

CITY OF BURNABY

ENVIRONMENT AND WASTE MANAGEMENT COMMITTEE

HIS WORSHIP, THE MAYOR  
AND COUNCILLORS

RE: STILL CREEK - BRUNETTE RIVER ISSUES AND PROPOSED  
ACTIONS - DRAFT REPORT

RECOMMENDATIONS:

1. **THAT** Council approve in principle the vision statement, objectives, and action items as outlined in Table 1 of this report as a basis for a public consultation process; and
2. **THAT** staff be authorized to work with the GVS & DD to conduct a public workshop and consultation process for all stakeholders in the Brunette basin, and upon completion of the public process, submit the final report back to the Committee and Council for consideration and approval; and
3. **THAT** staff provide periodic updates to the Committee and Council on specific action items undertaken under the Still Creek Action Program; and
4. **THAT** copies of this report be sent to:

GVS & DD  
BCIT (Attention: Mark Angelo and Bob Gunn)  
UBC Westwater Research (Attention: Ken Hall)  
UBC (Attention: Tony Dorcey)

<p>: COPY - CITY MANAGER - DIRECTOR ENGINEERING - DIRECTOR FINANCE - DIR. PLNG. &amp; BLDG. - DIR. REC. &amp; CULT. SERV. - ENVIRONMENTAL HEALTH OFFICER</p>
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REPORT

The Environment and Waste Management Committee, at its meeting held on 1996 October 08, adopted the *attached* staff report to presenting a draft report prepared by the Work Group for the Still Creek basin. The report outlines the vision and objectives for the watershed and recommends an action program to provide an integrated watershed management approach and solution.

Respectfully submitted,

Councillor D.P. Drummond

Councillor D. Johnston  
Member

Councillor D. Lawson  
Member

**TO:** CHAIRPERSON & MEMBERS  
ENVIRONMENT & WASTE  
MANAGEMENT COMMITTEE

**DATE:** 1996 09 30

**FROM:** DIRECTOR ENGINEERING  
DIRECTOR PLANNING & BUILDING  
DIRECTOR RECREATION & CULTURAL SERVICES  
CHIEF ENVIRONMENTAL HEALTH OFFICER

**FILE:** 40-02-03

**SUBJECT:** STILL CREEK - BRUNETTE RIVER ISSUES AND PROPOSED ACTIONS -  
DRAFT REPORT

**PURPOSE:** To present the draft report prepared by the Work Group for the Still Creek basin that outlines the vision and objectives for the watershed and recommends an action program to provide an integrated watershed management approach and solution.

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**RECOMMENDATION:**

1. THAT the Committee recommend to Council that:
  - a) the vision statement, objectives, and action items as outlined in Table 1 of this report be approved in principle as a basis for a public consultation process; and
  - b) staff be authorized to work with the GVS & DD to conduct a public workshop and consultation process for all stakeholders in the Brunette basin, and upon completion of the public process, submit the final report back to the Committee and Council for consideration and approval; and
  - c) staff to provide periodic updates to the Committee and Council on specific action items undertaken under the Still Creek Action Program; and
  - d) copies of this report be sent to:

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## REPORT

### SUMMARY

Still Creek is one of the major streams in a highly urbanized watershed in the Greater Vancouver region. With the diverse interests of protecting and enhancing the ecosystem and providing adequate flood protection in the Still Creek corridor, a fully integrated watershed management approach that recognizes the various competing values in the basin would be beneficial.

Since early 1996, a Work Group comprised of staff members from the GVS & DD, UBC, BCIT, and Burnaby Engineering, Planning, Environmental Health, and Parks departments have been working together to examine the watershed issues and to develop a framework for the watershed management plan including such components as the watershed vision and objectives, and proposed actions. Based on the work of the Work Group, a draft report entitled "Still Creek - Brunette Basin Issues and Proposed Actions - Draft Report" has been produced.

The proposed vision for the Still Creek - Brunette watershed is based on the protection and enhancement of its associated ecosystems with due recognition to the diversity of uses and values in the basin. The proposed actions developed support the watershed vision and objectives in three key areas: environmental quality, hydrology/hydraulics for flood protection, and watershed management and planning.

The purpose of this staff report is to present the proposed program and to seek the Committee and Council approval of the recommended plan and actions. Subject to Council approval, public workshop and consultation would take place to obtain input from other basin stakeholders. Upon the completion of the public process, the draft report will be finalized and a further report will be submitted to the Committee and Council recommending adoption of the final "Still Creek - Brunette Issues and Actions Report".

Although the Draft Report is now complete, the watershed planning process will continue and expand to address the entire Brunette watershed under the GVRD's Liquid Waste Management Plan Program. The work completed under this phase of the program will serve as the starting block for all future initiatives and action plan in the Brunette basin.

### 1.0 BACKGROUND

In 1994 September, the City's Environment & Waste Management Committee, in its discussion on the siltation and pollution problems in Still Creek, adopted the following motion:

*"Staff to undertake an evaluation of the water siltation and pollution entering Still Creek that affects Burnaby Lake and recommend the most effective mitigative measures."*

Following the motion, staff submitted reports in 1994 October and 1995 March that outlined a three phase water quality sampling program. The reports were subsequently approved by Council and the recommended program was implemented accordingly.

In subsequent discussions of the water quality data collection program by the Committee members, it was noted that Westwater Research of UBC has also been collecting run-off data within the watershed as part of an urban watershed research project. In 1995 March, a delegation from Westwater Research presented to the Committee details of the research program and the results of the analysis conducted on run-off quality and non-point source contaminants in Still Creek. Further to the Westwater presentation, the Committee also received additional information on the City run-off sampling program and the potential enhancement and rehabilitation opportunities in Still Creek proposed by the GVS & DD and BCIT.

Arising from the discussion, the Committee passed the following motion at its 1995 June meeting:

*"Staff work with BCIT and other relevant agencies and partners to better coordinate the resources and to develop a comprehensive, integrated strategy for mitigating specific environmental impacts and rehabilitating the Still Creek corridor."*

Hence, a Work Group consisting of representatives from the GVS & DD, Westwater Research, UBC, BCIT, and Burnaby Engineering, Planning, Environmental Health, and Parks departments was formed. The mandate of the Work Group is to coordinate and exchange information on ongoing and planned programs in the Still Creek corridor and to develop the framework for the beginning of a watershed management plan.

Based on input provided by the Work Group and separate meetings with other cities within the watershed and Federal and Provincial regulatory agencies, a draft report entitled "Still Creek - Brunette River Basin Issues and Proposed Actions - Draft Report" has been produced. The purpose of this staff report is to highlight the key issues identified in the Work Group's report and to present the recommended action programs specifically involving Burnaby as the lead agency or key participating partner.

The project has provided an excellent opportunity for the City, GVS & DD, UBC, and BCIT to work together towards the development of a watershed management concept that will harmonize the planning and management of land use, resources, and drainage infrastructure on a watershed basis. The level of support and participation by the GVS & DD, BCIT, and UBC is reflected in the vision, objectives, issues of concern, and proposed actions contained in the Draft Report. GVS & DD staff will be submitting the Draft Report to the Sewerage, Drainage & Air Quality Committee of the GVRD in 1996 October as part of the Liquid Waste Management Plan Program update.

## 2.0 VISION AND OBJECTIVES FOR THE WATERSHED

The Still Creek - Brunette River watershed is a highly urbanized watershed and the environmental and drainage impact of the urbanization process is evident within the Still Creek system. It is recognized that it would be cost prohibitive, if not impractical, to restore the Still Creek system to a pristine state for primary recreation purposes. Nevertheless, there are still many opportunities for the preservation and improvement of the remaining environmental qualities within the Still Creek basin.

With consideration to future preservation and enhancement opportunities and the many competing uses and objectives in the Still Creek corridor related to flood protection, wildlife and fish habitat, run-off quality, green spaces and land use, the Work Group has examined the watershed issues and developed the following vision statement for the Still Creek - Brunette River watershed:

*"The Still Creek - Brunette Watershed is a highly valued urban watershed that includes a variety of natural features and park, industrial, commercial, residential, infrastructure and recreational land uses. While recognizing the merging diversity of land use within the watershed, its ecosystem is protected and enhanced."*

To support the vision statement, the following objectives were developed and will require the commitment and participation of all basin stakeholders:

- a) To instill among all residents and businesses a sense of pride in maintaining a healthy aquatic ecosystem within an urban setting, and an appreciation of the challenges this poses.
- b) To ensure all residents, businesses, and developers understand that their daily activities impact the quality and quantity of water resources, and know what to do to mitigate the impact.
- c) To eliminate or minimize the threat to life and property from flooding and erosion.
- d) To maintain the quality of water at a level which is safe to aquatic life and poses minimal risk to human health for appropriate water related recreation.
- e) To protect and preserve habitats that support populations of aquatic and terrestrial wildlife and waterfowl.
- f) To minimize all contributions and impacts of pollutant loadings to the ecosystem due to activities within the watershed, including non-point source pollution and point source discharges.

- g) To strive for high aesthetic and appropriate recreational quality of streams with unlittered banks and stream beds, and water free of abnormal odours or algal growths.

It is recommended that the vision statement and the objectives be adopted as the guiding principles for future programs and initiatives in the watershed.

### **3.0 WATERSHED RELATED ISSUES**

During the course of the work program, the Work Group has identified many outstanding watershed issues of concern. Interviews with regulatory agencies and other municipal governments who have facilities or a potential interest in the Brunette watershed were conducted and a wide range of issues that go beyond the Burnaby City boundary were identified. These issues reflect a diverse view on the watershed management approach and for organizational purposes, they are grouped into three categories: environment, flood protection, and watershed management. It should be noted that the issues identified in the Draft Report do not cover the viewpoints of all the stakeholders in the basin. Future public workshops and open house meetings would provide opportunities for public input and generate public interest in the preservation and enhancement of the watershed for future generations.

A summary of the issues of concern is provided as follows:

#### **3.1 Environmental Quality Issues**

- a) Need to develop and coordinate basin-wide water use objectives and water quality goals among the stakeholders in order to support the vision for the watershed.
- b) Need to have a more coordinated approach for environmental monitoring programs and data management. A common watershed database should be established to ensure more efficient program planning and reduce effort duplication.
- c) There are problems associated with inappropriate inflows discharging to Still Creek resulting in contamination and impacts on recreation and aquatic life.
- d) Need to further address the impact on water quality caused by excessive sediment loads transported to the streams and lakes from soil erosion and construction activities.
- e) Need to establish physical habitat objectives and goals for the sub-watersheds.

### **3.2 Hydrology and Hydraulics Issues for Flood Control**

- a) The flow conveyance capacity of the existing stream system is inadequate and watershed-wide best stormwater management practices are not in place.
- b) Need more hydrologic and hydraulics information for proper flow management and for analysis of best management practice alternatives.
- c) Traditional run-off collection and discharge practices has compromised fisheries and wildlife resources.
- d) Need to provide more opportunities for fish habitat enhancement in facility repairs and improvement programs.

### **3.3 Watershed Planning and Management Issues**

- a) The mandates, jurisdiction, roles, and responsibilities of the various stakeholders in the basin are unclear.
- b) Information on the ownership and maintenance of the hydraulic structures and of riparian lands is lacking.
- c) Need a process for coordination, prioritization, and decision making of the various public and private watershed related programs and initiatives.
- d) Need to better address the preservation and management of green spaces in the watershed.
- e) Need to provide better communication to the public on reporting local environmental emergencies such as oil spills and inappropriate discharges that may harm the watershed environment.
- f) Need increased awareness, education, and stewardship programs among stakeholders and organizations living or working in the watershed.
- g) Lack of integration of basin geographical information collected by the various governments and education institutions.



#### **4.0 INITIATIVES UNDERTAKEN BY BURNABY IN THE STILL CREEK WATERSHED**

The City of Burnaby has long recognized the value of the Still Creek - Brunette system and the need to protect it. With the increasingly diversified interests in the watershed, a balanced approach must be maintained in the context of drainage conveyance, wildlife and fisheries habitat protection, and land uses.

Notwithstanding the issues of concern as noted in the previous section in this report, the City has initiated many environmental protection programs and drainage improvements to preserve the watershed's ecosystem and to achieve appropriate flood protection. A list of some of the initiatives and programs the City has undertaken in the watershed are highlighted as follows:

##### **4.1 Environmental Quality Programs**

- a) Still Creek run-off and sediment sampling programs
- b) Deer Lake sediment and water quality testing
- c) Still Creek - Brunette watershed bacteriological sampling programs
- d) Still Creek industrial and commercial operation audits and inspections
- e) Central Valley sanitary sewer replacement program - Phases 1 to 4
- f) Sanitary sewer pipe grouting program to prevent exfiltration
- g) Sewer pipe video inspection program and inflow/infiltration reduction program
- h) Requirement of oil interceptor installation in parking lots
- i) Requirement of car wash stalls for new multi-family developments
- j) Biofiltration pond and on-site siltation control at Oaklands development
- k) Deer Lake pilot nutrient sink pond
- l) Inventory and preservation of sensitive wildlife habitat in Deer Lake
- m) Purple Loosestrife pilot control measures
- n) Designation of Heritage Meadows in Deer Lake Park
- o) Sanitary sewer cross connection corrections

#### **4.2 Hydraulics and Hydrology for Drainage Control**

- a) Eagle Creek culvert improvements and bank stabilization work at Broadway
- b) Eagle Creek culvert replacement work at Piper
- c) Beaver Creek culvert replacement and stream enhancement work at Royal Oak
- d) Eagle Creek hydrologic analysis and study
- e) Buckingham Creek erosion protection
- f) Beecher Creek sewer crossings protection work
- g) Beecher Creek stream enhancement and flood protection work at Roy Street
- h) Brunette River erosion protection and bank stabilization work at the Freeway overpass
- i) Robert Burnaby Creek erosion protection and bank stabilization work
- j) Guichon Creek flood control and erosion protection work south of the Freeway

#### **4.3 Watershed Planning and Management**

- a) Council adoption of the staff report on urban stormwater management alternatives in 1995 October
- b) Inter-departmental environmental joint review process for major projects
- c) Computerized drainage facilities mapping program
- d) Phases 1 and 2 of Burnaby Lake Regional Nature Park Management Plan
- e) Deer Lake Park Management Plan
- f) Acquisition of 773 acres for the preservation of the Burnaby Mountain conservation area
- g) Urban forestry program
- h) Emergency spill response program and spill awareness signage in the Still Creek corridor

- i) Storm drain marking program
- j) Burnaby waterways map production
- k) Stream naming program
- l) Public education, stewardship programs, and events on environmental issues
- m) State of the Environment Report
- n) Burnaby Open Watercourse Policy

## **5.0 RECOMMENDED ACTIONS**

In 1995 October, Council approved a staff report on alternative stormwater management practices to enhance run-off quality and to protect the natural environment in the receiving streams. The principles of the integrated approach which combines sound engineering methods with environmentally sensitive solutions have been applied to various recent City projects. As in the Still Creek - Brunette watershed study, the principles of the watershed approach become the foundation for the various components of the recommended watershed management plan.

The key recommendations and proposed actions outlined in the Draft Report focus on local issues and programs but in order to be effective in the implementation of the proposed actions, the plan needs the support and feedback from all watershed stakeholders. Under the Brunette watershed planning process which is a part of the GVS & DD's Liquid Waste Management Planning Program, the Still Creek - Brunette Action Plan will form the basis for the Brunette watershed plan which is due to commence in the next few months. To ensure the planning process for the watershed does not stop after the production of the final Still Creek - Brunette Actions Report, the Work Group recommends the following key activities be included in the Brunette watershed planning program:

### **RECOMMENDATION #1:**

**Consider and further develop, then confirm and adopt the vision and objectives proposed in the Still Creek - Brunette Actions Report.**

### **DISCUSSION:**

Traditionally, environmental and engineering issues in the watershed are managed on an individual site and single purpose basis with little regard to the overall effect on run-off quality, ecosystem preservation, and flood protection. Recognizing the inadequacy of the single purpose approach, a comprehensive watershed management approach that integrates the social, economic, environmental, and engineering issues has gradually evolved as the preferred watershed management practice.

While the Work Group has effectively set the watershed management process in motion, the vision and objectives proposed in the Still Creek - Brunette Actions Report need the support, consultation, and feedback from all watershed stakeholders. The confirmation and adoption of the watershed vision and objectives would provide the foundation for the building of the watershed management plan and facilitate the implementation of the programs and initiatives.

## **RECOMMENDATION #2**

**Consider, evaluate, and proceed with the action items outlined in Tables 7.1 and 7.2 in the Draft Report.**

### **DISCUSSION:**

The recommended action items contained in Tables 7.1 and 7.2 of the Draft Report identify opportunities for joint programs and shared resources, and require participation by many stakeholders. Although the program focuses primarily on local issues, its impact and implication are basin wide. For the purpose of this staff report, a summary of the action items involving the City as the lead agency or key participating partner is given in Table 1 (attached). The recommended program is divided into three categories for easier reference.

## **RECOMMENDATION #3:**

**Develop and adopt an annual auditing and reporting procedures.**

### **DISCUSSION:**

To keep the watershed management process in motion and to measure the progress of the program, it is necessary to establish an annual audit and reporting procedure whereby the program targets will be measured with respect to the watershed objectives and criteria.

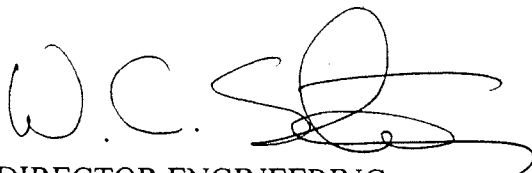
As the "Still Creek - Brunette River Issues and Proposed Actions Program - Draft Report" becomes the starting block of the Brunette watershed management plan, the continuous review, commitment, and support of the program by all stakeholders in the watershed is vital in order to achieve the vision and objectives set forth in this report.

## 6.0 CONCLUSIONS

The traditional approach in the management of human activity, wildlife and fish habitat, and urban run-off on an individual basis often creates problems and unsatisfactory solutions with respect to environment preservation and run-off quality deterioration. In search of a better solution that would offer a balanced approach in recognition that all of these social, economic, environmental, and engineering issues are inter-related and that decisions made in one area affect sometimes all the others, an integrated watershed management concept was developed.

For the Still Creek - Brunette Action Plan project, the Work Group has put forward the watershed management principles and formulated an action program that reflects the issues currently existing in the watershed and the vision for the watershed in the future. The completion of the Action Plan report does not signal the end of the watershed planning program but marks the beginning of a process of work activities in the watershed that will protect and preserve the ecosystem. Furthermore, the documentation produced under the project will serve as the starting block for the Brunette watershed plan which will involve a greater number of stakeholders including Cities of Vancouver, Coquitlam, New Westminister, Port Moody, and other public stakeholders in the basin.

A summary of the key components of the Proposed Actions where the City of Burnaby is identified as the lead agency or key participating partner is given in Table 1. It is likely that the list will expand as additional input is provided by other stakeholder groups and organizations living or working in the watershed. This report provides a framework for the watershed management cycle consisting of planning, acting, checking, and reviewing. It is hoped that through this process, with the support of all stakeholders in the watershed, the vision and objectives of the Brunette watershed can be achieved and maintained.

  
DIRECTOR ENGINEERING

  
DIRECTOR PLANNING & BUILDING

  
DIRECTOR RECREATION &  
CULTURAL SERVICES

  
CHIEF ENVIRONMENTAL HEALTH  
OFFICER

LSC:jb  
Attach.

cc: City Manager



Recommended Actions	Priority <sup>1</sup>	Participating Stakeholders
g) Identify requirements for flood mapping, hydrologic/hydraulic analysis for tributary streams.	2	Burnaby, GVS & DD
h) Develop Best Stormwater Management Practice options and guidelines for run-off and sediment control.	2	Burnaby, Brunette Basin Task Force
i) Develop stream maps with sub-watershed boundaries.	2	Burnaby, GVS & DD
<b>3. WATERSHED PLANNING AND MANAGEMENT</b>		
a) Undertake public and industrial, commercial and institutional education and communication programs on stream stewardship.	1	Burnaby, Brunette Basin Task Force
b) Develop sediment control guidelines and regulations.	1	Burnaby
c) Finalize and implement Burnaby Lake Regional Nature Park Management Plan.	1/2	Burnaby, GVRD
d) Develop Deer Lake Restoration and Park Management Plan.	1/2	Burnaby
e) Inventory all information sources which can be integrated into a basin map including sewers, drainage boundaries, watermains, land use, soils, green space, etc.	2	Burnaby
f) Develop management plan for Burnaby Mountain conservation lands.	2	Burnaby
g) Identify riparian land parcel and stream easement boundaries.	2	Burnaby, GVS & DD
h) Encourage participation of stakeholders and define their role in basin management.	2	Burnaby, Brunette River Task Force
i) Provide additional training of staff for emergency spill management procedures.	2	Burnaby, GVS & DD
j) Provide information to public on how to respond to emergency spills.	2	Burnaby, GVS & DD
k) Encourage land owners to preserve natural vegetation.	2	Burnaby, BCIT

