

#### 4. STYX ESPLANADE RESERVE DEVELOPMENT PROPOSAL

<b>General Manager responsible:</b>	General Manager City Environment
<b>Officer responsible:</b>	Richard Holland, Planning and Investigations Team Manager, Greenspace
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##### **PURPOSE OF REPORT**

1. The purpose of this report is, following public consultation, to obtain approval from the Shirley/Papanui Community Board for the planned development of the Styx Esplanade Reserve adjacent to Redwood Springs residential development that has recently been acquired through residential subdivision.

##### **EXECUTIVE SUMMARY**

2. Styx esplanade reserve downstream from the north/south railway line was acquired when the adjacent land went from rural to residential. This reserve forms part of a much bigger community vision for the Styx River and associated waterways and wetlands. The proposed development for this reserve incorporates habitat enhancement, development of a stretch of the Source to Sea walkway, a feature made of the springs, recognition and raising awareness of the cultural history of the locality (eg dairying), children's playground and the development of places to pause and enjoy the surroundings through the placement of seating and picnic tables at appropriate locations. The proposal will be implemented over a five year period beginning in 2006 and completed by 2011.

##### **FINANCIAL AND LEGAL CONSIDERATIONS**

3. The development of the reserve will require \$893,000 from the New Reserve Development Fund spread over five years (2006/07 – 2010/11 financial years). This sum has been allowed for in the draft 2006 – 2016 draft Long Term Council Community Plan and has resulted from the strategic planning associated with the Waterways and Wetlands Asset Management Plan and the long term vision for the Styx.

##### **STAFF RECOMMENDATIONS**

It is recommended that the Shirley/Papanui Community Board accept the proposal as outlined in Appendix 3 (attached) subject to the following -

- (a) That further consultation be undertaken in terms of the children's playground.
- (b) The need for parking be monitored and if any issues arise then they will be addressed in consultation with the community.

##### **CHAIRPERSON'S RECOMMENDATIONS**

That the staff recommendation be adopted, subject to workshop consultation being undertaken with the community.

## BACKGROUND ON STYX ESPLANADE RESERVE ADJACENT TO REDWOOD SPRINGS

### LOCATION AND DESCRIPTION OF LAND AREA UNDER CONSIDERATION

4. The Styx Esplanade Reserve, an area of 8.8784 hectares, is bounded by the Styx River to the north, a motorway designation to the east, Willow View Drive and new residential development to the south and the north/south railway line to the west. Please refer to the location map below.

Location Map



5. The Styx River borders the Reserve for approximately 1,200 metres. At the western end springs bubble up in a small pool adjacent to the river and drain into it. The adjacent landforms and soils associated with the reserve reflect their location adjacent to the Styx River. Wet peat soils immediately adjacent to the river itself, are extensively covered in willow trees, weed species such as blackberry, and naturally regenerating native riparian plant species (e.g. ferns and sedges). The land then rises approximately 4.5 metres as part of a river terrace that extends through the reserve parallel to the Styx River. In some areas, the edge of the terrace provides excellent views of the river.
6. Within the reserve on the higher areas, retention basins and a swale have been constructed for managing stormwater, a requirement of the adjacent residential development. Stormwater and spring flow from a nearby older residential area also flows into the Styx River (20 – 30 litres per second during dry conditions) via a large pipe that extends under the reserve. Refer to catchment plan in Appendix 2 (attached).
7. Areas of the reserve that were previously used for horticulture or grazing are now in grass, the only exception being an area of approximately .9 hectares at the western end of the reserve. This area has been cleared and replanted in native plants as part of a community planting day that took place in April 2003.
8. A utility structure is located near the road opposite Coolspring Way. The remains of some farm structures and a well are also located at the eastern end of the reserve.

Refer to Appendix 1 (attached) for photos of the existing reserve.

### LEGISLATIVE CONTEXT

9. The Styx River and adjacent reserves are managed in accordance with the Resource Management Act (1991), Long Term Council Community Plan (2004), Christchurch City Plan, Waterways and Wetlands Asset Management Strategy and the long term vision for the Styx.

## Christchurch City Plan

10. Policy 2.2.10 of the Christchurch City Plan<sup>1</sup> recognises the range of values associated with river margins. It states –

*“That provision for the protection of conservation values, recreational opportunities and public access to and along the margins of rivers and the coast be achieved through esplanade reserves, esplanade strips and access strips, in locations and of a width appropriate to the nature of the waterway and its adjoining land use.”*

## Long Term Council Community Plan (2004)

11. The ‘Long Term Council Community Plan’ recognises the importance of a sustainable natural environment in its community outcomes for a sustainable Christchurch. It states –

- *Our people enjoy and value our natural environment and take responsibility for protecting and restoring it.*
- *Our City’s natural resources, biodiversity, landscape, and ecosystem integrity are protected and enhanced.*
- *Our people recognise that the natural environment plays a significant role in our prosperity. The whole community ensures that negative impacts on the environment are managed to maintain environmental sustainability” .<sup>2</sup>*

## Waterways and Wetlands Asset Management Strategy<sup>3</sup>

12. A values based approach underpins the Waterways and Wetlands Asset Management Strategy’, a requirement of the Local Government Act. The city’s waterways and wetlands, including the Styx River, are assessed and managed for ecological, drainage, historical, cultural, recreational and drainage values.

## Styx Vision 2000 – 2040 Planning for the Future<sup>4</sup>

13. The Christchurch City Council has worked closely with the community, experts and other organisations in the development of a 40 year vision for the waterways and wetlands associated with the Styx catchment. The vision is consistent with the City Plan and the Waterways and Wetlands Asset Management Strategy and incorporates the following -

### *Vision 1*

*To achieve a “Viable Springfed River Ecosystem” to complement the other representative protected ecosystems of Christchurch such as the Port Hills, Travis Wetlands and the Coastline.*

### *Vision 2*

*To create a “Source to Sea Experience” through the development of an Urban National Reserve.*

### *Vision 3*

*To develop a Living Laboratory that focuses on both learning and research as envisioned by Dr Leonard Cockayne (1855 - 1934).*

### *Vision 4*

*To establish “The Styx” as a place to be through maintaining and enhancing the special character and identity of the area.*

### *Vision 5*

*To foster partnerships through raising the quality of relationships as we move forward together.”*

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<sup>1</sup> Christchurch City Plan, Volume Two, Page 2/11

<sup>2</sup> Our Community Plan, Christchurch O-Tautahi 20004/14 Volume One Page 24

<sup>3</sup> Waterways and Wetlands Asset Management Strategy adopted by Christchurch City Council (October 2000)

<sup>4</sup> Styx Vision adopted by Christchurch City Council (2001)

## Land Status

14. In terms of the Reserves Act, the land that makes up this reserve is Lot 41 DP 303747 and contained in certificate of title 15010. It is defined as a Local Purpose (Esplanade) Reserve vested in the Council as a result of subdivision. The Council is therefore also required to manage the reserve in accordance with the principal purpose of the reserve as elaborated upon below:<sup>5</sup>

“(2) It is hereby further declared that having regard to the [specific local purpose for which the reserve has been classified], every local purpose reserve shall be so administered and maintained under the appropriate provisions of this Act -

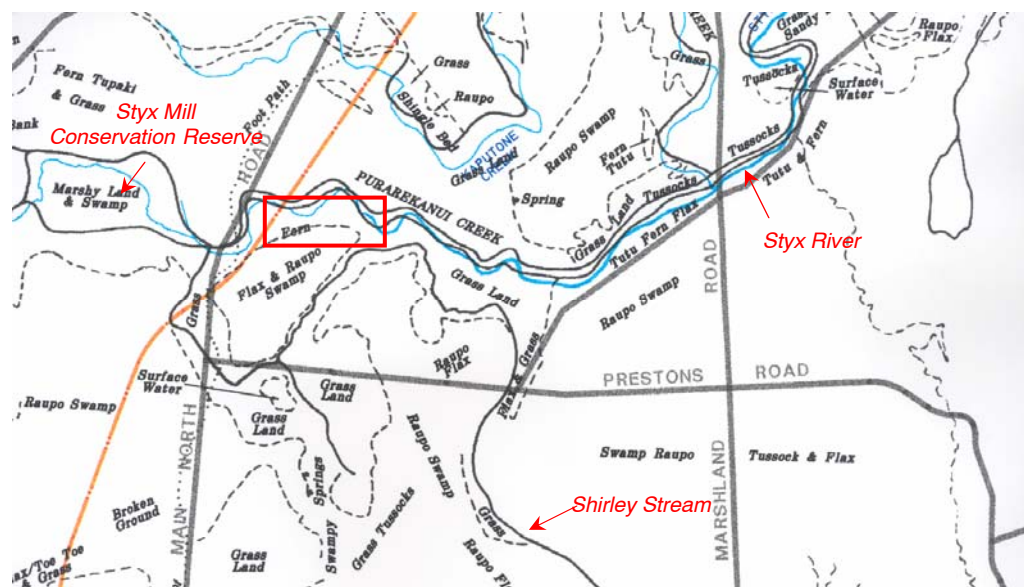
(a) Were scenic, historic, archaeological, biological, or natural features are present on the reserve, those features shall be managed and protected to the extent compatible with the principal or primary purpose of the reserve.”

There is no mandatory requirement to prepare a management plan for esplanade reserves under the Reserves Act, unless the Minister of Conservation in the notice of vesting directs that Section 41 of the Reserves Act apply.

## HISTORICAL CONTEXT

15. The Black Map (1856) indicates that historically this area consisted of grassland with the Styx River (Purakaunui Creek) to the north, and to the south, large wetlands that historically drained towards the Avon River via what is today known as Shirley Stream. The low-lying area, previously known as Rural Section 322, was originally owned by the Church of England. Residential development occurred to the south of Farquars Road during the 1970's and resulted in the headwaters of Shirley Stream being redirected towards the Styx River via a large pipe. This pipe now passes through the reserve (refer to paragraph 6).

Black Map 1856



Location of reserve and the Redwoods Springs residential development

Railway line

Major roads (2000)

<sup>5</sup> Reserves Act 1977, Section 23 (2)

16. The higher land adjoining the Styx River and previously known as Rural Section 150, was until recently also used for dairying and horticultural purposes.<sup>6</sup> This land was rezoned residential as part of the recent City Plan process. Land that is now identified for reserve purposes was set aside as a result of landuse change. The Council decision states –

*“The Council considered that the most important issue relating to the development of this land concerned the protection of the natural values of the Styx River Corridor. It noted the evidence of Messrs Watts, Crossland, and Meurk in this regard, and was gratified that agreement had been reached between the parties as to the extent of a setback needed from the river. This would provide major benefits for local amenities, improved bank management, and protection of wildlife values. It would give, at least in part, practical expression to the development of green corridor in this part of the city, particularly when regard was had to the existing Styx Basin Reserve to the west. This would provide both local and citywide benefits.”<sup>7</sup>*

## EXISTING VALUES AND MANAGEMENT ISSUES

### Planning Context

17. This reserve forms part of a much larger green corridor associated with the Styx River that extends from its Source to the Sea. The development of the reserve needs to be considered in conjunction with this wider context including the long term objectives and aspirations associated with this greater green corridor.

### Ecological values

#### Botanical values<sup>8</sup>

18. The riparian parts of the reserve support remnant and regenerating native plants, especially in the back swamp area near Grimseys Road. The native plants present include ferns (*Blechnum chambersii*, *B. minus*, *B. penna-marina*, *Hypolepis ambigua*, *Polystichum vestitum*), sedges (*Carex coriacea*, *C. maorica*, *C. secta*, *C. sinclairii*, *Eleocharis acuta*), rushes (*Juncus gregiflorus*, *J. sarophorus*), pohuehue vine (*Muehlenbeckia australis*) and cabbage trees (*Cordyline australis*). Of particular note are several locally rare species, i.e. *Blechnum chambersii* and *Carex maorica*.
19. Parts of the site still retain relatively unmodified soils and these would be suitable for restoration. Nearest the river low-growing riparian species could be restored throughout and in the back swamp areas some patches of forest would be appropriate. Further out from the river some woodland species could be used.
20. Weeds that require particular attention at this site include old mans beard, grey willow, gorse and blackberry. There are quite a few other weedy species present, but ongoing habitat enhancement should reduce the impact of all weeds on the site.

#### Ornithological Values

21. Birds currently using the reserve area include pukeko, paradise shelduck, grey teal, kingfisher, fantail, scaup, black backed gull, little shag shoveller duck and mallard<sup>9</sup>. With habitat improvements along the river margins and on the terrace, other birds that could use this site include red-billed gull, white-faced heron, spur-winged plover, coot and white faced heron. Predation is a major concern with evidence of dogs and people impacting on important bird roosting areas.<sup>10</sup>

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<sup>6</sup> Personal communication with Dennis Hills

<sup>7</sup> City Plan, Christchurch City Council decision 124, Hearing dates 20, 21, 29 October 1997

<sup>8</sup> Meurk CD (1997) Ecological report on Styx River rezoning proposal north of Farquars Rd. WSU9798/xxx

<sup>9</sup> Scott Butcher, site survey 22 November, 2005

<sup>10</sup> Scott Butcher, ornithologist, Christchurch City Council, personal communication November 2005

## **Instream Values<sup>11</sup>**

22. There are two distinct aquatic habitats; the main river which possesses deep strong flows, and the adjacent shallow springhead habitat with gentle shallow waters. The incorporation of substantial spring heads within the proposed reserve is rare and an interesting ecological feature. Owing to the range of physical environments, the proposed reserve would encompass a diversity of aquatic habitats, and accordingly it is expected that aquatic biodiversity would be high.
23. In the main river, most of the aquatic (submerged) macrophytes appear to be introduced; Canadian pondweed (*Elodea canadensis*) is abundant, with some curly pondweed (*Potamogeton crispus*). The deep main river would contain both eel species; the longfin eel (*Anguilla dieffenbachii*), and shortfin eel (*A. australis*), large common bullies (*Gobiomorphus cotidianus*) are probably present amongst the weedy sections, and under the banks. The deep water, and the variation of holes and runs makes this reach also suitable for the large brown trout (*Salmon trutta*), an introduced species.
24. In contrast, the shallow springhead flows would be free of large trout, and it is expected that native upland bullies (*G. breviceps*) would be present along the margins, and possibly spawning on the cobbles present near the spring head. Upland bully fry would take shelter amongst the marginal watercress present (*Rorippa nasturtium*). Amongst other invertebrate species, native snails (*Potamopyrgus antipodarum*) and crustaceans (*Amphipoda*) are abundant in the waters near the springhead.
25. Ongoing maintenance issues will need to include partial control of watercress in the spring head channel, and removing excessive curly pondweed from the main channel. However, the retention of some aquatic plants is beneficial to aquatic communities. The powerful water current in the main river could cause bank slumping in the near future unless the bank toe is replanted with trees and substantial shrubs. A degree of tree shading over the springhead would reduce the problem of algal growth during the summer months.
26. Safety concerns have been raised about the large spring located near the western edge of the reserve.

## **Swale and retention basins**

27. Retention basins and a swale have been constructed within the reserve to treat and manage stormwater associated with the adjacent Redwood Springs residential development. Although the swale has been re-graded, water continues to stagnate within the swale and has caused some concerns within the local community.

## **Built structures**

28. The new reserve previously contained a farm house and dairy buildings associated with the earlier farming activities that occurred in this area. To date, some structures have been retained as they have the potential to be adapted for other activities associated with the new reserve (ie viewing platform) as well as provide clues of the sites previous history.
29. A new utility structure associated with the adjacent residential development has also been located within the reserve adjacent to Willow View Drive opposite Coolspring Way.

## **Motorway designation**

30. The eastern boundary is formed by a motorway designation. Refer to the location map in paragraph 6. Although it is anticipated that the construction of this motorway is still some time away, it is important that any proposed development recognises the impact that the motorway will have on the reserve and seeks to minimise any adverse effects (ie noise) that could potentially arise.

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<sup>11</sup> Mark Taylor, Aquatic Ecology Limited, personal communication

## **Linkages**

31. There are a number of potential linkages to and from the reserve including the following –
- Cycleway along the railway line that takes people to and from the city centre
  - Walkway along the Styx River including links to Styx Mill Conservation Reserve
  - Links to the Supa Centre via a walkway/cycleway adjacent to Curtis's Stream and the railway line
  - Walkway/cycleway along the proposed northern motorway

## **Landscape values**

32. There is potential clash in landscape values associated with a new residential development and a conservation reserve. Careful management of the interface between the two areas will be required to ensure that there is a transition zone between those areas that are highly maintained and those areas that are managed predominantly for their wildlife values.

## **DEVELOPMENT OBJECTIVES**

33. The following objectives underpin the development proposal. These have evolved from legislative requirements and Council policies outlined in sections 9 – 14, together with the values associated with this stretch of the Styx River and adjacent lands.
- To protect and enhance the ecological values associated with the reserve, the Styx River, and greater Styx River green corridor.
  - To incorporate walkway linkages as part of the Source to Sea Walkway as well as to other community centres and focuses.
  - To provide a wilderness experience that contrasts with the adjacent urban areas
  - To provide built structures that complement and enhance the Styx River experience and tell the stories of the land
  - To recognise the name of the adjacent residential development through making a special feature of the springs located near the railway line.
  - To provide for children's play
  - To provide public access to the waters edge
  - To minimise maintenance costs in the long term

## **DEVELOPMENT PROPOSAL AND CONSULTATION PROCESS**

34. A proposal was developed for the reserve that incorporates wildlife habitat, walkways, access to the water's edge, and features being made of the springs, previous history and children's play areas.
35. Feedback was sought from the Shirley Papanui Community Board, along with the local and wider community. The consultation process was as follows –
- Presentation to the Shirley Papanui Community Board at a seminar meeting during June 2004.
  - A consultation brochure seeking submissions on the proposal was then distributed during the later part of 2004 via -
    - letterbox drop in the local area
    - mail out to people who have indicated an interest in the overall Styx project and its ongoing implementation

- local service centres and libraries
  - Christchurch City Council website 'Have your say'
- The submissions have been independently assessed by Opinions Market Research Ltd.
  - On the 15 November a meeting was held at 74 Willow View Drive with approximately 20 local residents who had concerns about the proposed development, particularly at the eastern end of the reserve.
36. A total of 72 submission forms were returned of which 43 came from the Redwood area. Please refer to Appendix 4 (attached) for an analysis of submissions by location.
37. Overall, the majority (85%) of those who made submissions indicated the plan should proceed. The aspects that were of most interest were the walkways (64%), feature spring (59%), habitat restoration (58%), and access to the river (52%). Around three quarters of submitters identified some aspects of the development proposals that they felt could be improved. These included the need for parking and where it was most suited; the playground location, the dairy shed and the need for a toilet.
38. Residents at the eastern end of the new residential development had specific concerns relating to the proposed activities at that end of the reserve. Comments that arose from the meeting on the 15 November are as follows –
- Overall concerns about attracting a lot of people to this part of the reserve and consequently the need for car parking. This arose from the narrowness of the road and that it is a cul de sac.
  - The group felt that the children's play structures should be centrally located. They also did not like the rope play structure.
  - Concerns about fruit trees but would accept nut trees
  - They did not like the interpretative structure that highlights the previous dairying activities in the area. Concerns about graffiti and loss of 'natural' views from their houses.
  - Had concerns about the built structure associated with the spring feature.
39. As a result of the consultation process, some aspects of the original proposal have been modified. These include relocation of children's play structures, removal of fruit trees, and some modification to the interpretative structure. The amended proposal is discussed below, including the adjustments that have been made to the original proposal.

### **Habitat Restoration**

40. The development proposal recognises the existing wildlife values associated with the reserve and seeks to enhance not only these values but also peoples enjoyment of them.
41. Some habitat restoration has already occurred at the western end of the reserve. The approach taken involved removing willow trees along the banks of the Styx River and planting this and an adjacent area of the reserve with locally sourced native plants appropriate to this location.
42. Concerns have been expressed about such a drastic approach. Future habitat restoration will therefore involve managing weed species, infill planting and the gradual removal of willow trees. A weed management programme will be developed with priority being given to those plants that have pest status under the Regional Pest Management Strategy<sup>12</sup>. The removal of willows will be a gradual process with the rate of removal being dependent on the rate of growth associated with infill planting and new plantings within the reserve. On going management will encourage the processes of both regeneration and decay through the retention of tree stumps, debris, and hollows; limited careful use of chemical sprays; and the retention of old trees that contain holes for bird nesting.
43. Special consideration has also been given to the needs of bush birds and wetland birds in the location of paths and public access to the waterway.

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<sup>12</sup> Canterbury Regional Council (1998) *Regional Pest Management Strategy (1998)*



## Swale and Retention Basins

44. Local residents have raised concerns regarding the occurrence of stagnant water within the swale and retention basins within the reserve. The swale was regraded by the developer during the last stage of the adjacent residential development but unfortunately, the very low gradient means there is minimal fall to drain stormwater away.
45. Staff from the City Solutions Unit, Christchurch City Council have undertaken an investigation into how to resolve these concerns. The scope of the report included investigating opportunities to utilise the large amount of water that was being discharged directly into the Styx River via a large pipe that runs underneath the reserve. The report identified the following options, together with associated costs and outcomes.

OPTION	ACTION	COSTS		OUTCOME
		Capital	Operating	
1	Status quo	N/A	\$1,500 per annum	Stagnant water not remedied
2	Increased maintenance of swale	N/A	\$3,000 per annum	Damp mud bottom within swale
3	Introduction of water into swale by pumping water from the existing large pipe underneath the reserve.	\$109,000	\$2,000 per annum includes depreciation costs for the pump	Continuous flow of water within the swale leading to improved landscape and ecological values associated with the swale and one of the existing retention basins.
4	Introduction of water into swale and treatment of stormwater from the catchment through the construction of another retention basin near the existing large pipe. Please refer to Appendix 2 for map indicating the extent of the catchment and Appendix 3 for location of retention basin. There is no pump used in this option.	\$152,000	\$1,500 per annum	Same as option 3 plus improved water quality of water entering the Styx River during storm events.

46. Feedback from the consultation process indicated that 68% of the people who filled out the submission form preferred option 4, 25% of the people preferred option three, and 7% of the people indicated either option 3 or 4. One submitter suggested redirecting the flow back to the Shirley Stream. Option 4 is the staff's preferred option as it not only resolves the issue of the swale but obtains water quality improvement of stormwater, an increasing concern, especially in terms of the proposed Natural Resources Regional Plan produced by Environment Canterbury.
47. Soil that needs to be removed in order to create the retention basin will be used to create mounding at the eastern end of the reserve in order to provide a noise and visual barrier to the proposed motorway that will eventually occur along this edge of the reserve.

## Source to Sea walkway

48. A major walkway runs east - west through the reserve, providing seating, views and interpretation at various points along its route. In the long term it is anticipated that this walkway will be extended upstream and downstream along the Styx River corridor. There will also be linkages to a proposed cycleway along the railway corridor and possibly along the motorway corridor. Access across the Styx River for pedestrians and cyclists is also being considered in the vicinity of the railway line and the proposed motorway.

49. In the short term the majority of the paths will be grass, except in the vicinity of the dairying precinct where they will be crusher dust. The grass paths will be monitored and upgraded as necessary.

### Redwood Springs

50. The adjacent residential development, now known as Redwood Springs, obtains its name from the many springs along this stretch of the Styx River. A pond at the western end of the reserve adjacent to the main walkway and railway line has a number of springs bubbling up within it. The proposal makes a feature of these springs while at the same time making them safe.



*Plan showing the location of the spring in relationship to the Styx River, railway line and existing and proposed walkways.*



*Perspective drawing of the spring feature.*

### Access to the water

51. The southern bank of the Styx River in this locality consists of a peaty floodplain that can make physical public access to the waters edge difficult. In order to provide physical access, pathways, boardwalks, and formed jetties need to be constructed. The development proposal indicates three locations along this stretch of waterway where public access to the waterway with be possible.



*Cross section of jetty access and seating area*