
CITY OF KELOWNA
MEMORANDUM

Date: June 13, 2002
File No.: 5280-14
To: City Manager
From: Environmental Manager
Subject: Stream Restoration and Enhancement Summary

RECOMMENDATION

THAT Council receives for their information a summary of the stream restoration and enhancement done in Kelowna since 1997.

BACKGROUND

In 1997, the Environmental Division introduced the City of Kelowna Watershed Stewardship Program. Since the program's inception, the Environmental Division has been very active in restoring several of our 29 local creeks. During that same time period, the Parks Division, several volunteer groups and developers have also been working to restore streams. Attached is a summary that has been prepared as a tool to track watershed restoration progress and as a method for examining the costs associated with various restoration techniques.

A variety of techniques have been used to restore our local creeks. Eroding banks have been stabilized using bioengineering techniques such as tree revetments, modified brush layers, habitat recruitment structures, and erosion control trilock systems. Stabilization of the Okanagan Lake foreshore has been done using dura-crib groynes and erosion control disks. Instream, habitat has been enhanced with the creation of off-channels, log bank cover, weirs and the addition of spawning gravel. A summary of the linear meters restored since 1997 is presented in the table below.

Linear Meters Restored

	Environment Division	Parks Division	Developm ent	Volunteer	TOTAL
Bellevue Creek	85	20		65	170
Brandt's Creek		750	350	700	1,800
Duggan Brook			300		300
Mill Creek	3,525	1,030	1,855	75	6,485
Okanagan Shoreline	30	320		73	423
Rembler Creek			5		5
Thomson Creek		8-9 hectares*			8-9 hectares*
Upper Vernon Creek			120		120
TOTALS	3640	2120	2630	913	9303 + 8-9 hectares

*Please note the width of most of these projects extended
2 – 10 meters back from the top of the stream bank.*

*(*this was a joint initiative between the Works and Utilities Dept. and the Parks Dept.)*

Riparian planting was a large component of most restoration projects. A healthy riparian zone is important both upland and adjacent to fish habitat as it improves bank stability, provides overhead cover and thermal protection, and contributes leaves and insects necessary for fish food. A riparian zone also acts as a waterway's buffer to protect it from pollution. The strip of vegetation traps, filters, and breaks down nutrients, sediment and other pollutants, ultimately protecting water quality. Since 1997, over 22,000 native plants have been planted to help vegetate these buffers as summarized in the table below.

Number of Plants Added to the Riparian Zone

	Environment Division	Parks Division	Development	Volunteer	TOTAL
Bellevue Creek	219	85		99	403
Brandt's Creek		650	7,568	800	9,018
Duggan Brook			1,616		1,616
Mill Creek	5,773	1,825	2,710	500	10,808
Okanagan Shoreline				125	125
Rembler Creek			90		90
Upper Vernon Creek			125		125
Totals	5,992	2,560	12,109	1,524	22,185

The remarkable amount of work accomplished by the City of Kelowna over the past five years has been in part due to the \$210,000 received from outside funding such as Fisheries Renewal BC, Habitat Conservation Trust Fund and BC E-Team.

Plans for restoration and enhancement continue with the Environment and Parks Divisions as well as with the volunteer and development community. It is anticipated that the drastic cuts in many funding programs will limit the restoration and enhancement accomplishments over the next 5 years. Work in 2002 continues with maintaining past projects to ensure success and:

- The Environmental Division will continue the Mill Creek Urban Instream Enhancement Program with work planned at 31 locations along Mill Creek. The project will be partially funded by the Habitat Conservation Trust Fund (\$17,500).
- The Parks Division will begin planting at Mission Sportsfield including the nursery development, planting of selected bank areas and addition of cattails, bulrushes and sedges to the wetland. The majority of the riparian planting will take place in 2003-2004.

If you require further information, please contact Tracy Gow at 862-3339, local 702.

Mark Watt, B.Sc.
Environmental Manager
Attach.

Summary of Restoration and Enhancement Summary

LINEAR METERS RESTORED					
	Environment Division	Parks Division	Development	Volunteers	Total
Bellevue Creek	85	20	-	65	170
Brandt's Creek	-	750	350	700	1800
Duggan Brook	-		300	-	300
Mill Creek	3525	1030	1855	75	6485
Okanagan Shoreline	30	320	-	73	423
Rembler Creek	-	-	5	-	5
Thomson Creek		8-9 hectares*			
Upper Vernon Creek	-	-	120	-	120
TOTALS	3640	2120	2630	913	9303
<i>*a joint initiative between Works and Utilities Drainage Division and Parks Division</i>					
NUMBER OF PLANTS ADDED TO THE RIPARIAN ZONE					
	Environment Division	Parks Division	Development	Volunteers	Total
Bellevue Creek	219	85		99	403
Brandt's Creek		650	7,568	800	9,018
Duggan Brook			1,616		1,616
Mill Creek	5,773	1,825	2,710	500	10,808
Okanagan Shoreline				125	125
Rembler Creek			90		90
Upper Vernon Creek			125		125
TOTALS	5,992	2,560	12,109	1,524	22,185