

Bowker Creek Blueprint: Framework for Collaborative Inter-municipal Watershed Implementation

Bowker Creek Initiative | 2021



**Bowker
Creek**

URBAN
WATERSHED
RENEWAL



Background

The Bowker Creek Blueprint: A 100 year plan to restore the Bowker Creek Watershed (Blueprint) was created in 2010 and subsequently endorsed by the District of Saanich (2011), City of Victoria (2011), District of Oak Bay (2012), and Greater Victoria School District 61 (2018). The *Blueprint's* watershed-wide and reach-specific recommendations provide member municipalities, the Capital Regional District, the community and other land stewards with information and guidance to manage and restore the watershed and creek corridor over the next 100 years.

When the District of Saanich Council endorsed the *Blueprint*, they also adopted a resolution to work cooperatively with the District of Oak Bay and the City of Victoria on the preparation

of development permit guidelines for the Bowker Creek watershed. The resolution envisioned development permit guidelines as the primary mechanism for implementing *Blueprint* actions on private property over the long term. Oak Bay and Victoria Councils both expressed support for coordinated implementation of the *Bowker Creek Blueprint*. However, the City of Victoria noted that development permit guidelines are just one of many tools that could be used to implement the *Blueprint*. Ongoing collaboration should therefore focus on a potential suite of tools, with implementation varying across municipalities. For instance, in the City of Victoria where all of Bowker Creek is underground in pipes, stormwater management is the priority and may be better addressed through alternate tools.

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As a result of a multi-year coordinated review and analysis of existing and potential watershed-wide planning tools, the Bowker Creek Implementation Framework has been developed. This framework is a partnership between the District of Saanich, District of Oak Bay and City of Victoria and has the following objectives based on the initial direction from Councils:




- Fostering consistent implementation of the *Bowker Creek Blueprint* watershed-wide actions between the three municipalities through action plans, common development permit guidelines, and other tools;
- Focusing on private land;
- Improving stormwater management;
- Recognizing the different conditions of Bowker Creek throughout the three municipalities;
- Entrenching the *Bowker Creek Blueprint* into municipal legislation and development review processes; and
- Accomplishing the vision of the *Bowker Creek Blueprint* over time.












The document describes tools (including development guidelines, bylaws, programs, all focused on private properties) adopted by each of the three municipalities to achieve the 20 private-property specific watershed-wide actions of the *Bowker Creek Blueprint*, and identifies opportunities for the municipalities to work together to address existing gaps in *Blueprint* implementation.

While significant work has been done towards achieving these 20 actions, there remain gaps in the municipalities' tools to fully complete each action. Table 1 highlights progress in achieving *Blueprint* action plan items that relate specifically to private property, and indicates opportunities for improvement. The table represents both an analysis of what has been achieved to date, and provides options for further progress. Progress towards completing each action is indicated for each municipality as follows: signs throughout the watershed.

















Table 1: Implementation progress of watershed-wide Blueprint actions related to private property:

-  Complete or in progress for completion
  Not complete or in progress
 Under partial development or partially implemented
  Not applicable to municipality (e.g. some actions do not apply to Victoria because the municipality has no open creek sections)

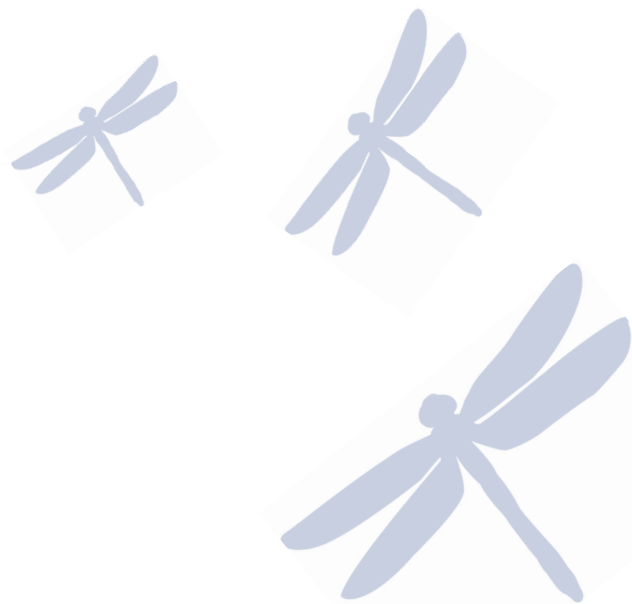
Blueprint Action #	Blueprint Action Description	Implementation examples and options	Oak Bay	Saanich	Victoria
1	Review and revise relevant official community plans, and community and local plans to include goals, objectives, and actions from the Bowker Creek Watershed Management Plan and Bowker Creek <i>Blueprint</i> . Incorporate <i>Blueprint</i> actions into annual municipal operation plans and budgets.	<ul style="list-style-type: none"> District of Oak Bay: OCP, Watercourses DPA District of Saanich: OCP, Streamside DPA, Shelbourne Valley Action Plan, Cedar Hill Park Management Plan City of Victoria: OCP 			
3	Designate a creek flood plain or zone on either side of the creek, through zoning bylaws to prevent any new construction of buildings below the 200-year flood elevation. Flood mapping should include climate change assumptions.	<ul style="list-style-type: none"> LUB / ZB to limit development within the 200 year flood elevation Floodplain or Fill Bylaw to limit fill and development Floodplain Development Permit Area to limit fill and development 			N/A
4	Establish policies that require minimum vegetated greenspace on developments and redevelopments, depending on type of land use. 12% is an average target, based on provincial standards and is within the range recommended by the Urban Forest Stewardship Initiative.	<ul style="list-style-type: none"> LUB / ZB: designate % greenspace required Tree Bylaw Development Permit Area Guidelines 			
5	Align watershed efforts with climate change adaptation and mitigation measures and strategies, including tree planting, greenways planning and rain/stormwater infrastructure.	<ul style="list-style-type: none"> Tree/Urban Forest Bylaw Local Area Plan or Action Plan policies Climate Plan: 100% Renewable and Resilient (Saanich) Climate Action Plan (Victoria) 			

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Blueprint Action #	Blueprint Action Description	Implementation examples and options	Oak Bay	Saanich	Victoria
6	With land use changes, use amenity bonusing or other mechanisms to fund or construct greenways, greenspace, or to daylight the creek.	<ul style="list-style-type: none"> • Local Area Plan or Action Plan policies • Negotiations at the time of property redevelopment and/or rezoning (Saanich) • Greenway Plan identified (Victoria) 			
7	Encourage and pursue daylighting and greenways projects as part of changes to land use or when replacing hydraulic structures.	<ul style="list-style-type: none"> • Local Area Plan or Action Plan policies • DPA guidelines • Restore and enhance riparian areas • Provide for daylighting • Provide for greenway (ROW) allowance • Control erosion • Form and character (LID I landscape) • Parks / greenways plans, and design • Capital projects and maintenance policies • Engineering standards 			
8	Develop municipal policies to acquire key streamside parcels for use as flood storage, greenway, parklands, and for creek daylighting.	<ul style="list-style-type: none"> • Update and maintain confidential property acquisition list • DCC Park Acquisition program 			
9	Purchase key properties affected by flooding, as appropriate	<ul style="list-style-type: none"> • Property acquisition list, policy, and designating funding 			N/A
10	Revise municipal policies and regulations to permit and encourage low impact development to ensure that developments and redevelopments have an effective impervious area of no more than 30%.	<ul style="list-style-type: none"> • LUB I ZB Update: effective impervious area targets (30% threshold) • LID I Stormwater Bylaw: Create new bylaw and administer through a DPA 			

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Blueprint Action #	Blueprint Action Description	Implementation examples and options	Oak Bay	Saanich	Victoria
12	In urban areas, ensure appropriate maintenance of oil interceptors and sediment traps on private property through a municipally-coordinated maintenance program funded by a fee-for-service program.	<ul style="list-style-type: none"> Maintenance program (funded through utility) Stormwater Utilities Bylaw (Victoria) 	●	●	●
14	Develop policies to require commercial and institutional property owners to install oil interceptors and sediment traps in parking lots before stormwater reaches the creek.	<ul style="list-style-type: none"> LUB / ZB Update Building permitting process Stormwater Utilities Bylaw (Victoria) 	●	●	●
15	Create a utility to fund stormwater management projects.	<ul style="list-style-type: none"> Stormwater Utility 	●	●	●
19	Adjust Municipal Development Cost Charges (DCC) to provide incentives for low impact development.	<ul style="list-style-type: none"> DCC Bylaw Incentive program for developers 	N/A	●	●
20	Discourage the sale of invasive exotic plant species at garden centres through education and policy. Encourage landowners to cease using cosmetic herbicides and pesticides through a public education program.	<ul style="list-style-type: none"> Education and outreach program for homeowners through CRISP (Capital Regional Invasive Species Partnership) Pesticide Use Bylaw (Victoria) 	●	●	●



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Blueprint Action #	Blueprint Action Description	Implementation examples and options	Oak Bay	Saanich	Victoria
21	<p>If municipalities have not already done so, develop and implement an urban forest strategy that includes the following actions:</p> <ul style="list-style-type: none"> • Develop educational materials describing the links between the trees and creeks, • Protection of existing trees through the development (as appropriate) of tree protection bylaws, • Plant and maintain street trees and boulevards throughout the watershed, including using a diversity of species, • Establish municipal policies that require a minimum of 12% vegetated greenspace on developments and redevelopments, • Encourage private landowners to plant native trees and vegetation on their properties, and • Encourage schools to add tree planting to school yards. 	<ul style="list-style-type: none"> • Urban Forest Master Plan, Strategy and Policy • Education and outreach program for homeowners and schools 	●	●	●
22	<p>Develop a strategy and coordinate invasive species eradication for the creek and riparian area, based on eradicating a few key species. May require some research or trials.</p>	<ul style="list-style-type: none"> • Prepare an invasive species removal incentive/strategy for private properties • Invasive Species or Noxious Weed bylaw 	●	●	N/A
26	<p>Identify and contact landowners with streamside properties and provide information on what is happening in the creek and ways they can contribute to creek health.</p>	<ul style="list-style-type: none"> • Education and outreach program for homeowners 	●	●	●

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Blueprint Action #	Blueprint Action Description	Implementation examples and options	Oak Bay	Saanich	Victoria
27	<p>Encourage voluntary action by developing and delivering workshops and educational materials on various subjects and needs including:</p> <ul style="list-style-type: none"> • Best on-site stormwater management practices for builders and developers, • Low impact development (stormwater management) for municipal managers and councils and the public • Workshops and/or educational materials for residential land owners on topics that include: <ul style="list-style-type: none"> • rain gardens, • installation of rain barrels, • disconnection of roof leaders, • protecting streamside vegetation, • planting native species, • lawn and garden management to maximize infiltration, • installation of pervious areas, • car washing, oil leaks and paint disposal, and eliminating deposition of deleterious substances into the drainage system. 	<ul style="list-style-type: none"> • Create region wide standards and educational material • Education and outreach program for homeowners • Work with community associations 	●	●	●
28	<p>Identify and contact owners of properties with large impervious surfaces and provide information on pervious surface technology and stormwater detention and infiltration.</p>	<ul style="list-style-type: none"> • Education and outreach program for homeowners, businesses and developers 	●	●	●
31	<p>Provide regular updates and outreach to residents and other watershed users through websites, Bowker Creek list serve, other list serves, community newsletters, other media, displays at community events, and presentations to community associations and groups.</p>	<ul style="list-style-type: none"> • Create inter-municipal key messages and outreach materials • Education and outreach program for homeowners 	●	●	●

Recommendations

Table 1 indicates that the three Bowker Creek Initiative municipalities have a range of progress levels in adopting development permit guidelines, bylaws and programs that support the implementation of watershed-wide *Blueprint* actions on private land. Overall, the areas of most progress are:

- Urban Forest Bylaws and Plans
- Climate change adaptation and mitigation plans
- Local Area Plan or Action Plan policies
- Stormwater quality programs
- Public education and outreach about invasive species, urban forests, streamside living, and stormwater management

The areas of least progress are:

- Floodplain designations
- Requiring a percentage of greenspace in developments
- Setting limits to impervious surfaces and associated outreach
- Stormwater Utilities
- Development Cost Charges

It is recommended that the three municipal councils support the formation of an inter-municipal working group to identify opportunities to collaborate on the areas of least progress. Appendix 1 describes planning tools that could be used by municipalities to achieve further watershed protection.



Appendix 1: Further Planning Tools for Watershed Protection

From the Green Bylaws Toolkit:

https://stewardshipcentrebc.ca/PDF_docs/GreenBylaws/GreenBylawsToolkit_2016.pdf

Legal Tools:

- Development Permit Areas to protect the natural environment: reflect the shared responsibilities of landowners and local governments to protect the environment
- Cluster new developments to protect biodiversity corridors and ecological features using OCP policies, development permit guidelines, and Zoning Bylaws
- Covenants: “Local governments and landowners use covenants to restrict the use of private land to activities and areas of use that respect sensitive ecosystems. Under section 219 of the Land Title Act, a local government or approved organization (such as a land trust) may hold a covenant registered on the title to private land that protects specific characteristics of the land, such as wetlands, grasslands, forested areas and other ecologically significant features.” Page 118, Green Bylaws Toolkit.
- Tree protection bylaws: can be used to require tree cutting permits in relation to areas affected by flooding or other hazards
- Urban Forest Bylaw: to achieve percent greenspace cover targets throughout the watershed
- Comprehensive Environmental Bylaw (page 128) – North Vancouver (*Environmental Protection and Preservation Bylaw*) This bylaw includes requirements for setbacks from watercourses, vegetation requirements for riparian areas, sediment control, QP oversight in some circumstances – this covers all private lands, including those not in a DP area. Bylaws are a regulatory approach that does not run with the property, and is not site-specific like a DP
- Covenants: local government can adopt bylaws to exempt riparian lands from property taxes if subject to a conservation covenant (p 163)
- Local government can require an Environmental Impact Assessment (EIA) for properties in DPAs before issuing

development approvals. EIAs can address preservation of functioning ecosystems: conservation areas, buffers, wildlife corridors, mitigation measures to minimize impacts on habitat.

Outreach & Stewardship:

- Develop a “biodiversity checklist” of features that developers and homeowners can choose from (e.g. green walls, bird boxes);
- Public education and awareness: compile and distribute a guide to native plant landscaping to private landowners
- Where City has limited control (e.g. private land), cooperation and engagement of stakeholders – working group; ongoing public communication (social media, open houses, information sessions etc)
- Encourage private land stewardship
- Rainwater management - swales, infiltration trenches, reduce impervious areas
- Groundwater recharge - vegetated swales, infiltration basins, absorbent vegetation

Planning and Policy:

- Greenway showing overall pattern of ecologically connected areas on public/private lands
- Maintain contiguous habitats on public and private lands
- Member municipalities can implement a Master Implementation Agreement (with regional district, health authority and the Province) - an integrated watershed management approach to managing and protecting surface water, drainage and groundwater in the Bowker Creek watershed (page 158)

From Common Design Guidelines for Green Stormwater Infrastructure: (CRD 2019) <https://www.crd.bc.ca/education/green-stormwater-infrastructure>

- Under the authority of the BC Local Government Act, local governments can regulate the design and installation of green infrastructure
- Stormwater quality bylaws
- Flood zone bylaw: land may be designated as a flood plain, specify flood level for flood plain, and setback from a watercourse (section 524); restrict (re)development within the 200 year flood plain of Bowker Creek

- Subdivision and development bylaws: can include stormwater management requirements. These traditionally focused on conveyance and flood protection, but these can include green infrastructure principles
- Could require soil permeability testing,
- Minimize impervious area by recommending narrower roads, minimal parking, pervious paving, green roofs
- Disconnect impervious areas from storm drain system, have them drain to absorbent landscape with only an overflow to the storm drain system
- Require new developments to install only (or primarily) native plants

From BC Climate Action Tool Kit: <https://toolkit.bc.ca/dpa>

- Development Permit Areas work in coordination with zoning bylaws to shape development on scale of a parcel or development site;
- DPAs work well with Comprehensive Development Zone – can be quite specific
- DPAs can stipulate conditions for density bonusing to achieve certain climate action or ecosystem functionality goals
- DPAs can be used to protect ecologically significant areas and natural hazards to maximize the benefits of compact and complete communities that concentrate growth (section 489 of Local Government Act)

Other Documents:

- Vision, Principles and Actions: <https://vancouver.ca/files/cov/integrated-stormwater-management-vision-principles-and-actions-volume-1.pdf>
- Best Management Practice Toolkit: <https://vancouver.ca/files/cov/integrated-stormwater-management-best-practice-toolkit-volume-2.pdf>
- Compact communities: <https://www.refbc.com/sites/default/files/building-change-2017.pdf>
- Develop with Care: <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/best-management-practices/develop-with-care>