

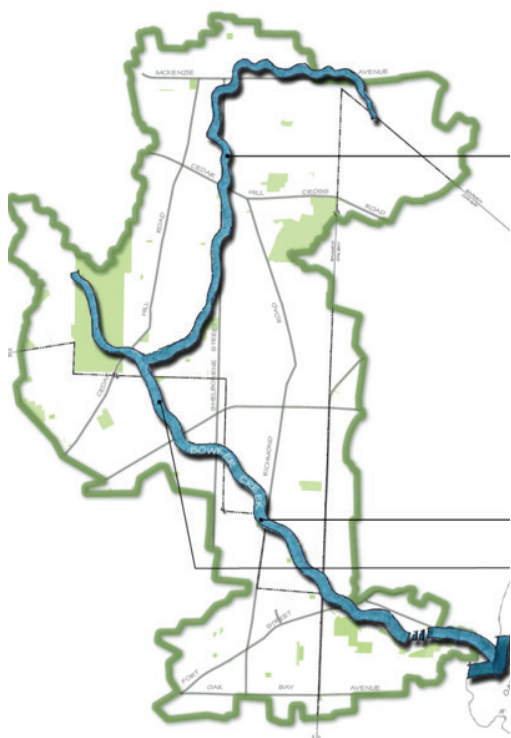
Bowker Creek Blueprint

10 Year Achievements | 2021



**Bowker
Creek**

URBAN
WATERSHED
RENEWAL



Introduction

The *Bowker Creek Blueprint* is a one of a kind 100 year action plan to restore Bowker Creek Watershed, which runs through Greater Victoria's most urbanized watershed. Bowker Creek flows from its headwaters at the University of Victoria to its outlet near Willows Beach, through the municipalities of Saanich, Victoria, and Oak Bay. Much of the creek is buried in pipes and culverts, and poor water quality, flooding and invasive species are major issues. Local governments, institutional partners and community champions have embraced vision of a restored creek and the potential it offers to improve ecological health, hydrology and community stewardship throughout our region.

The *Blueprint* was written in 2010 and subsequently endorsed by City of Victoria (2011), District of Saanich (2011) and District of Oak Bay (2012). These three municipalities, along with community and institutional partners, implement the *Blueprint* through the CRD's Bowker Creek Initiative (BCI). The *Blueprint* provides these municipalities, community and other land steward organizations with information and guidance to manage and restore the watershed and creek corridor.


Considerable progress has been achieved as the *Blueprint* reaches its ten year anniversary. This document has been prepared to review the ten key actions for short-term implementation identified in the *Blueprint* as important first steps for municipalities and land stewards to achieve. This milestone also provides an opportunity to document and









BCI Blueprint 10 Year Achievements

celebrate the important work accomplished to date by BCI partners and the many community members and partner organizations who are vital to its success. This document serves as a launching point for the next phase of restoration and renewal of Bowker Creek.







Table 1 provides a summary of successes in achieving the 10 short terms actions outlined in the *Blueprint*, as well as achievements in a selection of other important areas to be celebrated. The Bowker Creek Watershed map, following Table 1, highlights a selection of accomplishments throughout the watershed.

Table 1: Snapshot of Success: Blueprint Short Term Actions and Other Key Achievements

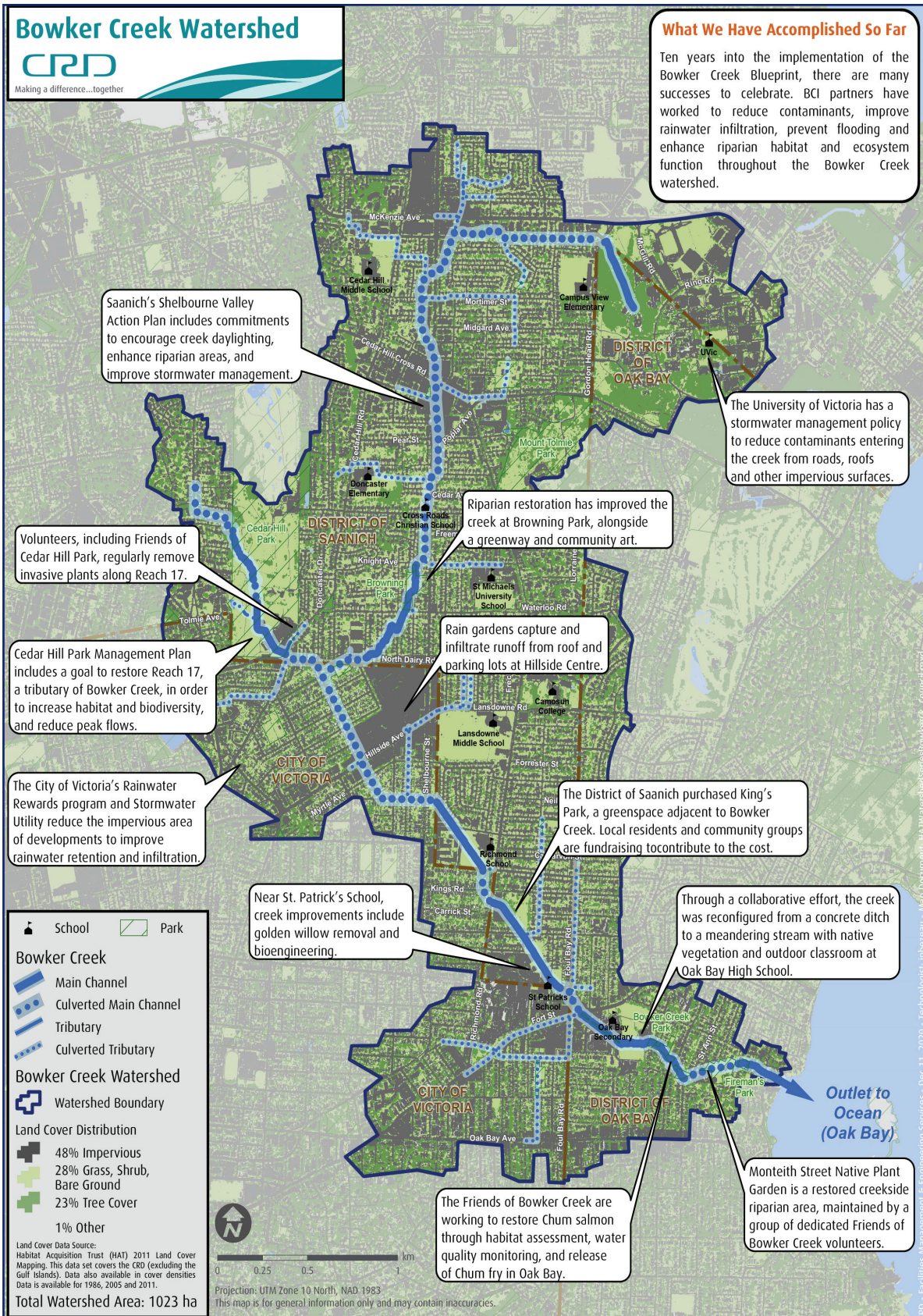
 Action largely completed
  Action underway

Short Term Blueprint Actions			
<p>Municipal plans should include Bowker Creek goals and actions</p> <ul style="list-style-type: none"> Bowker Creek is referenced in plans in all three municipalities. 		<p>Reduce effective impervious area for new developments</p> <ul style="list-style-type: none"> City of Victoria is leading the way in mitigating impervious surfaces through Rainwater Rewards program and Stormwater Utility. 	
<p>Remove target invasive species</p> <ul style="list-style-type: none"> High priority species have been reduced/eradicated. Volunteer efforts help to control invasive plants throughout the watershed. 		<p>Rainwater management demonstration site in each municipality</p> <ul style="list-style-type: none"> All three municipalities have at least one site. 	
<p>Oak Bay development of Urban Forest Strategy</p> <ul style="list-style-type: none"> All three municipalities now have strategies. 		<p>Develop a strategy to acquire key properties</p> <ul style="list-style-type: none"> The <i>Blueprint</i> and the 2020 Daylighting Feasibility Study provided the municipalities with lists of key properties for acquisition, which municipalities are operationalizing. 	
<p>Oak Bay High School creek restoration</p> <ul style="list-style-type: none"> The creek was restored through a collaboration between SD61, Oak Bay, and the BCI/CRD. Students, staff and community volunteers remain actively involved in maintaining the site. 		<p>Shelbourne Valley Action Plan input</p> <ul style="list-style-type: none"> Opportunities to daylight and restore Bowker Creek are featured prominently throughout the action plan and will help to facilitate future creek daylighting. 	

BCI Blueprint 10 Year Achievements

Other Key Achievements			
<p>Work with landowners between Pearl and Trent Streets to achieve long-term vision</p> <ul style="list-style-type: none"> The Daylighting Feasibility Study provided a plan for restoring the creek through Richmond School and King’s Park. The District of Saanich put funds towards the purchase of community green space in 2019, with community members working to fundraise a matching amount. 		<p>Restoration work at Browning Park</p> <ul style="list-style-type: none"> Browning Park boasts a natural creek channel, with a greenway and community art. Work to remove invasive plants and reduce erosion is ongoing. 	
<p>Daylighting Feasibility Study completed</p> <ul style="list-style-type: none"> This study lays the groundwork for coordinated and operationalized daylighting of the creek and development of a new greenways network 		<p>Community engagement and stewardship</p> <ul style="list-style-type: none"> Through outreach events, presentations and work bees, community members have learned about Bowker Creek and their role in its protection Community members are taking ownership of the creek and its stewardship through invasive species removal, water quality monitoring and fish habitat restoration 	
<p>Partnership building and collaboration</p> <ul style="list-style-type: none"> Key partnerships include SD61, University of Victoria, Community Associations, and the Friends of Bowker Creek. SD61 officially endorsed the <i>Blueprint</i> in 2018. 		<p>Water Quality Monitoring</p> <ul style="list-style-type: none"> CRD staff carry out invertebrate sampling and regular water quality testing including temperature, pH, oxygen, metals, and E.coli. Friends of Bowker Creek have begun additional water and invertebrate sampling as part of their Chum Salmon Recovery Project, and will share this data with the CRD. 	

BCI Blueprint 10 Year Achievements



Key Actions for Short-term Implementation

This section examines progress made in achieving the ten key actions that were identified in the *Blueprint* as high priority actions. These actions were deemed to be relatively achievable with significant positive benefits for Bowker Creek.



✔ Action #1: Review and revise municipal plans to include Bowker Creek goals and actions

All three municipalities have successfully included *Blueprint* goals and actions into their municipal plan. This action is important because it helps to ensure that the aims of the *Blueprint* are integrated into municipal plans and on-the-ground operations. This section summarizes the various ways the three BCI municipalities have incorporated the *Blueprint* into their plans and policies.

District of Saanich

The District of Saanich's Official Community Plan (OCP) predates the *Blueprint* (2008) but since the *Blueprint's* publication, Saanich Council has committed to enhancing the Bowker Creek watershed through various motions and plans. Concurrent with its endorsement of the *Blueprint* in 2011, Saanich Council passed a motion that the Planning, Engineering, and Parks and Recreation Departments be directed to consider the principles and actions for watershed management, the ten key actions for short-term implementation, and stream reach actions of the Bowker Creek *Blueprint* when developing Departmental work plans and budgets. This motion supports numerous noteworthy policies and plans:

Shelbourne Valley

Bowker Creek runs roughly parallel to Shelbourne Street in Saanich's highly urbanized Shelbourne Valley, which holds important daylighting and restoration potential. The Shelbourne Local Area Plan was adopted in 2008 and includes two key policies that relate to Bowker Creek:

- Policy 5.4: Seek opportunities to restore and daylight Bowker Creek
- Policy 5.5: Support community initiatives by a variety of institutions to create a stream stewardship and Environmental Education Program related to Bowker Creek.

In 2017, Saanich Council adopted the Shelbourne Valley Action Plan. This plan is described in more detail in Action #8, later in this document, and contains important commitments to restoring the ecological health of Bowker Creek.

Cedar Hill Park Management Plan

A tributary of Bowker Creek (Reach 17) runs through Saanich's Cedar Hill Park, flowing through an open channel near the Cedar Hill Recreation Centre and ball diamonds. Saanich Council endorsed the Cedar Hill Park Management Plan in 2020, which prioritizes the restoration of Reach 17 as an environmental management and restoration goal. In particular, the plan's Goal 1.0: Move the Bowker Creek *Blueprint* forward lists the following actions:

- Based on modeling completed by Kerr Wood Leidal (KWL) in 2018, develop a detailed plan for improvements to sections of Reach 17 which will include some public interaction with the creek (viewing, etc.)
- Seek funding opportunities (grants and community partnerships) to complete the restoration as planned
- Implementation of improvements to Reach 17 which includes public amenity improvements such as viewing opportunities, interpretive/educational signage and seating.

BCI Blueprint 10 Year Achievements

Spotlight: Community Associations

Numerous Community Associations have been important partners in implementing the *Blueprint* at the local level. Members of Community Associations representing Oak Bay, Camosun, Quadra Cedar Hill, and North Jubilee have all been involved in the coalition since its inception. Community Association members play a key role in sharing a neighbourhood perspective about Bowker Creek with local government staff.

District of Oak Bay

Oak Bay's OCP (2014) references Bowker Creek numerous times:

- Community-wide guidance is provided related to the reduction of impervious surfaces, and support for Bowker and Hobbs Creeks watershed improvement plans. (Pages 52-54)
- A Rainwater Management Bylaw is proposed that would require low impact development practices to increase onsite retention and absorption of rainwater, reducing the effective impervious area in the watershed (Page 59).
- A commitment is made to explore opportunities to acquire the Bowker Creek bed and adjacent slopes as options arise through changing ownership (Page 59)
- Any improvements to the tennis bubble at Oak Bay Recreation Centre should include the potential for daylighting portions of the creek (Page 115)
- The District will explore opportunities for a multi-use greenway corridor along Bowker Creek, in accordance with the proposed regional greenway system, ideally outside of the riparian setback area (Page 122).
- Watercourses Development Permit Area requirements specifically reference Riparian Area Regulations, including guidance related to Bowker and Hobbs Creeks (Pages 169-173). Special guidelines for Bowker Creek include:
 - For any major development projects on sites where Bowker Creek is buried, consider 'daylighting' the creek if possible.
 - Increase the width of the undisturbed riparian area along the creek, ideally to 30 metres from the top of bank, and restore and enhance riparian vegetation in this area.
 - Design the creek and the riparian corridor to provide native habitats, biodiversity, and passage for fish and wildlife. Replace any hard structures such as walls along the creek with landscape solutions such as planting or bioengineering, subject to bank stability and erosion control considerations.

Spotlight: Friends of Cedar Hill Park

Cedar Hill Park is home to a tributary of Bowker Creek (Reach 17) along the western edge of the Bowker Creek watershed. This section of the creek is significant because it is on public land and is accessible to the public. The Friends of Cedar Hill Park (FoCHP) came together in 2006 to protect the natural areas of Cedar Hill Park, including Reach 17. Between 2012-14 the Friends worked alongside other community members to successfully oppose a proposal to build eight clay tennis courts between Bowker Creek and the recreation centre. Members currently meet on a weekly basis to remove invasive plants throughout the park, and sit on the BCI steering committee.

BCI Blueprint 10 Year Achievements



- **10.13.1:** Implementing management plans for the Bowker Creek watershed
- **10.13.2:** Exploring the acquisition and designation of creek side ecosystems through a Parks Acquisition Strategy or major redevelopment proposals
- **10.13.3:** Integrating the acquisition of natural creek side features into the development of greenways, where appropriate.
- Bowker Creek Greenways are outlined on the Greenways Network map (Map 6).
- Additionally, a commitment to “integrate Bowker Creek watershed protection and daylighting opportunities into land use planning” is listed as on Map 27, Jubilee Village Strategic Directions and Map 29, Oaklands Strategic Directions.

City of Victoria

The City of Victoria’s Official Community Plan (2012) references Bowker Creek watershed protection, creek daylighting, the development of greenways and riparian protection numerous times:

- **10.13:** Collaborate with the Capital Regional District, neighbouring municipalities, community organizations, property owners and other partners to protect and enhance streams and watercourses, including the potential daylighting of streams and improvement of riparian habitat, by:

The City of Victoria’s 2017 Parks and Open Spaces Master Plan incorporates the priority of daylighting or celebrating culverted streams, and specifically references Bowker Creek. The following is identified as a short term, high priority planning action:

- **1.2.3** Identify opportunities to daylight or celebrate culverted streams

Spotlight: Friends of Bowker Creek

The Friends of Bowker Creek (FoBC) is a community-based group that works to “support the restoration and enhancement of Bowker Creek and its watershed to a healthy state, guided by the vision and goals of the Bowker Creek *Blueprint*.” The FoBC have been instrumental in organizing educational and stewardship work that make an important on-the-ground difference in the watershed. Members of FoBC were a key part of the early production of the *Blueprint* and over the years have been closely involved in the restoration of the creek at Oak Bay High, the development of Bowker Creek signage and artwork, and organizing various community events including Communi-Tea celebrations and pendant printing

workshops. The FoBC have hosted the BCI educational display at many community events, including the interactive watershed model. They also hold regular work parties at Oak Bay High and Monteith gardens that give community members the opportunity to remove invasive species and plant native species along the creek.

In 2020, FoBC expanded its focus to include the Bowker Creek Chum Salmon Recovery Project, a multi-year project with the aim of restoring chum salmon back to the lower reaches of Bowker Creek. Volunteer streamkeepers are measuring water and habitat quality, with the goal of releasing chum salmon at Oak Bay High and Monteith Gardens over the next few years.

 **Action #2: Adopt requirements to reduce effective impervious area for new developments.**

Approximately 50% of the Bowker Creek watershed is covered by impervious surfaces, including roofs, roads and other hard, impenetrable surfaces. These impervious surfaces impact creek health by contributing to flooding, erosion, and poor water quality. The “effective” impervious area of the watershed can be lowered using green infrastructure features such as raingardens, permeable pavement and green roofs. In an urbanized watershed like Bowker Creek, new developments present an important opportunity to use low impact technologies to improve rainwater retention and infiltration.

District of Saanich

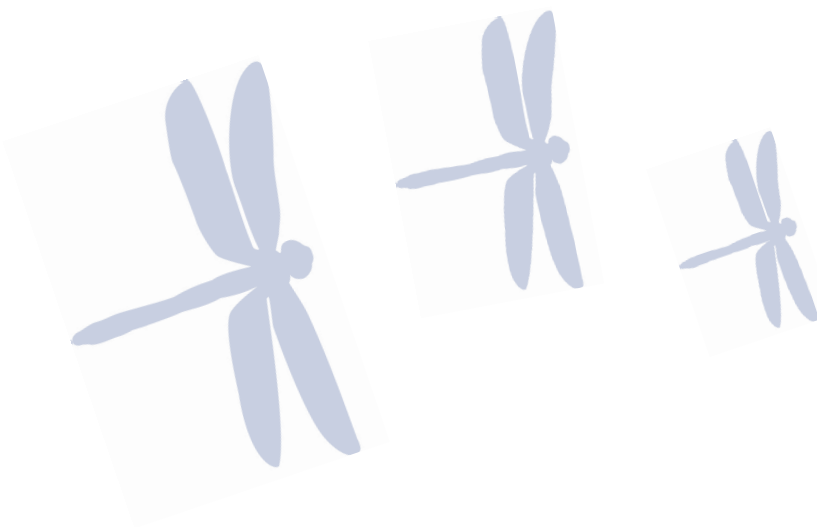
Saanich has a policy that new developments must detain stormwater run-off onsite, and is working to adopt new standards that will include infiltration.

City of Victoria

The City of Victoria has implemented two important programs to reduce the impervious area of new and existing developments:

Hillside Centre stormwater management

Hillside Centre is the single largest impervious surface in the Bowker Creek watershed. Through a partnership between the City of Victoria and the owners of Hillside Centre, numerous features have been installed to reduce run-off and improve stormwater quality. Parking lot improvements in recent years include tree wells and rain gardens to help slow and filter rain runoff. BCI interpretive signs provide public education about these green infrastructure features, and flagstone artwork reflects the water movement in the creek flowing underground.



BCI Blueprint 10 Year Achievements

Rainwater Rewards program (2015)

The City of Victoria's Rainwater Rewards program is an incentive program for properties that manage rainwater sustainably through technologies like rain barrels and cisterns, infiltration chambers, permeable paving, rain gardens, bioswales, and green roofs. Low density residential properties can apply for rebates to help with up-front costs, and properties over four units may be eligible for an ongoing credit. Multi-family, business and institutional partners may be eligible for up to 50% off of stormwater utility bills, depending on the type of rainwater management method used. The City of Victoria has Rainwater Management Standards for both do-it-yourself and professional uses to guide the implementation of rainwater management technologies.

Stormwater Utility (2016)

The City of Victoria's Stormwater Utility charge is based on property-specific information including the amount of impervious area on site, street cleaning requirements, intensity code (e.g. low density vs multi-family), and participation in the Codes of Practice Program (program designed to clean stormwater before it leaves a property).

District of Oak Bay

In its OCP, Oak Bay proposes a Rainwater Management Bylaw that would require low impact development practices to increase onsite retention and absorption of rainwater, reducing the effective impervious area in the watershed.

✔ Action #3: Remove specific invasive species beginning to colonize the watershed.

Invasive plants grow throughout the Bowker Creek watershed, and are a concern because they displace native species that provide important ecosystem functions. The *Blueprint* highlighted two invasive plant species, policeman's helmet and invasive knotweed, as priorities for control in the watershed. Other more pervasive invasives like blackberry, ivy, and golden willow grow throughout the watershed and require long-term collective efforts for their effective management and control.

Invasive species control and removal in the watershed is supported by all three municipalities' involvement in the CRD-led CRISP program (Capital Regional Invasive Species Partnership) and numerous volunteer groups.

The District of Saanich is working on golden willow removal in riparian areas and eradication of high priority species. Successes include a 62% reduction of knotweed sites throughout the municipality, and eradication of Policeman's helmet. Several of Saanich's large parks lie within the Bowker Creek watershed, and have teams of volunteers helping to control invasive plants. Within Cedar Hill Park, the Friends of Cedar Hill Park and Saanich's Pulling Together volunteers regularly participate in invasive plant removal and stewardship activities in the Bowker Creek riparian zone (Reach 17). At the highest point of the watershed in Mount Tolmie Park, community volunteers have been actively removing invasive species and participating in stewardship activities for at least 20 years. Further downstream in Browning Park, students and teachers from St. Michael's University School have participated in Pulling Together stewardship activities to remove invasive plants along the creek over the last several years.

In **Oak Bay**, invasive plant removal has a strong volunteer backing. Oak Bay volunteers meet weekly to remove invasive plants and plant indigenous species in the Monteith Street native plant garden (see sidebar), and regular work parties at Oak Bay High School focus on invasive removal and restoration of the creek. These work bees are attended by the Friends of Bowker Creek, Oak Bay high school students and teachers, and members of the general community. Boy Scout groups in Oak Bay also regularly volunteer with invasive plant removal along Bowker Creek.



Spotlight: Monteith Street Native Plant Garden

In 2008, the BCI was awarded funding from the TD Friends of the Environment Foundation to restore the creekside riparian area near Monteith Street in Oak Bay. As part of the site rehabilitation, this neglected city property has become a community amenity with a demonstration native riparian restoration site and native plant garden, highlighting many edible native plants. Since its establishment, restoration work has continued through volunteers with the Friends of Bowker Creek, who meet twice every month to remove invasives from the steambank environment and plant indigenous species. Their ongoing work has made the garden a valuable community gathering place.

✔ Action #4: Complete a pilot project to locate and build a demonstration rainwater infiltration/retention structure in each municipality.

Rainwater management demonstration sites have been established in several locations throughout the Bowker Creek watershed as a way of showcasing infiltration and retention options to the broader community. These demonstration sites are an important way of raising awareness among developers and community members about alternative ways of managing rainwater. Each BCI municipality has at least one demonstration site:

District of Saanich, McKenzie Avenue rain garden and retention pond

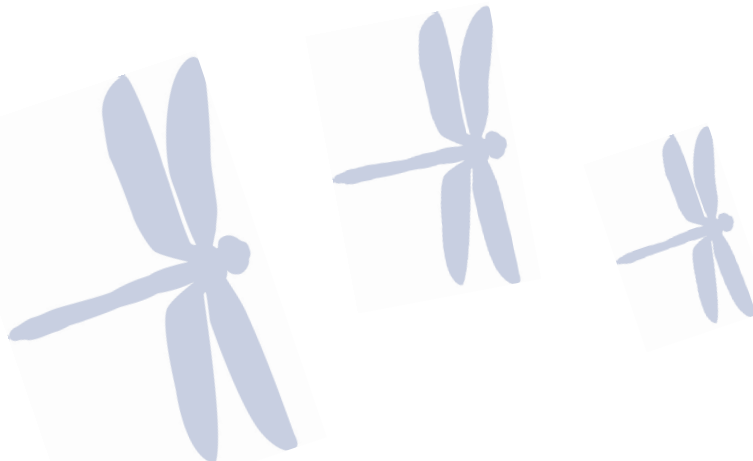
The District of Saanich completed the McKenzie Avenue Rain Garden in 2013 adjacent to the University of Victoria. The site includes a wet pond with inline vegetation for water treatment, and graduated vegetation from top of the slope to the basin, using plants adapted to varying water tolerances. A "Raingarden at Work" sign educates the public about the important role of the site.

District of Oak Bay, Monterey Recreation Centre rain garden

In 2012, Oak Bay created a rain garden in the southeast corner of Monterey Centre's parking lot. It is designed to collect rainwater and naturally filter out pollutants, such as oils and grease, before water enters the storm drain. Native plants adapted to wetter winters and drier summers are used in the rain garden. Its location at a busy community centre gives this rain garden great exposure and provides an excellent learning opportunity for the public.

City of Victoria, Trent Street rain garden

The Trent Street rain garden treats surface runoff from the majority of Trent Street and is designed to handle a two year rain event. Besides managing stormwater and pollution, the gardens also narrow the road, calm traffic, separate pedestrian from vehicular traffic, and create wildlife habitat.





✔ **Action #5: Support development of an urban forest strategy in Oak Bay to complement those underway in Saanich and Victoria.**

All three municipalities in the Bowker Creek watershed have adopted urban forest strategies or plans since the creation of the *Blueprint*:

- District of Saanich Urban Forest Strategy, 2010
- City of Victoria Urban Forest Master Plan, 2013
- District of Oak Bay, Urban Forest Management Strategy, 2017

These strategies and plans help to protect the trees that grow throughout the Bowker Creek watershed. They emphasize the benefits provided by the urban forest, including enhancing the natural environment, mitigating climate change, and improving stormwater management, and will help to ensure healthy tree populations into the future.

Spotlight: Outreach and Events

Public outreach and engagement has always been an important focus of the BCI and its partners. Outreach keeps Bowker Creek in the public eye, develops and nurtures community connections, and builds momentum for watershed renewal. Outreach and engagement activities have taken numerous forms, with help from many dedicated volunteers and community groups, particularly the Friends of Bowker Creek and Peninsula Streams Society:

- Watershed tours for citizens, local government staff, and politicians
- Watershed model and interpretive display at community events
- Interpretive signage and channel markers
- Creekside concert series, Communi-Tea celebrations, and Creekside art workshops
- Printed materials, including Developer's Guide and Home Owner's Guide

✔ **Action #6: Develop a strategy to acquire key properties as they come available.**

A confidential property acquisition list was created and shared with municipal partners after the *Blueprint* was finalized, in order to support creek daylighting and greenway development. 2020's Daylighting Feasibility Study resulted in a revised list of properties for acquisition, which will be

shared with municipal partners and remain confidential. Municipalities will then operationalize the purchase of these properties, according to their internal systems and priorities for property acquisition. It should be noted that property acquisition within the *Blueprint* or Daylighting Feasibility Study is an incremental, opportunistic process. As properties age and become available for redevelopment or as major infrastructure renewal work is undertaken, the property acquisition list enables the purchase of key properties in a coordinated, forward-thinking manner that could ultimately support creek daylighting and restoration.

Spotlight: Daylighting Feasibility Study

BCI's Daylighting Feasibility Study (DFS) was completed in March 2020. The purpose of the DFS was to develop a tool to facilitate the establishment of a daylighting corridor for Bowker Creek to ensure future daylighting can occur as properties are redeveloped or major infrastructure renewal work is undertaken. The report summarizes current and future land use and redevelopment plans adjacent to the creek corridor, provides plan and profile views of existing closed sections, proposes daylighting options, identifies properties that may need to be obtained to daylight the creek, and assesses options for incorporating multi-use and pedestrian greenways corridors adjacent to the creek. Cost estimates and overall recommendations for implementation are provided. The DFS represents a milestone in efforts to improve the Bowker Creek watershed. By outlining all opportunities for daylighting Bowker Creek, it builds upon the *Blueprint* and specifically defines how creek daylighting could contribute to the overall watershed vision.



✔ **Action #7: Work with Oak Bay High School to design and implement creek restoration on school district property.**

Between 2013 and 2018, the Bowker Creek Initiative, District of Oak Bay, School District 61 and Oak Bay High School staff and students worked together to design and create a beautiful and functional meandering creek reach adjacent to the school. The restoration project was officially handed to School District 61 in April 2019. It features a well-used outdoor classroom, community greenway and gently sloped vegetated creek bank. Previously, Bowker Creek flowed through a straight blackberry-choked concrete channel that contributed to downstream flooding during heavy rain events.

Oak Bay High students, teachers, and community volunteers including the Friends of Bowker Creek are involved in continued restoration of the site, including invasives removal and planting native species. The restoration effort has led to important ecological, hydrological, educational, and community-building benefits.

Spotlight: School District 61 and Oak Bay High School

School District 61 officially endorsed the Bowker Creek *Blueprint* in 2018. SD61's support for the creek's revitalization was essential to the restoration of the creek alongside Oak Bay High School. Students and staff at the high school were involved in the design of the restoration project through a 'Creeks and Careers' workshop and a design charrette. They contributed to the final design, including a well-used outdoor classroom alongside the creek.

The restored section of the creek provides a real-life laboratory for science classes, as students learn about native plants, creek ecology, and salmon restoration. Science teacher Derek Shrubsole says "the outdoor classroom provides the students at Oak Bay with a learning resource unique among schools in the area. It allows us to bring students outside for authentic, place-based learning. I also believe it helps to create a connection between our students and Bowker Creek, something they know and care about."

The school has partnered with the Friends of Bowker Creek to maintain the restored creek and keep on top of invasive plants through monthly work sessions. Another exciting partnership has paired Oak Bay students with Dutch students through an exchange program that focuses on local biology and creek ecology.

✔ Action #8: Participate in the Shelbourne Corridor Action Plan process to identify current and future opportunities for creek restoration, rainwater infiltration and/or greenway development.

The District of Saanich's Shelbourne Valley Action Plan was adopted by Saanich council in May 2017 as Appendix O of the Official Community Plan Bylaw. Representatives from the Bowker Creek Initiative provided input into the development of the plan through a lengthy consultative planning process. Multiple commitments to improve and restore Bowker Creek are found throughout plan, including the following key policies:

- 4.2.1 Adopt a District-wide Stormwater Management Bylaw, to reduce stormwater impacts on the Bowker Creek watershed.
- 4.2.3 Integrate the principles and actions identified in the Bowker Creek *Blueprint* as part of redevelopment proposals and infrastructure replacement.
- 4.2.4 Acquire key properties to facilitate the restoration of Bowker Creek, including for the purposes of daylighting sections, enhancing riparian areas, and improving stormwater management.

- 4.2.5 Employ a flexible approach to achieve the daylighting of Bowker Creek, including re-routing or partially daylighting the Creek in stretches where technical constraints exist.
- 4.2.6 Work cooperatively with the City of Victoria and the District of Oak Bay to develop common Development Permit guidelines or other tools to help implement the Bowker Creek *Blueprint* on private lands within the Bowker Creek Watershed.
- ✔ 4.2.7 Support the Bowker Creek Initiative in the development of a study to assess the technical opportunities and constraints of daylighting Bowker Creek in the Shelbourne Valley.
- 4.2.8 Promote daylighting or enhanced stormwater management on greenways that align with the Bowker Creek channel to reinforce the location of the Creek and create a community asset.
- 4.2.9 Consider reducing streamside setbacks and removing other barriers to daylighting to acknowledge urban conditions and land use constraints in the Valley.
- 4.2.10 Encourage the daylighting of Bowker Creek, by considering additional building height allowances, including up to six storeys on sites designated for apartments.

Together, these policies provide a pivotal opportunity to advance plans to daylight and restore Bowker Creek along the Shelbourne corridor. Alongside the Daylighting Feasibility

Study, the Shelbourne Valley Action Plan lays the pathway for future daylighting with important benefits for the watershed, including increased hydrological function, improved biodiversity and habitat, and aesthetic enhancements. Most importantly, the Action Plan operationalizes Saanich's commitment to restoring the creek in this urban setting, making future improvements to the creek more probable and achievable.

Action #9: Work with creek-side landowners between Pearl and Trent Streets to achieve the long-term vision.

This action refers to two important properties along Bowker Creek, both within the District of Saanich. The first property lies between Pearl Street and Newton Street, on the property of SD61's Richmond School. Bowker Creek runs directly through the middle of the schoolyard, and for safety reasons is fenced on both sides due to extreme erosion and entrenchment of the steep banks. Golden Willow and other invasive plants clog the length of this section of the creek.

Part of the Daylighting Feasibility Study explored options for restoring this section of the creek by shifting the creek bed to the side of the school yard. This design includes a meandering creek profile with naturalized vegetation, expands the playing field, and includes a greenway for active transportation and connectivity. During extreme rainfalls, a portion of the site beside the creek would be designed to flood to help alleviate downstream flooding. Creek restoration at this site offers important benefits in terms of improved creek ecology and hydrological function, active transportation, and learning and recreational benefits for Richmond school.

Spotlight: University of Victoria

As home to the headwaters of Bowker Creek, the University of Victoria plays an important role in protecting downstream reaches of the creek. UVic is a long-term member of the BCI steering committee, and has contributed to the creek's health through several initiatives:

- In 2019, UVic installed a new Bowker Creek interpretative sign to explain UVic's partnership in the Bowker Creek Initiative and the importance of the watershed within Greater Victoria. In addition, the signage includes a stormwater management map highlighting the locations of curb cuts, green roofs, permeable pavement, and water detention or bioswales.
- Guided by a Stormwater Management Plan, the university continues to reduce the amount of impervious surfaces on campus and minimizes runoff using permeable paving and green building design.
- In 2020, UVic installed a stormwater detention pond by Parking Lot 10 on the West Campus Greenway to manage campus stormwater entering Bowker Creek.



BCI Blueprint 10 Year Achievements

Action #9 also refers to a nearby riparian area of Bowker Creek, also known as the BC Hydro lands or 2661 Richmond Road. Lying in the Saanich panhandle between Kings Road and Haultain Streets, Bowker Creek flows through a 2.2 ha greenspace at 1843 Kings Road. The space is valued as a natural oasis in an urban setting, where people come to walk, bike, relax, and appreciate nature. In addition to its biodiversity benefits, the site also provides active transportation linkages to the Royal Jubilee Hospital and beyond. A long history of community advocacy led to the District of Saanich's 2019 purchase of the site from BC Hydro for \$2.75 million. Community fundraising efforts through the

Saanich Legacy Fund and the Save Kings Community Nature Space group aim to raise an additional \$2.75 million by March 31, 2021 through grants, personal donations, and requests for contributions from government agencies.

The Daylighting Feasibility Study also explored options for restoring this section of the creek. The restoration plan includes a low lying naturalized area along the creek that could flood during storm events, turf grass that might occasionally flood, park space, and maintenance of the existing greenway path.



Spotlight: Water Quality Monitoring:

The CRD monitors water quality in Bowker Creek at least twice a year, and every 5 years conducts more in-depth analysis. The latest detailed assessment was completed in 2019. In addition to the standard physical measurements of temperature, pH and dissolved oxygen, staff measured metals, E.coli, hardness, suspended solids, organic carbon, ammonia, nitrate, nitrite and caffeine. Water samples were collected five times in 30 days in the summer and fall at four locations in the creek.

Relative to the previous in-depth sampling effort in 2014, 2019's data indicate that sewage inputs and urban development in the watershed continue to degrade water quality in Bowker Creek. Copper, zinc, dissolved oxygen, phosphorus, turbidity and suspended solids are at levels that are potentially harmful to aquatic life. Fecal coliform and E.coli levels indicate significant sewage contamination is still present and recreational activities, such as swimming, are likely unsafe.

One indicator did show minor improvement between 2014 and 2019. Sampling of benthic invertebrates (those living in the creek's sediment) suggests a slight improvement in water quality since 2014. The invertebrates found in 2019 indicate less organic pollution overall, although organic pollution still is a concern throughout the creek, particularly in lower reaches.

The CRD will continue to monitor water quality in Bowker Creek and will work with its partners to improve water quality throughout the watershed. Recently, the Friends of Bowker Creek have begun additional water and invertebrate sampling as part of their Coho recovery project, and will share this data with the CRD in order to build a more complete picture of water quality issues in the creek.



Action #10: Continue with restoration at Browning Park.

Saanich's Browning Park contains one of the most natural stretches of Bowker Creek, with an open channel, treed banks, and a meandering creek profile. A greenway runs alongside the riparian zone, and community art celebrating the creek has been incorporated in various locations around the park. Still, invasive species are an issue in this stretch of the creek, in addition to channelization, conveyance, flooding and erosion. Recent restoration activities have largely focused on invasives removal through the Saanich Pulling Together volunteer program, with most stewardship help coming from St. Michaels University School students and teachers.



The Way Forward

As the *Bowker Creek Blueprint* reaches the milestone of its ten year anniversary, there are many achievements throughout the watershed that should be celebrated. The BCI and its partners have succeeded in completing 6 out of 10 of the *Blueprint's* short term actions, with implementation of the remaining four well underway. Additionally, numerous other key achievements should be noted and celebrated. Some of them are concrete, like the completion of the Daylighting Feasibility Study and ongoing water quality monitoring, while others are less tangible but undoubtedly important, like the building of community, the creation of a network of stewards, and the development of partnerships across municipal and institutional boundaries. Ten years into *Blueprint* implementation, the BCI partners are in a good position to commit to a new set of priority actions. The successes of the past ten years coupled with the newly completed Daylighting Feasibility Study mean that the time is right to update the *Blueprint* and recommit to a revised set of actions for watershed renewal.