECTION 48(1)(a)
PART A	9.	WASHINGTON SKATE PARK FUNDING		

This resolution is made in reliance on Section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act which would be prejudiced by the holding of the whole or relevant part of the proceedings of the meeting in public are as follows:

ITEM NO.	REASON UNDER ACT	SECTION	PLAIN ENGLISH REASON	WHEN REPORT CAN BE RELEASED
8.	Enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations	7(2)i	The property is subject to confidential negotiations with regard to the purchase. Disclosure of the agreed price, if the Council do not purchase, would prejudice the land owners position.	If the property is purchase – after the sale of any surplus plant.
9.	Prejudice commercial position Conduct of negotiations	7(2)(i) 7(2)(b)(ii)	The tender information is confidential until after the successful tender is awarded.	The tender information is confidential until after the successful tender is awarded.

Chairperson's Recommendation: That the foregoing motion be adopted.

Note

Section 48(4) of the Local Government Official Information and Meetings Act 1987 provides as follows:

"(4) Every resolution to exclude the public shall be put at a time when the meeting is open to the public, and the text of that resolution (or copies thereof):

(a) Shall be available to any member of the public who is present; and
(b) Shall form part of the minutes of the local authority."

ENVIRONMENT AND INFRASTRUCTURE COMMITTEE AGENDA (CONTINUED)

THURSDAY 8 AUGUST 2013

AT 9AM

IN COMMITTEE ROOM 1, SECOND FLOOR, CIVIC OFFICES, 53 HEREFORD STREET

Committee: Councillor Claudia Reid (Chair)
Councillors Sally Buck, Jimmy Chen, Barry Corbett, Aaron Keown, and Sue Wells

General Manager
City Environment (Acting)
Terry Howes
Telephone: 941-8608

General Manager
Strategy and Planning
Michael Theelen
Tel: 941-8281

Committee Adviser
Tracey Hobson
Telephone: 941-5219

PART A - MATTERS REQUIRING A COUNCIL DECISION
PART B - REPORTS FOR INFORMATION
PART C - DELEGATED DECISIONS

INDEX

4. BRIEFINGS (CONTINUED)

4.3 Land Drainage

10. APPEAL ON PART OF CRC DECISION IN STYX SMP CONSENT

Christchurch City Council
City Environment Group

Memorandum

Date: **16 July 2013**

From: **Mike Gillooly (Land Drainage Operations Manager)**

To: **Environment and Infrastructure Committee**

Re: **Land Drainage Briefing**

Introduction

This memorandum covers the following topics:

- Which locations will be covered by the TYP programme for drainage/surface water improvements, ($4.8 million budget). What makes the top of the pile and why?
- Were these sites validated by the June rainfall event, including a commentary on the rainfall event, how severe, what was the impact, and what was learned,

1. Which locations will be covered by the TYP programme for drainage/surface water improvements, ($4.8 million budget). What makes the top of the pile and why?

The 2014 capital programme comprises two major work programmes:
- Flood Protection and Control Works.
- Stormwater Drainage.

The total capital programme expenditure is $8,003 million. The value of the growth-related projects is $5.025m and the value of renewals is $2.978m.The list of projects is shown below. The programme is a mixture of growth-related projects and renewal of assets due to their poor condition and criticality.

Flood Protection and Control Works:

Piped Systems - Pipe Drains (New)
- Thames St Piping
- Dudley Creek Culverts
- Martindales Rd Culvert

Natural Waterways (New)
- Jacksons Creek @ 7 Cameron St

Open Water Systems - Open Drains (New)
- SWAP conduits

South West SMP - Waterways Detention and Treatment Facilities
- Owaka & Awatea Green Corridor
- Lower Milns
- Quaiffes/Murphys (Fulton Hogan Cost Share)
- Knights
- Carrs Rd Basin
- Sparks Road
- Days Drain
- Cashmere Worsleys

STYX SMP - Waterway Detention and Treatment facilities

- Applefields Stormwater Detention Facility
- Supercentre Cost Share

Stormwater Drainage

- Kirkwood Basin
- Owaka Basin/Wilmers Pit
- Mundys Drain Radcliffe Road
- Jacksons Creek @ Addington park
- Waterways & Wetlands Purchases

RENEWALS AND REPLACEMENTS

Flood Protection and Control Works:

Stormwater Pipe Renewals

- Reactive Replacement

Marshland/Briggs Pipe

- Centaurus Culvert

Technical Equipment - Replacement

Minor Piping Projects

- Brittains Invert

Unlined Drains Renewals

- Firestone/Sissons Drain
- Wilderness Drain

Banks Peninsula Stormwater Renewals

- Rue Grehan
- Cass Bay
- Lyttelton Culverts and Grates

Structural Replacements

- Evans Pass/Heberdeen Ave

Piped Systems - Pipe Drains (R&R)

- Lyttelton Brick Barrels
- Reactive Replacement

Open Water Systems - Box Drains (R&R)

- Minor Relining Projects
- Snellings Drain at Lake Tce Rd
- Boxed Drains Renewals

Open Water Systems - Unlined drains (R&R

- Unlined Drains Renewals

Natural Waterways (R&R)

- Mid Heathcote Masterplan Design
- Styx River Reserves
- Charlesworth reserve planting
- Port Hills Waterways Reveg
- Kaputone Reveg
- Cashmere Stream Green Corridor
- Beckenham Pond Naturalisation

Stormwater Drainage

- Westmoreland Re-vegetation
- Redwood Springs
- Shepards Stream
- Travis Wetland

2. Were these sites validated by the June rainfall event, including a commentary on the rainfall event,
how severe, what was the impact, and what was learned.

While a reasonable amount of rain fell in the June rainfall event, rainfall intensity was relatively low and fairly evenly spread across the city. It was only for durations longer than 4 hours that the event intensity was more than a 1 in 2 year event. It eventually got up to about a 10 year event for durations of about 36 hours.

This means that most of the small catchments drained well, because the pipework infrastructure is capable of dealing with a 5 year event. The bigger catchments like the Styx River (which has a critical duration of 36 hours or so) experienced a 1 in 10 year event.

The areas where water naturally ponds were inundated and this is what we saw in natural ponding areas like Cranford and Hendersons Basin as well as the area around Flockton Street.

There have been at least 32 storm events in the last 132 years with a higher rainfall that occurred at the Botanic Gardens in June (105.4mm) (see table below).

YEAR	Depth of rainfall
1894	204.8
1978	179.5
1941	170.5
1934	165.4
1957	161.4
1968	158.7
1923	156
1974	150.2
1909	144.7
1942	144.7
1945	138.6
1925	138.1
1941	133.8
1911	133.5
1979	132.5
1945	129.1
1992	128.8
1908	124.9
1959	124.3
1975	124.1
1986	122.6
1881	118.6
1986	115.2

1904	113.5
1980	113
1895	112.7
1977	110.9
1963	109.5
1994	108.6
1881	107.3
1910	105.6
1938	105.4

In terms of properties affected, the worst areas were Richmond/St Albans/Mairehau with several streets, properties and some house floor levels flooded. The location and flood levels of those properties have been surveyed and the information is being used to help determine solution for these areas.

There were 15 houses that had flooding above the floor level, 112 houses had flooding up their foundations, and 94 properties had flooding below their foundation. It is relevant to note that the last significant flood in this area for which there is reliable data was in 1986.

Mike Gillooly

Land Drainage Operations Manager

10. APPEAL ON PART OF CRC DECISION IN STYX SMP CONSENT

General Manager responsible:	General Manager City Environment Group , DDI 941-8608
Officer responsible:	Unit Managers Legal Services Unit and Asset and Network Planning
Author:	Brent Pizzey

PURPOSE OF REPORT

1. The purpose of this report is for the Environment and Infrastructure Committee to decide whether to recommend to the Council that the Council confirm the lodging of an appeal seeking deletion of the words "wherever possible" in condition 4(b) for the Styx stormwater management plan (SMP) discharge consent issued by the Canterbury Regional Council (CRC) to the Christchurch City Council (Council).

EXECUTIVE SUMMARY

2. The Styx SMP discharge consent CRC131249 is the second catchment-wide discharge consent obtained by the Council. The purpose of these "global" consents is for the CRC and the Council to better manage stormwater discharges in the catchment, resulting in environmental improvements from those that would occur through incremental ad-hoc consenting processes.

3. The Council lodged the application in October 2012. The application differentiated between "classes" of waterway relevant to stormwater discharges. The application proposed conditions that the consent holder uses its best endeavours to achieve water quality standards for class one and two waterways but not for class three waterways. Class three waterways were mainly the network of man-made and often timber lined drains.

4. The CRC notified the application. There were a number of submitters in opposition, including one by Mahaanui Kurataiao Limited (MKT) on behalf of Ngāi Tūāhuriri Rūnanga. That submitter's concerns included the categorisation of waterways, and the absence of proposed environmental objectives in the application for the class 3 waterways. MKT sought that the consent be declined.

5. Hearing Commissioners appointed by the CRC heard the application in the week of 6 May 2013. Many points of difference between the Council and the CRC reporting officers were resolved during the hearing. MKT maintained its opposition, but at the request of the Council the Commissioners adjourned the hearing to allow time for Council officers to seek to resolve any points of difference with CRC reporting officers and with MKT. Council officers then engaged in productive discussions with MKT. When the Council lodged its written right of reply on 7 June 2013, it reported to the Commissioners that all substantive points of difference between those parties had been resolved. The Council proposed in that Right of Reply the following to condition 4 of the resource consent, this having been agreed between the CRC reporting officers, Council officers and MKT:

    4. The consent holder shall use reasonable endeavours:

        (a) to achieve the surface water quality, sediment quality, aquatic ecology and tangata whenua objectives set out in Table 1 for all receiving waterways marked as Class 1 and 2 on Plan C, which forms part of this consent; and

        (b) To work to improve Class 3 receiving waterways shown on Plan C at a catchment-wide scale by:

            (i) Protecting and otherwise enhancing ecological values; and

            (ii) Ensuring Class 1 and 2 values downstream are not compromised; and

            (iii) Protecting and otherwise enhancing tangata whenua values.

6. The CRC issued its decision on the applications on 1 July 2013. A copy of the decision is attached. The Decision accepts and reflects well on the Council's evidence and submissions

on all key matters. However, the decision made a change to condition 4(b) regarding class 3 waterways as follows:

4. *The consent holder* shall use *reasonable endeavours*:

(a) To achieve the surface water quality, sediment quality, aquatic ecology and tangata whenua objectives set out in Table 1 for all receiving waterways marked as Class 1 and 2 on Plan C, which forms part of this consent; and

*(b) To work **wherever possible** to improve Class 3 receiving waterways shown on Plan C at a catchment-wide scale by:*

(i) Protecting and otherwise enhancing ecological values; and

(ii) Ensuring Class 1 and 2 values downstream are not compromised; and

(iii) Protecting and otherwise enhancing tangata whenua values.

7. That change is not explained in the Commissioners' Decision, other than a brief passage that states "In broad terms we have accepted the applicants 'final' offered conditions and the monitoring programme as being both necessary and appropriate if consent is to be granted. We have however made some minor modifications to both, although generally they are editorial in nature to aid interpretation and understanding…" (paragraph 6.180).

8. Council officers have significant concerns regarding that addition of the words "wherever possible" to condition 4(b). On one possible interpretation, the condition may be unenforceable due to uncertainty, as there are uncertainties in how the CRC would enforce an obligation in the condition to "use reasonable endeavours" to "work wherever possible" to improve those waterways. On another possible interpretation, the addition of the words "wherever possible" increases the significance of the duty on the Council to improve the Class three receiving waters. The addition of the words "wherever possible" may be interpreted as imposing an obligation on the Council to do some work to improve Class three receiving waterways at a catchment wide scale whenever it is possible to do so – and that it is always "possible" to do so, even when as far as the Council's resources are concerned, it is not reasonably possible.

9. If the Council wished to appeal, it was required to lodge the appeal in the Environment Court and serve it on the CRC by Monday 22nd July 2013 (section 121(1) of the Resource Management Act 1991). Accordingly, the Acting General Manager approved the appeal being lodged, subject to this being retrospectively approved by this Committee and the Council. The appeal can be withdrawn if not approved.

10. Council officers expect that the appeal will be resolved efficiently, as the CRC and Council – and MKT if it joins as a party – may be able to seek orders by consent to amend the condition. It is not anticipated that the appeal will proceed to a hearing.

11. The legal advice to the Council is that an appeal is warranted at law. The Council position on appeal would be that described in the attached copy of the Notice of Appeal.

FINANCIAL IMPLICATIONS

12. There will be costs for the Council in pursuing the appeal. However, these will be minimised if the parties resolve the matter without a hearing being required. Moreover, there is another appeal by the Case Family in Cranford Basin against the CRC decision, so there will be appeal costs for the Council regardless of this appeal by the Council.

13. If the Council does not appeal, there may be significant additional costs for the Council in complying with the requirement to "*use reasonable endeavours*" to *"work wherever possible to improve Class 3 receiving waterways*"; or there may be additional costs arising from uncertainty as to how that obligation is to be fulfilled.

14. If the Council decides to proceed with the appeal, officers will endeavour to settle the issue at mediation. This will be a more efficient method of resolving the appeal.

Do the Recommendations of this Report Align with 2013-16 Three Year Plan Budgets?

15. Yes

LEGAL CONSIDERATIONS

16. The legal considerations are described above and in the attached Notice of Appeal.

Have you considered the legal implications of the issue under consideration?

17. Yes.

ALIGNMENT WITH THREE YEAR PLAN AND ACTIVITY MANAGEMENT PLANS

18. Yes.

Do the recommendations of this report support a level of service or project in the 2013-16 Three Year Plan?

19. Yes.

ALIGNMENT WITH STRATEGIES

20. Yes.

Do the recommendations align with the Council's strategies?

21. Yes.

CONSULTATION FULFILMENT

22. There is no consultation requirement when deciding whether to lodge an appeal. The Environment Court will encourage the parties to enter mediation on the appeal.

STAFF RECOMMENDATION

It is recommended that the Environment and Infrastructure Committee recommend to the Council that:

(a) The Council confirm the lodging of an appeal seeking deletion of the words "wherever possible" in condition 4(b) of the Styx stormwater management plan discharge consent issued by the Canterbury Regional Council to the Christchurch City Council.

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application CRC131249 by Christchurch City Council for a discharge permit to discharge contaminants onto and into land, and into water associated with stormwater management in the Styx Area of Christchurch City.

DECISION OF THE COMMISSIONERS

26 June 2013

1.0 BACKGROUND

1.1 We (Ken Gimblett a Resource Management Planner, Hugh Thorpe a Civil Engineer specialising in groundwater and Raewyn Solomon an independent commissioner with knowledge of Māoritanga, have been appointed by Canterbury Regional Council (**ECan**) to hear and decide an application for a discharge permit by Christchurch City Council (**CCC**). The application is to discharge contaminants in relation to the management of stormwater in the Styx River/Pūrākaunui area of Christchurch, encompassing an area of approximately 6,940 hectares.

1.2 The CCC has embarked on a programme of preparing a series of Stormwater Management Plans (**SMP**) as guidance to integrating land use, stormwater and infrastructure planning for the various catchments within the authority of the Council. This application seeks to enable CCC to implement its Styx SMP[1] and is the second such application following the granting of resource consent in April 2012 to discharge stormwater in the south-west area of the City.[2] The CCC proposals are intended to be consistent with regional plan directions towards encouraging the preparation and use of SMP's as the preferred method for securing approval for stormwater discharges.

1.3 The Styx SMP is itself informed by a range of statutory and other strategic planning documents, including the Belfast Area Plan[3] (**BAP**), the Christchurch City Plan (**CCP**), the Greater Christchurch Urban Development Strategy (**UDS**) and the Canterbury Regional Policy Statement (**RPS**). Although in overall area terms the Styx SMP area would still remain predominantly rural, these documents together identify the potential for a further 595 hectares of residential development and just over 76 hectares of commercial and industrial development to be accommodated within this area of the city.

1.4 The discharge permit application is to discharge water and contaminants into and onto land, and into water, and was lodged on the 9th of October 2012. Two requests for further information were made by ECan with separate responses by the applicant

[1] The Styx SMP comprises two parts: **Part A** setting out the planning framework, supporting technical investigations, waterway classifications and associated management objectives for those waterways; and **Part B** (Blueprint) describing the preliminary "specimen" stormwater treatment and detention scheme for the area to achieve the catchment objectives, accounting for the theoretical urban development scenario and climate change predictions.
[2] CRC120223.
[3] A framework for land use planning and public expenditure over the next 35 years. The BAP is for an area of 1349 hectares, the majority of which falls within the Styx SMP area.

received on the 21st of December 2012 and the 4th of April 2013 respectively. A consent duration of 35 years is sought.

1.5 There are various existing stormwater consents being exercised within the area covered by the application, including two 'global' type consents held by the CCC.[4] The intention is that if consent was granted, existing consents would either be amended to exclude the application area, transferred to the CCC or otherwise surrendered.

1.6 It is intended that the resource consent being sought would ultimately replace the need for individual stormwater discharge consents within the SMP area. It would enable existing and future residential discharges, construction phase discharges and industrial discharges where the CCC has accepted the discharge into the stormwater network.

1.7 There were 38 submitters to the application. No written approvals were obtained by the applicant. The application was heard by us over 5 consecutive days commencing on Monday the 6th of May. We then adjourned the hearing pending receipt of a written right of reply on behalf of the applicant, some additional information from the applicant and other parties, and a site visit by us. We carried out our visit to the area on Tuesday the 14th of May and received the requested material and written reply by the 7th of June. After reviewing that material we formally closed the hearing on the 10th of June 2013.

2.0 PROPOSED ACTIVITY

2.1 The application relates to stormwater discharges from both existing and future planned activity occurring in the Styx SMP area. That area is identified in the application and includes the Styx River/Pūrākaunui, Kaputone Creek and Smacks Creek, as well as the Wilsons Drain and Cranford Basin catchments.

2.2 This area of the city is partly urbanised currently with a mix of business and residential development. Informed by CCP zonings, the UDS, the BAP, recent private plan changes and the proposals emergent through the Recovery Strategy and Recovery Plan process under the Canterbury Earthquake Recovery Act 2011, some 670 hectares of further urban land use development is anticipated for the Styx SMP

[4] CRC000315 (City Roof) and CRC090292 (Interim Short Term). CRC090292 was sought to enable a number of existing, low risk site discharges to be surrendered and managed under one consent as an interim measure while the SMP investigation and consenting programme is carried out .

area over the next 35 years. At that time around 40% of the catchment area would be urbanised, with the remainder in rural use.

2.3 Included in the application are discharges from roads, roofs, residential hard-stand areas, land development (phased construction areas of up to 5 hectares), and industrial sites. Excluded from the application are stormwater discharges that bypass the City Council stormwater network; those discharges from land development if at any stage land disturbed without remediation is greater than 5 hectares in area; and also from areas either listed by ECan or otherwise identified as being contaminated or having a high risk of contamination.[5]

2.4 As applied for, our consideration is of the discharge of stormwater only and not of any other approvals or consents that may be necessary in enabling subsequent development of the network or infrastructure upgrading to proceed.

2.5 The stormwater management scheme proposed envisages:

- A 'Most Probable Development' (**MPD**) scenario including anticipated urban expansion, allowance for increased imperviousness due to infill development, a 16% rainfall intensity increase and 0.5m sea level rise attributable to climate change (2 degrees Celsius rise).

- A 'treatment train' for the vast majority of the area comprising of large dry sedimentation basins (first flush basins) followed by wetlands/ponds, coupled with partial detention by back flooding over wetland areas. The 'train' is designed to cope with runoff from the first 25mm of any rain event.

- Stormwater mitigation (generally)[6] based on partial detention to achieve storage within first flush basins and additional storage through back flooding of wetland areas to an average depth of 0.5m for the 2% annual exceedance probability (AEP) critical duration design storm event (50 year return period).[7] The wetland component of the 'train' would be designed to backflood to a depth of 500mm during storms of 10% AEP, i.e. once in 10 years on average.

- Water quality mitigation based on capturing and treating stormwater runoff for the first 25mm of any rainfall event thereby ensuring approximately 80% of all

[5] The application prescribes a process for this identification.
[6] Surface water discharges to the Dudley Diversion basin (Cranford Basin South) is to maintain the existing flood storage volume.
[7] The applicant's predictive modelling is based on an 18 hour duration storm for the upper catchment and 48 hour duration storm for the lower catchment.

annual rainfall runoff from the catchment would be treated within the 'train' prior to final discharge to receiving waters.

- An exception to the proposed surface water discharges approach in the western most sub-catchment[8] where ground infiltration conditions suit disposal to ground and flow paths to either surface receiving waters or the piped network don't presently exist. Two small existing infiltration basins in the upper Kaputone (Northwood) are proposed for inclusion.

- 'Retrofitting' where feasible for existing development areas, including diversion of existing runoff to new facilities.

- Continuous networks of swales and waterways which connect facilities and provide for both slow release of water and secondary overflows.

- Integrating water quality with water quantity mitigation options, i.e. incorporating detention facilities providing a degree of water quality improvement.

2.6 The management of industrial sites discharging into the network system is proposed to be based around initial identification and risk-ranking of all high risk sites in respect of contamination, auditing of those sites of highest risk within 2 years and of all high risk industrial sites within 10 years. That process is intended to identify any necessary improvement in site management practices to meet receiving environment objectives, and the removal of specific industrial discharges from the consent if that does not occur. If an industrial site is excluded from the 'global' consent, separate application must then be made to ECan. The present application identifies that all new industrial site discharges via the network system would be required to at least meet the residential stormwater quality standard equivalent to be accepted under the terms of the consent that is sought.

2.7 A range of environmental objectives are proposed by the applicant for identified classes of receiving waters to protect water quality and ecological values[9]. As well as excluding unacceptable industrial site discharges and significant areas of land disturbance during earthworks construction, associated mitigation measures include requiring preparation and implementation of sediment and erosion control plans in accordance with ECan guidelines for any development area.

[8] Broadly about and west of Gardiners Road.
[9] The Styx SMP identifies four surface waterway classes, and water quantity and ecological objectives for each.

2.8 CCC has proposed a combination of conditions of consent and a programme of monitoring against a range of environmental objectives for the receiving environment. A fundamental feature of the proposals is the adoption of an adaptive management regime embodied in those conditions, with on-going monitoring and suitable response(s) a requirement of them. Various iterations of those possible conditions emerged during the course of the hearing and we were ultimately presented with a 'final' set of proposed conditions and a programme of monitoring that represented an substantially agreed position between the applicant's advisors and also Officers and advisors engaged by ECan.[10] There remains however two points of disagreement between the two councils on conditions regarding implementation records and we discuss these more specifically later in our decision.

2.9 As was the case with the first such SMP application for the south-west SMP area, it was again emphasized to us how the proposals represent something of a collaborative approach between the CCC as applicant (consent holder) and ECan (as regulatory authority), in a way that is consistent with specific agreed principles and practices contained in a joint protocol on stormwater management established between those two councils.

3.0 APPEARANCES AT THE HEARING

3.1 At the hearing we heard from representatives for CCC and ECan; and in respect of submissions from K and A Rodriques, R and P McGuigan, Styx Living Laboratory Trust (J Glennie), M Case (A Hughes-Johnson, Counsel), K Snook, Silver Fern Farms Limited (A Johnstone),and Mahaanui Kurataiao Limited (S Orchard, A Lobb). A written statement was also tabled at the hearing on behalf of B Bourke (S Fletcher).

3.2 We heard from the following persons on behalf of the applicant:

- Mr B Pizzey - Legal Counsel
- Mr G Harrington – Surface water planning / engineering
- Mr T Parsons – Hydrological and hydraulic modelling
- Mr R Eastman – Stormwater engineering / management
- Mr A Shadbolt – Landscape architecture
- Dr Z Dewson – Surface water quality and ecology

[10] As per the applicants written right of reply dated 5 June 2013 and the attached Monitoring Programme also dated 5 June 2013.

- Mr P Callander – Groundwater quality and quantity
- Mr M Mullen – Monitoring and implementation
- Ms J West – Resource management planning.

3.3 We heard from the following Council officers and consultant advisors on behalf of ECan:

- Ms J Douglas – Principal planner consents
- Mr B Mongillo – Principal contaminated sites advisor
- Mr T Oliver – Principal hazards analyst
- Dr L Bolton-Ritchie – Marine water quality
- Mr N Dougherty – Compliance and enforcement

3.4 In addition to those who presented at the hearing on behalf of ECan, various others also contributed to preparation of the section 42A report.

4.0 PROCEDURAL MATTERS

4.1 We record here at the outset our response to several matters of a procedural nature that arose in relation to the hearing of the application. They concern possible conflicts of interest for two of the Commissioners and the manner in which notice of the application was served on affected parties.

4.2 In our Minute circulated to the parties in advance of the hearing we outlined the association between one of the submitters (Styx Living Laboratory Trust) and Commissioner Thorpe.[11] We explained the nature of that association and invited any party to comment on Commissioner Thorpe's continued involvement in the hearing and determination of the application. No responses to our Minute were received and it was reiterated to us that the applicant in particular had no concerns in that regard. On that basis Commissioner Thorpe continued in his appointed role.

4.3 During the hearing, following the presentation by a submitter and our questioning of them, a question was asked of the consent authority by that submitter as to the appropriateness of Commissioner Solomon's involvement in the hearing. The submitter noted her association with Ngāi Tahu and Ngāi Tahu Properties joint venture Prestons 'Urban Village' Land Development project, which is situated in part within the Styx SMP area.

[11] Minute of Commissioners, dated 18 April 2013.

4.4 The inference was that this personal association, and perhaps questions of the submitter by Commissioner Solomon regarding consultation with representatives for the Prestons development, suggested there to be a conflict of interest for the Commissioner.

4.5 We have carefully considered that matter and satisfied ourselves that is not the case. Commissioner Solomon is employed by Te Rūnanga o Kaikōura, the administrative and legal body of Ngāti Kurī, which is the Ngāi Tahu hapū (sub-tribe) that has mana whenua (tribal authority) over Kaikōura. However her appointment to the Hearing Panel is not a representative one for Te Rūnanga o Ngāi Tahu , Te Rūnanga o Kaikōura, or Ngāti Kurī. Rather, she brings a considerable knowledge and understanding of Māoritanga generally to the Panel assisting us collectively in exercising our decision making responsibilities. On receipt of the application and subsequent appointing of Commissioners it was no doubt evident to the consent authority that issues regarding Maori cultural values and their association with natural resources (fresh water particularly) would be very relevant to the applicants proposal; the AEE, submissions received and the evidence presented to us confirm that to be so.

4.6 Commissioner Solomon's specific questions regarding consultation were in no way intended as a judgement of the parties conduct in that regard (if that was the impression gained). They were directed to understanding the basis and nature of apparent uncertainties between respective parties as to the probable outcomes of consented development works, as they were being highlighted to the Panel at the time. That form of enquiry is both appropriate and understandable in the context of such a resource management hearing process. We can record that Commissioner Solomon personally has had no direct association with the Prestons 'Urban Village' Land Development project.

4.7 The final matter, again raised by a submitter, concerns the process of public notification of the application to affected persons. We have formed no view on that matter, acknowledging the explanation of the notification of the application as set out in the section 42A report. In any case we note that ECan's responsibilities and discretions in that regard had been exercised well ahead of our appointment and fall outside the extent of the delegation of statutory responsibilities to us as the Hearing Panel.

5.0 PRINCIPAL ISSUES IN CONTENTION

5.1 In summary, the principal issues in contention were identified by us to be:

- Does the activity to discharge exacerbate flooding conditions for affected land such that additional mitigation is required or consent should be declined?
- Should determination of the application be deferred until acquisition procedures, or other authority to use land, required for works/facilities planned for the management of stormwater in the catchment are completed/obtained?
- Have relevant RMA matters been satisfied concerning cultural values and Maori relationships with resources, and particularly freshwater resources?
- Whether the proposed adaptive management regime, associated conditions of consent and required monitoring are directed to achieving appropriate environmental outcomes, and provide adequate certainty of achieving those intended outcomes?

6.0 STATUTORY CONSIDERATIONS

6.1 Those provisions of the RMA that have particular relevance to our consideration of the application are considered in this section of our decision.

Activity Status

6.2 In terms of determining the status of the proposed activity, the relevant regional plans are the Natural Resources Regional Plan (**NRRP**), the Waimakariri River Regional Plan (**WRRP**) and the proposed Land and Water Regional Plan (**pLWRP**).

6.3 Rule WQL8 of the NRRP relates to the discharge of stormwater to land and water in accordance with a SMP, and prescribes various conditions towards determining compliance. The proposed discharges do not satisfy conditions 2 (regarding water quality standards) and 4 (discharges within Groundwater Protection Zones) of Rule WQL8.

6.4 Under Rule WQL8 an activity not meeting condition 2 is non-complying. An activity not in compliance with condition 4 is discretionary.

6.5 The water quantity rules of the WRRP are also applicable to the Styx River catchment and Rule 5.2(b) prescribes an activity as discretionary where a discharge of water is to the Waimakariri River or its tributaries, or any wetland.[12]

6.6 The proposed Land and Water Regional Plan (**pLWRP**) also has relevance to activity status as it was notified prior to this application being lodged. Under that plan proposed Rule 5.71 classifies this activity as restricted discretionary.

6.7 The activity therefore has an overall status of **non-complying**.

Section 104

6.8 Section 104 directs us in our consideration of the application. In exercising our discretion as to whether or not to grant consent, and subject to Part 2 of the Act, we are to have regard to matters as set out in section 104(1), including any actual or potential effects of allowing the activity on the environment; the relevant provisions of any applicable national environmental standard, policy statements or plans; and any other relevant matter that is reasonably necessary to determine the application.

6.9 Additionally under section 104(2) we may disregard an effect of the activity on the environment if a national environmental standard or plan permits that effect, although we heard no evidence of a reliance on such an effects 'permitted baseline' in support of granting consent.

6.10 Relevant also in terms of this application, we must have regard to matters under section 105 regarding the nature of the discharge and sensitivity of the receiving environment, reasons for the proposed form of discharge and possible alternative methods. We are not to grant consent if it would be contrary to section 107 of the RMA or any regulations.

6.11 We may also decline the application if we consider there to be inadequate information to enable us to determine it, having had regard to the outcomes of any requests for further information (s104(6) and (7)).

[12] Pursuant to powers conferred under the Canterbury Earthquake Recovery Act 2011, the Minister of Earthquake Recovery in May 2012 amended the WRRP to make the Styx River Catchment subject to the **water quality** rules of the NRRP. This did not however extend to rules regarding **water quantity** (Chapter 5).

Effects on the Environment

6.12 Consistent with the evaluations by both the applicant and the section 42A report prepared for ECan, the actual and potential effects on the environment that we have considered broadly relate to:

- Surface water quantity and quality
- Groundwater quantity and quality
- Soil quality
- Freshwater ecological values
- Amenity and recreation
- Cultural values and associations
- Socio-economic values

6.13 While several of the principal issues in contention relate to anticipated effects, we note a significant level of agreement between the planning experts as to effects on the environment in respect of these matters being minor or less than minor. We set out a summary of the relevant evidence, our findings and conclusions on the environmental effects of the proposal in the following discussion.

Surface water quantity and quality

6.14 Many of the submitters raised issues relating to flooding and the increased volume of water entering surface waterways in the catchment as a consequence of the proposed management of stormwater, including discharges from anticipated urbanisation of land within the SMP area.

6.15 To set flood mitigation and management in context, Mr Harrington set out for us the City Council's general philosophy underpinning the management of surface waterways and other natural assets across the city. That philosophy reflects a move to proactively looking beyond simply the 'drainage' function of the stormwater network, to reflect, integrate with and enhance other environmental, cultural and social values. We heard of various related CCC management strategies and technical guidance that embody that approach, and for which catchment based SMPs are a key implementation tool.

6.16 Mr Harrington also described the consequences of Variation 48 to the proposed Christchurch City Plan made operative in January 2011, which addressed both the possible effects of sea level rise and flood management generally in Christchurch. Notably that Variation delineated Flood Management Areas (**FMA**) within which floor

levels are set using a 0.5% AEP flood rather than a 2% AEP event (as per the Building Act), meaning new floor levels in the Styx floodplain below Marshlands Road are now generally to be set at a minimum of RL 11.8m.

6.17 Frequently flooded 'undeveloped' Flood Ponding Areas (**FPA**) are also identified in the City Plan and within which future development and filling of land is significantly restricted. The Lower Styx floodplain downstream of Marshlands Road within the SMP area is one such FPA. That area is a natural floodplain offering extensive flood water storage, with the tide gates to the Waimakariri River protecting the Styx River from regular tidal inundation and occasional river floodwater incursion.

6.18 Given the duration sought for the consent, we heard from Mr Harrington of allowances in the design of the Styx stormwater management regime for the anticipated effects of future climate change, anticipating a 0.5m rise in sea level (**SLR**) by 2100 and a 16% increase in rainfall intensities.[13]

6.19 With respect to flood levels Mr Harrington acknowledged the history of flooding in the lower Styx basin but explained how that area could accommodate some increases of flow with minimal effects (e.g. a rise of up to 40mm at Harbour Road) in extreme1/50 AEP events.[14] He notes in more frequent events up to 1/5 AEP, proposed stormwater management facilities can result in a decrease in flood levels as a result of first flush detention facilities effectively overcompensating for inflows.

6.20 Mr Parsons has been responsible for the development of the hydrological and hydraulic models of the Styx River catchment stormwater system, and using those to test scenarios to inform flood predictions and mitigation design. We were told of some inherent uncertainties (as in any model, and particularly for such a complex system), but that the model represented industry best practice and reflected a methodology that has been specified by other New Zealand Councils. The model has also been independently reviewed.[15]

6.21 It was explained however that the model had only been calibrated against stream flow gauging collected during a singular 10 year event in 2008 (pre-earthquake), but that it had been updated to reflect land damage within the floodplain as a consequence of the Canterbury earthquake sequence. Mr Parsons accepted the

[13] These are based on MfE assumptions to be valid in 2100. Because the consent sought would terminate in 2048, this was explained by Mr Harrington to add further conservatism to the CCC modelling predictions.
[14] Harrington paragraph 56.
[15] Parsons, paragraph 38.

model will require validation/re-calibration to rainfall events in the future. The model was used to predict flooding up to a 200 year return period.

6.22 In terms of new buildings, we note that the model is used by the City Council to set freeboard levels for building consents, with a compensatory 400mm allowance added. Mr Parsons observed that allowance to be well beyond the modelled main channel water difference under the range of modelled return periods or level differences with the calibrated event.

6.23 Mr Eastman emphasised for us the how the surface water 'Blueprint' for the greater Styx catchment is a specimen design to achieve key catchment objectives, one of which is to accommodate expected urban growth over the next 35 years without a significant increase in the cost of flood damage to the community. The modelled scenarios assessed include the existing development footprint (**ED**) and the most probable development (**MPD**) inclusive of anticipated urban development. During the hearing, further modelling results became available for the critical duration 2% AEP design storm but without the 0.5m SLR condition. This was to show the impact of new development upstream in the catchment on the low lying areas in terms of 'today's tidal environment'. This assisted us understanding the extent to which flooding risk (is) would be as a consequence of tidal influences, and proved informative in our consideration of effects on individual submitters properties.

6.24 Mr Eastman explained the basis to selecting a 'Partial Detention' design approach in this catchment, and summarised the outcomes of the modelling for different development scenarios with storm probability and duration.

6.25 The water quantity design parameters for the proposal are key determinants of the likely effects of the management system proposed and important in understanding the level of flood mitigation that would result. Mr Eastman detailed these matters in his evidence.

6.26 In summarising the effects of the activity on surface water quantity, Mr Eastman noted:

- Factoring in SLR introduces a flooding risk attributable to tidal sea water moving westward from Brooklands Lagoon through the dune system to inundate land between the dunes and the Styx River. The fullest extent of that predicted rise in sea level is however some decades away.

- The Partial Detention option would cause some increase in rain generated flooding within the Styx River and tributaries. Most of that flood depth increase however is over the existing flood prone land in the identified FMA. Increased flood costs and environmental effects in this area is therefore, in his opinion, unlikely. In such low frequency events resultant flooding effects are assessed to be minor.
- Where it occurs the increased flood depth in the upper catchment is more significant, but the increase in flood extent is considered to be minimal because this reach is more incised.
- For some of the more extreme storm events investigated widespread flooding throughout Christchurch would occur.
- Change in river base flows for the lower reaches is much more responsive to tide gate and weed growth maintenance activity than any 'lack' of detention storage for new development upstream.
- Minimal impact is anticipated on the river corridor and floodplain for more frequent storm events, given the significant attenuation offered by planned detention storage and 'retrofit' intentions. After full development, the effects of lesser but more frequent storms in the downstream reaches will be positive (better than the status quo), i.e. reduced flood depths.

6.27 Mr Eastman also provided specific responses to concerns expressed by individual submitters, some of whom presented to the hearing. Before moving to consider those concerns, we first note the evidence of Mr Oliver in respect of the consent authority's assessment of flooding effects.

6.28 Mr Oliver endorsed adopting the respective 18 hour and 48 hour storm durations for the upper and lower catchments, and the 2% AEP critical storm design standard. He accepts the modelling investigation and analysis as satisfactory for preliminary design purposes. More accurate modelling however he believes will be necessary to inform more detailed design of facilities and operations.

6.29 Mr Oliver is supportive of a condition of consent regarding identification of secondary overflow paths from new structural mitigation measures and ensuring dwellings are avoided. He also accepts the further information and modelling results provided by the applicant regarding individual property flood impacts informing us that in his opinion any increase in localised flood levels would be no more than minor.

6.30 As to the intended objective (and proposed condition) to not exceed a prescribed flood level above 2012 impervious surface levels for the 2% AEP critical duration event, there was some evolution of the originally proposed condition during the course of the hearing. It was ultimately put to us by the applicant that the allowable increase should be set at 100mm above that 2012 base level plus a 20% tolerance,[16] and we understand Mr Oliver is accepting of that. This 'tolerance' was the subject of some of our questioning of the experts and we note the reasoning in support of such a margin given the degree of accuracy in the predictive modelling.

6.31 We then heard from K and A Rodriques, R and P McGuigan, K Snook, and received a written statement on behalf of B Bourke, all raising specific concerns regarding flooding of their properties. Submitters who did not appear before us also raised such concerns.

6.32 The Rodrigues' reside in Earlham Street, Brooklands and told us of what they felt were fundamental flaws or omissions in the application information relied upon to determine future flooding potential in and around their property. Unlike many others in Brooklands, the Rodrigues' property is not within the identified 'Red Zone' classification. The Rodrigues' directed us to inconsistencies between their own ground survey data and that of the applicants, and apparent mistakes in the interpretation of the background report on the modelling outcomes by the City Council witnesses that did not support the conclusion of high tides having greater flooding significance than high rainfall in the vicinity of their property.

6.33 Ms Snook also lives on the edge of Brooklands on the corner of Earlham Street and Lower Styx Road, and on the edge of the 'Red Zone'. Like the Rodrigues', Ms Snook also expressed concerns regarding the predicted modelling results relative to her property and the surroundings, and also noted the significance of weed growth, earthquake damage to land and tidal influences in terms of flood predictions.

6.34 The McGuigan's, who reside on Lower Styx Road, identified issues with potential flooding of their property, and particularly in relation to their boundary drain and outlet pipe to the Styx River. Some of their concern relates to the effects of adjacent land development and the impact that may have for local drainage.

6.35 Mr Bourke's principal concern is in relation to potential inundation of land on Lower Styx Road on which he has established plantation forestry and the consequences

[16] Measured at Harbour Road Bridge.

that might have for his property, the health of his trees and associated investment. He offers to install a monitoring well on his land at his cost if that would facilitate appropriate monitoring by the consent holder.

6.36 We accept that these submitters, and no doubt others who did not appear before us, have realistic concerns about potential flooding of their property, based on personal experiences. It is quite conceivable based on the evidence we received that worsened flood problems as submitters have identified are attributable to quite recently changed river conditions. We were told these changes include earthquake induced land subsidence plus the reduction of flood carrying capacity from reduced channel width, bed heave and excessive weed growth.

6.37 We were informed that CCC, post earthquakes, did not carry out regular weed cutting which could well have worsened recent flood events. Weed cutting has now resumed and the evidence indicates this can reduce water levels by up to 400mm. We were also informed that special channel dredging of the lowest reaches has recently been completed. However while these are very relevant factors affecting flood issues in the Lower Styx, and in that respect may offer some comfort to land owners, Mr Pizzey correctly submitted to us that they are beyond the scope of this hearing which is solely restricted to considering the effects of future stormwater discharge. There is nevertheless a critical relationship here and we note them because they have a very real bearing on the outcomes being experienced in the lower catchment in particular.

6.38 Evidence presented to the Panel, which we accept, is that full urbanisation, if partially mitigated as proposed and if required as a condition of this consent, would not raise flood levels in the Lower Styx by more than 100mm plus a 20% tolerance (+ 20mm) relative to the 2012 baseline at the identified point of measurement. This increase is much less than the potential reduction in present levels if the Styx River channel is restored to and maintained in its previous condition, which falls under the responsibilities of CCC independent of this application.

6.39 The applicants responses and the very specific interpretation of the modelling results for individual properties, including those of several of the submitters, indicates some changes over time could be expected in the degree to which land is subject to flooding. This is so in the lower catchment particularly and the proposed management of stormwater discharge would be a contributing factor in some storm events. We recognise that, but equally we recognise the limited degree to which that

is likely to cause any significant impact on those properties, associated dwellings, use of the land or access to it. The reality is significant areas of the catchment are recognised floodplains, and unfortunately coastal proximity and the predicted outcomes of climate change will progressively exacerbate the implications of flood events, in areas of the lower catchment especially, in the future.

6.40 In nearly all cases, areas for new development would have first flush detention capacity for detaining and treating the first 25mm of stormwater runoff. This would be preceded by a wetland designed so that in a 2% AEP critical duration (48 hr) storm event it would backflood to a depth of not more than 500mm.

6.41 During a flood event a detention basin would still be releasing some water while the basin is filling and then the basin would slowly empty when the storm has passed. Full detention volume drawdown would occur over 4-7 days. The applicant termed this design 2% AEP (48 hr) Partial Detention (**PD**).

6.42 For events more severe than the 2% AEP (48 hr) flood event the PD facilities will overflow and this water would be carried by secondary flow paths which could be along roads or through reserves. These secondary flow paths must be planned for at the design stage, and clearly identified consistent with conditions proposed by the applicant.

6.43 In design terms we understand the “specimen” concept adopted by the applicant and applied to inform the determination of system sizing and configuration in order to service the hypothetical development scenario. We heard no evidence to question the validity of that process or the design outcomes derived from it, and observe it to be helpfully informed by past performance (both good and bad) and consistent with other policy and consent decisions affecting stormwater management in the city.

6.44 While we understand the concerns as to flood mitigation and management that have been expressed to us, we note that those concerns have been specifically considered and addressed in the evidence and responses of the applicant. Recognising what are the principal contributing factors presently and into the future, our scope is extremely limited in that regard, and our focus in considering concerns or uncertainties expressed to us about this application has been to assure ourselves that sufficient account has been taken of those adverse effects that have relevance and that, as appropriate, avoidance, mitigation or remediation is provided for. As to

flood water attenuation and management of flood water release we conclude the applicant's proposals to be conservatively based and adequate in that regard.

6.45 We acknowledge and accept that the proposals would provide a significant level of mitigation in the Styx catchment, offering improved mitigation for more frequent events up to 20% AEP (1 in 5 year). It is proposed (to be conditioned accordingly) that full development according to the most probable development (MPD) would be mitigated in the Styx to the point that increases in flood levels in the lower catchment would be less than 100mm plus 20% tolerance for the 2% AEP design storm. That does not mean flooding of land would be avoided, even under such an event, but we are satisfied insofar as inundation is attributable to the management of stormwater discharge, that it would not cause significant adverse environmental effect. Most importantly, while accepting that the impact of climatic change will in time have significant impact in some areas, dwellings would be sufficiently protected in terms of the effects attributable to this discharge.

6.46 In relation to surface water quality, the section 42A report states that currently within the Styx catchment it is *"generally good but with elevated concentrations of some parameters at individual sites and on some smaller tributaries."* That said, we were informed that with full implementation of the Blueprint (by 2057) improvements to the existing water quality in the existing environment are likely to occur. This also assumes retrofitting treatment in significant areas in the Styx that are presently unmitigated.

6.47 ECan officers and others raised valid questions regarding the appropriateness of including current industrial sites within the application, as to whether improved treatment of industrial discharges should be more immediate and also as to what would ultimately be considered "acceptable" industrial discharges in applying the proposed audit process.

6.48 We accept the responses to these matters as put to us by Mr Mullen and others. Without the necessary understanding for individual industrial sites and discharges, it is not feasible to prescribe appropriate treatment at this point, nor does it seems consistent with the integrated catchment wide philosophy to exclude industrial discharges until that information becomes available. In our conclusion we see greater merit and fairness in including existing industrial discharges but embodying a commitment to the audit and risk assessment process, and supporting any

subsequent exclusion of individual activities from the consent on a more informed and consultative basis.

6.49 In respect of contaminated or potentially contaminated land the proposal is to initially exclude those sites from the consent, but enable them to be later assimilated if it was established through soils analysis that concentrations are at or below residential values. Under the proposed conditions the "identification" responsibility rests with largely with ECan, informed by existing regional council records including the Listed Land Use Register (**LLUR**). We accept however that this will require a collaborative approach again between the two councils as to determining land that may ultimately come under the terms of an approval, with individual owners still having the option of independently consenting their own discharges.

6.50 The potential for land exposed during earthworks to create extra highly silt laden runoff was also addressed. The applicant accepts restriction on the amount of land area within a development that could be exposed at any time (a 5 hectare limit). We note that notwithstanding some initial concerns expressed in the section 42A report, ECan officers now accept the proposed conditions concerning erosion and sediment control.

6.51 In our conclusion, subject to appropriate mitigation measures, any adverse effects on surface water quality or quantity would not be more than minor.

Groundwater quantity and quality

6.52 For the applicant, Mr Callander described the issues and effects of the proposal in respect of groundwater. We heard how the depth to the water table across the Styx SMP area is generally shallow, deepest in the west but from Belfast and further east, the water table is expected to be within 3m of ground level. The generally shallow water table is evidenced by the spring fed waterways within the catchment.

6.53 Mr Eastman described the depth of groundwater and infiltration capacity in the west of the catchment to be conducive to soakage systems, however the permeable unconfined aquifer is vulnerable in the west to contamination. To the east low permeability surface sediments confine the aquifer, and that coupled with seasonally high shallow groundwater rule out the (usually preferred) option of any significant stormwater disposal by soakage.

6.54 We also heard from Mr Callander that while groundwater quality is generally good, localised effects are evident due to previous land use activity and present industries.

6.55 Mr Callander identified how aquifer recharge is dominated by seepage from the Waimakariri River, being the main source of water sustaining the baseflow of the Styx River. Rainfall recharge is a relatively minor source of recharge in comparison (< 5%), and thus change in pervious area due to anticipated urban development in the catchment creates a very minor change in the overall aquifer system.

6.56 In Mr Callander's view, the proposed regime of stormwater management is likely to result in little increase of groundwater levels in the lower catchment, although some contribution to lowering groundwater levels in this part of the catchment could be expected with the planned detention facilities discharging to surface waterways, and the reduction in pervious surfaces. Similarly, he noted little change in river flows is anticipated as a result of groundwater contribution changes in times of low or high flows.

6.57 Mr Callander expects the baseflow of small tributaries in the catchment to be maintained, as seepage from the Waimakariri River and distant rainfall are the main contributors. However, a factor which might lead to changes of baseflow would be large changes of groundwater take from shallow aquifers near the spring heads. Any change in localised rainfall recharge is most likely to be evident in mid range flows of these small waterways. Where larger springs occur we were informed they too are more influenced by groundwater flows than local rainfall recharge.

6.58 Commenting on specific matters raised in submissions, Mr Callander notes the protection of aquifers and well supplies in the eastern catchment because of the low permeability surface strata and upward hydraulic water table gradient. He also reiterated the very small change likely in water table level attributable to changes to groundwater recharge. Changes in water table levels due to raised river levels are assessed to be small, localised close to the Styx River or Brooklands Lagoon, and minor in scale relative to groundwater level changes resulting from rainfall infiltration in a major (1 in 50 year) storm event and/or any surface flooding that could be expected to occur during such a significant event.

6.59 Mr Callander raised the issue of diversion of groundwater flow by interception from deep trenches excavated during installation of buried services. Trenching and gravel backfilling during land development could interfere with shallow groundwater by

creating an artificial flow path in a different direction to the natural flow, with the potential to impact on key characteristics of the spring-fed waterways (food quality habitat and high ecological values). There was some discussion in submissions, section 92 requests/responses, the section 42A report and evidence regarding the need (or otherwise) to monitor and manage such land development activity in terms of such associated adverse effects.

6.60 While highlighting this potential Mr Callander also suggested a means to mitigate such potential effects through backfilling trenches with impermeable material. However he accepted that if done comprehensively this might have a similar effect by creating a flow barrier. The obvious objective should be backfill in such a way that changes to the natural flow path are minimised. Ms Stevenson in originally contributing to the section 42A report suggested that documentation of the City Council process for identifying and managing this risk at the time of subdivision be added to the applicants proposed implementation records. A receiving environment objective (condition) too was recommended regarding protecting baseflow conditions as at 2012 when locating stormwater management facilities.

6.61 The submission by Mr Glennie on behalf of the Styx Living Laboratory Trust also raised this interception issue, it being of concern to the Trust if it led to alteration of spring flows. Mr Callander made the point that water thus diverted would almost certainly be discharged to surface water somewhere within the catchment and would therefore not be lost to the catchment flows as a whole. Nevertheless there could be changes to flows, especially spring flows, which although very localised, are especially significant for amenity, cultural and ecological values.

6.62 Mr Pizzey responded to this matter quite specifically and reminded us that the evidence of Mr Callander was that there would be no effect on the consent holders implementation of the discharge consent – the primary groundwater source for the rivers being the Waimakariri River. Perhaps more significantly, we were also reminded we could not contemplate a future change to the receiving environment as it might be impacted by future resource consents (i.e. not yet granted). Services trenching of the nature described would typically be the subject of independent resource consent, usually at the time of subdivision approval, or by virtue of the City Plan's filling and excavation rules, or regional rules regarding impacts on groundwater. Irrespective of the trigger, independent consent processes would consider this issue and Mr Pizzey argued there was therefore no legitimate or reasonable basis on which to require reporting and planning related conditions in

terms of this discharge proposal, as had been suggested in the section 42A report. We accept this reasoning and agree.

6.63 In relation to groundwater, Mr Bourke pointed out that his plantation trees at 944 Lower Styx Road are susceptible to increasing water table levels. On the evidence we have received we cannot reassure him absolutely that levels will not increase but given the small increase in river levels locally (100mm plus 20% tolerance) with 2% AEP flood and under maximum probable development in 48 years time, it seems unlikely the water table will increase significantly. It would be of greater benefit to him if CCC were to maintain the river channel to a high standard as CCC have shown us that weed cutting in particular can notably reduce water levels. Mr Bourke has suggested monitoring on his property, and while we don't see that as a necessary requirement on the consent holder, we note the offer made and simply encourage CCC to further engage with Mr Bourke as to that possibility.

6.64 With regard to groundwater quality, we recognise that the principal method of discharge proposed is via surface waterways rather than directly or indirectly to groundwater. We also note the agreement between advisors for the applicant and ECan as to the assessment of the two instances where discharge is proposed to ground, that the level of treatment through soil adsorption would adequately remove contaminants and protect groundwater quality. We accept that to be the case and heard no compelling evidence to the contrary.

6.65 The applicant's proposed monitoring programme does not include monitoring of groundwater levels or quality because no new facilities discharging to ground are proposed.[17] There are presently only two small, consented infiltration basins in the Styx catchment (Northwood) and we accept that effects of infiltration on groundwater quality from these are likely to be minor or less.

6.66 Consistent with this, the Council section 42A report concludes the effects on groundwater generally to be minor, including from the continued use of the consented detention and infiltration ponds discharging to groundwater in the Upper Kaputone sub-catchment. We concur.

6.67 Insofar as it may have some implications for water quality in general, Mr Harrington and Ms West discussed the matter of stormwater discharges (also washdown water) from industrial sites and pointed out that the application includes these. They

[17] CCC does monitor groundwater at various sites throughout the city, including some within the Styx SMP area.

explained that the intention is to create an inventory of such sites within the catchment and progressively audit them for stormwater characteristics. This inventory would be completed within two years of the granting of this consent. Based on this inventory the ten most hazardous sites would also be audited within two years. The remaining site audits would be completed within ten years. Mr Harrington noted that the intention is that the quality of the stormwater leaving such a site is expected to be the same as stormwater entering the system from general urban activities. Where this standard cannot be achieved the site may be excluded from the global consent and the activity required to obtain an independent discharge consent from the regional council.

Soil quality

6.68 We note the intended reliance on the findings of soil quality monitoring for adsorption basins under the south-west SMP consent to inform of the performance of representative systems for comparative purposes. That programme prescribes sampling protocols, analytical methods and detection limits, and monitoring would commence 10 years after commissioning of an identified facility, and thereafter requires samples to be analysed at 5 yearly intervals.

6.69 While there was general agreement between the experts on the issue of impacts on soils, we note Mr Mongillo's concern that relying on surrogate monitoring of soil quality in adsorption basins in the city's south-west catchment may be inadequate to determine the behaviour of retention basins and wetlands in the Styx catchment. The two systems are likely to behave differently because in an infiltration basin all stormwater must pass through the soil whereas in a detention basin nearly all the water will pass through, albeit having been detained for a period of a few days. One would intuitively expect that soils in an adsorption basin would accumulate pollutants more rapidly than a detention basin where metals adsorbed onto coarser sediments would settle and dissolve, or immiscible pollutants (e.g. hydrocarbons) or those attached to colloids would largely pass through and into the downstream wetland.

6.70 The type of detention/wetland system proposed for the Styx is, as far as we know, new to Christchurch and therefore we believe warrants some study. We therefore support one such basin in the Styx being designated for monitoring and, given the demand on resources, this could be substituted for one of the proposed south-west basins. Such a basin in the Styx should be selected, as much as can be determined from present and likely future developments, as a worst case scenario. Since it is not

proposed to begin monitoring in the south-western area until ten years after construction there is ample time to implement this recommendation. Implementation of this proposal would also provide useful information on the wetland component of the treatment train. As we later discuss, this is now the subject of an amendment to the proposed monitoring programme enabling such a substitution.

6.71 Imminent urbanisation of significant areas of the Styx catchment may also reveal historic contaminated sites, and while this may be strictly beyond the scope of this application, we draw attention to the need for care in the westernmost part of the catchment where infiltration from disturbed sites is a possibility. There is less concern in those eastern areas where the aquifers are overlain by fine sediments.

6.72 Although Mr Mongillo indicated some concern at apparent shortcomings in the identification of historical and active 'hazardous sites' by CCC in other areas, we recognise the offered (and ECan agreed) condition requiring the consent holder to institute a systematic, time-bound identification programme of industrial sites where there may be risk.

6.73 In our conclusion, the limited number and size of the present soil adsorption and infiltration basins which treat only residential stormwater, means any adverse effects on soil quality are likely to be minor.

6.74 We are also satisfied that any notable contamination of soils will be localised to occur within the dedicated infiltration areas and that adequate consideration has been given to mitigating the effects of that localised increase in contaminant build up over time.

Freshwater ecological values

6.75 The proposals are premised on the basis of meeting certain surface water quality objectives consistent with those of the SMP and reflective of waterway classifications based on the relative ecological value of those receiving environments. Those objectives and the associated targets or measures are expressed in the proposed consent conditions and provide a framework for both monitoring and the adaptive management envisaged.

6.76 Dr Dewson provided evidence for the applicant in respect of the effects of the proposal on ecological values, more particularly aquatic values as they may be impacted by changes in surface water and sediment quality. We were told of the

relatively high water quality in the SMP area waterways relative to other urban waterways in the city. Monitoring of sample sites in the area reveal average lead concentrations to be well within national water quality guidelines[18] however average concentrations for copper and zinc exceed these guideline levels at several monitoring sites.

6.77 A survey of freshwater ecological values in the SMP waterways has enabled a baseline assessment of their ecological condition, with the majority classified as having moderate or low ecological values. Several are identified as having high ecological values.

6.78 Sediment quality at selected sites also has been sampled and assessed, revealing measured trace element concentrations to be generally lower in the Styx River than in Kaputone Stream, Kruses Drain and Horners Drain. Common stormwater metal concentrations were found to be lower in sediments near rural land than near land developed for urban use. Against ANZECC guidelines sediment sampling for copper showed levels below guideline trigger values, whereas for zinc and lead trigger values were exceeded in a number of places within the catchment.

6.79 The proposed regime of managing stormwater is directed to achieving the stated objectives depending on the particular classification of the waterway. The proposed conditions now seek a range of receiving environment objectives for classes 1, 2 and 3 waterways as agreed to by both the applicant and ECan. According to Dr Dewson much of the anticipated improvement in overall contaminant load in the Styx River would be as a consequence of the retrofit of existing un-mitigated stormwater in the catchment.

6.80 Dr Dewson responded to various matters raised in the section 42A report, accepting a number of the recommendations made in that report as they relate to consent conditions and the expression of objectives for the receiving (waterway) environments. Dr Dewson however does not support requests for monitoring of the effectiveness of planned treatment devices within the catchment nor focus on the performance of individual discharges, preferring instead a focus on representative monitoring of the water quality and ecology of the receiving environment. We however note the agreement now reached between the two councils as to appropriate related conditions. The essential point made by Dr Dewson and others, and emphasised by Mr Pizzey, is that the existing situation is one of a large

[18] ANZECC 2000.

proportion of discharges to the catchment being untreated. The proposal is to provide some retrofit improvement and best practise treatment for new greenfield development. The uncontested expert evidence is in support of the activity achieving an overall improvement in surface water quality.

6.81 Dr Bolton-Ritchie presented to the hearing and although not a contributor to the section 42A report, generally agreed with Dr Dewson. The position now reached between these experts on conditions indicates acceptance that, with appropriate mitigation measures, freshwater ecological values would be adequately protected and expected to be progressively enhanced.

6.82 Mr Shadbolt described practical examples of City Councils approach to waterways planning and management in the Styx catchment, including acquisition, naturalisation and protection of strategic land parcels along the Styx River and tributaries. He outlined how such acquisition enabled a range of values to be managed, and experiences and opportunities provided for (recreation, rural amenity, natural character, cultural use, etc). Mr Shadbolt illustrated improvement and restorative works completed for a number of the boxed drains in the upper catchment, and explained how the Styx River reserve network is now being managed as a Regional Park. It is readily apparent that much has already been achieved in the catchment towards realising the Councils own Styx Vision 2000-2040.

6.83 In response to wildlife related concerns expressed by some submitters Mr Shadbolt explained how implementation of the Styx SMP would have considerable advantages to both local and city-wide populations through proactive management and long-term protection of key habitat features. We accept that to be so.

6.84 At the hearing on the application for stormwater disposal in the south-west of the city there was some discussion amongst the applicant's advisors and ECan officers as to the use and relevance of ANZECC (2000) marine and freshwater water quality guidelines (trigger values) and the United States Environmental Protection Agency (USEPA) water quality criteria. We were told of the agreement reached in that case to use the national guidelines for all future work. Dr Dewson and the section 42A report however both note the discrepancy between the use of the USEPA guidelines in the background contaminant load modelling report and the quality guidelines used for the AEE and SMP. This was explained by the relative timing of the work and we were assured by Dr Dewson that the interpretation in the AEE and SMP was based

on the ANZECC guidelines, as are the stated objectives for the receiving environment in the proposed conditions.

6.85 Ms Stevenson (for ECan) made the point during the south-west SMP hearing that as that application was a forerunner to others for Christchurch based around a similar SMP approach, both procedures used in developing it and the desired outcomes of it should be clearly evident and explained in order to attain consistency with later applications. We agree with that as a general principle and make some further comment on that later in terms of the monitoring programme. We recognise that the Styx SMP is only the second of what is likely to be a city-wide series of such management plans and so the same approach as to explaining design philosophy and documenting desired outcomes should be followed. While saying that we acknowledge the treatment trains proposed and the "specimen" approach are different from those taken in the south-west area.

6.86 With respect to improving sediment quality. We did not hear that significant quantities of sediment have been deposited in the upper catchment of the Styx as a result of the earthquakes but clearly there have been very significant changes to the channel banks and bed in the lower catchment. Sediment influx into the receiving waters in future from the stormwater system will have been through the treatment trains and would be reduced in quantity and improved in quality compared to the present.

6.87 The section 42A report included a general acceptance of the effects of the discharge on aquatic habitats and communities in the receiving waters being no more than minor. This was however qualified with the suggestion of specific monitoring to be undertaken in the most sensitive reaches of those receiving waterways. Dr Dewson explained why that was not seen to be necessary given the focus on achieving receiving environment objectives rather than considering all discharges individually. Dr Dewson explained to us how the identification of monitoring locations deliberately includes high ecological value parts of the catchment downstream of areas of proposed future urban development. We also accept her point that the risk of adverse effects is low as the proposal would both retro-fit improvement in treatment for existing developed areas and achieve best practice outcomes for the treatment of new discharges.

6.88 Mr Mongillo expressed some concerns at the hearing regarding monitoring of the effects of industrial site discharges, and also sampling of treatment basins from

within the SMP area rather than solely of representative examples from beyond it. With some modification, agreement has now between reached between the two councils on a collaborative approach to industrial site management. We have also already noted the applicants latest monitoring programme now specifically proposes the potential to review soil sampling locations in consultation with ECan, and that includes the possibility of future facilities commissioned within the Styx SMP area replacing those sampling sites presently proposed. We very much support that and understand this satisfactorily addresses the concerns initially raised by Mr Mongillo.

6.89 The Styx Living Laboratory Trust had suggested that sediment mapping and monitoring ought to be required through conditions. The Trust identifies extensive cumulative bed sedimentation and smothering of high quality reaches as the likely biggest aquatic ecosystem issue, and one potentially lost in a focus on measuring of water quality contaminants. Dr Dewson explained the sampling that had been undertaken to be representative of the catchment in the development of the SMP. She however also explained how the very detailed Christchurch River Environment Assessment Survey (CREAS) methodology would not be sufficient to identify if specific outcomes were being met.

6.90 While we accept the practical points made by Dr Dewson, we do also recognise the importance of protecting the current characteristics of the catchment against the adverse effects of sedimentation. In that regard the objectives and targets set out in the proposed conditions are significant in terms of measurement against the pre-development 2012 baseline. Relevant to the matter raised by the Trust, monitoring against that baseline is proposed for both fine sediment cover and sediment quality. Without seeing it as a necessary further prescription on the consent holder, we do direct the applicant to the suggestions made by Mr Glennie as to how sediment cover might be cost effectively monitored, as we believe his point is fundamentally a sound one.

Amenity and recreation

6.91 In terms of effects on general amenity we acknowledge that a key element of the proposed form of stormwater management is to create a fundamentally natural system, avoiding where practicable the use of piped or historically ‘engineered’ conveyance structures in favour of naturalised ponding areas, wetlands and rehabilitated surface waterways. That approach described to us by Mr Harrington as “values based” reflects the City Councils strategy for Waterways and Wetlands

(1999) and its more recent Surface Water Strategy (2009-2039). We note the Councils adopted goals include supporting a range of recreation activities on and around waterways, protecting heritage and landscape values, and also protecting and restoring Ngāi Tahu values associated with surface water resources.[19]

6.92 The Councils Styx Vision (2000-2040) is similarly orientated to protecting and enhancing natural character and habitat values, and opportunities for people to experience nature. Mr Shadbolt provided various examples of where already such outcomes where been achieved in the SMP area and it is evident through the adopted SMP that significant emphasis is to be put on developing and maintaining that natural system in conjunction both protecting and enhancing the amenity values associated with it. Many of those values derive from planting retention and enhancement, removal of historical channelled 'box drains' where possible and improving public accessibility to areas such as wetlands and waterway margins developed within the system. While we appreciate amenity values are influenced by a multitude of factors, in our conclusion the effects on amenity values associated with the waterway system will essentially be positive.

6.93 Relevant also to amenity values, the submission by Canterbury District Health Board raises concerns regarding the eventual design of stormwater facilities and the potential to create mosquito and biting midge breeding habitat. This relates to one of the matters of disagreement between CCC and ECan as to appropriate conditions, and is addressed by Dr Dewson in evidence and by Mr Pizzey in his reply on behalf of the applicant. While we do discount this potential issue as one of relevance in terms of those facilities and their operation, we fully agree with Mr Pizzey that we are not in a position to influence those aspects in determining this application to discharge contaminants. Indeed it would likely be unlawful to seek to do so.

6.94 Although the condition preferred by ECan is in respect only of the proposed implementation plan including measures to ensure infrastructure design addresses ways to mitigate this potential for adverse effect, we do not see the necessity for that to be a binding obligation on a consent to this particular application. We were informed of how other processes, including the application of the CCC Waterways, Wetlands and Drainage Guide (2003) to relevant resource consent applications, specifically address ways to mitigate against this type of effect, and also of present mosquito larvae monitoring undertaken on behalf of CCC by Community and Public

[19] Harrington, paragraph 25.

Health. To require essentially a replication, transfer or translation of these existing methods into an approval to discharge, in our conclusion, would serve no meaningful resource management purpose.

6.95 As to recreational values, we understand the primary recreational activity related to waterways within the SMP area are generally informal activities such as kayaking and whitebaiting, and possibly swimming. Beyond those types of activities, walking and passive recreation occurs along the river system and in dedicated reserve areas such as the Styx Mill Conservation Reserve and Janet Stewart Reserve. Consistent with our conclusions as to effects on surface water quality and quantity, and also aquatic ecological values, we do not consider any effects on recreation to be negative, and they may well be positive.

Cultural values and associations

6.96 Prior to, and even during the course of the hearing, it was evident that issues concerning cultural values and associations, particularly for tangata whenua, remained a significant issue. Notwithstanding discussions that had occurred between the applicant and representatives for local iwi throughout the development of the Styx SMP and supporting documents, and progress towards a Pūrākaunui State of the Takiwa by the Rūnanga directly, the submission lodged by Mahaanui Kurataiao Limited (**MKT**) on behalf of Te Ngāi Tuahuriri Rūnanga indicated outstanding matters of concern. Post the receipt of submissions on this application, further consultations between these parties occurred and a response also provided by CCC to specific requests by ECan under section 92. As has been noted, MKT represented through Mr Orchard and Ms Lobb presented to the hearing.

6.97 As the hearing neared its conclusion it was evident to us that these parties and ECan could well benefit from further opportunity to discuss specific cultural matters, and potentially move towards a position of agreement on the application and appropriate conditions of consent, or something closer to it. With our encouragement, such discussions were conducted in advance of the applicants right of reply being prepared. Suffice to say that eventuated in CCC, ECan and this submitter reaching a very closely aligned position on whether consent could be granted, and on what basis. We detail that qualified position further and our conclusions in that regard later in our decision.

6.98 Mr Pizzey in his reply for the applicant set out in summary how the applicant and amended conditions as now offered have responded to the matters raised by MKT. That offers some assurances around analysis and monitoring work already undertaken by CCC (e.g. of *E.coli*); also inclusion of a cultural monitoring dimension to the overall Styx SMP monitoring programme; accepted reclassification (higher) of some waterways; and 5 yearly review of those classifications to account for any relevant new information.

6.99 Ms West addressed any potential effect on the Statutory Acknowledgement Area for Te Tai o Mahaanui (Selwyn – Banks Peninsula Coastal Marine Area), noting this area to be adjacent to, but generally not within, the boundaries of the SMP. In her conclusion the particular association of Ngāi Tahu with this important area would not be affected in any way.

6.100 With that and our findings as to effects on values such as water quality and ecological health in mind, we have concluded that, in cultural effects terms, the proposal and the conditions and monitoring as now proposed by the applicant achieve both satisfactory recognition of Maori cultural values and associations with natural resources within the SMP area, and adequate avoidance or mitigation of adverse effects in that regard through conditions.

Socio-economic values

6.101 We heard from Mr Hughes-Johnson, and Mr Case on his own behalf, regarding the impact of the proposals on land owned by the Case family in Cranford Basin. Mr Case provided us with background to his families farming and market gardening operations in the Basin, historical issues with flooding of the land and attempts to remedy that through implementing diversion drains, and on-going court proceedings between the Case family and CCC in respect of claimed inadequate flood management on the part of the City Council. We were informed also of recent requests by the family regarding the opportunity for urban development of land within the Basin through proceedings promoting change to the RPS (Proposed Change No.1), and subsequently the emergence of the proposed Land Use Recovery Plan (**pLURP**) for greater Christchurch.[20] Mr Case opposed the identification of stormwater retention in the Basin ahead of any final determination as whether or not

[20] Under the direction of the Minister for Canterbury Earthquake Recovery in accordance with the Canterbury Earthquake Recovery Act 2011.

urban development could occur on his land, and felt that no consideration had been given to the economic and social consequences for the Case family.

6.102 Mr Hughes-Johnson submitted to us that uncertainties in the application meant land owners like Mr Case could not understand the likely implications for their land holding interests. He also stated the making of the application at the present time puts the *"cart before the horse"* and that not first settling matters of land acquisition (either by agreement or by compulsory statutory procedures) risks leaving the Case family (and others) with an *"uncompensatable stigma"* if consent is granted. Mr Hughes-Johnson also questioned the extent to which consideration had been given to alternative sites not involving the submitters property.

6.103 The submissions made on Mr Case's behalf by Mr Hughes-Johnson were strongly rejected by Mr Pizzey in replying for the applicant. Mr Pizzey emphasised and highlighted a number of points both from the technical evidence and other public documents in support of his submissions. We will elaborate our conclusions on this matter further, but in short we agree with Mr Pizzey in many respects.

6.104 Citing caselaw authority in support of his position,[21] Mr Pizzey directed us to considering only effects of the consent holder discharging stormwater into waterways and into land, or which would inevitably follow from the granting of this discharge permit. He argued that as the application does not include any discharge into the Case family land in the Cranford Basin, the social and economic effects claimed by the submitter, should not be had regard to. Furthermore, the submitter was accepting of the technical evidence presented by the applicant (or at least did not challenge it), and did not present any specific evidence on which a conclusion as to social and economic effects on the Case family interests could be based. Therefore even if we were to turn our minds to these effects, Mr Pizzey identified that the submitter had not provided any such evidence in support of their concerns.

6.105 In our consideration of these matters we have first turned our minds to the reality of what is actually intended to occur in the Cranford Basin, and in respect of the submitters land in particular. The SMP provides us guidance,[22] as does the evidence of both Mr Eastman and Mr Harrington. The Blueprint identifies the area of the Cranford Basin, based on modelling, susceptible to flooding in the 2% AEP storm event (some 89ha in total, of which approximately 49ha is south of QEII Drive and

[21] Cayford v Waikato Regional Council [2013] NZLJ 11.
[22] Blueprint sections 4.3.4 (Horners/Kruses sub-catchment) and 4.3.7 (Dudley Diversion sub-catchment) .

west of Philpotts Road). It recommends establishing this area as a local purpose drainage reserve in perpetuity, and Council purchasing land within it that is not already in Council ownership.[23] Part of the Basin is intended for the Northern Arterial Extension and associated stormwater pond and forest proposals, and that also is set out conceptually in the Blueprint.[24]

6.106 Of particular relevance to the submitters land within the Dudley Diversion Ponding Area, the proposed regime of stormwater management does not promote notable change for how this part of the catchment functions - the emphasis is very much on retaining the existing ponding volume and natural ponding function of this area. It is however conceivable that retro-fitting of the existing upper system could have localised positive effects. Anticipated urban development 'above' the Basin has largely already occurred and we are satisfied on the technical evidence that the proposed regime of stormwater management would not exacerbate those historical conditions.

6.107 As to whether the Case family (or others) might be unreasonably disadvantaged by the application relating to the discharge being determined at this stage without certainty as to final facilities design and/or securing the required land, we do not find that to be so. In that regard we note much is already in the public domain about the Styx SMP management proposals for the Cranford Basin, including the indicative Blueprint advocating for Council purchase of flood-prone land, possible extension of the northern arterial motorway in this area, and the associated compensatory stormwater facilities and potential forestry. We were told of negotiations already underway between Mr Case and CCC over land sale and it could not reasonably be claimed that future stormwater management within the Cranford Basin and the catchment generally has not been openly signalled for some period, and at least since 2010.

6.108 Even accepting that public awareness, we have then considered whether determining this consent might of itself put the submitter in a disadvantaged situation, in the way claimed by Mr Hughes-Johnson. We were again reminded by Mr Pizzey that our consideration is to be directed to the discharge and the effects on the environment attributable to it. While the SMP puts forward an integrated management scheme for the area, and the Blueprint an indicative design of how the system might be configured and operate, implementation remains dependent on a

[23] That includes land both east and west of Cranford Street, including land owned by the Case family.
[24] Blueprint Figure 12, page 38.

range of other factors, including finalised design and land purchase. The extent to which design of the necessary infrastructure and potential location of components has been undertaken was described to us as being sufficient to provide reasonable assurance the system could operate to achieve the intended environmental outcomes. That seems entirely sensible to us. Equally it would seem extremely difficult, if not unrealistic, to advance to a finalised implementation stage, including securing all land, for such an integrated, catchment based approach without having achieved sufficient certainty as to the acceptable standard and nature of the associated discharge from the system.

6.109 We accept the point made by Mr Pizzey that we as Commissioners are not being asked to consider or decide upon the design, location or operation of the stormwater network, and that those are either matters for CCC in exercising its responsibilities under other legislation, or the subject of other independent voluntary or statutory processes. Respectfully, nothing in the submissions by Mr Hughes-Johnson nor the 'authorities' he referenced persuades us otherwise.

6.110 Insofar as a number of the issues raised by Mr Case are partly or similarly raised by other submitters, our conclusions are the same. The section 42A report rightly notes that the indicative locations of the associated stormwater infrastructure as set out in the Blueprint would not be restricted by granting this consent. We are also assured by the expert evidence we received that there is sufficient inherent flexibility in terms of locational choice and design for those future facilities for variability while still achieving the objectives set for the receiving environment. This point was emphasised by the applicant, for example, in response to Silver Fern Farms identifying future infrastructure in the Blueprint being shown in part over that organisations own current established operations.

6.111 Although not so much an issue of social or economic effects, Mr Hughes-Johnson also raised the matter of 'alternatives' to the proposals for the Cranford Basin in terms of fairness and equity considerations, and so we touch on that here, and on alternatives more generally later in discussing section 105 obligations.

6.112 The Blueprint discusses option considerations in respect of the Cranford Basin.[25] Mr Eastman and others in giving evidence for the applicant also explained the reasoned choices made in developing the adopted management approach. In many respects the realistic options in the case of the Cranford Basin are dictated by historical

[25] Including the Executive Summary and the identified Principal Issues (Part 3.3).

development, the physical characteristics of the area and its surrounds (soils, topography), and the natural ponding function it performs. Accepting our earlier conclusions as to how far we might venture to consider the final design, location and configuration of future stormwater facilities that will necessarily be the subject of separate processes, we are satisfied the applicant has adequately considered possible alternatives that would avoid, remedy or mitigate the effects of the discharge and arrived at a reasoned choice.

6.113 As Mr Eastman pointed out, the proposal offers the prospect of some positive social gain in terms of integrated catchment management and facilitating the opening up earlier of identified areas for new residential development in light of the significant loss of local housing opportunity post-earthquakes.

6.114 To the extent we can consider them, we have found actual or potential adverse social or economic effects of the proposed discharge to be acceptable.

Policy Statements, Standards and Plans

6.115 There was significant agreement between the planning experts both as to the relevant planning instruments and the extent to which the proposal is consistent with the provisions of those instruments. We are substantially in agreement.

6.116 At a national level, the National Environmental Standard for Assessing and Managing Contaminated Soil for the Protection of Human Health (2012) has direct relevance where land use change, significant earthworks or subdivision are concerned. While the application to discharge stormwater does not in itself involve those activities, obligations under this NES in relation to Hazardous Activities and Industries List (**HAIL**)[26] site identification at the future construction stage for stormwater treatment and detention facilities would assist in understanding the location and implications of such sites. We acknowledge however that for the purposes of this application it has no material effect.

6.117 We also note the National Policy Statement for Freshwater Management (2011) (**NPS**) and the emphasis that NPS places on integrated management of freshwater on a whole of catchment basis. The evidence referred us to the prescribed water quality limits and targets in both the NRRP and pLWRP which is consistent with the directives of that NPS.

[26] Ministry for the Environment Hazardous Activities and Industries List (2004).

6.118 While the planning experts did not address it specifically in their presentations to us, we asked as to the relevance of the New Zealand Coastal Policy Statement (2010) (**NZCPS**) to the proposed discharge. We were informed in the applicants written right of reply, and in additional evidence by Ms West, that the NZCPS does have relevance, and that the proposal is generally consistent with the objectives and policies of the NZCPS. Those provisions are directed towards appropriate recognition and management of the characteristics and qualities of the coastal environment. Particularly relevant is the intention to improve over time the quality of the freshwater discharge ultimately entering coastal waters.

6.119 In regard to the operative RPS, we were directed to consider Chapters 2, 4, 5, 7, 17 and 18.

6.120 Chapters 2 and 4 concern matters of significance and resource relationships for tangata whenua. We have set out our conclusions as to effects on cultural values and associations with natural and physical resources, and the large measure of agreement now reached between the applicant, ECan and MKT in that regard. We discuss specific points of difference later in our decision. Notwithstanding those differences however there is a clear commitment to protecting, and where possible improving, water quality outcomes through the implementation of the Styx SMP, sustaining environmental flow regimes to maintain, restore or improve waterway health, and to embed cultural monitoring tools and consultation with Rūnanga within the overall adaptive management regime being put forward.

6.121 Chapter 5 addresses land use and infrastructure. The key objective (objective 5.2.1) sets to guide the location, design and function of development. Associated policies (5.3.5 and 5.3.6) require appropriate servicing, including designing and operating stormwater services to maximise their ongoing effectiveness, and to also avoid or mitigate adverse effects in providing for such infrastructure. Given the proposed SMP and Blueprint approach, and insofar as the application is to discharge only at this stage, the application is found to be consistent with these provisions.

6.122 With regard to freshwater water quality and quantity (Chapter 7), two objectives are most relevant (objectives 7.2.3 and 7.2.4). They seek maintaining or improving the overall quality of the regions freshwater resource, while safeguarding life supporting capacity, ecosystems and processes, and indigenous species. Sustainable management in an integrated way is also sought, within and across catchments, between activities and agencies, and involving those interested in the community.

Related policy 7.3.5 addresses potential adverse effects of land uses on the flow of water in water bodies and the recharge of groundwater. Policy 7.3.6 requires management of activities such that minimum water quality standards continue to be met or exceeded, or where currently below those standards, quality is not further degraded.

6.123 Policy 7.3.13 promotes the involvement of people and communities, including consent holders, in the management of freshwater. An identified method is through consent conditions providing for self-monitoring, auditing and reporting, which is aligned with the adaptive management approach embodied in the application.

6.124 Inherent in the applicants proposal is the focus on maintaining or improving freshwater quality overall in the receiving waterways. Consistent with our conclusions as to effects on both water quality and quantity being acceptable, the proposal is generally in accord with the aims of Chapter 7.

6.125 Chapter 17 relates to the management of contaminated land with a singular objective (17.2.1) to protect people and the environment from the adverse effects of such contamination. An outcome of policy 17.3.2 is to ensure discharges from contaminated land do not lead to further significant adverse effects. The application provides for a targeted identification and audit process and our conclusion is this is manageable through such an approach. As for the planned infrastructure, adaptive management means, among other things, that the location of stormwater facilities is to a degree flexible, and these may be sited so as to avoid contaminated sites. Where this is not possible, removal of contaminated material and appropriate design options can avoid or mitigate adverse effects on people and the environment.

6.126 The provisions of Chapter 18 concern hazardous substances and look to avoiding, mitigating or remedying adverse effects associated with the use, storage, disposal and transportation of such substances (objective 18.2.1 and policy 18.3.2). The section 42A report recommends including additional measures to address hazardous substances effects where such substances are entrained in stormwater runoff from operating HAIL sites. Ms West and Mr Pizzey emphasised that the consent sought is for discharge that may include some wash down, not for individual sites to discharge, or for hazardous substances to be used, stored, disposed of or transported. The consent relates to existing discharges entering the network and then being discharged from it. We accept the rationale put to us for the inclusion of wash-down water from industrial sites within the application, and accept the evidence that the

quality of wash-down water would be similar to that from the regular stormwater network.

6.127 The proposal anticipates close relationships and collaboration between CCC and Ecan staff in ensuring the necessary audit and information requirements in the proposed conditions are met. It was however initially recommended in the section 42A report that further conditions were required in respect of implementation, industrial site management and reporting to ensure that steady progress is made towards goals proposed in the suggested conditions. Given the level of agreement reached, and the modifications now proposed for those conditions, we consider those in respect of industrial site management to be in accord with the aims of the RPS.

6.128 We were asked to also consider the relevance of proposed change 1 to the RPS concerning growth and development in Christchurch. The complicated history to this proposed change is well summarised in the section 42A report, planning evidence and legal submissions presented to us. Suffice to say we accept that the future outcomes of this change and associated appeals before the Environment Court remain uncertain, particularly in view of the emergence of the pLURP. Accordingly we have afforded this proposed change relatively little weight. That said we are satisfied that the proposal would appropriately provide for the necessary stormwater facilities to enable the urban growth envisaged for this area of Christchurch, and with appropriate management, do so without compromising the ability to protect the natural and physical environment (objective 3, policy 7).

6.129 In terms of regional plans three have relevance to the application.

6.130 Chapter 4 of the NRRP relates to surface water and groundwater quality. The commitment towards meeting water quality outcomes contained in the NRRP or otherwise progressively improving towards meeting those outcomes is generally consistent with objective WQL1.1.(2) and associated policies. We heard of some difference of view between the experts as to the applicability of policy WQL1(1), particularly in respect of the entrainment of hazardous substances in stormwater. The section 42A report recommends additional measures as already noted regarding identification and mitigation of associated effects. Ms West explained her interpretation of this policy as more applicable to specific industrial site discharges or point source discharge of particular contaminants, rather than the situation of wash down entrainment as in the context of this application. We do not interpret the policy

to necessarily be so categorical, but we do agree with Ms West and the section 42A report that policy WQL1(2) is perhaps the more applicable.

6.131 This policy contemplates the situation where the water quality standards set by the NRRP are not being met, as is currently the case for some of the Styx SMP area waterways. Relevant for the Styx SMP area, three alternative outcomes are sought in that circumstance – either the discharge does not result in a further decline in water quality (WQL1(2)(b)(i)(1)); no significant adverse effect arises relative to Table WQL5 purposes/outcomes for a river (WQL1(2)(b)(i)(2)); or the discharge is from an existing local authority network and there is a substantial commitment to progressively improve the quality of the discharge to ultimately meet the standards by 2025 (WQL1(2)(b)(iii)). Ms West concluded the proposal would be *"allowable"* under the criteria to see no further decline in quality and in respect of an existing network.[27]

6.132 We do not fully accept that position. The applicant's proposed conditions regarding improved water quality outcomes are not specifically tied to meeting the NRRP standards, nor are they 'time bound' in the terms of the policy to 2025, or even the full 35 year term sought for the consent – a point made in the section 42A report. The offered consent condition objectives for the receiving environment (Table 1) are not absolute in those terms, and neither are the equivalent aims in the SMP. In our conclusion the proposal is consistent with this policy only insofar as we are satisfied water quality outcomes generally would not further decline, and that the expert evidence supports a conclusion that Table WQL5 outcomes would not be compromised on a catchment basis for the higher classification waterways. In terms of the application as it has evolved there is a *"reasonable endeavours"* intention to see improvements as measured against the NRRP Table WQL5 water quality outcomes (Class 1 and 2 waterways) and more general protection and improvement expressions for class 3 waterways in terms of ecological and tangata whenua values.

6.133 The section 42A report and Ms West also address policy WQL3 regarding discharge of certain contaminants to surface waters. We have previously discussed effects in this regard and have some sympathy with the arguments of Ms West as to the limited applicability of this policy to the proposal. In any event we take from the agreed position now reached between CCC and ECan on conditions specific to industrial site management that the intentions of this policy and others addressing hazardous substances are able to be met on the basis of those conditions.

[27] West, paragraph 110.

6.134 Objective WQL2.1 and policy WQL7 setting water quality outcomes of groundwater are relevant to the two existing land discharges in the Upper Kaputone sub-catchment and would substantially be met.

6.135 The second regional plan of relevance is the WRRP in respect of water quantity.

6.136 Objective 5.1 and policy 5.1 concern enabling communities to gain social, cultural, economic, recreational, health and other benefits from waterbodies while protecting a range of other associated values, including life-supporting capacity, drinking water, mahinga kai and wahi tapu, natural character and amenity. The focus is principally on abstractions as opposed to discharges, and the respective Council staff and advisors agree the proposal is consistent with this document. We concur.

6.137 The pLWRP is the third regional plan to consider. However like the expert planners, we have given this document comparatively little weight in our considerations given the stage it is at procedurally. To the extent to which we have applied it weight, we find nothing in the proposal to be contrary to the objectives and policies of the pLWRP.

6.138 In summary, while we accept that in some respects the proposal does not meet the exact standards set at a policy level in particular, overall the application is largely in accord with the objectives and policies of the relevant statutory planning documents.

Other Matters

6.139 Presented to us were a range of matters considered to be relevant and reasonably necessary for our consideration under section 104(1)(c). This was not a matter of contention and although we do not discuss each individually, we have generally accepted that we should give consideration to those various documents referred to us.

6.140 Among these were the Te Rūnanga o Ngāi Tahu Freshwater Policy Statement (**NTFPS**) and the Mahaanui Iwi Management Plan (2013) (**MIMP**). The NTFPS informs us of the issues of importance to iwi in relation to freshwater resources, and of desired outcomes in that regard. The MIMP is very recent and provides a policy framework for the protection and enhancement of NgāiTahu values and for achieving outcomes that provide for the relationship of Ngāi Tahu with natural resources. Both documents were referred to by MKT on behalf of Te Ngāi Tuahuriri Rūnanga in presenting to their submission.

6.141 It is evident to us that as a general conclusion the Ngāi Tahu Freshwater Policy would not be compromised by the proposed activity. The proposal is consistent with desired outcomes of that policy, namely recognising Ngāi Tahu's association with freshwater resources and support for integrated management with other resources; recognising the mauri of waterbodies and Ngāi Tahu's practises of kaitiakitanga and rahui; the desire to protect and restore water quality and quantity; providing for Ngāi Tahu as Tangata tiaki (guardians) to participate in freshwater management; and ensure protection of mahinga kai species and habitats.

6.142 We have set out our conclusions on the anticipated effects of the activity on issues, values and associations of cultural significance, and Mr Pizzey has set out in the applicants right of reply the understood position reached between CCC and MKT with regard to conditions, although that understanding is still somewhat qualified.

6.143 As to other matters, we record our acceptance of the relationship to existing consents that have been identified to be surrendered, transferred or varied should this application be granted and see no impediment in that regard to approving the application.

6.144 Lastly we are aware that under the Canterbury Water Management Strategy (CWMS) the province is divided into ten water management zones and the Styx catchment lies within the Christchurch-West Melton zone. Each zone management committee has prepared a zone implementation plan (ZIP) which has been accepted by the relevant councils. However this ZIP is not a statutory document. It is that committee's considered recommendations as to the most relevant water management issues within the zone and suggests who should lead in addressing them. Because it is a non statutory document it carries no weight in the present decision making process but in fact the intentions of the applicant coincide closely with the ZIP general philosophy.

Section 104D

6.145 As a non-complying activity section 104D of the RMA requires that consent may be granted only if we are satisfied that the adverse effects on the environment will be minor, or the application is for an activity that will not be contrary to the objective and policies of the operative and proposed regional plans.

6.146 We heard statements from both expert planners appearing before us, Ms West and Ms Douglas that they considered the proposed activity to be generally consistent with

the relevant objectives and policies of the NRRP, WRRP and pLWRP subject to appropriate conditions being imposed. With that same proviso neither planner concluded the proposals to be contrary to those provisions. Each however had formed their original opinions based on some differences as to appropriate conditions and associated monitoring necessary to support that conclusion. As we have identified those differences are now evidently specific to only two implementation matters.

6.147 Similarly both planners concluded the overall effects of the proposal on the environment to be minor, again subject to appropriate (but in part differing) conditions of consent. We have addressed those differences in evaluating the anticipated effects of the activity and favour the position of Ms West and the applicant in both respects. In any event we do not see those points of difference on implementation matters to be so significant or fundamental as to lead us a conclusion that adverse effects in an overall sense would extend to being anything more than minor.

6.148 In our conclusion, and for the reasons we have set out, the proposal would neither lead to adverse effects on the environment that would be more than minor or be considered contrary to the objectives or policies of the relevant plans or proposed plan. Accordingly, section 104D does not preclude granting consent.

Section 105

6.149 For this application to discharge stormwater we must also apply the provisions of section 105 of the Act. Accordingly we must have regard to the nature of the discharge and the sensitivity of the receiving environment to adverse effects, the reasons for the proposed choice of discharge and the any possible alternative methods of discharge, including to another receiving environment.

6.150 The applicant's AEE, the evidence presented by the CCC and the section 42A report each consider the relevant matters under section 105.

6.151 We have discussed and concluded on the likely and potential effects on the environment of the activity, and found those effects to be minor or less, provided appropriate mitigation measures are in put in place. We have noted the adaptive management approach to be implemented by the consent holder and the associated monitoring and response regime directed to achieving the desired outcomes for the receiving environment. While we acknowledge there are always some uncertainties

as to actual effects arising from such proposals, we are satisfied due consideration has been given to those environmental sensitivities in devising an adaptive management approach with sufficient safeguards through consent parameters and conditions.

6.152 The Blueprint document and evidence by Mr Eastman and Mr Oliver in particular addressed the applicant's choice of approach to stormwater management in this part of Christchurch and of possible alternative methods. We have had regard to those statements and particularly note the preferred approach (with two existing exceptions) in this case of discharge to water rather than ground given localised soil and groundwater conditions, and the location of much of the area over the Christchurch Groundwater Protection Zone.

6.153 Our conclusion is that sufficient and adequate regard has been had to the matters prescribed in section 105.

Section 107

6.154 This section of the Act restricts the granting of discharge consents in circumstances where the discharge is of a contaminant or water into water, or of a contaminant into or onto land if it may enter water, such as to give rise to certain adverse effects after reasonable mixing.

6.155 The section 42A report identified the potential for significant adverse effects on aquatic life due to hazardous substances entrained in stormwater or wash down water from existing unmitigated industrial catchments, but concluded exceptional circumstances still supported granting of consent. Mr Pizzey in submissions and Ms West in her evidence stated that the applicant's evidence did not support a finding of significant adverse effects on aquatic life, rather the contrary, and therefore consideration of whether circumstances were exceptional under section 107(2) (a) was unnecessary.

6.156 It occurs to us that this initial concern on the part of the section 42A report authors may have been overcome given the level of acceptance eventually reached on possible conditions. Irrespective of that however we agree with the submissions of Mr Pizzey that declining consent under this section would be hard to fathom when the evidence supports the real probability of a long term improvement of water quality and other conditions necessary to sustain aquatic life.

6.157 Our finding is that in the circumstances of this proposal, section 107 does not preclude the granting of consent.

Part 2

6.158 The purpose of the Act is to promote the sustainable management of natural and physical resources. In defining sustainable management section 5 directs us to considering the management of natural and physical resources in relation to people and communities providing for their social economic and cultural wellbeing, and for their health and safety. In doing so, the potential of those resources to meet future needs is to be sustained, the life supporting capacity of air, water, soil and ecosystems is to be safeguarded, and adverse effects are to be avoided, remedied or mitigated.

6.159 We heard significant evidence on the apparent need for an improved, comprehensive and integrated system of stormwater management in the Styx SMP area of Christchurch, and therefore meeting foreseeable future needs has been a fundamental driver for the proposals. The applicant has intentionally sought to provide both for envisaged future urban development through the design of the proposed system of treatment and discharge, and also sought to improve on past performance where practical, particularly in respect of water quality outcomes. These intentions are clearly directed towards achieving community and individual well being through the management of the use, development and protection of resources within the application area and also for affected areas beyond those catchments. The proposal also provides some positive contribution to enabling post-earthquake recovery for the Christchurch community.

6.160 In the design and methods of implementation of the proposals, particular consideration has been given to protecting the values of soils, water and ecosystems, all of which are to be directly or indirectly impacted by the discharge of stormwater. We have concluded that appropriate protection of those values would be achieved, managed through appropriate conditions and informed by on-going monitoring, and in a number of respects improvements in the receiving environment are probable.

6.161 The basis of the adaptive management regime that has been devised is to achieve relevant standards for the receiving environment and to enable appropriate response and adaption as may be required in doing so. We are satisfied that adequate

baseline environmental understanding exists to inform that process, that clear objectives have been set and embodied in conditions, that monitoring is to be targeted to the necessary environmental indicators, and that the conditions would safeguard against failure to detect and remedy irreversible adverse effects.

6.162 The health and safety of individuals, and managing risks to property and other investment are also important aspects of the proposals. The discharge has the potential to affect those matters in terms of flooding, groundwater impacts and change in water quality. We note that the proposal is premised on protecting present and future health, safety and investment, notwithstanding accommodating significant further urban development within the SMP area. It offers reasonable certainty as to long-term outcomes and seeks to improve on current (minimal) mitigation of flooding and water quality issues through a more integrated approach to catchment management.

6.163 Several matters of national importance under section 6 have relevance, namely the preservation of the natural character of wetlands, rivers and their margins (s.6(a)); protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna (s.6(c)); and the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga (s.6(e)).

6.164 In the upper catchment especially the stormwater system comprises of a local piping network discharging to an extensive system of open drains and waterways. Many of the waterbodies within the application area have been described as modified and “urbanised”, and values associated with natural character are in many examples diminished. However other waterways still retain such value and significant restorative initiatives have proven successful in returning natural characteristics to parts of the catchment. Mr Shadbolt illustrated that for us, and we ourselves observed that to be the case at locations throughout the application area during our site visit. We accept it remains an important focus in the overall management of city’s waterways generally by the CCC. The SMP and the application place significant emphasis on maintaining or enhancing water quality in conjunction with waterway restoration measures, and we do not perceive natural character values of the affected waterway system to be diminished as a consequence of the management system that is proposed.

6.165 We heard of poor aquatic ecological habitat being present in some places, but also of significant areas where those values are much higher (e.g. judged on sensitive species). Our conclusions as to the acceptability of effects on those associated values, and the particular conditions setting outcomes for the receiving environment, reflects both recognition of those values and provision for adequate protection.

6.166 We have described and discussed our conclusions with respect to the application and relationships of Maori with resources, particularly those associated with fresh water. As described earlier we have been informed through the applicants right of reply of continuing engagement and discussions held between the applicant and MKT around the specific concerns of that submitter and also possible consent conditions. Although late in proceedings that engagement between these parties has clearly proved positive. We take from correspondence by MKT to CCC and reference to a subsequent email,[28] that MKT on behalf of Ngāi Tuahuriri (as submitter) is now accepting of consent being granted subject to certain conditions.

6.167 Those conditions seen by the submitter to be necessary and acceptable are evidently as finally presented by the applicant, but with some qualification. In a specific sense that qualification relates to two matters. Firstly, CCC propose a condition regarding engagement with Ngāi Tuahuriri Rūnanga (condition 13) at concept design stage. The submitter had noted that this meets in part their original concern, but that it does not provide for 'absolute protection' of important cultural values in the design and siting of stormwater infrastructure. In essence the inherent duty is to consult only, nothing further.

6.168 In addressing this Mr Pizzey notes the specific processes for design, siting and ultimately consenting the necessary infrastructure is beyond the scope of this application. Separate and subsequent processes would determine those outcomes, and that is so, accepting also that condition 13 is most probably lawful only if offered by the applicant. He further submits that absolute protection of waterways as a more generic objective would require fundamental change to the management of the urban stormwater utility, impose requirements that are not reasonably achievable and create enforcement issues for class 3 waterways. To elevate the objectives for water quality for class 3 waterways to match those for classes 1 and 2 is, it was submitted, neither affordable nor practical in a developed urban catchment, and that it would be technically impossible to eliminate discharge of contaminants from all class 3 urban

[28] Letter to CCC (Mr B Pizzey) from MKT (Mr S Orchard/Ms A Lobb), dated 4 June 2013, and email from Mr Orchard to Mr Pizzey, received 5 June 2013 (as per applicants right of reply).

waterways in any timeframe. We heard evidence from both Mr Eastman and Dr Dewson as to some of those impracticalities and costs, and in effect to do so would be tantamount to declining consent.

6.169 The only instances where we consider the 'absolute protection' might be achieved are in those river reaches above which there is no stormwater discharge at the moment and the water is essentially in pristine condition. Such reaches are of very limited length and close to the spring heads.

6.170 Other specific matters raised by this submitter have been addressed through the latest proposed conditions, including expressed objectives for class 3 waterways with a commitment to protecting or otherwise enhancing tangata whenua values; the reclassification of several waterways and a spring to class 3 from class 2; and 5 yearly review of waterway classifications.

6.171 The second matter concerns a proposed condition that an implementation plan be prepared and available to ECan and Te Ngāi Tuahuriri Rūnanga which is to include various prescribed matters (condition 18). The submitter wishes to see an added requirement to consult with Te Ngāi Tuahuriri Rūnanga on the draft monitoring process for individual Erosion and Sediment Control Plans which are to be prepared in the case of development discharge for construction areas. Mr Pizzey has responded indicating such *"process matters"* are outside of the realm of this consent; effectively they relate to City Council exercising its functions under the Local Government Act and statutory resource management functions in the administration of other consents as consent authority.

6.172 We accept that, and go further to also note the proposed inclusion within the overall monitoring programme of specific monitoring of Tangata Whenua Value Indicators, with both the development of indicators and the reporting of results subject to consultation with Ngāi Tuahuriri Rūnanga. This is to based on the Cultural Health Index and 2012 Pūrākaunui State of the Takiwa methodologies, and sets up a mechanism for catchment wide consideration of issues of cultural significance. Additionally we recognise that the applicants proposed condition 18 enables the implementation plan to be available to Ngāi Tuahuriri Rūnanga on request. In our conclusion that moves significantly towards satisfying the issues expressed to us by MKT.

6.173 We discuss possible conditions further shortly, but we find the evidence indicating that there would be a significant improvement in water quality and ecology generally to be positive outcomes in terms of our section 6 considerations. We are also mindful of the inherent benefits to an integrated SMP approach relative to the environmental outcomes likely through ad hoc, incremental consenting of stormwater discharges. Accordingly in our conclusion section 6 matters have been adequately recognised and provided for.

6.174 Relevantly, regard must be had under section 7 to the following matters:

(a) Kaitiakitanga:

(aa) The ethic of stewardship:

(b) The efficient use and development of natural and physical resources:

(c) The maintenance and enhancement of amenity values:

(d) Intrinsic values of ecosystems:

(f) Maintenance and enhancement of the quality of the environment:

(g) Any finite characteristics of natural and physical resources:

(h) The protection of the habitat of trout and salmon:

(i) The effects of climate change:

6.175 We have substantially addressed these matters in our previous discussion. In summary the proposals intentionally place the consent holder in a greater stewardship role; they represent efficient use and development of resources; aquatic ecological values would be either maintained or enhanced; relative to the present, amenity values and the quality of the environment would be generally positively affected; cultural relationship values have been recognised and adequately provided for; and conservatism has been built into the predictive modelling relied upon to inform design, including in respect of climate change, resultant sea level rise and increasing rainfall.

6.176 In achieving the purpose of the Act, section 8 requires that the principles of the Treaty of Waitangi are to be taken into account. In that regard the applicant has engaged with local Ngāi Tuahuriri Rūnanga in the development of the strategies and plans that have informed the application. That engagement, it's recent continuation and the sensitivity of the proposals to resource relationships and values of cultural

significance is evidence of account being taken of Treaty principles regarding active protection and a duty to consult.

6.177 In terms of the overall sustainable management purpose of the Act, the application is considered to be consistent with promoting that purpose.

Section 108 - Conditions

6.178 This section of the Act enables conditions to be imposed on a resource consent. As has been noted, the application as presented to us relies on a range of offered conditions closely linked to a programme of ongoing monitoring against achieving stated environmental outcomes. That regime is informed by the consent obtained by the City Council for the management of stormwater in the south-west area, is intentionally adaptive, and able to be responsive to changes and improvements necessary over time. We also acknowledge that the nature of those conditions and monitoring provisions evolved through the course of the hearing and thereafter, to the point where we were informed that a high degree of agreement has been reached on them between CCC and ECan.

6.179 ECan however seek two additions to the applicants proposed conditions (18c and d). As we have discussed they relate to mitigating against creation of habitat for mosquito and biting midge habitat and the processes CCC will follow in respect of identifying development areas where intercepting/diverting groundwater flows may be detrimental to springs and baseflows. We have set out our reasoning as to why we do not consider it either appropriate or necessary to impose such conditions on this consent.

6.180 In broad terms we have accepted the applicants 'final' offered conditions and the monitoring programme as being both necessary and appropriate if consent is to be granted. We have however made some minor modifications to both, although generally they are editorial in nature to aid interpretation and understanding. Recognising the long-term nature of the monitoring programme and the importance of both precision and consistency if that programme is to be informative and effective over many years, we have endeavoured to ensure the intended monitoring methodology and its application is sufficiently clear. For completeness we also record the amendment to the application to now include the modified waterway

classification map (referenced as Plan C) in response to concerns raised by Ngāi Tuahuriri Rūnanga.[29]

6.181 Lastly, we note the applicant's proposed conditions require annual reporting to ECan and Ngāi Tuahuriri Rūnanga. The proposed monitoring programme and proposed conditions include guidance on the content and focus of such reporting. As was indicated in the decision granting consent for the equivalent south-west SMP stormwater discharge, we anticipate in the situation of the Styx area there could equally be community interest in gaining understanding and awareness of the results of proposed monitoring and of any management responses to those findings. Ideally we believe the CCC in particular should consider publicising (locally at least) the availability of results on an annual basis, including where they may indicate something unforeseen or a modification of the management approach being necessary. We believe organisations such as the Styx Living Laboratory Trust, Styx Guardians and the Christchurch-West Melton Zone Water Management Committee are examples of specialist interest groups that would conceivably have a particular and on-going interest in receiving those annual reports, if only for information. Accordingly we have made a note referencing the desirability of that in the reporting section of the monitoring programme (Section 8).

Consent Duration

6.182 Mr Pizzey and the section 42A report address the matter of the 35 year consent duration sought by the applicant. Both the applicant and ECan are in agreement as to the appropriateness of such a duration. We recognise the general encouragement to catchment wide integrated management of stormwater in the relevant planning instruments. Such an approach of necessity represents a long term view, ultimately requires significant capital investment in land and infrastructure, and is directed to progressive improvement in environmental outcomes over time. We find those reasons all to be compelling in support of a longer rather than shorter consent duration.

6.183 In our evaluation there is sufficient knowledge and understanding of the receiving environment, adequate safeguards in the form of monitoring and adaptive management if intended outcomes are not been seen to be achieved, and cost efficiencies achievable for the applicant and the community with an integrated and long term management approach, that support the maximum 35 year duration.

[29] As per applicants written right of reply (5 June), and as referenced in condition 4(b).

Additionally a review condition has been offered by the applicant if unanticipated and significant adverse effects do emerge meriting reconsideration of the consent.

Conclusion

6.184 Given our prior discussion, our evaluation of the relevant statutory considerations, and the management of adverse effects through conditions, we are satisfied that granting this consent for a duration of 35 years promotes the sustainable management of natural and physical resources in a manner that is consistent with the purpose of the Act.

6.185 For the principal issues in contention we have found:

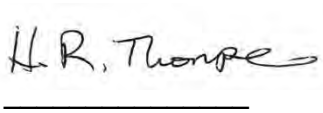
- Any associated increase in inundation of land due to flooding to be relatively minor, and for some storm events such effects would be reduced;
- Deferring the application until necessary land acquisition and/or other authorities to develop the require stormwater infrastructure have been completed is neither realistic or necessary, nor is it reasonable;
- Adequate account has been taken of Maori cultural interests, values and relationships with resources; and
- The adaptive management regime proposed is sufficiently certain and robust, and directed towards achieving appropriate environmental outcomes.

7.0 DECISION

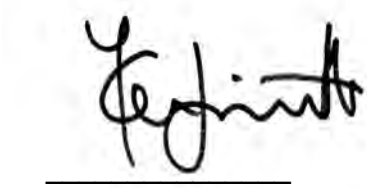
7.1 Application CRC131249 for a discharge permit to discharge contaminants onto and into land, and into water associated with stormwater management in the Styx Area of Christchurch is **GRANTED** for a duration of 35 years from the date of decision, subject to the attached conditions.

Raewyn Solomon

Hugh Thorpe



Ken Gimblett (Chair)



Appointed Commissioners

26 June 2013

APPENDIX 1

Consent Conditions

CRC131249 To discharge stormwater from Styx Stormwater Management Plan Area

Advisory Note: The following consent conditions have been prepared according to the agreed practices of the Joint Christchurch City Council & Canterbury Regional Council Stormwater Management Protocol, Report U10/12 (the Protocol). The Protocol establishes how Canterbury Regional Council and Christchurch City Council will work together to achieve integrated catchment wide stormwater management in Christchurch. The Protocol records the understanding between Canterbury Regional Council and Christchurch City Council but does not create legal obligations that are enforceable by either party. Appendix 4 of the Protocol sets out responsibilities pertaining to compliance and operations and notes the role of the SWiM Working Party in any enforcement matters.

For the purpose of this consent the following definitions and abbreviations apply to all conditions:

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 occurring in any one 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.

Blueprint means the surface water management scheme called the Styx Stormwater Management Plan Blueprint for Surface Water Management.

critical duration means the time at which it takes peak water levels to be reached in the Styx River/Pūrākaunui as agreed by Canterbury Regional Council and Christchurch City Council and based on the most up-to-date information or modelling.

design storm is the theoretical rainfall event that the analysis is based on for a particular probability. The design storm is based on certain assumptions, including rainfall depth and intensities, and storm rainfall profile shape for the critical duration. For example, in the case of the Styx SMP one of the design storms is the 2% AEP 48 hour duration event.

development area means any individual area within a site or sites that is undergoing development and construction activities.

facility means a stormwater management facility comprised of a stormwater treatment train that may include, for example, an off-line sedimentation basin followed and/or preceded by a constructed wetland or wet pond.

industrial site means:

(a) Any premises used for any industrial or trade purposes; 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 production land.

Greenfields urban development means the construction of subdivisions, buildings, roads and associated network services.

Partial Detention means storage within first flush basins with additional storage through back flooding of wetland areas to an average depth of 500 millimetres over the wetland for the 2 % AEP critical duration design storm event.

QMCI means Quantitative Macroinvertebrate Community Index.

site means an allotment title and any balance of land or adjacent land or allotment titles held by the same owner or ownership with an affiliated interest, for example a family trust or company.

stabilised means an area sufficiently covered by erosion-resistant material such as a good cover of grass, mulch, weed matting, bark, sand/aggregate, or paving by asphalt or concrete etc, in order to prevent erosion of the underlying soil.

stage of development means the phase of development of any one development area which is completed prior to any other stage of 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'.

SMP means stormwater management plan.

stormwater means runoff that has been 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 or from routine washdown practices and may contain contaminants (which may include traces of hazardous substances). This definition excludes discharges of spilled or deliberately released hazardous substances and the subsequent washdown of such spills or releases. Any unacceptable washdown practices will be identified as part of the Industrial Site Audit process and be addressed via that process.

stormwater network means Class 3 and 4 waterways as identified in the Styx River/Pūrākaunui SMP and as shown on Plan C attached to this consent, and includes the reticulated piped network, including 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, maintenance and upgrade.

SWiM Working Party means the Joint Storm Water Issues Management Working Party. The SWiM Working Party 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 "Planning and Consents Protocol for Surface Water Management."

Scope

1. The discharge shall be only stormwater discharged from the area identified as the Styx SMP Area as shown on Plan A, which forms part of this consent, that:

    a) Enters the Christchurch City Council stormwater network and is subsequently discharged into surface water, or onto or into land via the two soakage basins on Springwater Ave, Northwood. This includes discharges existing prior to 27 August 2012 from areas adjacent to the SMP Project area shown on Plan A, but reticulated into the Styx Area network; or

    b) Is generated from development areas and is discharged into the Christchurch City Council Styx SMP Area stormwater network or into surface water within the Styx SMP Area, but excludes discharges from the areas specified in Condition (2); or

    c) Is from roofs from individual properties, located within zones 1, 3 and 8 as defined in Plan B "Stormwater Disposal Options for individual sites", and is discharged onto or into land via one of the preferred options for the zone it occupies, as described on Plan B, which forms part of this consent; or

    d) Is from hard-standing areas on individual residential properties, located within residential zones 1, 3 and 8 as defined on Plan B "Stormwater Disposal Options for individual sites", and is discharged onto or into land via one of the preferred options for the zone it occupies, as described on Plan B.

2. There shall be no discharge into the stormwater network or to surface water from a stage of development with a total area of disturbance greater than 5 hectares of land.

3. There shall be no discharge to surface water from the following unless expressly authorised by Canterbury Regional Council and Christchurch City Council:

    a) Any development area or facility on a site that the Canterbury Regional Council has identified as being contaminated.

    b) Any development area or facility on a site on the Canterbury Regional Council's Listed Land Use Register, unless the soil has been analysed for the appropriate contaminants as determined by Canterbury Regional Council and has been shown to be 'At or below background concentrations' or 'Below guideline values for residential' and accepted by Canterbury Regional Council as 'At or below background concentrations' or 'Below guideline values for residential'.

    c) Any industrial site discharge that bypasses the Christchurch City Council stormwater network.

    d) Any site listed on the attached Schedule 1 'Sites excluded from the Styx SMP Area consent.'

    Advisory note: The purpose of conditions (2) and (3) is to identify sites where stormwater quality may compromise the outcomes that this consent seeks to achieve and, where feasible, discourage such discharges. If such discharges cannot be avoided and consent is sought, the consent process provides applicants with the opportunity to demonstrate that their discharge will not compromise the outcomes specified in the conditions of this consent.

Receiving Environment Objectives

Water Quality and Aquatic Ecology

4. The consent holder shall use reasonable endeavours:
   a) to achieve the surface water quality, sediment quality, aquatic ecology and tangata whenua objectives set out in Table 1 for all receiving waterways marked as Class 1 and 2 on Plan C, which forms part of this consent; and
   b) To work wherever possible to improve Class 3 receiving waterways shown on Plan C at a catchment-wide scale by:
      (i) protecting and otherwise enhancing ecological values; and
      (ii) ensuring Class 1 and 2 values downstream are not compromised; and
      (iii) protecting and otherwise enhancing tangata whenua values.

Water Quantity

5. Over the duration of this consent, the modelled 2% AEP design rainfall flood level in the Styx River/Pūrākaunui at Harbour Road Bridge, when compared with the 2012 impervious surface 2% AEP design rainfall flood level, shall not be greater than 0.1 metres plus a 20% tolerance (i.e. + 20mm).

6. The water quantity model for the Styx River/Pūrākaunui shall be validated further and updated, as significant storm opportunities arise, using field measurements from the river and tributary flows, flood levels, rainfall, land use information and other hydraulic data, using the latest river modelling techniques.

7. Mitigation of water quantity effects from Greenfields urban development in the Styx catchment shall be achieved using Partial Detention. The minimum detention storage volume shall be determined for the 2% AEP critical duration design storm event such that Condition (5) can be achieved.

Design

8. All water quality mitigation facilities constructed for Greenfields urban development after commencement of this consent shall be designed to treat the runoff from the first 25 millimetres of rainfall from the contributing impervious areas of the site or sub-catchment. For all other water quality mitigation facilities constructed after commencement of this consent, reasonable endeavours shall be taken to treat the runoff from the first 25 millimetres of rainfall from the contributing impervious areas of the site of sub-catchment.

9. All water quantity mitigation facilities constructed after commencement of this consent for Greenfields urban development shall:
   a) For facilities discharging to surface water within the Styx River/ Pūrākaunui and Otukaikino River catchments provide Partial Detention.
   b) For surface water discharges to the Dudley Diversion Basin (Cranford Basin South), maintain the existing flood storage volume.

c) For the Bullers Facility, which discharges to surface water in the Avon River/Otakaro catchment, provide Partial Detention.

10. Secondary flow paths downstream of water quantity mitigation facilities constructed after the commencement of this consent to cope with flows in excess of the 2% AEP design storm shall be identified and protected, and shall avoid dwellings.

11. In addition to the minimum design standards specified in Conditions (8), (9) and (10), any mitigation facilities constructed shall include best practice design features that capture and contain as much as practically possible any spills of contaminants contained within stormwater entering the facility.

12. For design of water quantity mitigation facilities, detailed hydraulic analysis shall be required, including computer modelling for sub-catchments greater than 20 hectares. Assessments shall be made available to Canterbury Regional Council if requested. The outlet hydrograph for the 2 % 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 Styx River/ Pūrākaunui to confirm compliance with Condition (5).

13. The consent holder shall consult with Ngāi Tūāhuriri Rūnanga at concept design stage:
    a) Regarding siting and design of stormwater infrastructure with respect to wāhi tapu and wāhi taonga particularly spring head features and natural wetlands; and

    b) Regarding the identification of existing discharges of concern with respect to spring head features and natural wetlands; and

    c) Regarding landscaping and choice of plant species.

Erosion and Sediment Control

14. An Erosion and Sediment Control Plan (ESCP), prepared in accordance with Canterbury Regional Council's *Erosion and Sediment Control Guidelines for the Canterbury region*, shall be prepared and implemented for the construction discharge from any development area.

15. Copies of ESCPs submitted to or prepared by/for the consent holder shall be made available to Canterbury Regional Council on request.

Implementation Records

16. The consent holder shall notify Canterbury Regional Council when the developer for a project has been issued an authorisation from the Christchurch City Council under this consent.

17. The consent holder shall maintain records including, but not limited to, detailed design drawings, 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 shall be made available to Canterbury Regional Council on request.

18. Within 12 months of the granting of this consent the consent holder shall prepare an implementation plan that sets out how and when actions shall occur and shall provide this to the Canterbury Regional Council and Ngāi Tūāhuriri Rūnanga on request. The plan shall include but not be limited to the following:

    a) A review of the receiving waterway classification at least once every five years, to take into account relevant new information obtained from, for example, monitoring results, discussions with Ngāi Tūāhuriri Rūnanga runanga or changes triggered by rehabilitation/naturalisation.

    b) The process that the consent holder will follow to monitor compliance with individual Erosion and Sediment Control Plans submitted to or prepared by the consent holder under this consent.

Monitoring

Monitoring Programme

19. The consent holder shall undertake monitoring in accordance with the attached Monitoring Programme for Styx River/Pūrākaunui Stormwater Management Plan Version 1.0 ('Monitoring Programme') or any subsequent certified revisions to the Monitoring Programme.

20. The purpose of the Monitoring Programme is to investigate the effects of stormwater discharges on surface water quality, tangata whenua values, stream sediment quality, the ecology of surface waterways, surface water levels and soil quality within the Styx SMP area. The Monitoring Programme or any revisions to the Monitoring Programme shall also:

    a) Be sufficient to detect any trends in achieving tangata whenua values, surface water quality, stream sediment quality, the ecology of surface waterways and soil quality.

    b) For surface water monitoring programmes, be sufficient to measure compliance with the water quality, sediment quality, aquatic ecology and tangata whenua objectives set out in Table 1**.**

    c) Be sufficient to demonstrate compliance with the water quantity objectives set out in Conditions (5) to (7).

21. Any amendments to the Monitoring Programme may not replace the previous version until the Monitoring Programme has been certified by the RMA Compliance and enforcement Manager of the Canterbury Regional Council as complying with the requirements of Condition (20).

Industrial Site Management

22. Within two years of the granting of this consent the consent holder shall undertake and report on the outcomes of a desktop based identification of industrial sites. This report shall set out the process used to identify all industrial sites and include a discussion of the parameters used to rank sites for risk relative to stormwater discharge and identify the industrial sites that pose the highest risk.

23. The report shall also include a programme for prioritisation and scheduling for auditing the industrial sites that pose the highest risk identified during the desktop study. This shall include:

    a) A process to maintain an up to date, risk-ranked inventory of industrial sites as urbanisation of the catchment progresses.

    b) A process and schedule for periodically re-auditing and re-evaluating the identification of high risk sites for compliance with the consent holder's stormwater monitoring and pre-treatment management and maintenance requirements.

    c) A process for consulting with the Canterbury Regional Council's stormwater and pollution prevention officers as necessary to address difficult sites; and

    d) A process for periodic review of this programme by the consent holder.

24. Within two years of the granting of this consent the consent holder shall undertake the auditing of the top 10 highest risk sites within the catchment.

25. The industrial site audit of the highest risk sites shall identify:

    a) Site environmental practices, including spill prevention/control, minimisation or elimination of contaminants at source;

    b) Any data on discharge quality, or on the need for the site owner (and/or site occupier) to carry out monitoring of their stormwater discharge; and

    c) Adequacy of the site's stormwater system including stormwater treatment.

26. All sites that present an unacceptable risk to achieving the receiving environment objectives shall be excluded from this consent in accordance with Condition (3)(d).

27. If at any stage during a site visit, audit or monitoring of a site it is determined that a site is presenting an unacceptable risk to achieving the receiving environment objectives, the consent holder shall notify the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within 20 working days.

28. If investigations demonstrate that the objectives are not met as a result of discharges from an industrial site and the consent holder determines that the site shall be added to Schedule 1, the Schedule shall be updated.

29. The programme developed in Condition (23) shall be undertaken and shall be completed within ten years of the grant of this consent.

    Advisory note: Industrial sites deemed to be high risk and worthy of priority for auditing shall be determined by the SWiM Working Party.

Responses to Monitoring

30. If the monitoring results identify that the objectives set out in conditions (4) to (7) are not being met, the consent holder shall investigate the reason for this by following the steps set out in section 7 of the Monitoring Programme. Where adverse effects are a result of the discharges authorised by this consent, the Christchurch City Council will review its implementation and will use reasonable endeavours to meet the objectives

or achieve progressive improvements towards meeting the objectives, in Conditions (4) to (7).

*Advisory note: If, over the course of the consent, the receiving environment objectives are not being met, consultation is to occur between Christchurch City Council and Canterbury Regional Council via the SWiM Working Party***,** Ngāi Tūāhuriri Rūnanga***,** *to discuss the reasons and determine whether reasonable endeavours have been used, and whether any further action is necessary to ensure the objectives are met in the future. This consultation shall occur in accordance with the Protocol or subsequent revisions to the Protocol and in accordance with any consultation agreements entered into between the consent holder and Ngāi Tūāhuriri Rūnanga.*

Reporting

31. The consent holder shall provide an annual report to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and Ngāi Tūāhuriri Rūnanga , by 31 March each year. The report shall describe the process undertaken in accordance with Condition (4) and may include, where appropriate:

    a) A summary of the results of monitoring carried out under Conditions (19) and (20) and any responses carried out under Condition (30) including the supply of an updated Schedule 1. The annual report shall also be prepared in accordance with the reporting requirements of the Monitoring Programme.

    b) An update on progress with the high risk industrial site audit programme under Condition (23).

    c) An update on the timetable for construction and activation of Christchurch City Council stormwater treatment systems.

    d) Any waterway enhancement programmes undertaken within the catchment, and plans for funding of future enhancement projects that may result in improvements to ecological, cultural and amenity values of the waterways.

    e) Comment on consultation with Ngāi Tūāhuriri Rūnanga and report on any activities relating to the protection or enhancement of cultural values, including improvements to class 3 waterways.

    f) Any additional monitoring or investigations undertaken beyond those specified in the Monitoring Programme, and including those undertaken on industrial sites, that have been initiated to inform the consent holder on stormwater management effectiveness, such as contaminant source investigations or stormwater treatment performance monitoring.

    g) Any other significant matters which may have a positive or negative impact on the receiving environment in the future.

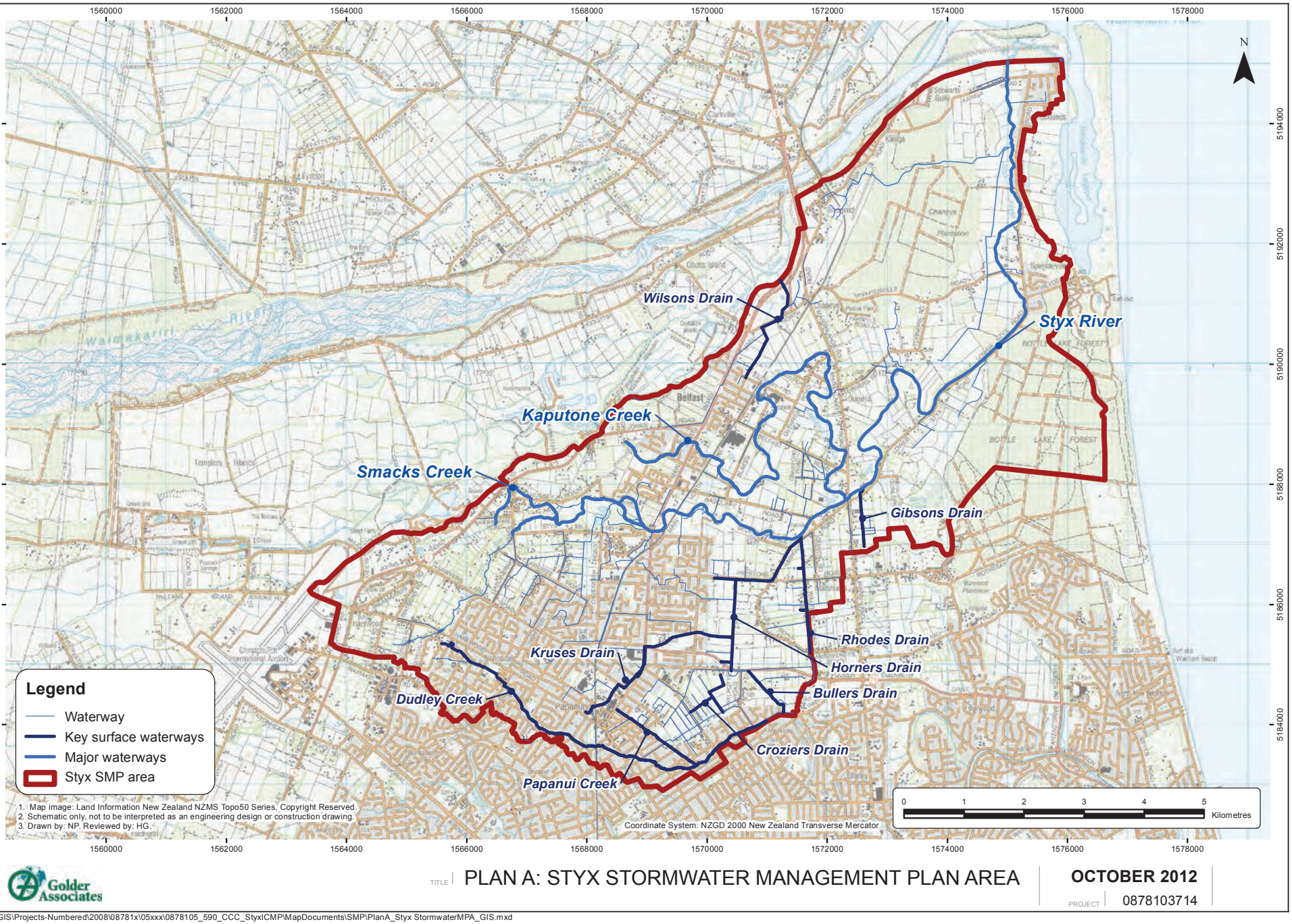
Administrative

32. 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 and which it is appropriate to deal with at a later stage; or
b) Achieving reasonable endeavours to make improvements to water quality; or
c) Complying with the requirements of a relevant rule in an operative regional plan.

Table 1 Receiving Environment Objectives - Surface Water Quality

Objectives (based on Stormwater Management Plan objectives)	**Measure/Target**	**Basis for Measure/Target**
Protect and otherwise enhance ecological values.	Minimum QMCI score 4.5 - 5	Water quality outcomes in Table WQL5 of Chapter 4 of the Natural Resources Regional Plan (2011). QMCI is an indicator of aquatic ecological health.
No adverse ecological impacts from construction activities.	Maximum cover of bed: Fine sediment – 30-40% Macrophytes – 50% Filamentous algae 30%	Water quality outcomes in Table WQL5 of Chapter 4 of the Natural Resources Regional Plan (2011). Fine sediment, macrophyte and periphyton cover are indicators of the quality of aquatic habitat. Improvement towards macrophyte and periphyton targets can be achieved by reduction in nutrient concentrations or other means such as riparian planting to shade waterways. Fine sediment cover to be measured against pre-development concentrations (pre-2012).
Improve water quality towards the national guidelines for copper, lead, zinc.	Site specific hardness-dependant criteria for copper, lead and zinc to be calculated.	Improvements will be measured against pre-development concentrations (pre-2012) with long-term target of reducing below national guidelines (ANZECC) for the 95% level of ecosystem protection, as outlined in table WQL16 of the NRRP (Schedule WQL1).
Reduce nutrient concentrations.	Reduced nitrogen and phosphorus concentrations in waterways after new treatment systems installed or retrofitted.	Measured against pre-development concentrations (pre-2012).
Maintain or improve sediment quality.	ANZECC (2000) sediment quality guidelines for copper, lead, zinc and PAHs plus industrial contaminants listed in Monitoring Programme	Measured against pre-development concentrations (pre 2012) and aim for long-term improvement towards ANZECC (2000) guideline trigger values (or subsequent revisions).
Protect and enhance tangata whenua values and recognise and provide for Ngai Tahu's association with freshwater resources.	Based on the Cultural Health Index and the State of the Takiwā.	Improvements will be measured against a 2012 baseline of cultural health indicators including the State of the Takiwā.



Golder Associates

TITLE | PLAN A: STYX STORMWATER MANAGEMENT PLAN AREA

OCTOBER 2012

PROJECT | 0878103714

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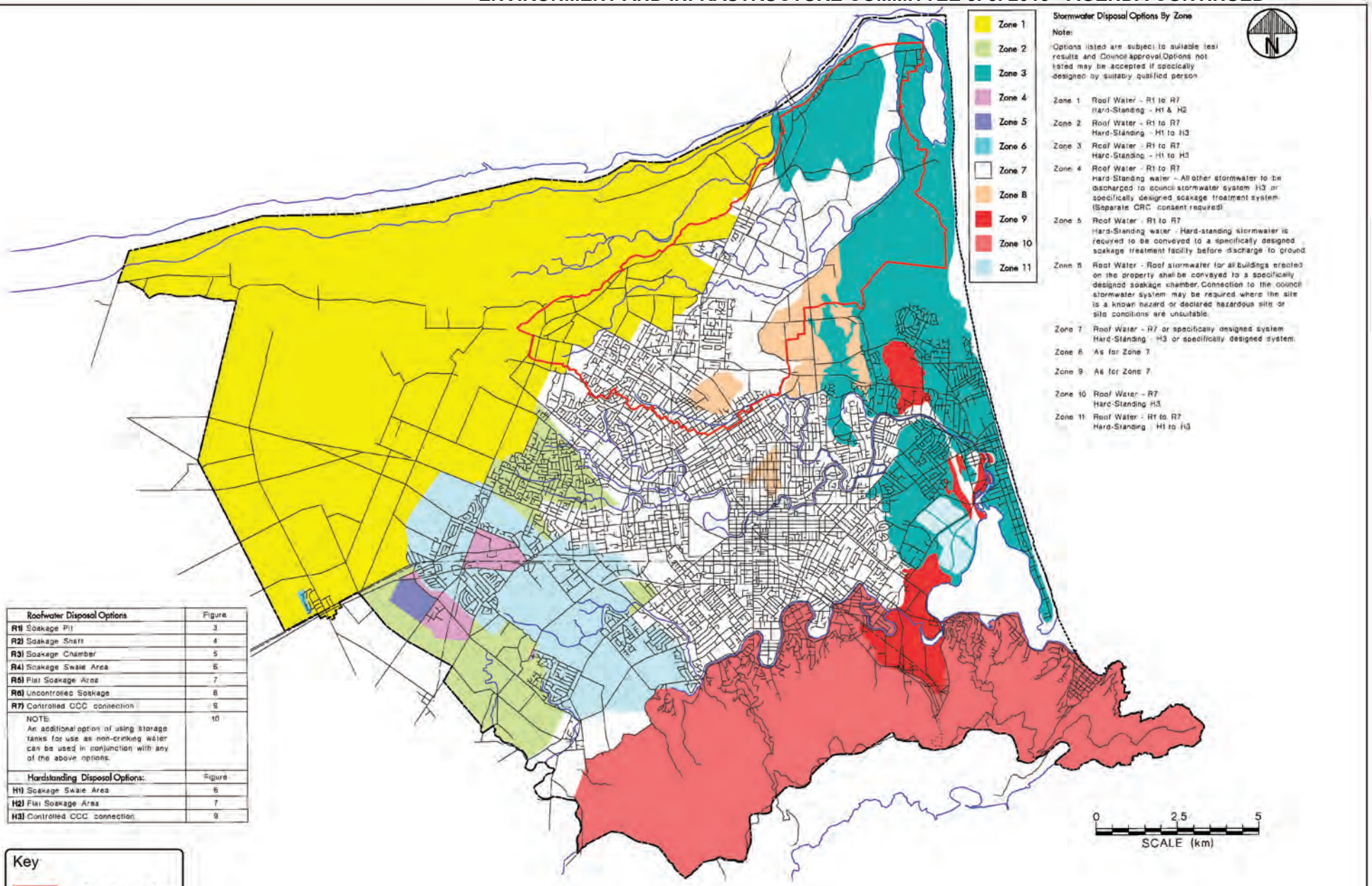


Roofwater Disposal Options	Figure
R1 Soakage Pit	3
R2 Soakage Shaft	4
R3 Soakage Chamber	5
R4 Soakage Swale Area	6
R5 Flat Soakage Area	7
R6 Uncontrolled Soakage	8
R7 Controlled CCC connection	9
NOTE: An additional option of using storage tanks for use as non-drinking water can be used in conjunction with any of the above options.	10

Hardstanding Disposal Options:	Figure
H1 Soakage Swale Area	6
H2 Flat Soakage Area	7
H3 Controlled CCC connection	9

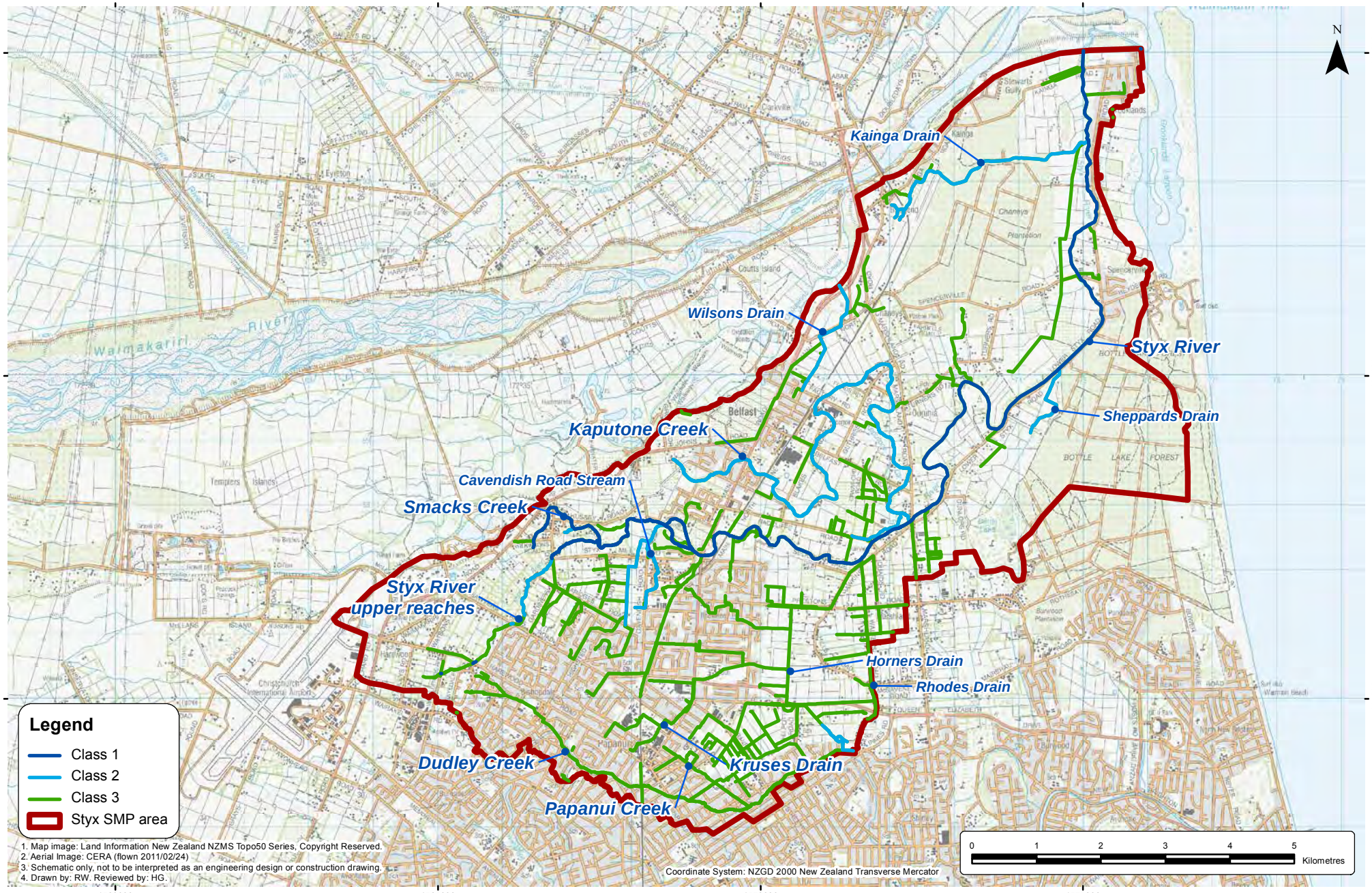
Key

Styx Project Area

Christchurch City Council

PLAN B - STORMWATER DISPOSAL OPTIONS FOR INDIVIDUAL PROPERTIES

WorkSpace: Styx.gws
Layout: 1
Scale: 1:110,000
Date: 21/08/2012



Golder Associates

TITLE | PLAN C: WATERWAY CLASSIFICATIONS

MAY 2013

PROJECT | 0878103714

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In the Environment Court
Christchurch Registry **ENV-2013-CHC-**

In the Matter of	the Resource Management Act 1991
And	
In the Matter of	an appeal under section 120 of the Act
Between	**Christchurch City Council**
	Appellant
And	**Canterbury Regional Council**
	Respondent

Notice of Appeal

Dated: 18 July 2013

CHRISTCHURCH CITY COUNCIL
PO Box 73013
Christchurch 8154
Solicitor Acting: BK Pizzey
Tel 64-3-9415550 Fax 64-3-9416441

To: The Registrar
Environment Court
Christchurch

1. The Christchurch City Council (CCC) appeals the decision of the Canterbury Regional Council on resource consent application CRC131249 to discharge contaminants onto and into land and into water, associated with stormwater management in the Styx Area of Christchurch City (Decision).

2. The CCC received the Decision on 1 July 2013.

3. The CCC is the applicant for resource consent and is not a trade competitor for the purposes of section 308D of the Act.

4. The Decision was made by Independent Commissioners appointed by the Canterbury Regional Council.

5. The CCC does not appeal the grant, or the conditions, of consent other than the words "*wherever possible*" in condition 4(b).

6. The CCC's appeal is concerned solely with the deleting the words "*wherever possible*" in condition 4(b) as follows:

   4. The consent holder shall use reasonable endeavours:
   a) to achieve the surface water quality, sediment quality, aquatic ecology and tangata whenua objectives set out in Table 1 for all receiving waterways marked as Class 1 and 2 on Plan C, which forms part of this consent; and
   b) To work ~~***wherever possible***~~ *to improve Class 3 receiving waterways shown on Plan C at a catchment-wide scale by:*
   (i) protecting and otherwise enhancing ecological values; and
   (ii) ensuring Class 1 and 2 values downstream are not compromised; and
   (iii) protecting and otherwise enhancing tangata whenua values.

7. The Commissioners erred in including the words "*wherever possible*" in condition 4(b) as the resultant condition is either too uncertain and meaningless to be enforceable, or imposes an unreasonable, inappropriate, unjustifiable and unsustainable obligation on the consent holder to improve Class 3 waterways.

8. The reasons for the CCC appeal are:

   8.1 The text of condition 4 in the Decision is, aside from the addition of the words "*wherever possible*", the text that was proposed by the applicant, supported by the Canterbury Regional Council reporting

officers, and agreed to by Mahaanui Kurataio Ltd on behalf of Te Ngāi Tūāhuriri Rūnanga.

8.2 The Commissioners erred as the sole justification for the Commissioners' changes to the proposed conditions is the following passage in the decision:

> *6.180 In broad terms we have accepted the applicants 'final' offered conditions and the monitoring programme as being both necessary and appropriate if consent is to be granted. We have however made some minor modifications to both, although generally they are editorial in nature to aid interpretation and understanding…*

8.3 The Decision does not include any substantive reasons for the addition of the words "*wherever possible*". The Commissioners erred as they made no findings of fact, or decisions on the statutory framework, that justify requiring the Council to work wherever possible to improve the Class 3 waterways.

8.4 Addition of the words "*wherever possible*" can be interpreted as significantly increasing the obligation on the CCC to improve the Class 3 receiving waters. It imposes an obligation on the CCC to do work to improve Class 3 receiving waterways at a catchment wide scale whenever it is possible to do so – and it is always "possible" to do so, even when as far as the CCC's resources are concerned, it is not reasonably possible.

8.5 The Commissioners erred insofar as addition of the words "*wherever possible*" can be interpreted as requiring the CCC to place extraordinary resources into improvement to Class 3 waterways, contrary to sustainable management of natural and physical resources.

8.6 Alternatively, addition of the words "*wherever possible*" results in condition 4(b) being nonsensical, as it does not make sense to require the consent holder to "*…use reasonable endeavours…to work wherever possible to improve Class 3 receiving waterways…*".

8.7 The Commissioners had no, or no reasonably adequate, regard to the CCC's evidence of the unsustainable changes to the CCC's management of urban stormwater resources that is necessary if the CCC is required to do work to improve Class 3 waterways wherever it is possible to do so. The Commissioners:

(i) Failed to take into account all matters reasonably necessary to decide the application; and

(ii) Erred in not properly considering the reasonableness of the obligation that condition imposed on the consent holder; and/or

(iii) Erred in imposing a resource consent condition that is meaningless.

8.8 As a result, the Commissioners' decision to include the words "*wherever possible*" in condition 4(b) is erroneous.

9. The CCC seeks the following relief:

9.1 Removal of the words "*wherever possible*" in Condition 4(b); and

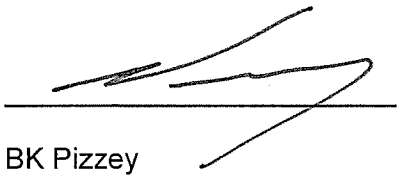
9.3 The costs of and associated with this appeal.

10. The following documents are attached to this notice:

10.1 A copy of the Canterbury Regional Council decision; and

10.2 A list of the names and addresses of persons to be served a copy of this notice.

Dated this 18th day of July 2013



BK Pizzey
Counsel for the Christchurch City Council

Address for service of the Appellant:

Legal Services Unit
Christchurch City Council
53 Hereford Street
PO Box 73013
Christchurch 8154
Attention: BK Pizzey

Telephone: (03) 941-5550
Email: Brent.Pizzey@ccc.govt.nz

Advice to recipients of copy of notice of appeal

How to become a party to proceedings

If you wish to be a party to the appeal, you must lodge a notice in form 33 with the Environment Court within 15 working days after the period for lodging a notice of appeal ends.

You may also apply to the Environment Court under section 281 of the resource Management Act 1991 for a waiver of the above timing requirement (*see* form 38).

Your right to be a party to the proceedings in the Court may be limited by the trade competition provisions in section 274(1) and part 11A of the Resource Management Act 1991.

Advice

If you have any questions about this notice, contact the Environment Court in Auckland, Wellington or Christchurch.

Contact details of Environment Court for lodging documents

Documents may be lodged with the Environment Court by lodging them with the registrar.

The **Christchurch address** of the Environment Court is:

Postal:
Environment Court
PO Box 2069
Christchurch

Physical:
99-101 Cambridge Terrace
Christchurch 8013

Telephone and facsimile numbers are:

Telephone (03) 365-0905
Telephone (03) 353-8546
Fax: (03) 365-1740.

Attachment A: Copy of Decision

Attachment B:

A list of names and addresses of persons to be served with a copy of this notice