
**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, 25 APRIL 2007**

SUBJECT **BOWKER CREEK URBAN WATERSHED RENEWAL INITIATIVE – 2006 ANNUAL REPORT**

PURPOSE

To present the 2006 achievements of the Bowker Creek Urban Watershed Renewal Initiative (BCI).

BACKGROUND

The BCI is a broad coalition of community, local government agencies and institutions working together to protect and enhance the ecological, social and economic health of the Bowker Creek watershed. Established in 2004, the BCI works through a consensus-based steering committee to coordinate and implement actions required to achieve the goals of the Bowker Creek Watershed Management Plan. This plan was approved and adopted by the District of Saanich, City of Victoria, District of Oak Bay and the Capital Regional District (CRD) in 2003.

The BCI 2006 annual report (see Appendix A) is the third annual report on the progress of the initiative. It provides highlights on the projects, outreach activities and partnerships that BCI has sponsored or participated in during the period January to December 2006.

2006 Accomplishments

In 2006, the BCI focused on outreach activities, the Master Drainage Plan (MDP), greenways and restoration, and monitoring projects. The main accomplishments summarized by goals are highlighted below:

Goal 1: Increase Awareness and Responsibility within the Bowker Creek Watershed

- Demonstrated the interactive Bowker Creek watershed model at six outreach events. The model was also displayed in the foyer of the City of Victoria municipal hall and will be displayed at Saanich and Oak Bay municipal halls in 2007. This model is an exceptionally effective educational tool.
- Co-hosted the 9th Annual Bowker Creek Clean Up and Rubber Duck Race. Approximately 100 participants and spectators attended the event, garbage was removed from the creek and \$480 was raised and donated to the Friends of Bowker Creek Society.
- Produced channel marker signs that will be installed in 2007. These will mark the open sections of the creek throughout the watershed and raise awareness of the BCI.
- Created a Bowker Creek listserv to inform the community about upcoming volunteer opportunities and other Bowker Creek news.
- Presented information about Bowker Creek and the BCI to community and school groups and at conferences throughout the year.

Goal 2: Manage Flows Effectively

- Obtained the remaining \$70,000 in required external funding from the Federation of Canadian Municipalities to complete the MDP. The MDP is the first phase of an Integrated Stormwater Management Plan (ISMP) for the Bowker Creek watershed and will address the hydrological and engineering components of the ISMP. The final ISMP will combine the MDP components with the social, environmental and economic aspects of integrated stormwater management at a watershed scale. The ISMP will provide essential information that will help to guide future development and infrastructure planning within the watershed, which will result in decreased flooding and damage to private property and infrastructure, improved greenways and wildlife habitat, riparian habitat along the creek and improved public amenities.
- Selected and engaged Kerr Wood Leidal Associates Ltd., in accordance with CRD procedures and in partnership with Oak Bay, Saanich and Victoria engineering staff, to complete the MDP.
- Continued monitoring flows and velocities throughout the watershed to obtain the required flow and velocity data for the MDP, a hydrologic and hydraulic assessment of the watershed that will identify solutions and capital projects to reduce flooding and erosion.

Goal 3: Improve and Expand Public Areas, Natural Areas and Biodiversity in the Watershed

- Completed a bioengineering project (use of live vegetation to stabilize banks) on approximately 30 meters of creek bank alongside allotment gardens in Oak Bay.
- Completed invasive species removal projects along Bowker Creek with St. Patrick's Elementary School and community members.
- Developed potential greenways routing and possible land acquisition requirements in consultation with municipal staff and representatives on the BCI's Greenways subcommittee. The input from the BCI, which encourages a multi-use greenways corridor from the headwaters of Bowker Creek (at University of Victoria) to the ocean, will be provided to the municipalities for consideration in their greenways planning processes.
- Conducted ongoing maintenance (weeding, mulching) at the St. Patrick's demonstration restoration site, with the help of volunteers. This site, constructed in 2005, is performing as expected and has successfully withstood large flooding events.
- Completed a proper functioning condition assessment (PFC) of stream bank and channel conditions for the open sections of the creek, to provide information to the MDP and the ISMP.
- Initiated planning and collaboration with the City of Victoria to pursue a demonstration stormwater management project along Trent Street, associated with the CRD Trent Street pump station project.

Goal 4: Achieve and Maintain Acceptable Water Quality in the Watershed

- CRD staff continued to monitor creek water quality and sediments. The 2005 monitoring data indicates reasonable water quality in Bowker Creek; however, elevated levels of copper and zinc were found at one of the four sampling stations. CRD and municipal staff are working together to identify possible sources of these contaminants.

FINANCIAL IMPLICATIONS

Annual reporting is included in the core area stormwater annual budget.

SUMMARY/CONCLUSIONS

In 2006, the BCI made significant progress in improving the Bowker Creek watershed. The momentum of this initiative continues to build, and the steering committee is committed to short- and long-term actions that are critical to the successful achievement of the goals of the BCI. In 2007, the BCI will focus on completing the ISMP and obtaining external project funding.

The successes of the BCI are due to the fundraising efforts and support provided by the watershed plan implementation coordinator position and the coordination provided by the BCI steering committee. The long-term vision and cooperation of the CRD, District of Saanich, City of Victoria and District of Oak Bay to establish and fund the coordinator position and support the BCI steering committee is critical to the continued success of this watershed-based initiative.

RECOMMENDATIONS

That the Core Area Liquid Waste Management committee:

1. receive the *Bowker Creek Urban Watershed Renewal Initiative 2006 Annual Report* for information; and
2. continue to support the Bowker Creek Urban Watershed Renewal Initiative.

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Senior Manager, Scientific Programs

Dwayne Kalynchuk, PEng
General Manager, Environmental Services
Concurrence

COMMENTS

JW:bc
Attachment: 1



Bowker Creek Urban Watershed Renewal Initiative 2006 Annual Report

Goals

The BCI is based on the four goals from the watershed plan:

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

Goal 2: Manage flows effectively.

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

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

Activities

In 2006, the BCI focused on the Master Drainage Plan (MDP), outreach activities, greenways, and restoration and monitoring projects.



The restoration demonstration site (completed in 2005) at St. Patrick's elementary school fared well in 2006, even with unusual flooding events. PHOTO CREDIT: Tanis Douglas

Background

The Bowker Creek Urban Watershed Renewal Initiative (BCI) is a broad coalition of community, government, businesses and institutions working together to protect and enhance the ecological, social and economic health of the Bowker Creek watershed. The BCI was established in March 2004 following the completion and adoption of the Bowker Creek Watershed Management Plan (BCWMP) by the District of Saanich, City of Victoria, District of Oak Bay, the Capital Regional District (CRD) and community groups.

The BCI is led by a consensus-based steering committee which is chaired by the CRD. The committee's role is to implement actions to achieve the goals of the BCWMP. Three subcommittees: Outreach, Master Drainage Plan and Greenways, focus

on the key issues of the BCI. A part-time coordinator at the CRD initiates and manages projects, seeks funding and organizes the BCI. This position is funded by the partner municipalities of Saanich (59%), Victoria (23%) and Oak Bay (18%). This is the third annual report since the establishment of the BCI and provides an overview of progress meeting the objectives of the BCWMP.

Activities

In 2006, the BCI focused on the Master Drainage Plan (MDP), outreach activities, greenways, and restoration and monitoring projects.

Master Drainage Plan

The Master Drainage Plan (MDP) is the first phase of an Integrated Stormwater Management Plan that will be completed by 2008. The MDP was



initiated in 2006 following extensive fundraising, planning and data collection. It will be complete in spring 2007 and will investigate flooding, erosion and environmental stormwater problems and identify solutions, along with their costs and benefits. The technical information provided by the MDP will eventually be incorporated into a comprehensive Integrated Stormwater Management Plan (ISMP), which will also take into account ecological, social and economic information. The solutions identified in the ISMP will support many of the goals identified in the BCWMP.

In 2005, \$66,500 was raised or contributed by the BCI partners for the MDP data collection and technical study, in addition to substantial staff and volunteer time contributed. In 2006, a further \$70,000 was awarded from the Federation of Canadian Municipalities to allow the study to proceed.

Outreach Activities

Outreach is a critical part of the Bowker Creek Initiative, as public awareness is needed to foster long term citizen stewardship in the watershed. In 2006, various outreach activities were undertaken, including:

- The interactive Bowker Creek Watershed model was created by Oak Bay High School students with the support of the Stream Team. The model was used at six outreach events, and was also displayed in the foyer of the City of Victoria municipal hall. This model was well received and has proven to be an exceptionally effective educational tool.
- The 9th Annual Bowker Creek Clean Up and Rubber Duck Race was hosted by The Oak Bay High School Visions Environmental Club, with participation from The Friends of Bowker Creek Society, the Stream Team Society and CRD Environmental Services. There were approximately 100 participants and spectators. Garbage was removed from the creek, and \$480 was raised and donated to the Friends of Bowker Creek Society.

- Channel marker signs were produced to mark the open sections of the creek and to raise awareness of the BCI.
- A bioengineering course was an important outreach tool, and included 28 municipal staff members from Victoria and Oak Bay.
- A Bowker Creek listserv was created and had 53 subscribers that received information about upcoming volunteer opportunities and other Bowker Creek news.
- Information about Bowker Creek and the Initiative was presented to community and school groups and at conferences. This included:
 - University of Victoria (UVic) Restoration of Natural Systems and Environmental Studies Classes, and UVic Sustainability Project's EarthFest
 - Water in the City Conference and Stewardship Fair
 - Bowker Creek Brush Up
 - BC Rivers Day
 - Quadra Cedar Hill and Camosun Community Association Picnics.



The Master Drainage Plan, started in 2006, will identify solutions to watershed flooding problems. PHOTO CREDIT: Peter Fall



Greenways

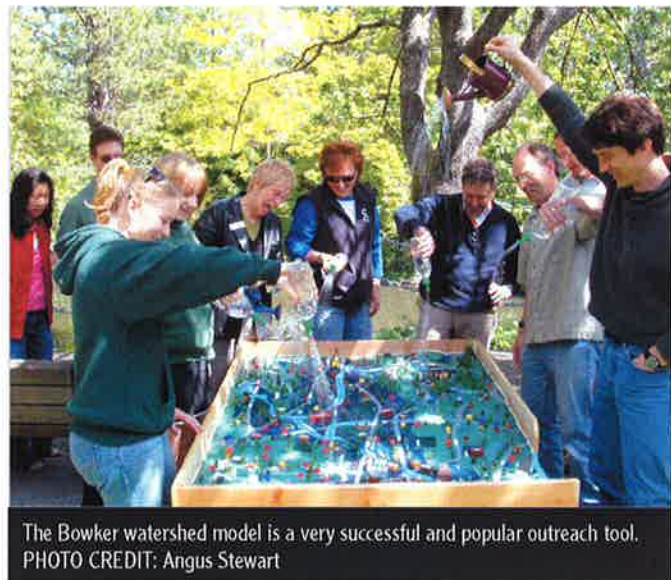
The Bowker Creek Watershed Management Plan includes an objective to create a multi-use greenway corridor from the headwaters (University of Victoria) to the ocean, in accordance with a regional greenway system. A greenway that follows Bowker Creek could provide riparian and aquatic habitat as well as providing an alternative transportation route that links parks, neighbourhoods, commercial centres, and public facilities such as recreation centres and schools. In 2006, the BCI Greenways Subcommittee developed recommendations for potential greenways routes and possible land acquisition requirements, in preparation for municipal greenways planning processes. This information will directly support the upcoming planning process for Phase 2 of the Saanich Centennial Trails Project. BCI input will help ensure that any future greenways will complement the goals of the BCI.

Restoration and Monitoring

Water quality monitoring continued throughout 2006, through both sediment sampling and scheduled water sampling. This sampling confirms that Bowker Creek has the poor water quality typical of urban creeks, and provides a baseline against which improvement can be measured. Flows were also monitored in preparation for the Master Drainage Plan, and unusual flooding events provided good data. An assessment of channel and streambank habitat conditions was done for the open sections of the creek, to provide information for the Master Drainage Plan. Monitoring and weeding were done at the restoration demonstration site at St. Patrick's elementary school. This site is performing as expected and has successfully withstood large flooding events. In Oak Bay, a bioengineering course was developed and participants used the technique to stabilize the creek bank adjacent to the allotment gardens on Monteith Street. Although unusual flooding damaged these efforts, the project provided useful information for future bank stabilization work. Lastly, plans were made to develop a concept for stormwater management (improved infiltration) along Trent Street, as part of a sewer pump project planned by the Capital Regional District.

| Funding Source | Funding (\$) | Item |
|---|------------------|--|
| Watershed Plan Coordinator | | |
| District of Saanich | \$30,993 | BCI Coordinator |
| City of Victoria | 12,082 | BCI Coordinator |
| District of Oak Bay | 9,455 | BCI Coordinator |
| Project Funding | | |
| Environment Canada | 15,000 | Master Drainage Plan |
| Capital Regional District | 23,062 | Proper Functioning Condition Assessment and Master Drainage Plan |
| Friends of Bowker Creek Society (Evergreen Unilever Fund) | 1,500 | Bioengineering workshop and bank stabilization |
| District of Oak Bay | 1,000 | Bioengineering workshop and bank stabilization |
| Federation of Canadian Municipalities | 70,000 | Master Drainage Plan |
| Oak Bay High Visions Environmental Club | 1,000 | Watershed Model (Stream Team Society) |
| TOTAL 2006 | \$164,092 | |

* Figures in this table do not include the value of municipal staff and volunteer time.



The Bowker watershed model is a very successful and popular outreach tool. PHOTO CREDIT: Angus Stewart

2006 Funding

In 2006, funding was provided for the BCI through various sources. The municipalities of Saanich, Victoria and Oak Bay provided funding for the BCI Coordinator. Many other external funding agencies have shown their support for the initiative by providing funding for projects within the watershed.

What's Next?

In 2007, the BCI will continue to implement activities designed to achieve the goals of the BCWMP. These activities include:

Integrated Stormwater Management Plan

A terms of reference for the Integrated Stormwater Management Plan (Phase 2) will be developed by February of 2007. Funding will be solicited to complete the plan, which if successful will be initiated before the end of the year. This plan will integrate information from the MDP (Phase 1), and will provide detailed recommendations and priorities that will provide direction in meeting the Initiative's goals with respect to: managing flows; improving public areas, natural areas and biodiversity; and achieving acceptable water quality.

Outreach Activities

Outreach activities will continue to raise awareness by sharing information about Bowker Creek with the community. The BCI will continue to support the Oak Bay High School Visions Environmental Club's 10th annual Rubber Duck Race and Clean Up, and will plan a second Bowker-focused event. The coordinator and volunteers will continue public presentations and will bring the BCI display and

watershed model to various community events. The revitalized Outreach Subcommittee will work more closely with schools and universities to support teachers in raising awareness of the watershed and to gather information and carry out projects on Bowker Creek. New outreach activities — such as a watershed pledge or a video project to collect elders' memories of the Creek — will increase the profile of the Initiative in the community.

Restoration and Monitoring

Restoration plans and priorities will be developed as part of the ISMP and implemented as possible. Monitoring and maintenance of the channel at St. Patrick's Elementary School will continue. The bioengineering done at the creek bank at the allotment gardens in Oak Bay will be repaired, and other potential improvements to that channel section may be made. Other continuing activities include water quality and flow monitoring and analysis.

Watershed Planning and Greenways

In 2007, the BCI will continue to participate in other aspects of planning in the watershed, such as providing comments on proposed developments in the watershed, and providing the BCI greenways input to the member municipalities.

Summary

During 2006, significant progress was made towards achieving the BCI's goals and in the implementation of the BCWMP. The final necessary funding was obtained for the Master Drainage Plan, and this important planning work was initiated. The BCI had a presence at various community events, and the watershed model was very well received.

The BCI worked to develop input to municipalities' greenways planning, in accordance with the goals of the BCWMP. The BCI also continued to work with agencies and groups to restore sections of Bowker Creek, raise awareness within the watershed and collaborate on watershed stewardship activities. These activities and projects are working towards decreasing stormwater and contaminant inputs entering the creek, protecting and enhancing habitat quality, achieving ecologically suitable land uses and advocating environmental protection for the watershed. Partnering with municipal, community and business partners, and planning for land use within the watershed is essential to this process and a key action for the BCI ■



Bioengineering was done to stabilize the creek bank in Oak Bay, though an unusual flood that occurred soon after meant that the work needed to be redone. PHOTO CREDIT: Matthew Wheeler