

9. STYX RIVER STORMWATER MANAGEMENT PLAN AND DISCHARGE CONSENT

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PURPOSE OF REPORT

1. This report provides information on the Stormwater Management Plan (SMP) for the Styx River Catchment. This SMP sets out the surface water facilities for the Styx catchment and supports the stormwater discharge consent application which will be lodged with Environment Canterbury (ECan). These matters have been brought to the Council at the request of the Water and Wastewater Committee following a briefing to the Committee on 18 May 2012.

EXECUTIVE SUMMARY

2. Under ECan’s Natural Resources Regional Plan (NRRP) a resource consent is required for the discharge of stormwater (**Attachment 1**). The provisions of the NRRP require the Council to prepare SMPs. A programme for the preparation of SMPs has been incorporated into Christchurch City Council’s Surface Water Strategy 2009-2039. Of the 13 river catchments across the City and Banks Peninsula, the Styx River is the second SMP to be completed. In order to facilitate the development of SMPs, the Council and ECan entered into a “Protocol for Stormwater Management”, which has seen closer collaboration during the finalisation of SMP technical reports and consent conditions.
3. The SMP for the Styx River Catchment (**Attachment 2**) is a culmination of three years investigative work by the Council, working closely with consultants and ECan officers. The purpose of the SMP is to address how surface water is managed within the catchment, and how water quality will be protected, or where possible improved, in the face of existing/anticipated future greenfield development and land use change. For the Styx SMP, this work has been integral to the development of the Belfast Area Plan and, post earthquakes, the fast tracking of the Prestons, Highfield and Highsted subdivisions. It will also assist future management of stormwater associated with the Northern Arterial Motorway and Cranford Basin.
4. The Styx River SMP has taken a ‘multi-value’ approach, giving full consideration to ecology (in-stream, riparian and terrestrial), landscape, recreation, heritage and cultural values, as well as water quality and quantity. Hydrological changes within the catchment resulting from major earthquake activity have been investigated and incorporated into technical reports. Proposed locations for stormwater facilities throughout the catchment have been discussed with potentially affected landowners and there has been mixed responses to this. Final design and placement of facilities will only be decided after subdivision applications and Outline Development Plans are accepted by the Council. Facilities in greenfield areas will be constructed and funded by developers, while those on public land will be constructed by the Council. All will eventually come under the Council’s ownership and management.
5. The Styx River SMP, stormwater facilities scheme (blue network) and Stormwater Discharge Consent application are now complete and awaiting the Council’s approval for lodgment with ECan.

FINANCIAL IMPLICATIONS

6. The total land acquisition and construction costs for the establishment of the stormwater facilities is estimated to be \$136.5 million between now and 2027. Approximately 73 per cent of that total cost will fall to the Council (the majority of this was included in the 2009-19 LTCCP following adoption of the Belfast Area Plan), while the remainder will be funded by developers during subdivision development. Most of the facility costs will be associated with future greenfield developments, although a portion will be to retrofit existing development and proposed roading extensions.

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

7. The forecasted land acquisition and capital project costs for the majority of sites have been factored into the LTCCP budget. Post earthquakes, Cranford Basin, Horners and Kruses Drains were included into the Styx SMP so their associated costs are to be included into the 2013-22 LTP budget.

LEGAL CONSIDERATIONS

8. Under Environment Canterbury's NRRP a resource consent is required for the discharge of stormwater. The provisions of the NRRP require the Council to prepare SMPs in accordance with Section 4.7.3.2 of the Water Quality Chapter (**Attachment 1**) for the area from which stormwater is collected and conveyed to the point(s) of discharge that are covered in the discharge consent application.
9. The SMP will form the technical basis for the discharge consent. The standards adopted in the preliminary design are "best practice" and comprise the recommended technical solution.

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

9. Yes, see above.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

10. SMPs and their associated stormwater discharge consents, will help meet regional and local policy and planning requirements and will promote the integrated management of land and water resources throughout Christchurch. This approach dovetails with strategic infrastructure planning and management through processes such as Activity Management Planning and Long Term Council Community Planning. Alignment is specifically with Activity 6.5: Waterways and Land Drainage.

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

11. Supports the levels of service associated with:
 - maintaining the stormwater drainage system
 - maintaining the natural waterways.

ALIGNMENT WITH STRATEGIES

12. This work aligns with the Council's Surface Water Strategy 2009 – 2039 and its associated Implementation Plan, 8b, Styx River SMP.
13. The preparation of a "best practice" stormwater management plan is consistent with the current Council's waterways and wetlands strategy and aligns with the Council's multiple values – in particular; landscape, ecology, recreation and drainage.

Do the recommendations align with the Council's strategies?

14. Yes, it is a key deliverable of the Surface Water Strategy, while also contributing to objectives in the Biodiversity and Public Open Space Strategies.

CONSULTATION FULFILMENT

15. Several presentations on the Styx River SMP have been made to the Shirley-Papanui Community Board, particularly during consultation for the development of the Belfast Area Plan. The Board were updated, via memorandum, in May 2011.

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16. The owners of all properties directly affected by proposed stormwater treatment and detention facilities associated with the Styx SMP Blueprint have been contacted directly and visited by technical experts.
17. The purpose of this consultation has been to:
 - explain the process and technical considerations that led to locating facilities on their land
 - discuss the owner's future development aspirations for the land and obtain feedback on how they may be constrained or advanced by the proposals
 - explore the opportunities to modify the proposals in order to mitigate adverse effects on owners' aspirations.
18. Meetings were held with over 30 owners including multiple owners of 47 properties affected within the Belfast Area Plan study area prior to the submission period for the Belfast Area Plan. Meetings were held in early 2012 with landowners in the remainder of the catchment.
19. The response from landowners was mixed and generally reflected their future plans for the land, with those looking to develop land in the short term tending to be the most supportive.
20. Landowners who have been contacted have been advised that the aim is to lodge the Styx River Stormwater Discharge Consent with ECan in June 2012.

STAFF RECOMMENDATION

It is recommended that the Council:

- (a) Take note of the Stormwater Management Plan for the Styx River Catchment of Christchurch
- (b) Take note that the Styx River Catchment Stormwater Discharge Consent will be lodged with Environment Canterbury this month (June 2012).

BACKGROUND (THE ISSUES)

21. In 1991 the Resource Management Act created a new planning environment wherein all property developments require a resource consent to discharge stormwater into natural waters. Subsequently ECan made provision in the NRRP for Territorial Authorities to be granted a catchment consent to manage surface water in areas where comprehensive planning had been undertaken. ECan and the Council have since signed a "Planning and Consents Protocol for Surface Water Management". This is based on the principle that "To improve surface water quality, a change in focus from individual sites to a catchment-wide approach is needed".
22. Other practices were agreed:
 - "Ensuring that actions governed by the Protocol are consistent with the NRRP
 - Prioritising catchments within Christchurch for preparation of SMPs and applications for catchment-wide consents
 - Continuing to process applications for individual discharges until catchment-wide consents are obtained
 - Council and ECan focus on catchment-wide management rather than individual non-compliances
 - Taking sewer outflows into account when preparing SMPs
 - Surrendering relevant existing discharge permits once catchment-wide consents have been obtained
 - Using a pilot area for preparation of an SMP and catchment-wide consent
 - Authorisation by the Council of discharges into the stormwater network system where catchment-wide consents have been obtained."

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23. Investigations for the Styx catchment have spanned several years and have included major investigations into the state of the springs, surface water and ecology, as well as the state of groundwater and the response of groundwater to the operations of a large-scale surface water management scheme as proposed. The hydraulic computer model of the Styx River has been revised and used to investigate flooding scenarios. Other investigations have focussed on surface and groundwater quality. The major streams of investigation have been compiled in a "Water Quantity Report" and a "Water Quality Report". These two reports and the Council's Waterway Wetlands and Drainage Design Guide are the technical basis of the SMP.
24. The systems chosen for greenfield development in the area are first flush basins and wetlands for water treatment, with detention ponds for flood attenuation and sediment removal. The stormwater management facilities are a fundamental part of the Belfast Area Plan as their multi-valued attributes integrate with the landscape, recreational areas and greenspace corridors. These treatment options are preferred because they contribute positively to the living environment. The largest land areas are required for detention of the additional runoff from the impervious areas created when land is developed for residential or business purposes. Where technically feasible, the treated stormwater will be returned to the upper aquifer and thus the area of land required for storm detention and conveyance is minimised.
25. The stormwater management scheme is designed to provide communal facilities for new developments. There is also scope to retrofit some of the existing unmitigated development with treatment and detention facilities. This will not only improve water quality but also restore the 50 year recurrence interval (2 per cent chance in any one year) floods close to those which would have occurred with the state of development in 1991. If the Council does not provide these communal facilities then the current practice of each development providing its own facilities will continue. These small un-coordinated facilities with their own monitoring and maintenance requirements are difficult and expensive to run - once they are taken over as an asset by the city - and do not make such a positive contribution to the city environment. Such a plan simplifies future planning for the developers and Council staff alike and was one of the main drivers for the Council/ECan "Planning and Consents Protocol for Surface Water Management".
26. At this stage the Council is being asked to note the SMP essentially as "the stormwater management facilities for the Styx River Catchment" which will also be used in the application to ECan for a Catchment Stormwater Discharge Consent. Council staff have workshopped the technical aspects of the scheme with ECan staff, who have indicated to the Council that an application using the present SMP would be appropriate.
27. The SMP facilities are at the stage of a preliminary design. This means there are clear design principles allowing for the size of each proposed facility and its current cost estimate to be determined. The facilities will not be finally designed and detailed until imminent development within the catchment generates the demand, although land areas need to be set aside in advance.
28. It should be noted that the land for facilities will be purchased by negotiation as it comes on the market and will transfer into the City Environment accounts once the works commence. Where a stormwater facility is principally used to service a single development and is within the area of land owned by the developer then the Council may not need to buy the land, although the asset will be vested to the Council at the end of the development. If the land is not able to be purchased or obtained by these means then designation may be required.

Styx River Stormwater Management Plan and Discharge Consent

Attachment One

Natural Resources Regional Plan (NRRP) – Chapter 4 Water Quality

Section 4.7 - Information to be provided with resource consent applications

4.7.3.2 Management plan for a stormwater discharge under Regional Rules WQL7 or WQL55

In addition to the general information outlined in Sections 1.3.4, 4.7.1. and 4.7.2, where relevant, an application for a stormwater discharge under Regional Rules WQL7 or WQL 55 shall include a management plan which contains the following information:

- a. Identification [of] the land uses in the catchment or stormwater collection area, including an assessment of possible future land use change, the establishment of new activities including activities listed in Schedule WQL3, existing and potential sources of contaminants and stormwater flow.
- b. A description of the stormwater network system, capacity of the system to meet current and future needs, and the level of service for the network.
- c. For discharges onto or into land, the results of a site assessment to characterise the physical and chemical properties of the soil and subsoil layers where the discharge will occur and their suitability for stormwater disposal. This assessment should include an investigation of the infiltration capacity, including any limitations of the soil and subsoil layers to absorb the discharge.
- d. A description of the range of possible measures to avoid, remedy or mitigate adverse effects of the discharge(s), an evaluation of the effectiveness of these measures, and the reasons for selecting the measures proposed:
 - (i) to reduce the potential for adverse effects on: the water quality of groundwater or surface water, aquatic ecosystems and instream values, changes to channel morphology, people and communities from flooding, and other existing uses of surface and groundwater from:
 - (1) existing and proposed stormwater discharges in the catchment; and
 - (2) a change to urban land use in a catchment that is largely undeveloped.The measures should include the protection, use, and enhancement of riparian vegetation, buffer zones and wetlands.
 - (ii) to minimise adverse hydrological changes to the existing flow or level regime, including base flows, lake and groundwater levels, caused by the discharge(s) and its cumulative effect with other discharges. The assessment should as far possible be based on actual rainfall data from a site or sites in the vicinity of the discharge;

(iii) to reduce the volume and concentration of contaminants and water entering the network system, including the use of low impact designs or structures, community education, and non-structural methods;

(iv) to avoid or minimise the accumulation of toxic and persistent contaminants in the soil or subsoil layers as a result of a discharge to land;

(v) to treat contaminated stormwater to reduce volume or concentration of hazardous substances or prevent the inputs of hazardous substances into the network system from a site where an activity listed in Schedule WQL 3 is occurring, including measures to contain and respond to spills and leaks.

- e. A description of the programme of works, including setting priorities to implement the management plan, including maintenance of the network, source control measures and structures. Any programme beyond three years will be indicative.

A description of the monitoring programme to assess the effectiveness of the programme of works and maintenance, and the effects of the discharges from the networks on the receiving environment. This will include a review the results of the monitoring programme and to identify situations or circumstances where a management response or the work or maintenance programme should be adapted to improve the effectiveness of the implementation of the plan and to reduce adverse effects on the environment.

Styx River Stormwater Management Plan and Discharge Consent
Attachment Two

Styx River Catchment SMP Boundary

