BOWKER CREEK WATERSHED

MANAGEMENT PLAN

JANUARY 2003

BOWKER CREEK WATERSHED MANAGEMENT PLAN SUMMARY

The Bowker Creek watershed is located in the Capital Regional District (CRD), extending from the University of Victoria to the north, through the District of Saanich, the City of Victoria, to the District of Oak Bay. This watershed management plan has been developed under the sponsorship of the Capital Regional District (CRD) as part of the Watershed Management Strategy that was approved by the Environment Committee in 1997. A forum of landowners, representatives from nongovernmental organizations, and local and senior government staff was convened by the CRD to develop an integrated watershed management plan for Bowker Creek.

Early in the planning process, the Forum identified its concerns about the potential for developing a plan that 'just sits on the shelf' or a plan that calls for making 'plans for more plans.' Accordingly, the Forum focused on developing this plan in a way that would assure successful implementation. Strategic implementation guidelines were developed to provide a framework for taking on detailed implementation activities. The important strategic guidelines include the following:

- Ensure political approval of the plan.
- Create a steering committee to oversee plan implementation.
- Secure funding commitments for the identified actions.
- Monitor detailed implementation of the plan.

The Forum developed a vision statement that helped to define, in broad terms, valued aspects of the watershed that require protection or ongoing management:

> The varied human uses and natural areas in the Bowker watershed are managed to minimize runoff and pollution, making Bowker Creek a healthy stream that supports habitat for native vegetation and wildlife, and provides a community greenway to connect neighbourhoods.

On a more detailed level, the Forum identified hydrologically, ecologically, and socially important elements of the watershed and outlined specific goals and objective to protect them:

Goal 1. Individuals, community and special interest groups, institutions, governments, and businesses take responsibility for actions that affect the watershed

Objective 1A. Ensure all interest holders understand the values of Bowker Creek and the watershed so they can act responsibly.

Objective 1B. Foster long-term community stewardship of Bowker Creek and celebrate accomplishments.

Objective 1C. Plan and manage land in the Bowker watershed in ways that create compact and attractive communities, increase areas of greenspace, reduce stormwater runoff, and improve water quality in Bowker Creek.

Goal 2. Manage flows effectively

Objective 2A. Base watershed management decisions on a comprehensive understanding of the hydrological characteristics of the watershed; manage the risk of flood damage to property near Bowker Creek; and coordinate flow management decisions among jurisdictions.

Objective 2B. Encourage onsite retention and infiltration of stormwater to reduce the area of effective impervious surfaces in the watershed.

Goal 3. Improve and expand public areas, natural areas, and biodiversity in the watershed

Objective 3A. Prepare a comprehensive inventory of watershed values.

Objective 3B. Protect and enhance existing natural areas (or areas with restoration potential) in the watershed, particularly adjacent to Bowker Creek.

Objective 3C. Create a multi-use greenway corridor from the headwaters to the ocean, in accordance with the Regional greenway system.

Goal 4. Achieve and maintain acceptable water quality in the watershed

Objective 4A. Identify water quality problems and causes.

Objective 4B. Meet or exceed provincial water quality guidelines for aquatic life.

Objective 4C. Establish and maintain stable naturalized banks to protect water quality and public safety.

Figure 1. Forum members get an overview of the watershed from Mount Tolmie.

Figure 2. A series of workshops allowed Forum members to develop a draft plan.

A draft Bowker Creek Watershed Management Plan was developed and public input was sought via an Open House and by posting the draft plan on the CRD's website. The Open House was attended by 76 people. Fifty-two comment sheets were completed by people attending the Open House. Comments were received from 28 Saanich residents, 13 Oak bay residents, and 11 Victoria residents. Comments are summarized in *Bowker Creek Watershed Management Plan: Report on the Public Consultation Process*[1], submitted to the CRD Environmental Services Department.

The most commonly mentioned concerns were:

- Water quality,
- Flooding and flow management,
- Creating greenways, natural areas and more greenspace, and
- Providing for biodiversity and habitat protection (both plant and animal).

Additional concerns related to:

- Reducing culverting and increasing daylighting,
- Watershed development and redevelopment,
- Bank erosion, stability, and treatment, and
- Government coordination and planning.

The Forum reviewed the public comments and agreed that the final plan reflects the views of the Forum and members of the public who provided written comments.

[1] Urban Aspects Consulting Group. 2002. *Bowker Creek Watershed Management Plan Report on the Public Consultation Process*. Prepared for the CRD Environmental Services Department. Victoria, BC.

BOWKER CREEK WATERSHED MANAGEMENT PLAN
CONTENTS

Figures, Maps, and Tables

ACKNOWLEDGEMENTS

This report was prepared by Eleanor Setton, David Harper, and Christopher Parks of Westland Resource Group. Diana Butler, of Urban Aspects Consulting Group managed the public consultation component of the plan. Westland would like to thank Rob Miller of the CRD Environmental Services department for his work in coordinating this project and promoting watershed management in the region. We would like to extend special thanks the members of the Bowker Creek Watershed Management Forum for the time, energy, enthusiasm, expertise, and creativity that they contributed to developing this plan. The Forum members were:

Judy Ashurst	Teacher, Greater Victoria School District # 61
Kevin Brewster	Senior Planner, CRD Health Facilities Planning
Steven Brown	Grounds, University of Victoria
Pamela Charlesworth	Chair, Provincial Capital Commission
Gerald Fleming	Coordinator of Design and Development, District of Saanich
Kathrynn Foster	Representative, North Jubilee Neighbourhood Association
Mike Goldsworthy	Landscape Technician, District of Saanich
Ian Graeme	Representative, Camosun Community Association
Maia Green	Student, University of Victoria
Lynn Howse	Sustainability Coordinator, University of Victoria
Rob Janus	Communications Coordinator, CRD Environmental Services
Chris Jensen	Representative, Friends of Bowker Creek Society
Bruce Kerr	Manager, Water and Environmental Engineering, City of Victoria
Paul Lambert	Manager, Facilities Planning, Vancouver Island Health Authority
Don Lovell	Manager, Campus Planning, University of Victoria
Hugh McKay	Director Engineering Services, District of Saanich
Rob Miller	Supervisor, Stormwater Quality Program, CRD Environmental Services
Norm Mogensen	Greater Victoria Natural History Society
Stuart Pitt	Municipal Engineer, District of Oak Bay
Adriane Pollard	Manager, Environmental Services, District of Saanich
Tanya Price	Habitat Auxiliary, Fisheries and Oceans Canada
Kim Proudlove	Property Rights Management, BC Hydro
Kevin Rieberger	Environmental Management Analyst, WLAP
Martin (Marty) Roberts	Representative, Mount Tolmie Community Association
Ken Silvester	Manager, Water and Environment Division, City of Victoria
Karl Sturmanis	Representative, Oaklands Community Association
Anne Topp	Manager, Planning Services, District of Saanich
Ken Whitcroft	Representative, Quadra - Cedar Hill Community Association

1.0 INTRODUCTION

The Bowker Creek watershed is one of the most highly urbanized major watersheds in the Capital Regional District (CRD). From the headwaters near the University of Victoria to the outlet at Oak Bay, relatively little of the watershed remains undeveloped. Before agricultural and urban development, Bowker Creek was an open water feature, winding its way to the ocean. The main channels of Bowker Creek totals 8 kilometers in length, and today only 2.5 kilometres remain open. The rest of the creek flows underground through pipes and culverts.

Because so much of the area has been developed, the watershed functions much differently from one in a natural, undisturbed setting. Although the watershed will never be restored to an entirely natural state, some natural characteristics remain that can be protected and enhanced. In the absence of a plan the identifies the possibilities and presents specific actions, the existing urban development and the pressure for redevelopment will continue without regard for the potential for Bowker Creek to become a cherished asset, linking communities across the three municipalities.

In 2000, the CRD commissioned Reid, Crowther & Partners Ltd. and SHIP Environmental Consultants to conduct an assessment of the Bowker Creek watershed[2]. The assessment includes an general description of the character of the watershed, a review of previous reports and work undertaken on the creek, the compilation of digital base mapping, interviews with municipal engineers, extensive field inspections, and water quality sampling. The assessment found that:

- water quality is generally acceptable, and levels of fecal coliform appear to be declining
- fish are present only between the mouth of the creek and the first culvert
- riparian vegetation may be limited by clay soils and invasive species are prevalent
- areas near to some open portions of the creek are used recreationally
- hydraulic limitations are most severe at Monterey Avenue and Trent Street

A group of local and senior governments, residents, and nongovernmental organization have come together as the Bowker Creek Watershed Management Forum (the Forum) to prepare a management plan to protect and enhance key values in the watershed. The Forum was convened by the CRD, which also assembled and published this plan. This plan represents only the first step in improved management of the Bowker Creek watershed. Goals and objectives were defined and actions were formulated. To realize the vision for the Bowker Creek watershed, members of the community and local and senior governments need to maintain their commitment to the plan, and to see that the plan is implemented.

[2] Reid Crowther and Partners Ltd., and SHIP Environmental Consultants Ltd. 2000. Bowker Creek Watershed Assessment. Prepared for the CRD Environmental Services Department. Victoria, BC.

1.1 The Bowker Creek Watershed

The Bowker Creek watershed, totaling 1,028 hectares (2,540 acres), is located in the municipalities of Oak Bay, Victoria, and Saanich on southern Vancouver Island (Map 1). The watershed is composed of a gently sloping basin, with headwaters in the University of Victoria, McKenzie and Shelbourne, and Cedar Hill Park and Golf Course areas. The main channel of Bowker Creek flows southeast from these headwater areas through the Shelbourne valley, past the Fort Street and Foul Bay Road area, and enters the sea at Oak Bay, near Glenlyon-Norfolk School.

Historically, Bowker Creek was a meandering, low gradient stream with numerous small tributaries and wetland areas. Fish and wildlife, including anadromous species such as coho and chum salmon, inhabited Bowker Creek and its tributaries. Local First Nations derived food and fresh water from the stream, and nutrients transported from the watershed helped support a rich marine ecosystem in Oak Bay. Mary Tod Island, situated near the mouth of Bowker Creek was traditionally known by the Lekwungen People as "Kohweechella" which means "where there are many fish"[3].

Since the middle of the 1800s, the watershed has become increasingly developed, first for agriculture, and later for residential, commercial, industrial and other urban uses. Agricultural settlement began in 1851, when John Tod established a 200 acre farm in Oak Bay. Shortly thereafter, John and Jessie Irvine began the Rosebank farm, on 100 acres of land near the present day intersection of Cedar Hill Road and Cedar Hill Cross Road. In 1861, the creek was locally known at 'The Thames," being the largest stream in the vicinity. The creek was also known as Tod's Stream, but was formally named sometime later, after John Sylvester Bowker (son-in-law of John Tod), whose farm bordered the creek.[4]

Today, the Bowker Creek watershed is largely urbanized, with residential, commercial and institutional land uses predominating. As urban development has spread throughout the watershed, the mainstem and tributaries of Bowker Creek have been altered, with 70 percent of the channel now confined in culverts. These culverts now form the backbone of municipal stormwater drainage systems.

Figure 3. Culvert entrance near the headwaters at the University of Victoria

[3] Duff, Wilson. 1969. The Fort Victoria Treaties. *BC Studies* 3 (Fall), pp. 3-57.
[4] Some History of Bowker Creek. Friends of Bowker Creek Pamphlet.

Map 1
The Bowker Creek Watershed

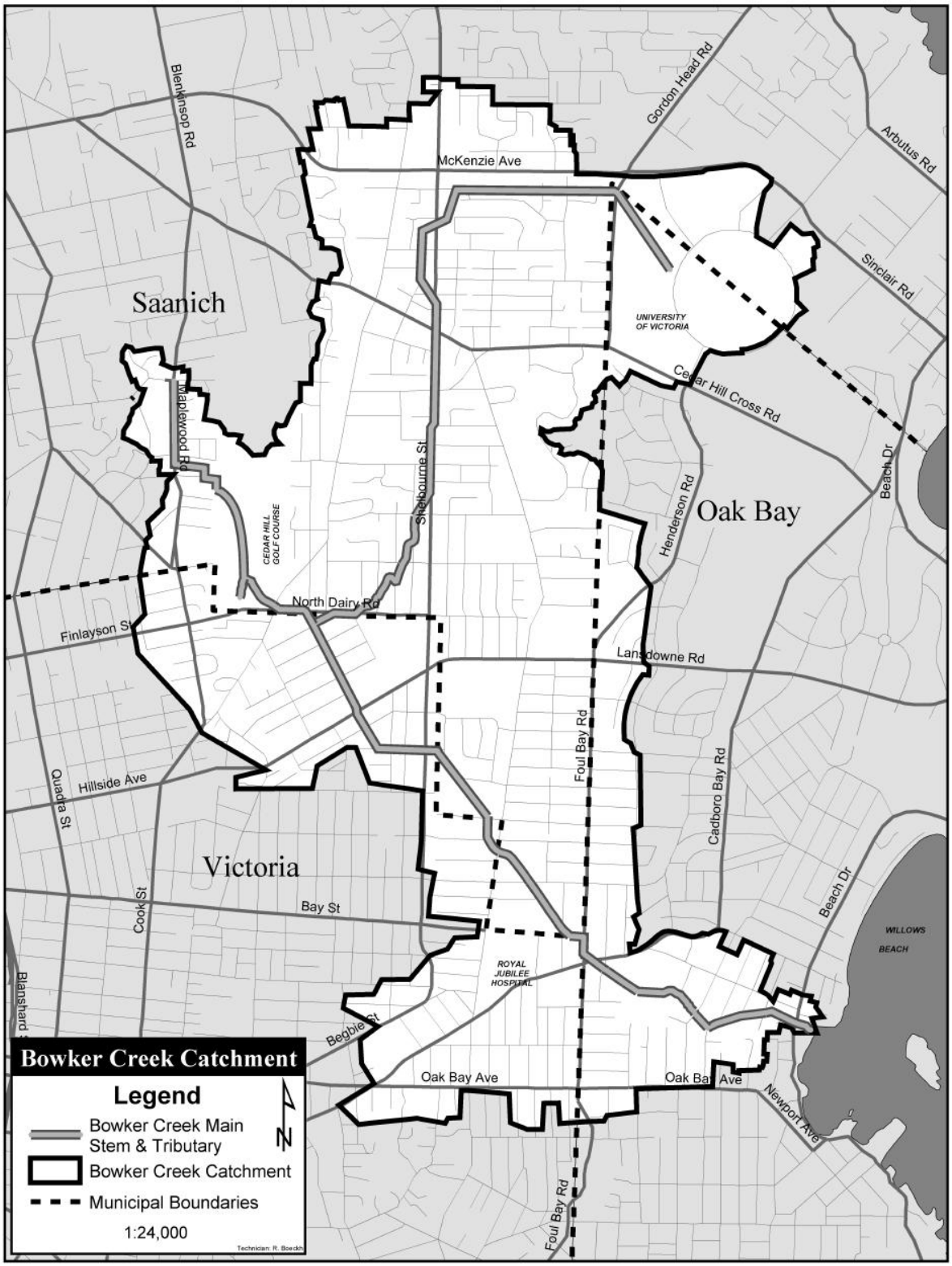


Figure 4. Introduced willow species have replaced natural vegetation, and the bank is eroding.

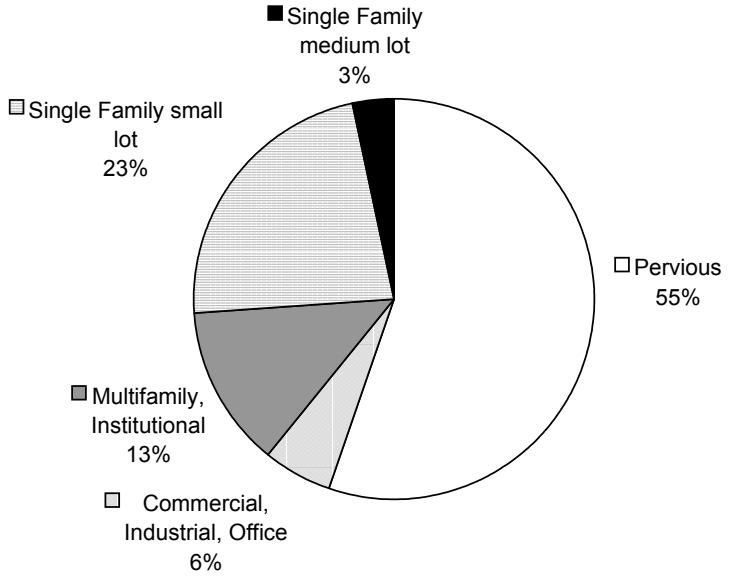
Open channel portions remain in the University of Victoria (UVIC), Cedar Hill Golf Course, and Shelbourne areas, as well as the Jubilee Hospital neighborhood and in Oak Bay. These channels have been invaded by exotic plants that limit the growth of native vegetation. Other channels have been deepened and straightened to carry stormwater runoff. Moderate erosion occurs in many areas on open channel portions of the stream. Attempts to halt this erosion have included installing retaining walls, rock filled gabions, sandbags, and rubble in various areas.

Approximately 87 percent of the watershed has been developed for commercial, industrial, office, institutional, and residential uses[5]. Surfaces that are now covered with roads, buildings, and pavement are impervious, and runoff that would have naturally filtered into the ground now runs off into the storm drain system. A recent study estimated that 45 percent of the Bowker Creek watershed is now impervious due to urbanization (Figure 5).

Although nearly half of the area in the Bowker Creek watershed is estimated to be impervious, other urban watersheds in the CRD may be even more impervious. The Cecelia Creek watershed, adjacent on the west side of the Bowker Creek watershed, is estimated to be over 60 percent impervious, and has more than five times as much commercial, industrial and office development per hectare[6]. Table 1 shows the relative contribution of land uses to imperviousness in both watersheds.

[5] Ruljancich, Shane. 2001. Calculating Imperviousness for Watersheds and Catchment Areas within the Capital Region using a Geographic Information System. Prepared for the CRD Environmental Services Department.
[6] Ibid.

Figure 5
Contribution of development to imperviousness in the Bowker Creek watershed



Data source: Ruljancich 2001

Table 1
Land use contributions to imperviousness in the Cecelia Creek and Bowker Creek watersheds

Land Use	Contribution to Imperviousness (percent)	
	Cecelia Creek	Bowker Creek
Commercial, Industrial, Office	33.4	5.6
Attached Housing, Institutional	8.3	13.0
Open (undeveloped or park land)	0.2	0.4
Detached Housing Large Lot	0.1	0.2
Detached Housing Medium Lot	3.3	3.3
Detached Housing Small Lot	16.2	22.6
Pervious	38.5	54.9

Data source: Ruljancich 2001

Impervious surfaces, the elimination of wetland and floodplain areas, and the culverting of most of the mainstem and tributaries have lead to an increase in the volume of peak flows during storm events. The increase in flow volume during these events has exacerbated flooding of public and private lands along the open channel portions of the stream. In addition, the lack of storage caused by the elimination of wetlands, ponds, and groundwater recharge areas, has lead to low summer base flows, reducing water quality and the quality of habitat for aquatic organisms.

Figure 6. Looking downstream from the Bowker Creek culvert under the intersection of Fort Street and Foul Bay Road during a flood. Note the affected nearby residential properties. December 1999.

Despite the changes that have occurred in the watershed, Bowker Creek is still used by people and wildlife. Open portions of Bowker Creek and adjacent riparian area continue to provide habitat for plants and animals, including birds, small mammals, and aquatic invertebrates. The local community values these areas for recreational and cultural opportunities, especially at The Cedar Hill Park and Gold Course, the headwaters at UVIC, Browning Park in Saanich and the Bowker Creek Park in Oak Bay. Other areas used for informal recreation include the vacant "BC Hydro Lands" near the Royal Jubilee Hospital.

Figure 7. Bowker Creek as it flows through Browning Park

Figure 8. The Bowker Creek Park near the Oak Bay Fire Station

Figure 9. Undeveloped greenspace near the Royal Jubilee Hospital and adjacent to Bowker Creek is owned by BC Hydro and is used by local residents and wildlife.

The Bowker Creek Watershed Management Plan has been created by a Forum of government agencies, community organizations, and residents in order to recognize and protect valued characteristics of the watershed. The Forum has created a vision for the future of the watershed to guide the development and implementation of the plan.

1.2 Watershed Management

A watershed is an area of land that drains precipitation and groundwater into a river system. Land in a watershed may be used for many different purposes and serve a variety of functions, including fish and wildlife habitat, resource extraction, human habitation, and recreation.

Two key principles of integrated watershed management are:

> **Functional Integration.** Managing one function of the watershed should not harm other functions of the watershed. For example, stream functions include the transport of water, sediment, and nutrients, and the support of aquatic and riparian habitat. Wetlands in a watershed provide temporary water storage areas, slow water flows and allow greater infiltration, and improve water quality. Increasing the ability of a stream to transport water may decrease the time water spends in wetland areas, thereby decreasing water quality and infiltration.
>
> **Spatial Integration.** – Management in one part of the watershed should not harm other parts of the watershed. For example, diverting water in the upper watershed into culverts that are connected to storm drain systems may increase flood flows in the lower watershed, and negatively impact aquatic habitat downstream.

The benefits of good watershed management include:

- protection of property from flooding and erosion,
- protection of water quality,
- protection of natural areas, green space, and habitats,
- preservation of aesthetic quality, and
- improved recreational opportunities.

A watershed management approach to planning is especially valuable where several municipalities and multiple land owners are managing the land in the watershed. The watershed planning process provides a venue for coordinating management and assurance that activities in one jurisdiction do not have negative impacts on another.

1.3 CRD Watershed Management Strategy

The CRD Environment Committee endorsed a Watershed Management Strategy that includes the creation of watershed management plans. Watershed management is part of the CRD's ongoing work in stormwater quality management.

The CRD has been involved in stormwater quality management since 1983 and was identified as having a coordinating role for stormwater quality management in the 1992 Core Stage 2 Liquid Waste Management Plan. Other components of the CRD stormwater quality program include stormwater discharge surveys, upstream investigations to determine the sources of contamination, nearshore marine investigations, promotion of public involvement and best management practices (BMPs) and ongoing special projects to protect stormwater and watercourses.

In November 1997, the CRD Environment committee endorsed a Watershed Management Strategy consisting of the six steps outlined below.

Step 1. Prioritize watersheds in the CRD.
Step 2. Prepare watershed assessments.
Step 3. Compile options and develop watershed management plans.
Step 4. Obtain political approval of the plan.
Step 5. Implement the watershed management plan.
Step 6. Monitor and report on progress.

To date, watershed assessments have been completed for Craigflower, Millstream, and Bowker Creek watersheds. Watershed management plans have been completed and incorporated into the Official Community Plans (OCPs) of some of the municipalities involved for the Craigflower and Millstream watersheds. Both the Craigflower and Millstream plans are currently being implemented.

This document presents the management plan for the Bowker Creek Watershed. The format is similar to the one that was used in the Craigflower and Millstream Watershed Management Plans, although it has been tailored to suit the specific conditions prevailing in Bowker Creek.

1.4 Initiatives Associated with Bowker Creek and its Watershed

Community groups, institutional organizations, and municipal governments are currently involved in projects within the boundaries of the Bowker Creek watershed, independent of the watershed management planning process. The following partial list of watershed projects are organized according to their sponsoring agency.

Community Groups: Community groups play an important role in the stewardship of Bowker Creek.

- The Friends of Bowker Creek Society leads tours of the creek, organize stream cleanups, and provides information to the public to raise awareness of Bowker Creek. The group is currently updating a website that provides information on Bowker Creek.
- The Camosun Community Association has developed and presented a slide presentation entitled "Supporting a regional vision for the Bowker Creek Corridor" in order to increase public awareness of the issues surrounding the creek, and the need for a vision to guide future decisions affecting the creek. The Association is also updating a brochure and display panel on Bowker Creek watershed issues and promotes community involvement by providing information on Bowker Creek in its regular community newsletter.
- The North Jubilee Neighbourhood Association has successfully developed the Spirit Garden, above a culverted section of the creek, protecting the property from future development and helping to create the beginnings of a greenway corridor for the community.

Schools*:* Local students contribute to the information required for sound management of the creek and the watershed.

- Students in the Environmental Technician program at Camosun College have included Bowker Creek in their projects, adding to the knowledge base about the current state of the creek. Most recently, four students prepared a report for the District of Saanich entitled "Restoration Options for Bowker Creek: Demonstration Segment Downstream of Haultain Street."
- Oak Bay High School Environmental Club has sponsored an Annual Bowker Creek Rubber Ducky Race, aimed a to promoting community awareness and public participation
- UVic has identified the wetland headwaters of Bowker Creek located on UVic property as a special study area. This designation will lead to a heightened level of study and investigation of these lands prior to any development. A 15-year campus land management plan is currently being developed.

- Students from local schools and the University of Victoria have conducted studies and water quality sampling on a periodic basis.

Capital Regional District*:* The CRD is responsible for water quality monitoring.

- The CRD Stormwater Quality program monitors Bowker Creek to determine whether water quality is getting better or worse over time. Water samples are assessed annually for fecal coliform levels at three stations during both the winter and summer. Sediments associated with the creek have also been analyzed to determine levels of chemical contaminants. In addition to contaminant sampling, the creek is also assessed for temperature, pH, dissolved oxygen, and specific conductance.

Municipalities: Each municipality is responsible for the portion of the creek and the watershed within their boundaries.

- The District of Saanich commissioned a prescription for the restoration of riparian habitat and the stabilization of eroding banks on open channel areas of Bowker Creek in Saanich. Actions and schedules for implementation have not yet been determined.
- Saanich Parks and Public Works performs annual maintenance in the open sections of the creek.
- Saanich Parks and Public Works also sponsors "Back to Bowker Creek" interpretive neighbourhood tours.
- The Shelbourne Local Area Plan includes a policy to undertake a Bowker Creek Greenway Action Plan.
- The District of Oak Bay administers open sections of the creek and responds to flood events.

2.0 THE BOWKER CREEK WATERSHED MANAGEMENT PLANNING PROCESS

2.1 The Bowker Creek Watershed Management Forum

The CRD Watershed Management Strategy calls for the creation of a Forum to develop a management plan for each watershed that has been assessed. The strategy states that Forum members should include "engineers and planners from the municipalities involved, selected staff from the CRD, Ministry of Water, Land and Air Protection, landowners and land users near aquatic features, regulatory agencies, community groups, environmental organizations, and local residents and other agencies as required[7]". The members of the Bowker Creek Watershed Management Forum are listed in the Acknowledgements section of this document.

The CRD Watershed Management Strategy recognizes the importance of including interested parties in the planning process. Participation in the Bowker Creek Watershed Forum by landowners, residents, community groups, and staff form all levels of government allowed for a full discussion of diverse interests. By combining the professional expertise, public consultation, volunteer efforts and funding resources of the participating agencies and organizations, an effective and efficient plan has been developed to improve the Bowker Creek watershed.

2.2 Work of the Bowker Creek Watershed Management Forum

The Forum met for four full days in 2002: April 4, May 15, July 30, and November 21. An Open House for the public was held on October 16. The following describes the activities undertaken on each date.

April 4, 2002. The Forum met for a half-day field trip and half-day workshop. The bus trip provided an overview of the watershed with stops at the mouth of the creek and most open channel areas. Forum members were provided with the opportunity to speak briefly at each stop about their concerns or involvement with activities in the area. The afternoon was devoted to developing a preliminary vision statement, goals, and objectives for the watershed.

Material generated at the workshop was reviewed and summarized to produce a draft management plan, including a vision statement, goals, and objectives. Suggested actions for

[7] CRD Engineering Department, 1997.

each goal were developed (based on workshop input and the consultant's expertise), and the draft was circulated to all Forum members on April 30, 2002.

May 15, 2002. The Forum met to review the draft management plan. A brief discussion of the report format was followed by a more in-depth review of the vision statement. Forum members then worked in small group sessions to confirm or revise the goals and objectives identified at the previous workshop, and to refine the actions associated with each objective. The Forum identified the need for broader public consultation, and the later part of the day was spent discussing options for making the plan available for public comment.

Material generated at the workshop was reviewed and summarized to prepare a second draft of the watershed management plan – circulated to Forum members on May 30, 2002 with a request for comments to be provided by June 15. Comments received were incorporated into a third draft management plan circulated to Forum members on July 8, 2002.

July 30, 2002. The Forum reviewed the Draft Bowker Creek Watershed Management Plan to refine identified goals, objectives, and actions. In-depth discussions of how to implement the plan, and how to elicit public comment on the draft were a key focus for the day. The input of the Forum was incorporated to complete the draft Bowker Creek Watershed Management Plan for public consultation.

October 16, 2002. An Open House was held from 3:00 pm to 8:00 pm at Knox Presbyterian Church on Richmond Road. Display material presented a summary of the draft plan, and copies of the complete draft plan were available for review. Representatives from Westland Resource Group, Urban Aspects Consulting Group, the CRD Environmental Services Department, and several Forum members were on hand to answer questions relating to the plan and the planning process. Comment forms were received at the Open House, and via mail or fax until October 23, and were reviewed and incorporated into the draft plan for approval by the Forum. A summary of public comments was prepared and submitted to the Forum as a separate document.

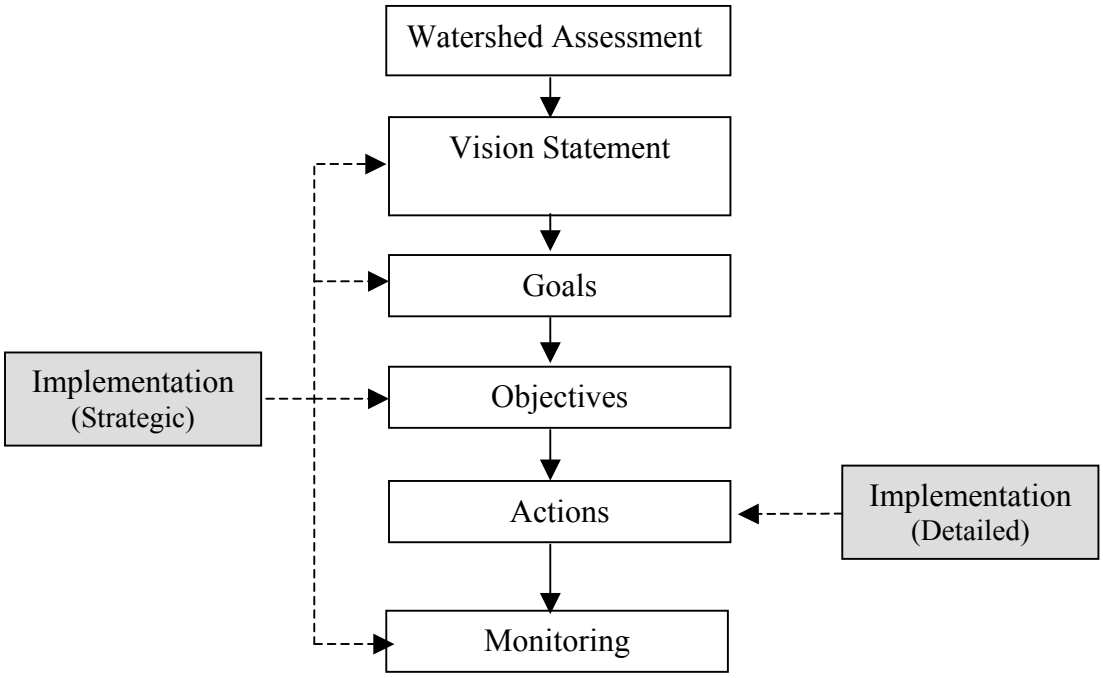
November 21, 2002. The Forum met to review the public comments received from the consultation process. The draft plan was revised to incorporate the suggestions and ideas put forward by those who attended the open house, or provided comments via e-mail or fax. A significant part of the day was spent discussing implementation strategies and short-term actions required to gain approval of the plan at the local government level.

January 15, 2003. Final comments on the draft plan and its implementation were incorporated and the final Bowker Creek Watershed Management Plan was prepared. The final plan was presented to Forum members and the Interim Steering Committee was formed.

3.0 The BOWKER CREEK WATERSHED MANAGEMENT PLAN

The Bowker Creek Watershed Management Plan has seven major elements as shown in Figure 8.

Figure 8
The Bowker Creek Watershed Management Plan Elements



- A **Watershed Assessment** provides an objective assessment of the existing characteristics of the watershed, and identifies issues and possible solutions to consider. The *Bowker Creek Watershed Assessment*[8] was prepared in 2000 for the CRD.

- The **Vision Statement** describes a desirable future condition of the watershed and provides overall direction for developing the other sections of the plan.

- **Goals** state desired outcomes for topics of concern.

[8] Reid Crowther and Partners Ltd., and SHIP Environmental Consultants Ltd. 2000. Bowker Creek Watershed Assessment. Prepared for the CRD Environmental Services Department. Victoria, BC.

- **Objectives** expand on the goals by describing desired outcomes that will contribute to achieving each goal.

- **Actions** are the means by which the objectives will be met.

- **Implementation strategies are both strategic and detailed.** ***Strategic*** implementation guidelines provide a framework for advancing the plan and include general principles. ***Detailed*** implementation consists of actions associated with each objective.

- **Monitoring** is necessary to assess progress toward implementation and to reveal whether the actions are achieving the plan's goals. Monitoring allows agencies to use "adaptive management," a process of learning from results to modify programs.

3.1 Strategic Plan Implementation Guidelines and Principles

The Forum identified the following strategic plan implementation guidelines to provide direction for ensuring the plan remains active and its goals and objectives are met:

- **Create a steering committee to oversee plan implementation.** The steering committee will ensure communication and coordination among municipalities on planning issues, coordinate efforts of volunteers, make applications for funding, and act as the lead agency for some plan actions.

- **Ensure political approval of the plan**. The plan must be endorsed by participating municipalities. Once political approval has been obtained, agencies will be able to assign staff to the plan and seek funding. Non-governmental organizations will seek support of their members, and commit to applying in-kind effort to implementing the plan.

- **Secure funding commitments for the identified actions.** Both financial and in-kind funding is required to implement the plan. Commitments from existing Forum members and new partners must be confirmed as the plan is implemented.

- **Monitor detailed implementation of the plan.** Implementation of the plan actions should be monitored on a regular basis, beginning with a baseline report including appropriate measurable indicators. The indicators should be re-measured, perhaps every 3 to 5 years, in order to assess progress toward the goals and objectives of the plan.

The Forum also described important **principles** for implementing the plan. The plan should:

- broadly reflect community values,
- consider timelines of up to 100 years,
- focus on incremental, achievable activities,
- set priorities and identify short and long term actions,
- be regularly revisited and updated,
- support decisions that are based on the best information available, and
- encourage and facilitate public involvement in watershed decisions and in plan implementation.

3.2 The Vision, Goal, Objectives and Actions

A Vision for Bowker Creek and its Watershed

The varied human uses and natural areas in the Bowker watershed are managed to minimize runoff and pollution, making Bowker Creek a healthy stream that supports habitat for native vegetation and wildlife, and to provide a community greenway that connects neighbourhoods.

A Possible Future for the Watershed

Scores of residents turned out for the annual "Bowker Days" festival, enjoying Bowker Creek and celebrating their successes in restoring the health of the creek and its watershed. Few people could remember the last time that heavy rains caused flooding of nearby homes. Now the flows are more moderate. Rainfall is allowed to infiltrate into the ground where it can be slowly released to the creek, and excess runoff is stored in wetland basins throughout the watershed. Most buildings' downspouts now flow into infiltration basins, not directly into storm drains.

Over many years, sections of the creek, formerly in pipes, have been opened to the sun, and community volunteers have replanted streamside areas with native trees and shrubs. Water quality and habitat has improved so much that cutthroat trout and sculpin inhabit open reaches of the stream, and frogs have returned in abundance. Birds, too, appreciate the improved habitat; their nests and songs continue to multiply each year. Wildlife provides everyday reminders that Bowker Creek is a living stream.

Trash in the creek is now rare. Strong partnerships among government, community volunteers, and the business community have led to shared responsibility and commitment for keeping the creek healthy and preserving this community treasure. The University of Victoria defined and protected the headwaters of Bowker Creek, recognizing its importance to the functioning of the watershed as habitat, as an area for research and education, and as an amenity for the university and surrounding community.

Ironically, as the Bowker Creek watershed gains more residents and businesses through redevelopment, it also gains more greenspace. People are drawn to the "ribbon of green" along the creek, which now connects the creek mouth in Oak Bay to the University, with branches to the Cedar Hill Park and Golf Course and Mt. Tolmie. Bowker Creek has become one of the amenities of the area, providing a functioning natural feature in the urban neighbourhood.

Bowker Creek is recognized in local community plans, making the creek an integral component in all urban redevelopment. Local businesses have taken the innovative step of opening the stream channel through their properties, making it part of the facility design. Shoppers and even tourists love it, and the award winning design is featured in international planning journals.

The Bowker Days celebrants look forward to their next steps in improving the creek and its watershed. Their successes so far in achieving cooperation among residents, government, businesses, and institutions is setting an example for others in the region seeking to improve the natural heritage of their communities.

GOAL 1

INDIVIDUALS, COMMUNITY AND SPECIAL INTEREST GROUPS, INSTITUTIONS, GOVERNMENTS, AND BUSINESSES TAKE RESPONSIBILITY FOR ACTIONS THAT AFFECT THE WATERSHED

Objective 1A. Ensure all interest holders understand the values of Bowker Creek and the watershed so they can act responsibly.

Because much of Bowker Creek is now underground, many interest holders do not realize the watercourse exists. Increasing public awareness of Bowker Creek and providing information on how activities and development practices affect the watercourse will help people act responsibly.

- **Action 1A-1**. **Develop educational ecological and historical information signs to be located at selected open portions of the creek**. Signs help to increase public awareness of the history and natural values associated with Bowker Creek.

- **Action 1A-2. Develop and deliver educational material for the public, local schools, colleges, universities, and businesses.** Educational material about how activities and development practices affect watercourses, and information about Bowker Creek will increase public awareness.

- **Action 1A-3. Organize and profile more community events to increase awareness (walking tours, educational exhibits) of this plan and support for its implementation.** Well-publicized community events not only help to raise public awareness, but also create a sense of 'community ownership', which motivates people to act responsibly.

- **Action 1A-4. Provide information on the watershed and the plan to the public and local media via brochures, displays, advertisements, and the internet.** Media coverage can reach a large number of people, and providing regular updates can create an ongoing story that captures the interest of the public for a long period of time. Increasing public awareness of Bowker Creek is important, but just as important is increasing public awareness of the plan after it is adopted by the municipalities. The plan provides direct actions and contacts for people who want to get involved in creating something better.

Objective 1B. Foster long-term community stewardship of Bowker Creek and celebrate accomplishments.

Long-term community stewardship of Bowker Creek will help to ensure that the goals and objectives of the plan are implemented. Partners working together can accomplish much more than separate, uncoordinated efforts, and can 'share the load' of completing ambitious actions. Acknowledging accomplishments builds pride, a sense of ownership, and confirms that progress is being made.

- **Action 1B-1. Develop and encourage partnerships with educational institutions for on-going technical studies education and restoration.** Students in ecological and environmental programs often perform fieldwork or conduct small sample projects as part of their studies. Partnerships among educational programs, municipalities, the CRD, non-governmental organizations, and the Bowker Creek Steering Committee can help to direct student activities so that both the students and the watershed benefit.

- **Action 1B-2. Publicize community efforts and promote information sharing via a Bowker Creek website.** A centralized information source will help to publicize ongoing studies or activities, and the progress of plan implementation. Active partners can use the website to check on past and planned activities and coordinate their work accordingly. The CRD and municipal websites should provide links to the Bowker Creek website.

- **Action 1B-3. Encourage voluntary actions to prevent pollution (promote best management practices, public education and outreach).** Every individual, business, and institution located in the watershed can be a steward of the creek. Letting people know how they can help prevent pollution is critical.

Objective 1C. Plan and manage land in the Bowker watershed in ways that create compact and attractive communities, increase areas of greenspace, reduce storm water runoff, and improve water quality in Bowker Creek.

Land uses in the watershed need to recognize the hydrological and other environmental conditions that are important to achieving the Vision. Increased residential and commercial densities can benefit the stream if greater areas are devoted to greenspace. Pedestrian-oriented nodal development can reduce automobile dependency in the watershed. Land use policies that seek protection of remaining open space through purchase or density transfers are also consistent with the goals of the watershed management plan.

While many of the goals of the watershed management plan can be achieved through voluntary actions of interest holders in the watershed, clear planning policies and enforceable bylaws highlight what is acceptable and give local governments the authority required to support watershed management.

- **Action 1C-1. Revise municipal policies and regulations to permit and encourage low impact development and smart growth design principles.** In some cases, low impact development techniques or smart growth principles are not allowed by or reflected in municipal policies and regulations. These policies and regulations should be revised so that residents and developers can incorporate improved concepts into new construction and renovation.

- **Action 1C-2. Ensure community plans include and reflect Bowker Creek Watershed Management Plan elements where appropriate.** These plans set out zoning and development guidelines that allow local government to regulate future land use in the watershed.

- **Action 1C-3. Adopt and enforce the municipal storm drain and watercourse protection bylaws, based on the CRD model.** These bylaws allow local government to regulate the quality of water received into stormwater drainage systems.

GOAL 2

MANAGE FLOWS EFFECTIVELY

Objective 2A. Base watershed management decisions on a comprehensive understanding of the hydrological characteristics of the drainage system.

Understanding the hydrology of the watershed, and the impacts of further development and redevelopment is key to making good watershed management decisions.

Manage the risk of flood damage to property near Bowker Creek.

Over the past 100 years, relatively dense urban development has occurred on what was once the natural floodplain of Bowker Creek. Some residences, schools, and commercial buildings are at risk when stormwater drainage systems or open portions of Bowker Creek flood. Effective management of flows and the use of appropriate mitigation methods can reduce or even eliminate flooding damage to nearby properties.

Coordinate flow management decisions among jurisdictions.

Actions in one part of the watershed may impact other parts of the watershed negatively. A collaborative approach to managing watershed flows will allow for integrative solutions that work for the entire watershed.

- **Action 2A-1. Prepare and implement a Master Drainage Plan (MDP).** Understanding the hydrology of the watershed, and the impacts of further development and redevelopment is key to making good watershed management decisions. The MDP will be developed collaboratively by the municipalities of Saanich, Victoria, and Oak Bay, in order to provide a coordinated approach to resolving flow management problems. The MDP should analyze and address:

    1) The hydrology of the watershed in order to predict flows under varying levels of precipitation. This analysis may involve the use of the provincial water balance model and preparation of a soils map of the watershed.
    2) Areas at risk of flooding,
    3) Options to address or mitigate flooding while achieving other watershed management plan goals,
    4) Cost-benefit analyses of identified options, and
    5) Funding mechanisms.

    The MDP provides detailed scientifically based analysis and solutions that are consistent with the goals and objectives of the Bowker Creek Watershed Management Plan. Results of the study will help to understand the effectiveness of various kinds of flow management activities in reducing flood risk. Engineering information (such as the effect of infiltration on runoff, and necessary culvert sizing) will be provided by the MDP. The results of the MDP should be reviewed prior to implementation.

Having identified the problem areas and appropriate solutions, such as storm water retention areas, infiltration programs, increased stream capacity, stream bank protection, or other mitigation structures, works and actions will be designed, funded and completed.

- **Action 2A-2. Establish or reactivate monitoring point flow recorder.** Data on flow volume will support the hydrological model for the MDP and ongoing monitoring and evaluation.

Objective 2B. Encourage onsite retention and infiltration of stormwater to reduce the area of effective impervious surfaces in the watershed.

When natural vegetated areas are paved over or replaced with buildings, rainfall that would have slowly soaked into the ground is instead quickly removed from a site by storm drains. This rapid peak in flow volumes can cause flooding and damage to natural areas and nearby property. Holding rainfall back and releasing it more slowly into the drainage system will help to decrease flooding and associated damage.

- **Action 2B-1. Adopt and incorporate into municipal Bylaws and development guidelines, requirements for the use of pervious surfaces and onsite management of precipitation in new development and redevelopment.** Requiring new development and redevelopment to use appropriate design and construction materials gives local government the means to reduce the area of impervious surface and regulate high flows. Use the provincial Storm Water Guidebook for British Columbia to develop programs for water retention options that can be used by local government and the public for the watershed. Different areas of the watershed require different water retention strategies. The guidebook describes options like disconnecting downspouts, pervious parking areas, green roofs, and rainwater re-use, and outline where these options may be best used.

- **Action 2B-2. Identify and contact owners of properties with large impervious surfaces, provide information on pervious surface technology and develop a "toolkit of incentives" for converting to watershed friendly surfaces and practices.** Retaining stormwater from large expanses of paved areas, like parking lots at shopping malls, can substantially reduce peak runoff flows. By infiltrating precipitation from large paved surfaces, groundwater can be recharged, with substantial ecological and hydrological benefit.

GOAL 3

IMPROVE AND EXPAND PUBLIC AREAS, NATURAL AREAS, AND BIODIVERSITY IN THE WATERSHED

Objective 3A. Prepare a comprehensive inventory of watershed attributes.

A detailed inventory of the location of valued watershed components forms the basis for coordinating and prioritizing the actions of the plan. A Geographic Information System (GIS) should be used to manage and analyze inventory information.

- **Action 3A-1. Compile accurate digital mapping of infrastructure, zoning, existing natural areas (terrestrial and aquatic), public areas, and properties of interest for expanding natural areas and in the watershed.** This information is required to support plan implementation. Some digital data already exists and should be reviewed to identify information gaps before any new data collection efforts begin.

- **Action 3A-2. Complete vegetation and wildlife inventories for natural terrestrial and aquatic areas.** In many places, invasive weeds, shrubs, and other species have displaced the natural plants and animals of the watershed. In other natural areas, overuse and encroachment of other land uses has impacted the ecosystems. The vegetation and wildlife surveys will help to identify natural areas at risk and provide a comprehensive description of current conditions.

Objective 3B. Protect, and enhance existing natural areas (or areas with restoration potential) in the watershed, particularly adjacent to Bowker Creek.

Few natural areas remain in Bowker Creek's otherwise heavily urbanized watershed, and so these places have a high value to residents. Natural areas provide opportunities for people to experience nature, even in the middle of the city, and contribute to the health of our communities, as well as providing habitat for birds, insects, and animals. There also may be opportunities to convert degraded places into natural areas.

- **Action 3B-1. Identify any significant unprotected natural areas in municipal OCPs and Bylaws.** Identifying any remaining natural areas as significant gives local government the direction to preserve these areas.

- **Action 3B-2. Develop and implement restoration plans for natural terrestrial areas and aquatic areas to rehabilitate damaged areas and increase biodiversity, particularly of native species.** Specific restoration plans, based on vegetation and wildlife surveys, provide clear direction for enhancing and improving natural areas.

Objective 3C: Create a multi-use greenway corridor from the headwaters to the ocean, in accordance with a Regional greenway system.

A greenway corridor that provides habitat for wildlife, recreational opportunities for residents, quiet spaces for nature appreciation, and the ability to travel safely across town by foot or bicycle instead of by car, would be an enormous community asset.

- **Action 3C-1. Identify a corridor of interest along Bowker Creek in all appropriate greenways plans.** A recognized corridor of interest along Bowker Creek in the Regional Greenways Plan will help to increase links between local government planning, and to promote awareness of this plan. Regional greenway plans include the Saanich Green / Blue Spaces Framework for Action.

- **Action 3C-2. Create a corridor development and use plan that recognizes the needs of different users.** The corridor development and use plan should focus on identifying compatible uses. Recreationists, commuters, nearby residents, and wildlife have different requirements that must be balanced along the corridor. Parts of the corridor could be identified as "no access wildlife habitat", while other parts could be designed for safe walking and cycling. Issues of access and public safety must be addressed.

- **Action 3C-3. Public institutions in the watershed (and adjacent to Bowker Creek) will protect and restore the natural qualities of their public lands, subject to available funding.** Public institutions hold a number of properties adjacent to Bowker Creek. A commitment from these institutions to maintain open areas for public use can contribute to the creation of a greenway corridor.

- **Action 3C-4. Where possible, take advantage of culvert replacement programs to daylight portions of Bowker Creek.** Culverts must be maintained and occasionally replaced to maintain adequate function of the stormwater drainage system. Rather than replacing or repairing culverts, daylighting the creek may be a viable option.

- **Action 3C-5. Initiate a small demonstration project that features daylighting culverted sections of Bowker Creek.** The concepts and results of daylighting the creek can be demonstrated to people in the watershed.

- **Action 3C-6. Implement a land acquisition plan to act on identified opportunities for increasing public areas or opening the watercourse.** Once properties of interest have been identified, an acquisition plan will be required that provides a list of each property, why it is of interest, and what kind of agreement might be necessary. The acquisition plan will act as a decision support tool for plan implementers, who can use it to evaluate whether or not to acquire land or rights as they become available.

GOAL 4

ACHIEVE AND MAINTAIN ACCEPTABLE WATER QUALITY IN THE WATERSHED

Objective 4A: Identify water quality problems and causes.

Water quality is a key indicator of watershed health, and may be affected by a wide variety of pollutants from many sources. Regular monitoring and reporting on water quality helps to indicate positive trends that indicate improving conditions, and negative trends that are cause for concern.

- **Action 4A-1. Monitor and report on water quality in the watershed.** A regular report on water quality in the watershed is needed to monitor trends. Provincial guidelines for water quality will be used where applicable to assess conditions and progress.

- **Action 4A-2. Identify likely sources of pollution, both point and non-point.** Pollutants can be introduced into the creek from many sources. Understanding where these sources are will aid in identifying ways to decrease or eliminate contamination of the creek.

- **Action 4A-3. Refine and focus the water quality sampling and monitoring program specifically for Bowker Creek.** Additional water quality sampling and monitoring programs will enhance our understanding of creek characteristics, on levels of pollutants, and the effects of rainfall on increasing pollutants temporarily.

Objective 4B. Meet or exceed provincial water quality guidelines for aquatic life.

Available standards for water quality must be met or exceeded in order to maintain water quality. Poor water quality may limit the success of efforts to restore natural habitats in the creek and along its shores, and detract from the value of the creek as a community asset.

- **Action 4B-1. Prepare, promote, and enforce regulatory Codes of Practice for those business sectors with potential to contribute to stormwater pollution.** The CRD, in consultation with local businesses, is preparing Codes of Practice for those business sectors with potential to pollute stormwater. Municipalities will be asked to adopt and apply and enforce these Codes of Practice in the watershed**.**

Objective 4C. Establish and maintain stable naturalized banks to protect water quality and public safety.

Open stretches of the creek provide opportunities for public use and for wildlife habitat, but also may be subject to erosion during flood events and thereby create risks to public safety and reduce water quality. In some areas, the natural banks of the creek have been replaced with concrete retaining walls in order to reduce erosion and subsequent risks. These 'hard engineered' solutions sacrifice natural areas in favour of public safety. Other solutions, that maintain the natural features while reducing risks, are possible and should be sought for remaining natural areas.

- **Action 4C-1. Assess existing open banks and identify problems.** This information provides a basis for developing and prioritizing future efforts.

- **Action 4C-2. Develop and implement bank stabilization solutions that are functional, integrated, and aesthetic.** Stream bank stabilization must reduce erosion to acceptable levels, and consider effects on upstream and downstream areas, other jurisdictions, and on the quality of the existing natural area. Appropriate channel geometry, vegetation, and where necessary structural measures can create natural-looking banks that convey runoff, support native vegetation, and allow safe public access.

3.3 Plan Implementation

A plan is only as good as its results. The Forum gave considerable thought to creating a plan that is practical and can be implemented. The members of the Forum worked with the intent that decisions and actions will be based on the plan. Although some of the plan's goals and objectives will take years to achieve, many of the actions identified can be initiated now, and opportunities for conducting some of the more complex activities may arise at any time. The Forum emphasizes that the parties responsible for implementing the plan must maintain a consistent, coordinated effort over the long term if the plan's vision is to be realized.

To foster effective implementation of the Watershed Management Plan, the Forum makes the following recommendations:

- A Bowker Creek Watershed Management Steering Committee should be formed, guided by the Draft Terms of Reference included in Appendix A. The jurisdictions and organizations represented on the Steering Committee would bear most of the responsibility for implementing the plan.

- The Forum strongly recommends that the municipalities of Saanich, Victoria, and Oak Bay formally request the CRD to assume a coordinating role in implementing the Bowker Creek Watershed Management Plan. Toward this end, the three municipalities together should prepare a written request that the CRD provide a Watershed Management Coordinator to support plan implementation and the work of the Steering Committee. The three municipalities should also provide funding for the position, as part of the annual requisition from the municipalities to the District. The Forum believes that the Coordinator should be a member of the Steering Committee, and should organize Steering Committee meetings, consult with other Steering Committee members on implementation planning and scheduling, pursue funding, and take primary responsibility for monitoring and reporting implementation progress.

The Forum was established to develop the Bowker Creek Watershed Management Plan. Having completed the plan, the Forum is now dissolved, and an Interim Steering Committee has been formed. The Interim Steering Committee will be responsible for pursing approval of the plan by Municipal Councils. Actions taken by the Interim Steering Committee will involve:

- presentations to mayors and councils by municipal staff and representatives of community groups

- development of a coordinated set of recommendations for endorsement by the councils involved, including a recommendation requesting the CRD assume the new

function of service and support to municipalities in implementing the watershed management plan.

The Interim Steering Committee will also ensure that a permanent Steering Committee is established. Once the permanent Steering Committee is established, the Interim Steering Committee will cease its work. It is envisioned that the permanent Steering Committee will develop and refine a detailed implementation strategy for the plan.

3.4 Monitoring Progress

The development of a management plan for the Bowker Creek watershed is a significant achievement in itself, but the plan must be a 'living document' that is used regularly. Progress toward the goals and objectives must be assessed. Where progress is being made, successes should be acknowledged and celebrated. Where progress is not being made, impediments must be identified or the plan should be amended.

The following indicators are suggested for monitoring the plan. In some cases, measurable indicators are not possible and so progress should be summarized and described. In a few cases, targets for achievement have been included.

Suggested Indicators
Goal 1. Individuals, community and special interest groups, institutions, governments, and businesses in the watershed take responsibility for actions that affect the watershed
Number of signs installed in each community
Number of institutions using Bowker Creek material
Number of community events and number of participants
Number of media updates produced
Number and names of media outlets using material on Bowker Creek
Level of public knowledge about Bowker Creek (survey)
Description of partnerships
Number of student projects that support or contribute to the plan
Number of information tools available (brochures, displays, etc)
Number of municipalities that have adopted the stormwater bylaw
Number of local plans referring to the plan
Goal 2. Manage flows effectively
Has the Master Drainage Plan been developed?
Is the point flow recorder active?
Have development guidelines been developed?
Number of programs for water retention
Number of landowners contacted regarding impervious surface reduction
Number of incentives for using water retention methods or converting impervious surfaces
Number of landowners adopting infiltration methods

Suggested Indicators
Change in runoff rate
Change in percent of effective impervious surface
Number of flood events
Value of flood damage (dollars)
Change in levels of suspended sediment
Volume and area (ha) of water storage (m^3)
Goal 3. Improve and expand public areas, natural areas, and biodiversity in the watershed
Have watershed values been identified and mapped?
Percent of unprotected natural areas
Percent of natural areas with completed vegetation and wildlife surveys
Percent of natural areas with: no restoration plan, completed restoration plan, active restoration, or completed restoration
Has a greenway corridor for Bowker Creek been identified?
Length and area of greenway established
Is the Bowker Creek greenway reflected in the Regional Greenways Plan?
Percent of area of public lands whose owners have committed to protect and enhance for natural areas or public uses
Area of greenspace in the watershed
Area of native vegetation in Bowker Creek riparian area
Length of Bowker Creek supporting cutthroat trout
Percent of culverts repaired, percent replaced, percent converted to daylight
Has a demonstration project been constructed?
Is there an acquisition plan for properties of interest?
Number and area of properties acquired for public open space
Goal 4. Achieve and maintain acceptable water quality in the watershed
Has a Bowker Creek sampling program been established?
Percent of open areas assessed for bank stability
Number of open areas requiring erosion control
Percent of problem areas with: no erosion control solution, erosion control solution identified, or erosion control solution implemented
Change in number of water quality exceedences
Change in key water quality parameters (fecal coliform, TSS, TDS, BOD, temperature, etc)

Appendix A. Draft Terms of Reference for the Bowker Creek Watershed Management Plan Steering Committee.

Prepared by the Bowker Creek Watershed Management Plan Interim Steering Committee, December 4, 2002

1.0 Purpose

The purpose of the Steering Committee is to assist with and coordinate the efforts of the District of Saanich, City of Victoria, and District of Oak Bay and other agencies and interests in implementing the Bowker Creek Watershed Plan. The Steering Committee will assist in undertaking a variety of activities, including but not limited to, monitoring goals and objectives, prioritizing actions, applying for grants, reviewing technical documents, increasing public awareness, and promoting partnerships.

The Steering Committee will produce an Annual Report for distribution to CRD, Municipalities, Community Associations, special interest groups, and the public.

2.0 Membership

The Steering Committee should consist of between 6 and 8 members, ideally comprised of:

- one Capital Regional District staff person;
- three municipal representatives, ensuring that engineering, planning, and environmental disciplines are represented (staff persons from Saanich, Victoria and Oak Bay); and
- four members of the public, including but not limited to watershed residents, business leaders, and community representatives (including youth).

Municipal Councils will endorse all proposed steering committee members prior to appointment. Selection criteria for public members of the Steering Committee will include:

- property ownership or residency in Bowker Creek Watershed preferred but not required;
- willingness and ability to commit to the necessary time over a two year period;
- demonstrated interest and knowledge of the Bowker Creek Watershed;
- ability to work toward consensus with people who hold different interests and opinions about the future of Bowker Creek Watershed;
- skills and experience related to watershed topics are helpful, but not required; and,
- skills and experience related to the roles and responsibilities associated with a Steering Committee are helpful, but not required.

Every effort will be made to create an appropriate balance of members, including a mix of people who represent the diverse backgrounds, experiences, perspectives, and neighbourhoods in the watershed.

3.0 Term of Appointment

Steering Committee members will serve for two years. In order to avoid a complete change in committee members at the same time every two years, and to ensure continuity over time, appointments should be staggered.

4.0 Responsibilities

The responsibilities of the Steering Committee should include, but are not limited to, the following:

- identify opportunities and facilitate the development of partnerships between government, community and business;
- promote coordination, clarify priorities, and help resolve scheduling issues among municipalities;
- identify funding sources and participate in the preparation of grant applications;
- review engineering, planning and consulting documents as appropriate;
- participate in the creation of public outreach and information and events;
- monitor and evaluate conditions and trends over time to ensure the goals and objectives are being met.

Appointment to the Steering Committee includes accepting responsibility to accept and advance the principles, spirit and intent of the Bowker Creek Watershed Plan, and in that context to:

- help foster plan realization through the local governments, communities and other stakeholders who may be involved;
- attend Committee meetings;
- attend Council meetings addressing Bowker Creek Watershed Plan issues;
- attend public information and community events;
- remain informed and inform others;
- share resources, creativity, experience, and expertise;
- work toward mutually acceptable recommendations; and
- build trust among participants through open, respectful, and productive communication.

5.0 Decision-Making

Steering Committee members will jointly seek outcomes that accommodate the interests and values of all members and their constituents, if applicable, and will make decisions by consensus.

> Consensus means an agreement that all participants can live with. The participants may not agree with every aspect but taken as a whole, a decision based on consensus reflects common major interests and satisfies individual concerns of participants to the extent that they can support it.

If participants reach consensus on a set of recommendations that resolves most, but not all of the issues that are being addressed, they will seek to document areas of disagreement. The reasons for disagreement and opportunities to resolve a disagreement will be included in the Steering Committee meeting records with the agreed-upon recommendation or action.

A quorum will consist of not less than four people of which two must be government representatives and two must be community representatives.

6.0 Meeting Procedures

Implementation of the Bowker Creek Management Plan will be an ongoing activity for many years. The Steering Committee is expected to meet once a month during the first year. During subsequent years no less than six meetings will be held yearly. Additional meetings may be held at the call of the Chair if sufficient notice is given. Participants will make every effort to attend committee meetings.

7.0 Public and Media Relations

Persons who are not Steering Committee members, and the media may attend Committee meetings. Persons attending a meeting will be asked to respect the process guidelines. The media are asked to indicate their presence. Presentations by the public may be accepted at the discretion of the Steering Committee. The Steering committee may accept responsibility for preparing press releases, granting interviews, or providing other information to the media. When speaking with the media, Steering Committee members are encouraged to highlight consensus positions of the Steering Committee and not to discuss the positions or suggestions of other participants.