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BOWKER CREEK BLUEPRINT | 2026 UPDATE

A 100-year action plan to restore the Bowker Creek watershed

TERRITORIAL ACKNOWLEDGEMENT



The Capital Regional District (CRD) conducts its business within the Territories of many First Nations, including but not limited to BOKEĆEN (Pauquachin), MÁLEXEL (Malahat), paaʔčiidʔatx (Pacheedaht), Spune'luxutth (Penelakut), Sc'ianew (Beecher Bay), Songhees, STÁUTW (Tsawout), T'Sou-ke, WJOŁELP (Tsartlip), WSIKEM (Tseycum), and xʷsepsum (Kosapsum) Nations, all of whom have a long-standing relationship with the land and waters from time immemorial that continues to this day.

The Bowker Creek Initiative steering committee wishes to acknowledge that the stream now known as Bowker Creek was once a healthy source of fresh water and food for the local Coast Salish people who have lived in the area since time immemorial. It is our hope that we can restore Bowker Creek to a state that can support habitat and healthy fish populations so that the original and ongoing stewards of these lands can harvest food and medicine from these areas. We also wish to express appreciation for the Songhees Nation who reviewed the Blueprint and gave their support for the goals.

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Executive Summary

Bowker Creek is a 9.3 km long, urban creek that runs through the District of Saanich, the City of Victoria and the District of Oak Bay. With 5.8 km of the creek enclosed in pipes underground and approximately 45% of the watershed covered with impervious surfaces; flooding, water pollution and habitat loss are significant concerns for the Bowker Creek watershed.

Despite the degradation it has suffered, Bowker Creek is highly valued. Community and stewardship groups have championed efforts to conduct stream clean-ups, invasive species removal, riparian planting, restoration, water quality monitoring, chum salmon recovery efforts, and education and outreach through thousands of hours of volunteer time. The three partner municipalities have shown leadership and innovation in collaborating to support and drive Bowker Creeks urban watershed renewal. To these stewards and to the 33,000 residents in the watershed, Bowker Creek offers connections with nature throughout an urban environment.

The Bowker Creek Initiative (BCI) was established in 2004 as a coalition of community, local government, and institutions working collaboratively to protect and enhance the ecological, social and economic health of the Bowker Creek watershed. In 2011, the Bowker Creek Blueprint detailed a 100-year action plan to revitalize the Bowker Creek watershed. The Blueprint identified a series of actions that would lead to improvements in the watershed and to the creek, habitat and community and achieve the goals of the Bowker Creek Watershed Management Plan (2003):

1. Individuals, community and special interest groups, institutions, governments, and businesses take responsibility for actions that affect the watershed.
2. Manage flows effectively.
3. Improve and expand public areas, natural areas, and biodiversity in the watershed.
4. Achieve and maintain acceptable water quality in the watershed.

Much has been accomplished since the completion of the original Blueprint including restoration of Bowker Creek through Oak Bay High School, completion of a Daylighting Feasibility Study, demonstration rain gardens in each municipality, and acquisition of the Kings Road Community Nature Green Space, a key property to achieve the vision for Bowker Creek. All three municipal partners have affirmed the goals and intent of the Blueprint in their recent Official Community Plans. These plans and the Blueprint identify ongoing challenges of climate change and various social pressures facing municipalities and the Bowker Creek watershed. While these pressures are significant and complex, they also offer a unique opportunity for innovation and collaboration.

The Blueprint has been updated with significant input from municipal staff, institutional partners and community members. The updated Blueprint builds on accomplishments and incorporates updated information including the Daylighting Feasibility Study and Memorandum on Potential Stormwater Management Facilities (2020), Bowker Creek Restoration Needs and Prescriptions (2023), the Framework for Collaborative Inter-municipal Watershed Implementation (2021) and

various other plans and studies to renew a plan of action that supports the achievement of the vision and goals for the watershed.

Considerable public engagement was conducted during the development of the original blueprint as well as during the 2026 update. Consultation demonstrated strong public desire to daylight Bowker Creek and restore habitat, mitigate flooding and create a greenway of connectivity. All Blueprint goals are well supported with enhanced livability and resilience to climate change as valued co-benefits by the public.

This blueprint is to be implemented over a period of decades in recognition that big change can be slow in the urban environment and is dependent on various factors including re-development and funding opportunities. It contains actions at both the watershed wide scale and specific reach actions and includes the following key approaches that will result in improved habitat, water quality and hydrological function:

- **Restoration** of open creek sections will support salmon recovery efforts as well as many other native species.
- **Daylighting** the creek will provide opportunity to bring wildlife and biodiversity back into our communities, prepare for increased rainfall and support mitigation of downstream flooding.
- **Stormwater management facilities** implemented through landowner partnerships will mitigate flooding as we face a changing climate and can include innovative examples such as playing fields designed to store rainfall from large storm events for a short period of time.
- Implementation of **green stormwater infrastructure** will reduce runoff pollution and allow our rainwater resource to infiltrate into the ground, restoring hydrological function
- Creating **biodiverse corridors through greenways** will provide habitat connectivity through the watershed, improve biodiversity and provide routes for walking, cycling and nature viewing throughout the watershed.

The updated Blueprint will continue to guide the municipalities, the Capital Regional District, the community, and other land stewards to manage and restore the watershed and creek corridor into the future and set the vision for how we want to live with nature in our cities. The accomplishments of the first 15 years of Blueprint implementation demonstrate that partnership and collaboration of the BCI can move this ambitious 100-year plan forward.

Glossary

Bioswales: Landscaped elements designed to promote infiltration and remove silt and pollution from surface runoff water that consist of a swaled drainage course with gently sloped sides (less than six percent) and filled with native vegetation and soil. The water's flow path, along with the wide and shallow ditch, is designed to maximize the time water spends in the swale, which aids infiltration and the trapping of pollutants and silt. Depending upon the geometry of land available, a bioswale may have a meandering or almost straight channel alignment. Biological factors also contribute to the breakdown of certain pollutants. A common application is around parking lots and or street curbs where substantial automotive pollution is collected by the pavement and then flushed by rain. The bioswale, aids in treating the runoff before releasing it to the watershed or storm sewer.

Climate adaptation: Is adjusting and preparing for observed or expected change in climate, in order to moderate harm and to take advantage of new opportunities.

Climate Change: Any long-term significant change in the “average weather” that a given region experiences. Average weather may include average temperature, precipitation and wind patterns. It involves changes in the variability or average state of the atmosphere over durations ranging from decades to millions of years. These changes can be caused by dynamic process on Earth (ocean processes, volcanoes), external forces including variations in sunlight intensity, and more recently by human activities.

Climate mitigation: Is action to reduce the emissions of greenhouse gasses (GHGs) – primarily carbon dioxide from combustion.

Co-benefits: In an environmental context, co-benefits refer to the additional positive outcomes that arise from an action such as improved air quality, enhanced biodiversity, climate resilience and recreational space for communities.

Creek restoration: A set of activities that help improve the environmental health, conveyance and erosion of a creek. Improved health may be indicated by expanded habitat for diverse species, reduced stream bank erosion, improved water quality (i.e. reduction of pollutant levels and increased dissolved oxygen levels) and achieving a self-sustaining, functional flow regime in the stream system that does not require periodic human intervention, such as dredging or construction of flood control structures. Restoration activities may range from a simple removal of a disturbance which inhibits natural stream function, to stabilization of stream banks to riparian zone restoration.

Daylighting: The act of removing streams from underground pipes and culverts, restoring some of the form and function of historic streams. Daylighting is the most profound form of stream restoration, recreating a surface waterway.

Dry pond: A dry pond is a low lying area that is designed to temporarily hold water while slowly draining to another location. They are generally used for flood control when large amounts of rain could cause flash flooding if it all entered the stormwater system at the same time. When a dry pond is used, the total amount of discharge is the same, but the discharge happens over a longer amount of time. A dry pond can be designed to temporarily detain the water and keep the runoff to the desired rate. When the rain ends the area will be empty shortly afterwards.

Green Roofs: Are building roofs that are purposefully covered with vegetation. Green roofs can store significant volumes of rainwater, prevent runoff in small storm events, and delaying peak runoff for larger storms. The plants also return some of the moisture to the atmosphere through evapotranspiration. Green roofs can reduce the heat island effect in the summer and provide valuable habitat for birds and insects.

Green Streets: Are streets that are designed to be part of a sustainable stormwater strategy that uses a natural systems approach to manage stormwater, reduce flows, improve water quality and enhance watershed health. Trees and shrubs are an integral component of the strategy and visual amenity of green streets, ideally located at the side of streets between the street and the sidewalk or in center median plantings. Green streets provide for traffic calming, improved pedestrian and bicycle safety, reduced demand on the stormwater system with reduction in the need for infrastructure / pipe system construction and reduced impervious surfaces so rainwater can infiltrate to recharge ground water and surface water, increased urban greenspace and enhanced community and neighborhood livability.

Greenways: are considered linear corridors that connect green spaces, natural areas and communities to provide habitat corridors as well as recreation and active transportation routes. The proposed greenway routing in the Bowker Creek Blueprint will provide an important safe alternative transportation function through busy neighbourhoods (avoiding main roads). Greenways can be shared on existing roadways (with cars on roads, pedestrians on sidewalks and bicycles in bike lanes or in shared streets), while some would be multi-use trails and some areas would provide for pedestrian traffic separate from nearby cycling routes. The Bowker Creek Greenway will also serve an ecological function through providing habitat corridors; including tree canopy and habitat enhancements and where possible contribute to the restoration of riparian and aquatic habitat.

Impervious surfaces: Are mainly artificial structures--such as pavements (roads, sidewalks, buildings, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone and rooftops.

Invasive Species: Are plants and animals introduced to an environment where they are not native and which they become a nuisance, often to the detriment of native species. Invasive species have the ability to establish quickly and spread rapidly, often displacing native plants, because their new environment has few natural competitors. Many invasive plants are difficult to remove due to deep taproots, high production and longevity of seeds and ability to thrive in unfavorable conditions. Invasive species are increasingly difficult and expensive to control.

Green Stormwater Infrastructure: Is an approach to managing rainwater during the development that imitates the natural hydrology, filtration and attenuation (or movement of water) of the site by using existing site characteristics and engineered or landscaped features to promote infiltration and evapotranspiration. In natural ecosystems, most of the rainfall (or snowmelt) infiltrates into the ground, is taken up by the roots of plants and trees or evaporates with less than one percent surface runoff. But when forests and natural open spaces are cleared, and buildings, roads, parking areas and lawns dominate the landscape, less water infiltrates and stormwater runoff increases, carrying pollutants to nearby waters.

Hydrology: is the distribution, movement and properties of water along the earth’s surface. In the urban environment this includes rainfall surface runoff, infiltration of water into the soil and groundwater and management includes analyzing rainfall projections, managing stormwater infrastructure, controlling flooding and protecting water quality.

Non-Point Source Pollution: Water contamination that does not originate from a single, identifiable source such as a pipe. It is caused by precipitation moving over the ground and picking up pollutants and depositing them into water bodies.

Permeable Pavement: Also known as pervious or porous paving, is a type of hard surfacing that allows rainfall to percolate to an underlying reservoir base where rainfall is either infiltrated to underlying soils or removed by a subsurface drain. Types of pervious pavements include permeable concrete or asphalt, unit pavers, interlocking bricks, grass pavers or gravel pavers.

Rain Gardens: Also known as vegetated infiltration basins and bioretention areas, are landscape features designed to treat and detain stormwater runoff from hard surface areas such as roofs, roads and parking lots. They consist of depressed garden spaces where runoff can pond and infiltrate into deep constructed soils and then into the native soils below. Components of a rain garden usually include an inlet pipe or sheet flow, compost amended soils, native plants that are appropriate for the moisture conditions, and an overflow drain or outlet.

Retention pond: A pond designed to hold a specific amount of water indefinitely. Usually, the pond is designed to have drainage leading to another location when the water level gets above the pond capacity but still maintains a certain capacity. The pond level may go up and down, but ordinarily the pond has some water in it at all times. Also called a wet pond.

Stewardship: Is an ethic that embodies cooperative planning and management of environmental resources with organizations, communities and others to actively engage in the prevention of loss of habitat and facilitate its recovery in the interest of long-term sustainability.

Stormwater: Is the component of runoff that is generated by human activities. Stormwater is created when land development alters the natural Water Balance. When vegetation and soils are replaced with roads and buildings, less rainfall infiltrates into the ground, less gets taken up by vegetation and more becomes surface runoff that picks up pollution from surfaces, mainly roadways, and carries it into the creeks, lakes and nearshore marine receiving environments via stormwater infrastructure.

Stormwater Management Facility: A stormwater management facility (SWMF) is a structural component designed to collect, convey, store, treat, or infiltrate runoff from rain to reduce flooding, erosion, and pollution.

Introduction

1.1 Background

The Bowker Creek Initiative (BCI) is a unique multi-jurisdictional effort to improve watershed management efforts in the capital region on Vancouver Island, BC. The BCI brings together citizens, community organizations, local and regional government, and educational institutions to protect and enhance the ecological, social, and hydrological health of the Bowker Creek watershed.

In 2003, the Bowker Creek Watershed Management Plan was completed for Bowker Creek with the aim of protecting and improving the overall health of the watershed and the creek corridor. The BCI steering committee was formed in 2004 to guide implementation of the watershed management plan.

The BCI steering committee with assistance of a consultant (Westland Resources) developed the Bowker Creek Blueprint: A 100-year plan to restore the Bowker Creek Watershed (the Blueprint) in 2010. The Blueprint was subsequently endorsed by City of Victoria (2011), District of Saanich (2011), District of Oak Bay (2012) and School District 61 (2018). The Blueprint provides governments, land stewards, and community groups with information and guidance to manage and restore the watershed and creek corridor, mitigate for flooding, daylight the creek, increase greenways, and meet the goals of the Bowker Creek Watershed Management Plan. Recommended actions were identified as short and medium term, and others were to occur opportunistically or through long-term efforts. The time horizon of the Blueprint recognizes the time required for significant change in an urban environment.

Considerable progress has been achieved in the fifteen years since the development of the Blueprint. In addition, new information, studies, and plans have enhanced our understanding of the watershed. In 2023, the BCI began the Bowker Creek Blueprint Update to review and revise actions based on accomplishments, new information, policies and current pressures facing the watershed. The 2026 updated Blueprint will continue to guide the municipalities, the community, and other land stewards to manage and restore the Bowker Creek watershed and creek corridor into the future.

1.2 Current Context

Climate change and its impacts are already a reality for Bowker Creek and its watershed. Hotter summers, extended droughts, and wetter winters are becoming the new normal across the capital region (Figure 1). These shifting conditions increase the risk of flash flooding, erosion, declining water quality, and biodiversity loss at the watershed level (Pacific Climate Impacts Consortium, 2024). These challenges are accentuated by urban development and the loss of pervious area. Proactive measures to protect the creek and its watershed from the impacts of climate change and development are essential not only to safeguard local ecosystem health and biodiversity, but also to protect water quality, mitigate flooding and maintain the green spaces and recreational areas that are important to community well-being. Like many urban watersheds, the Bowker Creek watershed is under pressure from an inter-related combination of stressors, including environmental degradation, competing land uses, social challenges, and budgetary constraints. While these pressures are significant and complex, they also offer a unique opportunity for innovation. These interconnected challenges, and the related opportunities that they present, provide the underlying context for the updated Bowker Creek Blueprint.

Alongside addressing environmental degradation, local governments are also tackling complex social challenges with constrained resources. The push for new housing, driven by provincial mandates, can place added strain on creeks, tree canopies, and natural areas. Equitable access to urban greenspace is a growing public health issue, especially as climate change accelerates. These pressures highlight the need to incorporate innovative rainwater management techniques into new developments and local streets, including measures that reduce peak stormwater flows, enhance groundwater recharge and treat contaminants in stormwater runoff. Equally important is the need to protect and enhance greenspace as the watershed develops, which will support both public health and climate resiliency goals.

Redevelopment within the Bowker Creek watershed is a part of its evolution and renewal cycle. This renewal cycle presents a key opportunity to implement the Bowker Creek Blueprint and advance the long-term vision for the watershed. With strategic planning, investment, and collaboration, the interrelated environmental and social factors that put pressure on the creek and its watershed can be addressed and mitigated.

Capital Regional District Climate Projections (2024)		PACIFIC CLIMATE IMPACTS CONSORTIUM			
		High Emissions Scenario			
		1990s	2041-2070 ("2050s")		
Impact Driver		Median	Low	Median	High
Precipitation					
	Total Summer Rainfall	159 mm	108 mm (-32%)	135 mm (-15%)	156 mm (-2%)
	1-in-20 Year Wettest Day (5% AEP)	101 mm	109 mm (+8%)	116 mm (+15%)	130 mm (+29%)
	Number of Days with Heavy Rainfall	9	11	12	13
Extreme Heat					
	Annual Amount of Heavy Rainfall	402 mm	466 mm (+16%)	527 mm (+31%)	588 mm (+46%)
	Hottest Summer Day	28.6°C	30.9°C	31.4°C	33.8°C
	Number of >25°C days per year	10	24	32	57
	Number of >16°C nights per year	0	5	8	29
	Longest annual heatwave (in days)	2-3	3	4	9
	Number of heat wave days	0-1	4	7	21

Figure 1. Climate Projections for the capital region

1.3 Description of Watershed

Bowker Creek is an urban creek that is 9.3 km long including the main tributary with 3.5 km of open channels and 5.8 km enclosed in pipes and culverts in the municipalities of the District of Saanich (Saanich), City of Victoria (Victoria), and the District of Oak Bay (Oak Bay) in British Columbia (Map 1). The creek flows northwest from its headwaters at the University of Victoria, west and then south through Saanich in the Shelbourne Valley, and southeast through Victoria and Oak Bay to the outlet in Oak Bay. A major tributary (1.5 km) flows southeast through the Cedar Hill Park and Golf Course and enters the main channel near Doncaster Drive and North Dairy Road. The total area for the Bowker Creek watershed is 1,016 hectares.

The majority of the underlying soil (see Map 2. Bowker Creek Reaches, Watershed Land Uses and Soil Types) in the watershed is clay with some areas of sand and gravels, and bedrock outcrops (Kerr Wood Leidal, 2007). The ground is generally flat (gradients less than 5%) with a few isolated steep areas such as Mount Tolmie (Kerr Wood Leidal, 2007).

Historically, Bowker Creek was a meandering, low gradient stream with numerous small tributaries and wetland areas. The watershed supported Garry Oak meadows, woodlands and the creek was rich with cutthroat trout, coho and chum salmon. 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 (Westland Resource Group, 2003). As agricultural and urban development spread, the mainstem and tributaries were altered with sections of the creek flowing underground through closed pipes and culverts.

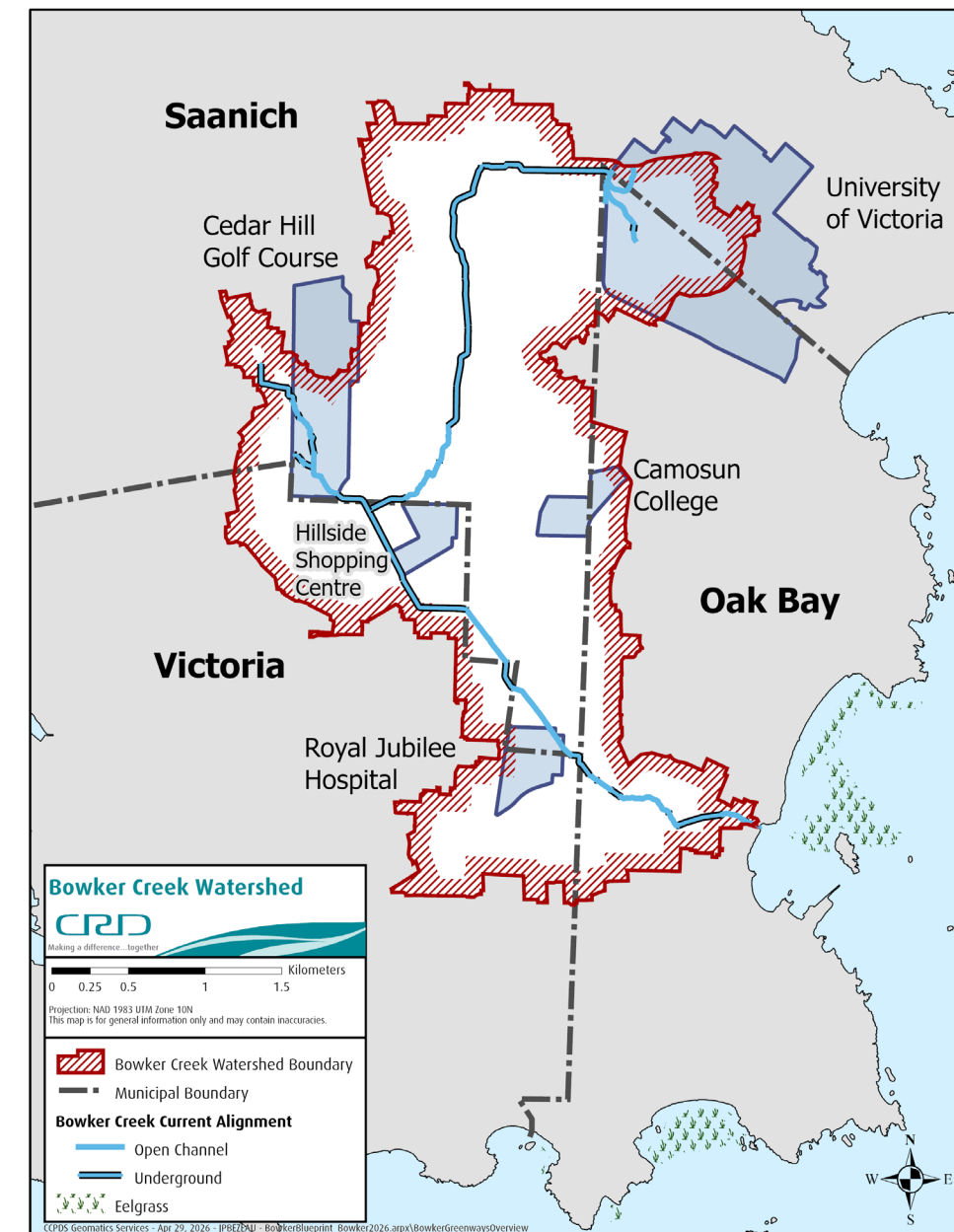
Today, the Bowker Creek watershed is highly urbanized with residential, commercial and institutional land uses and 33,450 residents in the watershed. In general, the open sections of Bowker Creek are deeply incised with retaining walls or steep banks and paved bottoms. The natural floodplain has been removed or significantly altered in all but the headwaters of the creek located on the University of Victoria campus and a small section of Cedar Hill Park. Where riparian exists, it is often dominated by invasive species. In most open sections, in-stream habitat is extremely poor.

An estimated 45% of the watershed is composed of impervious surfaces (see Map 3. Bowker Creek Watershed Land Cover) such as roads, parking areas and roofs preventing rainwater from naturally infiltrating into the ground. Instead, stormwater runs off into the storm drain system and rapidly enters Bowker Creek, picking up pollutants on the way. Impervious surfaces, the elimination of wetland and floodplain areas, and the piping of most of the mainstem and tributaries have worsened flooding along the open channels and upstream of some of the underground sections during high flow storm events. Impervious surfaces have also contributed to low base flows in summer, and lower water quality for aquatic habitat.

Despite these changes, Bowker Creek continues to attract people and provide habitat for plants and wildlife. The local community appreciate and enjoy the watershed including areas such as Cedar Hill Park and Golf Course, the headwaters at the University of Victoria, Browning Park in Saanich, the Bowker Creek Park in Oak Bay, Oak Bay High School, King's Road Community Nature Green Space and Mount Tolmie, the highest point in the watershed.

1.3.1 Bowker Creek Estuary

Bowker Creek flows into Oak Bay, a rich marine environment. The quality of the creek's water affects the bay, which has rocky shorelines, sandy beaches, and a variety of wildlife including seabirds, shorebirds, and harbour seals. The estuary is part of the Victoria Harbour Migratory Bird Sanctuary where many seabirds stop to rest and feed. Strong tides and cold water from the Juan de Fuca Strait bring nutrients to the bay, supporting kelp beds and fish, and orcas are occasionally spotted in the deeper waters. Both patchy and continuous portions of eelgrass can be found in the estuary facing Bowker Creek (Map 1) Eelgrass provides many ecosystem services and is an important home to juvenile salmon and other fish (SeaChange Marine Conservation Society, 2014). In 2020, Friends of Bowker Creek started the Chum Salmon Recovery Project to restore chum salmon to the lower reaches of Bowker Creek. If populations are re-established, the eelgrass in the estuary, may serve to provide important shelter and feeding areas for out-migrating juvenile salmon.

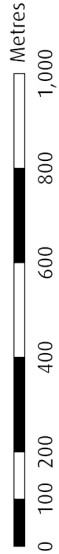


Map 1. Bowker Creek Watershed Overview

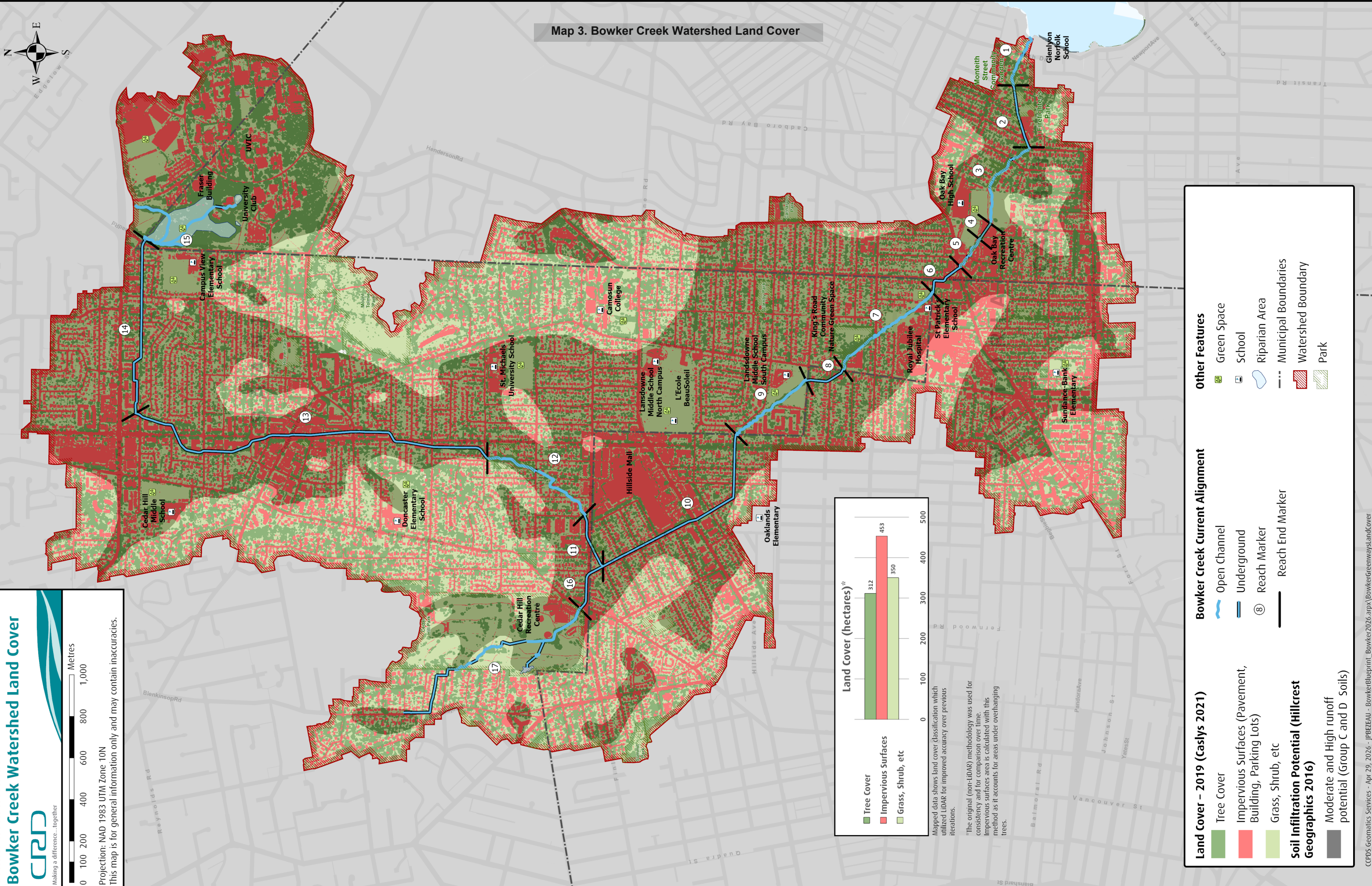
1.4 Vision, Goals and Objectives

Following are the vision, goals and objectives from the Bowker Creek Watershed Management Plan which guide the actions of the Bowker Creek Blueprint. Illustrations of the 100-year vision (Figure 3) demonstrate proposed changes to both residential and commercial properties that include green stormwater infrastructure and other retrofits in order to manage flow, improve water quality and improve nature and biodiversity. A daylighted creek is shown on an urban street as well as in a park or greenway. Implementing the Blueprint will provide many benefits of a healthy urban watershed including increased resilience to our changing climate, clean water, biodiversity and improved livability for all. (See Figure 2 - Benefits of a healthy urban watershed).

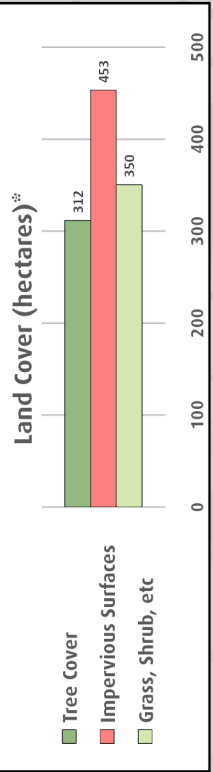
Bowker Creek Watershed
Bowker Creek Watershed Land Cover



Projection: NAD 1983 UTM Zone 10N
This map is for general information only and may contain inaccuracies.



Map 3. Bowker Creek Watershed Land Cover



Mapped data shows land cover classification which utilized LiDAR for improved accuracy over previous iterations.

*The original (non-LiDAR) methodology was used for consistency and for comparison over time. Impervious surfaces area is calculated with this method as it accounts for areas under overhanging trees.

Land Cover - 2019 (Caslys 2021)

- Tree Cover
- Impervious Surfaces (Pavement, Building, Parking Lots)
- Grass, Shrub, etc

Soil Infiltration Potential (Hillcrest Geographics 2016)

- Moderate and High runoff potential (Group C and D Soils)

Bowker Creek Current Alignment

- Open Channel
- Underground
- Reach Marker
- Reach End Marker

Other Features

- Green Space
- School
- Riparian Area
- Municipal Boundaries
- Watershed Boundary
- Park



Figure 2. Benefits of a healthy urban watershed

The Bowker Creek Watershed Management Plan Vision

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.



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 Creek 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/detention 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.

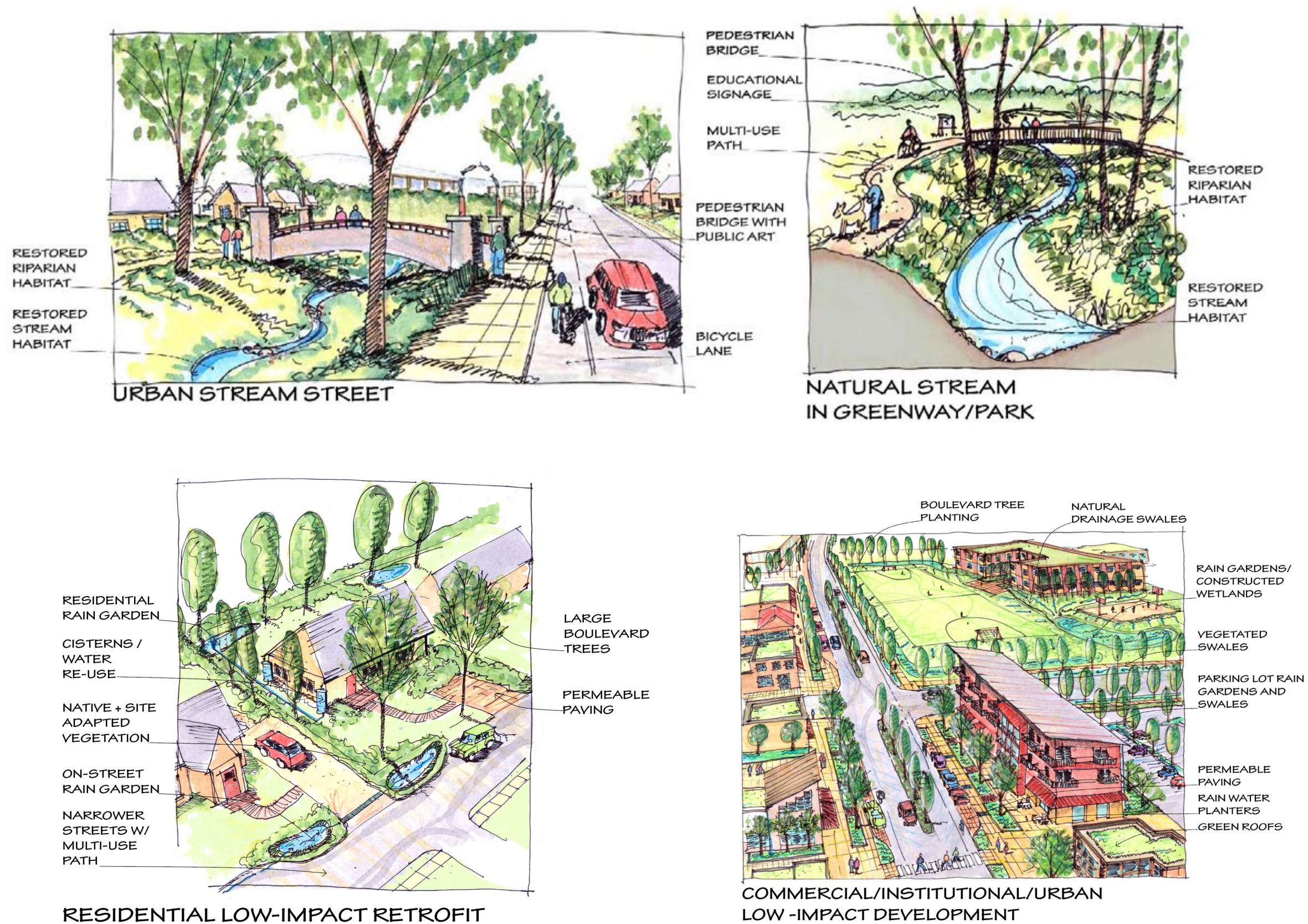


Figure 3. 100-Year Vision Illustrations

SECTION 2.0

2026 Update of the Bowker Creek Blueprint

Over fifteen years into implementation of the Bowker Creek Blueprint, there have been significant achievements and successes, changes to priorities, and development of multiple key studies and plans that have enhanced our understanding of opportunities to improve the creek and its watershed. Given these developments, the Bowker Creek Initiative Steering Committee determined an update to the Bowker Creek Blueprint was required.

The Bowker Creek Blueprint Update Working Group was formed to provide advice and guidance to ensure that the updated Blueprint reflects the needs, constraints, and aspirations of their respective organizations, while working towards the shared goal of restoring Bowker Creek and its watershed.

2.1 Key Accomplishments

Since completion of the original Blueprint, there has been considerable progress toward the restoration and enhancement of Bowker Creek. This section documents and celebrates the important work accomplished to date by BCI partners and the many community members and partner organizations who are vital to its success. Further detail can be found in the Bowker Creek Blueprint 10 Year Achievements (2021) document.

The BCI Partners include the City of Victoria, District of Saanich and District of Oak Bay, Friends of Bowker Creek, Friends of Cedar Hill Park, University of Victoria, School District 61, Camosun Community Association, Quadra Cedar Hill Community Association, Mount Tolmie Community Association and Community Association of Oak Bay.

2.1.1 Oak Bay High School Restoration

The restoration of Bowker Creek through Oak Bay High School lands transformed this section of the creek into a healthier riparian environment and an accessible community greenspace, classroom and public walkway (Photo 1). The construction, completed in 2015, created a meandering channel with riffles, small islands and lots of native riparian vegetation on the creek bank resulting in improved water quality, habitat and flow conveyance.

The site location allowed for many opportunities to involve students in all aspects of creek restoration, from channel design and planting to monitoring, and the creation of outdoor classroom for place-based learning. This project was made possible by a \$738,000 contribution from the Government of Canada through the Gas Tax Fund.

The project demonstrates successful collaboration and partnerships between School District 61, BCI, the Capital Regional District (CRD), District of Oak Bay and community members. Friends of Bowker Creek and Oak Bay High School students and staff continue to work on the ongoing removal of invasive species, as well as maintenance and restoration of the creek.

2.1.2 Completion of the Daylighting Feasibility Study

The Daylighting Feasibility Study (ISL Engineering and Land Services, 2020) identified potential daylighting opportunities for the length of Bowker Creek as well as daylighting concepts for various land use constraints. An additional technical memo (ISL Engineering and Land Services, 2020b) conducted an overview assessment of two potential stormwater management facilities (SWMFs) along Bowker Creek at Lansdowne Middle School South Campus and Kings Road Community Nature Green Space. This study is a critical milestone in the efforts of local governments and community groups to improve the health of the Bowker Creek watershed. With the detailed information compiled in the study and memo, municipalities will be able to integrate creek daylighting options into redevelopment plans and move forward with an enhanced greenway network through the watershed provided that associated funding to support this work is in place.



Photo 1. Completed Bowker Creek Restoration at Oak Bay High School

2.1.3 Community Engagement and Stewardship

Community members have worked to restore and steward the creek through invasive species removal, water quality monitoring, fish habitat restoration and implementation of green infrastructure such as rain gardens, education and outreach, and advocacy (Photo 2). This work is often accomplished in partnership with municipalities. The ongoing support and commitment by the following groups has been vital to the restoration success to date along Bowker Creek:

Friends of Bowker Creek Society	Mount Tolmie Community Association
Friends of Cedar Hill Park	Camosun Community Association
District of Saanich's Pulling Together Volunteers	Community Association of Oak Bay
Students and teachers from SD61 and St. Michael's University School	Quadra Cedar Hill Community Association
Peninsula Streams and Shorelines	Oaklands Community Association
Scouts Canada	North Jubilee Neighbourhood Association
Friends of Kings Road Community Nature Green Space	South Jubilee Neighbourhood Association
University of Victoria (UVic) Office of Campus Planning & Sustainability and Greater Victoria Green Team	

The amount and breadth of invasive species removal and restoration would not have been possible without the long-term collective efforts by community members making an important on-the-ground difference in the watershed with thousands of volunteer hours. Restoration work is ongoing at Oak Bay High School, Browning Park, Cedar Hill Park, Bowker Creek Walkway, Monteith St. Native Plant Garden, Mt. Tolmie Park, UVic and Kings Rd. Community Nature Green Space.

2.1.4 Demonstration Rain Garden Projects

Rainwater management demonstration sites have been established in each municipality as a way of showcasing rainwater infiltration and retention options to the broader community. These demonstration sites are an important way of raising awareness among developers and community members about the need to manage rainwater with practices that benefit our environment. In addition, the Friends of Bowker Creek Society and Peninsula Streams Society have since partnered to establish rain gardens at Campus View Elementary and Oak Bay High School.

- Located in the District of Saanich, the McKenzie Avenue rain garden and retention pond was completed in 2013. The site includes a wet pond with inline vegetation for water treatment and graduated vegetation from top of the slop to the basin, using plants adapted to various water tolerances. A “Raingarden at Work” sign educate the public about the important role of the site.
- Located in the District of Oak Bay, the Monterey Recreation Centre rain garden was completed in 2012. It collects rainwater from the parking lot and filters out pollutants such as oil and grease before water enters the storm drain. Native plants are featured in the rain garden that are adapted to wetter winter conditions and drier summers. The busy community location gives this rain garden high exposure to the public.
- Located in the City of Victoria, the Trent Street rain garden treats surface runoff from most of this urban street and is designed to handle a two-year rain event (Photo 3). The garden protects water quality in Bowker Creek by slowing and retaining rainfall and filtering pollutants. The gardens also narrow the road, calm traffic, separate pedestrians from vehicular traffic and create wildlife habitat.



Photo 2. Friends of Bowker Creek Community Outreach



Photo 3. Trent Street Rain Garden, City of Victoria

2.1.5 Kings Road Community Nature Green Space

In 2019 Saanich purchased the former BC Hydro lands near the Royal Jubilee Hospital to create a new park currently known as King’s Road Community Nature Green Space. Community fundraising efforts and financial help from other agencies including the City of Victoria and the District of Oak Bay contributed to its purchase.

King’s Road Community Nature Green Space is a key property in the Bowker Creek watershed of 2.2 ha (5.4 acres) with open space, and an interesting variety of trees including formally planted evergreens that frame a pathway along the property’s west boundary. Bowker Creek runs along the west edge of the park - one of the few stretches of the creek that has not been enclosed in underground culverts. The park management goals include restoring Bowker Creek to be ecologically robust and resilient for generations to come, improving stormwater management and mitigating flooding. This site was identified as a potential location for a stormwater management facility and creek realignment in the Daylighting Feasibility Study (Figure 4).



Figure 4. Creek realignment considerations from the Daylighting Feasibility Study 2020 used in the King’s Rd. Community Nature Green Space Public Engagement

2.1.6 Municipal plans include Bowker Creek goals and actions

All three municipalities have successfully included Blueprint goals and actions into their municipal plans. This is an important accomplishment because it ensures that the objectives of the Blueprint are integrated into on-the-ground operations. In recent engagement processes both the District of Saanich and City of Victoria included daylighting examples of Bowker Creek that will provide direction for staff and ensure Bowker Creek goals and actions are considered in municipal plans. For example, the City of Victoria included Figure 5 in their Places & Spaces Ideas showcase in 2025 as part of their OCP update and the District of Saanich shared an idea for Bowker Creek Daylighting with taller buildings as part of their Shelbourne Valley Action Plan engagement in 2025 (Figure 6). Concurrently with the update to the Blueprint the Official Community Plans for the District of Saanich, City of Victoria and District of Oak Bay were also updated. All three municipalities made references to the Blueprint and ensured that the goals of the Blueprint were included in the long-term vision for their communities (see Section 2.3.1).

Bowker Creek Daylighting along Pearl Street

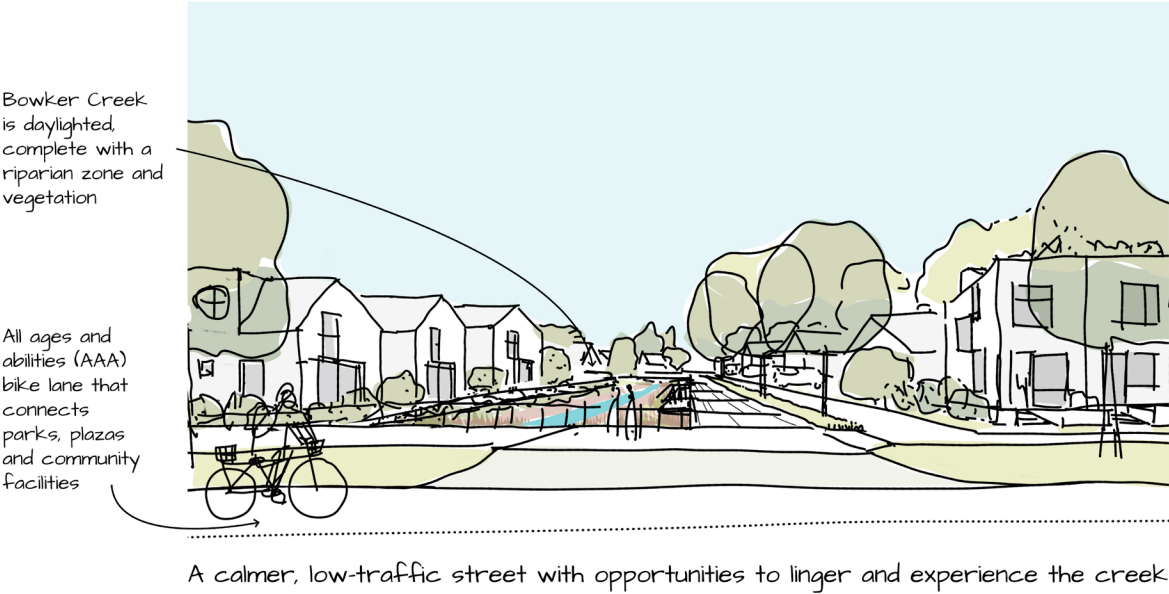


Figure 5. Vision from City of Victoria Places & Spaces Ideas Showcase as part of OCP Update, 2025

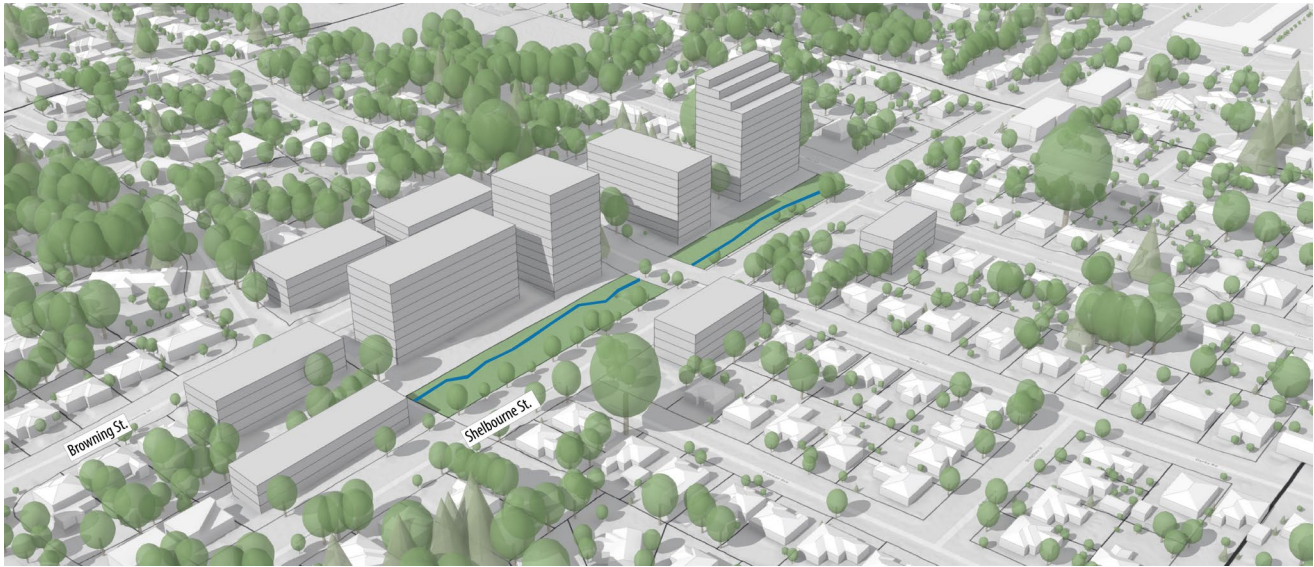


Figure 6. Idea for Bowker Creek Daylighting from District of Saanich Shelbourne Valley Action Plan Engagement, 2025

2.2 Project Team

The Bowker Creek Blueprint Update team working Group (Working Group) was comprised of Bowker Creek Initiative Steering Committee members, and additional municipal, institutional consultant staff from 2023-2025 (Table 1).

Table 1. Project Team

Organization	Name	Position
Capital Regional District	Stephanie Maasik/ Tara Stott	Bowker Creek Initiative Coordinator
	Jennifer Tyler	Harbours and Watershed Coordinator
	Jody Watson	Supervisor, Environmental Stewardship and Initiatives
City of Victoria	Marc Cittone	Senior Community Planner
	Tim Hewett	Senior Transportation Planner
	Brianne Tenk	Stormwater Management Specialist
	Moirra Wilson	Senior Landscape Architect
	Jill Collinson	Senior Planner
District of Saanich	Alex Browne	Stormwater & Environmental Management Specialist
	Paul DeGreeff	Manager of Parks Planning and Development
	Lesley Hatch	Senior Manager, Water Resources
	Alix Link	Manager of Urban Forestry, Natural Areas and Community Stewardship
	Megan Squires	Transportation Planner
	Christine Richards	Planner
	Scott Sexton	Stormwater & Environmental Engineering Program Manager
	Stephanie Maasik	Senior Biodiversity Planner
District of Oak Bay	Brian Green	Deputy Director of Community Building and Planning Services
	Steve Meikle	Director of Parks, Recreation and Culture
	Ken Miscovitch	Senior Engineering Technician
	Steve Rennick	Director of Engineering and Public Works
	Carly Rimell	Senior Planner
	Meghan Woods	Senior Planner, Climate Action
School District 61	Mark Baggott	Manager Building Services
	Mora Cunningham	Manager of Major Capital Projects
	Marni Vistisen-Harwood	Associate Director of Facilities Services

Organization	Name	Position
Community Members	Ian Graeme	Camosun Community Association
	Soren Henrich	Friends of Bowker Creek Society
	Peter Haddon	Friends of Cedar Hill Park
	Susan Haddon	Quadra Cedar Hill Community Association
	Ryon Bateman	Mount Tolmie Community Association
	Patricia Dijk	Oak Bay Community Association
University of Victoria	Juliet Van Vliet	Campus Planner
ISL Engineering and Land Services	Barry Raynard	Lead Water Planning
	Ian McKinnon	Manager Vancouver Island Office
	Shannon Jones	Community Engagement Strategist

2.3 Scope of the Blueprint Update

Starting in 2023, the Bowker Creek Initiative steering committee worked on updating the original Bowker Creek Blueprint which included:

- Detailed review of the new and updated publications, maps and environmental datasets, municipal plans and policies (see section 2.3.1) and other relevant publications
- Review and update to the watershed-wide, creek corridor and short-term actions
- Proposed daylighting and greenway routing
- Development of new maps and figures
- Updated watershed and creek monitoring program, and
- An interest holder and public engagement process

The purpose of the Blueprint is to:

- Recommend watershed management policies, planning and other stewardship actions to improve watershed health.
- Recommend reach-specific actions for each creek section including opportunities to daylight the creek.
- Provide support and information to municipalities and other land stewards to achieve the goals and objectives in the Bowker Creek Watershed Management Plan (See Section 3 Vision, Goals and Objectives).

2.3.1 New Studies and Plans

Table 2. New Studies and Plans (New documents and information that were reviewed and incorporated)

Document / Information	Summary
Bowker Creek Restoration Needs and Prescriptions (2023)	The 2023 assessment provides a detailed description of the open channel sections of Bowker Creek and recommendations for restoring the creek in the short-term and long-term.
Daylighting Feasibility Study and Memorandum on Potential Stormwater Management Facilities (2020)	The 2020 study developed options for daylighting the creek, considering land use, engineering, and integration with greenways. A range of daylighting cross-sections were proposed, from fully naturalized sections to retained sections to minimize land requirements. Potential stormwater management facilities to minimize flooding and erosion were also explored.
Assessment of watershed wide and reach-by-reach actions completed since 2010 (2023)	The 2023 assessment summarizes actions by the municipalities, CRD, and BCI community partners completed since the development of the Blueprint. It includes the status of the 33 watershed wide actions and 86 reach-by-reach actions.
Bowker Creek Monitoring including land cover, water quality, and benthic invertebrate results (2021)	• 2011 and 2019 watershed land cover data (urban tree cover, grass/lawn, pavement) • 2014, 2019 and 2024 stormwater quality data (e.g., oxygen, pH, coliforms, metals, nutrients) • 2014, 2019 and 2024 benthic invertebrate (in creek sediments)
Framework for Collaborative Inter-municipal Watershed Implementation (2021)	The 2021 framework provides tools such as development guidelines, bylaws, and programs to achieve the 20 private-property specific watershed-wide actions of the Bowker Creek Blueprint. It also highlights areas for the municipalities to work together to address gaps and roadblocks in the Blueprint implementation.
Bowker Creek Blueprint 10 Year Achievements (2021)	This document highlights the key achievements as the Blueprint reached its 10-year anniversary. These include inclusion of the Bowker Creek goals in municipal plans, reducing impervious area for new developments, removal of invasive species, and developing rainwater management demonstration sites.
CRD Urban Land Cover Classification (2021)	Mapping of land cover provides current data to support various planning and policy decisions for local and regional governments and also supports the on-going monitoring of landscape changes for tree cover and impervious surfaces. This report outlines the methods and results of the most recent updates to land cover mapping and change trends for portions of the CRD.

Document / Information	Summary
Capital Region Coastal Flood Inundation Mapping Project Summary (2021)	The 2021 project summary reports the projected high-water levels and coastal flood impacts from climate change and tsunamis at different locations across the CRD. The Oak Bay high-water levels are relevant to the lower sections and mouth of Bowker Creek.
Climate Projections for the Capital Region (2024)	The 2024 report measured the latest projections for CRD, noting increasing temperatures and changes in rainfall patterns. Fall rainfall levels are expected to increase while summer dry spells increase in length. Changes in flow will effect watershed health.
University of Victoria Integrated Stormwater Management Plan (2004)	The 2004 plan recommends multiple small storage facilities (depression storage, shallow infiltration trenches, permeable pavement, and rooftop detention) to reduce stormwater runoff.
University of Victoria Campus Plan (2016)	The 2016 plan recommends integrating stormwater management strategies into building developments and public realm improvements, such as rainwater harvesting, street bioswales, stormwater detention and retention, permeable paving, green roof and roof storage, and other strategies.
Shelbourne Valley Action Plan (SVAP) (2017)	The 2017 plan proposes to create vibrant development areas that balance economic growth, while enhancing and protecting the natural environment and provide opportunities for cycling, walking and transit. It proposes higher densities in exchange for creek amenities along Shelbourne Street near the open and piped sections of Bowker Creek. The SVAP is being updated in 2025.
Bowker Creek at Cedar Hill Park & Golf Course Daylighting Feasibility Design Alternatives Review (2019)	This technical memorandum provides a hydraulic review of Bowker Creek in the Cedar Hill Park, including the Golf Course zone within the park and examines rehabilitation alternatives for both creek daylighting and wetland storage and enhancement.
Cedar Hill Park Management Plan and Appendices (2020)	The 2020 plan provides guidance to balance preservation of the natural environment and space for physical and social well being and the community. This report included a technical assessment of Reach 17 of Bowker Creek for creek daylighting, restoration and storage.
Cedar Hill Natural Areas Inventory and Restoration Recommendations (2023)	This study followed the approval of the Cedar Hill Park Management Plan and included a survey of the park and a natural areas inventory of 13 of the zones. This included an inventory of invasive and native plants, coverage of the invasive and native species, and recommendations for remedial measures to improve the ecological health and function in each zone.

Document / Information	Summary
District of Saanich Environmental Policy Framework and Biodiversity Conservation Strategy	On June 17, 2024, Saanich Mayor and Council endorsed an Environmental Policy Framework and Biodiversity Conservation Strategy (BCS), creating a more coordinated and comprehensive approach to the policies, programs, and projects that will maintain and enhance biodiversity in Saanich. The BCS features seven theme areas and more than 130 actions that will be implemented incrementally over the next ten years, with a focus on the stewardship of private and public lands and park management and restoration in the first three years.
District of Saanich Urban Forest Strategy (2024)	On September 9, 2024, Saanich Mayor and Council endorsed the updated Urban Forest Strategy. The strategy will guide Saanich through the next 40 years towards a canopy cover of 44%, outlining key actions to protect and enhance our urban forest such as revising our planning and design processes to consider trees earlier in the process, developing and implementing a tree planting plan for our public lands, connecting and enhancing Saanich's natural forests, and exploring tree planting and voluntary stewardship programs on private lands and incentives for property owners to retain high-value trees.
District of Saanich 2020 Climate Plan: 100% Renewable & Resilient Saanich (2020)	The award winning 2020 Climate Plan was adopted by Council in January 2020. The Plan outlines a vision along with targets, objectives, strategies, and actions to protect the community, improve quality of life, and reduce local and global risks associated with a changing climate. The plan is undergoing an update in 2024/2025.
District of Saanich Active Transportation Plan (2018)	The Active Transportation Plan (ATP) was adopted in 2018 as a guide for decision-making and investment in active transportation, including walking, cycling, and transit. It was updated in 2024 and a revised list of priority projects for walking and cycling was included.
Royal Jubilee Hospital –Campus Master Plan (2015)	Approximately 100m of Bowker Creek flows through Royal Jubilee Hospital property and Adanac Street right-of-way. The campus plan includes an objective to respect natural environment and includes “support the vision, goals and objectives of the Bowker Creek Watershed Management Plan and the Bowker Creek Blueprint as part of Island Health’s commitment to monitor and maintain public health, clean water, and healthy communities”
District of Oak Bay Urban Forest Management Strategy (2017)	Implemented in 2017 to guide the long-term health and distribution of trees in the District of Oak Bay. The plan provides direction for key activities, including tree canopy cover growth, new plantings, tree health and maintenance, tree protection and budgeting within District limits.
City of Victoria Stormwater Master Plan (2014)	This plan assessed the hydraulic capacity of the storm sewer system, identified upgrades, and provided interim design criteria until stormwater management was embedded into City bylaws.

Document / Information	Summary
City of Victoria Urban Forest Master Plan (2013)	The City’s Urban Forest Master Plan guides the management of Victoria's urban forest. This plan identifies actions for the improved management of trees on public and private lands over 50 years and provides the vision and goals for managing the urban forest as integral to watershed health, biodiversity, and climate resilience.
City of Victoria Parks and Open Spaces Master Plan (2017)	The City of Victoria Parks and Open Spaces Master Plan is a 25-year strategic roadmap adopted to guide the planning, investment, and management of the city’s park system, focusing on environmental protection, accessibility, and community wellness. It covers over 100 parks and public spaces, aiming to enhance green areas as the city grows.
City of Victoria Climate Leadership Plan (2019)	Approved in 2019, the City of Victoria’s Climate Leadership Plan is a comprehensive strategy to reduce community greenhouse gas (GHG) emissions by 80% below 2007 levels and transition to 100% renewable energy by 2050. The plan focuses on transforming buildings, transportation, and waste management to improve energy efficiency and foster sustainability. The plan includes an “Adapting Early” direction to reduce climate risks.
Go Victoria Sustainable Mobility Strategy (2019)	Adopted in 2019, the Go Victoria Sustainable Mobility Strategy is the City of Victoria’s strategy aimed at creating safe, reliable, and low-carbon transportation by 2050. The strategy prioritizes active transportation, public transit, and electric vehicles, aiming to reduce single-occupancy vehicle use and improve street safety. The strategy reimagines streets as multi-functional public spaces that support sustainable mobility and ecological services.

Concurrently with the update to the Blueprint the Official Community Plans for the District of Saanich, City of Victoria and District of Oak Bay were also updated. All three municipalities made references to the Blueprint and ensured that the goals of the Blueprint were included in the long-term vision for their communities, as follows:

Official Community Plan	Summary
District of Oak Bay	The District of Oak Bay included a policy in their OCP 2025 Update to support restoration efforts for the Bowker Creek watershed through guidelines established in the updated Bowker Creek Blueprint and Watercourse DPA Recommendations, including daylighting parts of the creek, creating greenway corridors, improving habitat restoration and native planting, monitoring and assessment, stormwater management and community stewardship.
City of Victoria	The City of Victoria's OCP, <i>Victoria 2050</i> , recognizes Blue-Green Infrastructure as a key City Network, and a vital component of climate-forward urban infrastructure. The plan includes the objective of improving ecological process and enhancing the hydrological functions of Victoria's streams and coastlines through a watershed-focused approach to rainwater management. <i>Victoria 2050</i> identifies implementation of the Bowker Creek Blueprint as an action to support natural ecosystem functions, climate adaptation, and reflect the city's ecological identity.
District of Saanich	The District of Saanich included a policy in their 2024 OCP Update to support stewardship of the Bowker Creek watershed including through advancing the principles and actions outlined in the Bowker Creek Blueprint and associated strategies. Additional OCP policies support daylighting of channelized or culverted watercourses where possible, riparian zone restoration with native vegetation, integrated watershed planning, active transportation network connections, working with local First Nations, and community stewardship.

2.3.2 Updates to the Watershed-wide Actions, Reach-by-Reach Actions, and Short-term Actions

Building on past committee work completed in 2009; watershed-wide, creek corridor, and short-term actions were updated based on a review of the above documents, current priorities and ideas from the Working Group. Working Group feedback was obtained through a series of four workshops from April 2023 to November 2024 (Photo 4).

In addition, a series of separate meetings were held with the CRD, community members, individual municipalities, and School District 61. When possible, meetings were interdisciplinary, involving representatives from parks, environment, planning, transportation, and engineering. Written feedback was also obtained from the Working Group, the University of Victoria and the Songhees Nation and incorporated into the 2025 Blueprint Update.



Photo 4. Working Group Meeting

2.3.3 Updated Monitoring Program

The Blueprint includes a monitoring program that provides input into how well the ongoing actions are achieving the goals and objectives of the Bowker Creek Watershed Management Plan. The monitoring program is designed to use available datasets and sources of information to provide a summary of watershed health metrics and to identify trends where possible. The methodology may be modified over time based on changes to CRD monitoring programs and other monitoring initiatives. The updated monitoring plan is described in Appendix B. The monitoring results will be produced as stand-alone documents which will be hosted on the BCI website.

2.4 Public Consultation

Considerable public engagement was conducted during the development of the original Bowker Creek Blueprint in 2009-2010. In 2025, public consultation was conducted to gauge public support for the Blueprint, guide prioritization of actions, understand how the community interacts with the watershed and creek corridor, and collect feedback.

Engagement was carried out through an online survey, an in-person open house (Photo 5), online presentation and community walks. Information was also shared by BCI steering committee partners, news media ads, posters (Figure 7), postcards, community email lists and newsletters, the project website, and social media. A final What We Heard Engagement Report was completed in August 2025. The key themes and engagement feedback summaries follow.

Bowker Creek Blueprint

Have your say!



Fill out the survey and attend our open house or info session!

Learn about the Bowker Creek Blueprint - a 100-Year Action Plan to protect and restore the Bowker Creek Watershed.

Join the Friends of Bowker Creek for a watershed walking tour!
Two options available.

How to Participate

In-person Open House
June 10, 2025, 3 - 7 pm
Na'tsa'maht - Lansdowne campus
Camosun College

Virtual Information Session
June 12, 2025, 7 - 8:30 pm

Complete the Online Survey
May 27, 2025 - June 27, 2025

Visit getinvolved.crd.bc.ca/bowker-creek-initiative

Details here! 



59,090 views on Facebook and Instagram posts



403 clicks from posts to visit project webpage



2500 postcards distributed at community events (i.e. Fernfest etc.)



2 news ads placed in Black Press and Times Colonist each



55 posters throughout the community



Community groups shared information over internal email and newsletter distribution lists

Figure 7. Poster for Bowker Creek Blueprint Update Public Engagement

2.4.1 What We Heard - Key Themes

- **Blueprint Goals:** All Blueprint goals are important to participants.
- **Co-benefits of a Healthy Watershed:** Increased community greenways and recreational space, enhanced livability, and resilience to climate change are the most valued co-benefits by most participants.
- **Environmental Actions:** Most participants said planting native trees and plants, removing invasive species, daylighting, and implementing green stormwater infrastructure and low-impact development are the preferred environmental actions.
- **Concerns:** Wildlife habitat loss and water pollution are the greatest concerns, followed by flooding and construction and development impacts.
- **Activities and Connectivity:** Most participants visit Bowker Creek and the Bowker Creek watershed primarily for walking, running, biking, relaxing, and enjoying nature. Living nearby is also a significant factor connecting participants to the area.
- **Popular Locations:** The Bowker Creek Walkway in Oak Bay and the Oak Bay Recreation Centre are the most visited places in the watershed by participants. Oak Bay High School and Hillside Centre Mall are also popular.
- **Information Preferences:** Most participants showed a strong preference for information about native trees and plants, preventing pollution, and watershed stewardship.
- **Education Methods:** Most participants considered signage as the most useful form of education about the watershed, followed by volunteer opportunities for restoration and awareness campaigns.



Photo 5. Bowker Creek Blueprint Update Open House



Photo 6. Community walking tour for Bowker Creek Blueprint Update by Friends of Bowker Creek

2.4.2 Engagement Feedback Summary

Environment

- **Daylighting the Creek:** Many Participants expressed a strong desire to daylight Bowker Creek in areas where it is currently buried or channelized. They believe that uncovering these sections would restore the creek to a more natural state, improve the environment, and enhance the aesthetic appeal of the area.
- **Habitat Restoration:** There is a strong focus on implementing sustainable practices to restore natural habitats within the watershed. This includes creating green corridors, planting native vegetation, removing invasive species, and supporting local wildlife.
- **Flood Management:** Flooding remains a major concern, especially for long-term residents. Participants emphasized the need for hydrological studies, improved drainage systems, and climate-resilient infrastructure to manage stormwater and prevent damage.
- **Greenway Connectivity and Urban Integration:** Strong support exists for extending the Bowker Creek Greenway as a continuous “emerald necklace,” connecting Oak Bay to the Shelbourne Valley and regional trails. Interim connections using residential streets are encouraged, independent of daylighting timelines.

Governance and Planning

- **Protective Policy and Regulation:** Participants called for stronger environmental laws, better enforcement of existing plans (like the Bowker Creek Blueprint), and alignment of development projects with watershed goals.
- **Governance and Inter-Municipal Collaboration:** There is a call for coordinated action across jurisdictions, with the CRD encouraged to take a leadership role in funding and advancing restoration phases.
- **Housing, Development, and Community Amenities:** Participants expressed concern about how increased densification intersects with creek stewardship. There’s support for negotiating community benefits through development approvals and offering incentives for sustainable redevelopment.

Engagement and Awareness

- **Neighbourhood-Level Engagement:** Tailored outreach using signage, story maps, and local events.
- **Youth and School Engagement:** School-based stewardship programs and educational signage.
- **Volunteerism and Public Participation:** Encouraging residents to join conservation and planning efforts.
- **Awareness:** Suggestions include educational signage in high-traffic areas, brochures, online materials, and reframing Bowker Creek as an “inland waterfront” to boost public interest.

Ecological and Cultural

- **Wildlife and Habitat Protection:** Concerns include human and pet interference in sensitive areas, especially where salmon recovery is underway. Suggestions include signage to discourage feeding wildlife and protecting riparian zones.
- **Cultural Recognition and Indigenous Inclusion:** Participants recommended incorporating Indigenous place names and knowledge systems into signage and planning, especially where the creek crosses traditional territories.

SECTION 3.0

Watershed Wide Approaches & Actions

The Bowker Creek Watershed Management Plan provides clear actions for municipalities, community groups, and landowners to implement and achieve the vision for the Bowker Creek watershed. The recommended actions and approaches will improve water infiltration and retention, reduce flooding and erosion, lessen the impact on the creek channel, and improve water quality. Others will provide an opportunity to increase community involvement and stewardship by removing invasive species, planting trees, and championing the development of a greenway for Bowker Creek. The watershed-wide actions (Table 3) were established and prioritized as part of the Bowker Creek Blueprint Update. The general approaches to implementation are provided as a summary. If these watershed management approaches are considered in development, land use and operational decision making, it will lead to improved watershed health.

3.1 General Approaches to Implementation

There are many specific actions outlined to achieve the vision, goals, and objectives of the Bowker Creek Watershed Management Plan. The most important themes are provided here as approaches to implementation. These approaches are essential to achieving a healthy urban watershed and the vision and goals of the watershed management plan.

1. Plant native trees and plants & remove invasive species

Native trees and plants are vital components of healthy and resilient ecosystems. They provide ecosystem services such as food and habitat for native wildlife, absorption of rainfall, shading and cooling and resilience to climate change. Urban development and invasive species have reduced available habitat for native plants. By continuing to remove invasive species and planting native species we can support biodiversity in the watershed.

2. Restoration of Bowker Creek and riparian areas

Creek restoration involves working towards the recovery and renewal of a degraded creek. Restoration of sites along Bowker Creek can include: rehabilitation of riparian areas with native plants and trees, removal of invasive species, creation of more gently sloping banks where appropriate and other activities that help improve habitat and water quality. The restored creek will provide a community amenity and gathering space as well as ongoing education on the many benefits of a healthy watershed.

3. Create biodiverse corridors through greenways

A multi-use greenway corridor from the headwaters to the ocean, will provide habitat connectivity through the watershed, improve biodiversity, and provide routes and connections to regional trails improving safe walking, cycling and nature viewing throughout the watershed.

4. Monitor water quality

Continuing water quality monitoring will provide information about the health of the creek and where to focus our efforts. The CRD and the Friends of Bowker Creek conduct water quality monitoring in Bowker Creek. Recent data indicates that inputs and urban development in the watershed continue to degrade water quality. Many water quality parameters have at times been measured at levels that can be harmful to aquatic life.

5. Prevent pollution

Homeowners, developers, local government, businesses and other agencies can prevent pollution in many ways including minimizing hardscape areas for driveways and patios and avoiding the use of chemicals where possible. Preventing contaminants and sediment from entering storm drains and Bowker Creek can make significant improvements to watershed health.

6. Develop green streets

Green streets and parking lots are part of a sustainable rainwater management strategy that manages rainwater, reduces storm flow peaks, improves water quality and enhances watershed health. Green streets can contribute to traffic calming, improve pedestrian and bicycle safety, reduce demand on city infrastructure, reduce impervious surfaces, increase urban green space and enhance community livability. See Figure 7

7. Utilize green stormwater infrastructure

As rain travels over roofs, driveways and roads it picks up chemicals, metals, dirt and oils. Green stormwater infrastructure can improve water quality and can clean and infiltrate rainwater runoff before reaching the natural receiving environment. A raingarden can absorb runoff and reduce these contaminants through soil filtration and vegetative uptake. Green stormwater infrastructure captures and slows the flow of rainfall and allows it to infiltrate the ground which minimizes peak flows in the creek and helps prevent flooding. Incorporating this infrastructure throughout the watershed will help improve water quality and fish habitat.

8. Implement stormwater management facilities

Opportunities for stormwater management facilities to mitigate flooding are being explored through landowner partnerships as a mechanism to help manage flows and restore hydrological function to the watershed. Examples can include playing fields that can be designed to store rainfall from large storm events for a 24-hour period as well as smaller underground chambers. The 2007 Master Drainage Plan and the 2020 Daylighting Feasibility Study identified Lansdowne Middle Schools, The Kings Community Nature Green Space and the University of Victoria as potential locations large stormwater management facilities.

9. Daylight underground sections of the creek

Freeing the creek from underground pipes can provide increased capacity in the creek to help manage flows; provide habitat in support of protecting and restoring biodiversity (including efforts to reintroduce chum salmon); and provide a valued community amenity. A Daylighting Feasibility Study provided options for restoring the creek to an open channel along the entire length of the creek. A restored Bowker Creek will provide stormwater benefits as well as numerous aesthetic, economic, and environmental benefits.

10. Incorporate Blueprint goals and actions into municipal plans

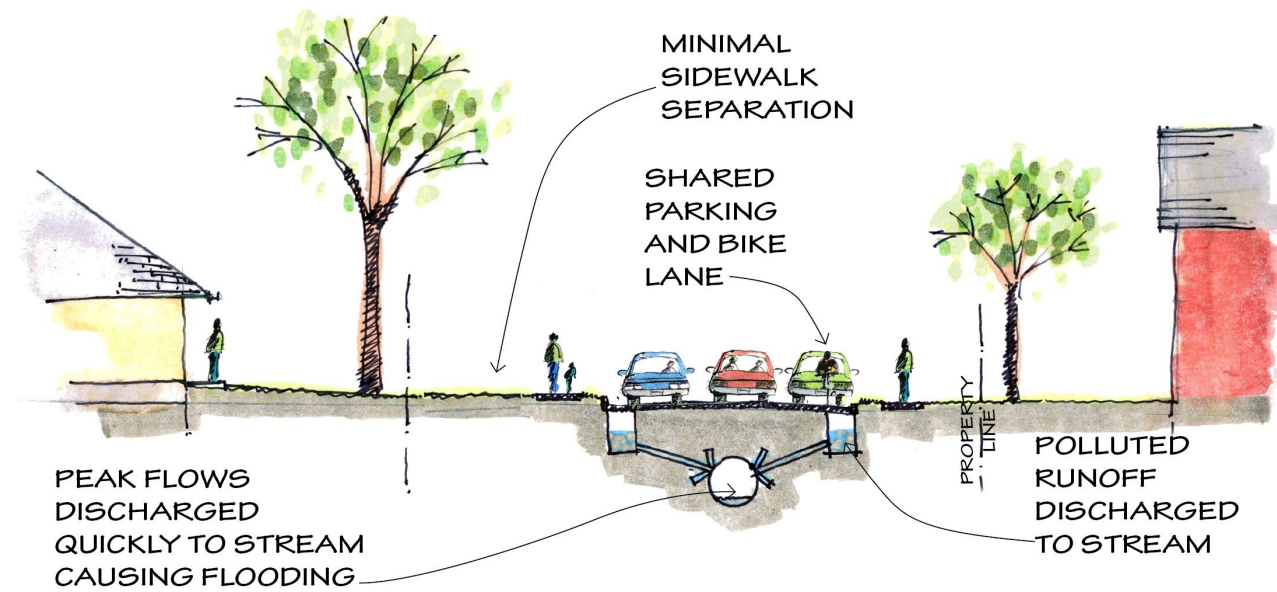
This is a key method by which the goals and actions of the Blueprint are integrated into municipal plans and on-the-ground operations. Although all three municipalities have successfully accomplished this, it continues to be important as Official Community Plans are updated, and other Action Plans or Strategies are developed.

11. Education and engagement

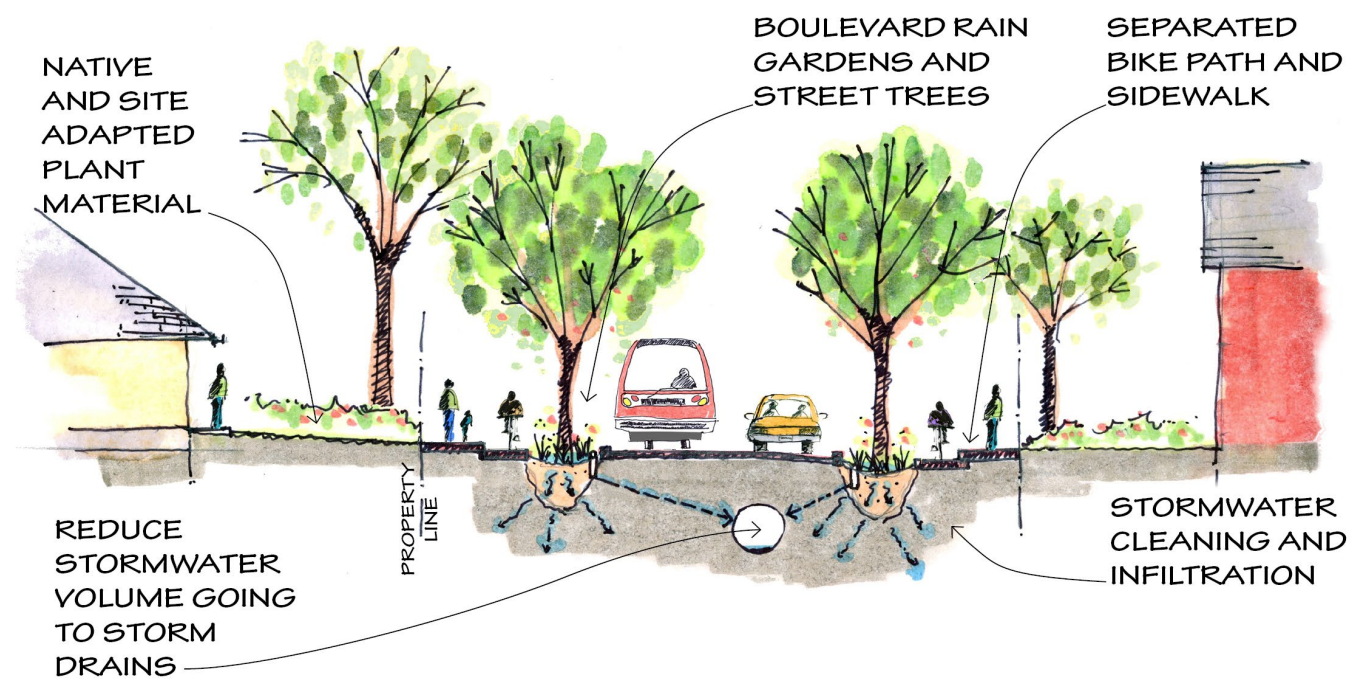
Providing educational information and engaging with the residential, institutional and business community helps to foster landowner and community awareness and connection to Bowker Creek, builds a culture of stewardship and encourages action. Approximately 30,000 people live in this watershed. It will take actions by everyone to restore a healthy creek.

12. Collaboration and partnership

Building relationships with landowners, community groups, schools, public organizations, First Nations and municipal governments is an important way to move the Blueprint forward. In a highly urban environment, voluntary partnerships in pursuit of achieving the Blueprint goals are needed to restore Bowker Creek to a healthy watershed.



EXISTING STREET SECTION



PROPOSED 'GREEN STREET' SECTION

Figure 8. Green Street Vision

3.2 Watershed Wide Actions, Prioritization & Goal Areas

The following watershed-wide actions are organized by goal area. Many actions achieve multiple goals and therefore supplemental goal area is also provided. Prioritization is provided for high (H) and medium (M) priority items based on opportunities and needs provided by the municipalities. Opportunities will occur with changing land uses, as funding becomes available, as infrastructure needs to be upgraded, and as societal priorities change. Key actions have been identified for short term (ST) implementation within the next 10 years (Section 5). The Bowker Creek Initiative (BCI) includes all partners. When BCI is a partner this means a coordinating role is required.

Table 3. Watershed Wide Actions, Priorities and Goal Areas

No.	Action	Priority H: High M: Medium ST:short term	Supplemental Goal area    	Partners
	Goal 1: Individuals, community and special interest groups, institutions, governments, and businesses take responsibility for actions that affect the watershed.			
1.	Integrate Blueprint goals and actions into municipal plans, strategies and projects as they come up for review or update using common language.	H - ST		Municipalities
2.	Consider developing a Natural Asset Management strategy for the Bowker Creek watershed that standardizes language between municipalities.	H- ST		BCI, Municipalities
3.	Work cooperatively to develop common Development Permit Area guidelines or other tools to help implement the Bowker Creek Blueprint on private lands. Refer to the Framework for Collaborative Intermunicipal Watershed Implementation.	M		Municipalities
4.	Incorporate the Bowker Creek Channel Restoration Needs and Prescriptions (2023) into Parks and Open Space Master Plans, climate plans, natural assets, integrated stormwater master plans including policies for acquisition of park space, long-term park uses, and long-term operation and maintenance requirements.		  	Municipalities
5.	Use a climate change resiliency and adaptation lens to prioritize, design and implement projects within the Bowker Creek watershed (i.e. restoration, daylighting, stormwater management facilities and green stormwater infrastructure).		  	BCI, Municipalities, Community Groups
6.	Collaboratively develop clear policies for the minimum amount of additional park space required to accommodate increased density through redevelopment, establish green space objectives, and consider a collaborative funding model.	H		Municipalities
7.	Explore grants, infrastructure funding and alternative and innovative financing options to provide sustainable long-term funding to support implementation of Blueprint goals and actions including additional Bowker Creek Initiative coordinator hours.	H		BCI, Municipalities, Community Groups, UVic, SD61
8.	Work together to align, coordinate and prioritize grant opportunities for implementation of Blueprint actions.	H		BCI, Municipalities, Community Groups, UVic, SD61
9.	Consider policies, funding mechanisms and other tools to prioritize and implement Blueprint goals and actions for restoring and daylighting Bowker Creek, supporting biodiversity and natural assets, minimum vegetated greenspace, green infrastructure and stormwater management on private property. Tools may include amenity bonusing, development permit areas and guidelines, for more examples see the Framework for Collaborative Inter-Municipal Watershed Implementation, 2021.		  	Municipalities
10.	Engage First Nations communities with an interest in the Bowker Creek watershed early in the planning stages prior to undertaking ground disturbance as land altering projects come up for implementation (i.e. restoration and daylighting) or land acquisition.	H		BCI, Municipalities
11.	Engage with First Nations communities to explore interest and opportunities for involvement in the Bowker Creek Initiative and to learn and highlight the cultural significance of Bowker Creek.	H		CRD, BCI
12.	Complete an archaeological overview assessment of the entire Bowker Creek system in partnership with involved First Nations.	H - ST		BCI
13.	Consider partnership agreements with institutions and/or private property owners to support restoration and daylighting opportunities.	H	  	Municipalities, Community Groups, Institutions / Commercial Centres
14.	Build relationships with schools, institutions, other public organizations and private landowners to raise awareness and encourage the development of green infrastructure, restoration, daylighting, biodiversity and urban forest canopy projects on private lands.	M	  	Municipalities, BCI, Community Groups, UVic, SD61

No.	Action	Priority H: High M: Medium ST: short term	Supplemental Goal area    	Partners
15.	Develop education materials and interpretive signs and attend community events to foster landowner and community awareness and connection to Bowker Creek, build a culture of stewardship, and encourage voluntary action among residents and business owners.	M		BCI, Community Groups
16.	Develop a communication and engagement strategy to engage and educate elected officials, staff, key property owners and developers to support the implementation of Blueprint goals and actions and identify linkages to municipal priorities on climate change adaptation, flood prevention, biodiversity, urban forests and green space accessibility. Tools can include: - Municipal-specific information sheets identifying the significance of the Blueprint, and municipal commitments - Information sheets for developers providing information about the Blueprint actions, and best practices for green infrastructure, stormwater detention and infiltration, and implementation.	H-ST	  	BCI, Municipalities, Community Groups
17.	Develop and implement a Strategic Land Acquisition Plan that identifies a short-list of properties for acquisition to facilitate restoring and daylighting Bowker Creek which prioritizes flood-vulnerable properties and consider incorporating properties into municipal land acquisition strategies.	H-ST	 	BCI, Municipalities
18.	Explore the legislation, regulations, and policy around newly daylit areas and the implications for adjacent properties. (i.e., Streamside Protection and Enhancement Area)	H		Municipalities
19.	Incorporate the Green Stormwater Infrastructure Common Design Guidelines for the Capital Region (2019) or equivalent into municipal policies.		 	Municipalities
20.	Explore daylighting design guidelines including typical cross-sections to achieve a consistent appearance (i.e., landscaping, and signage) for a variety of urban conditions and constrains.	H-ST	 	BCI, Municipalities
21.	Consider updating policies to include green infrastructure as a condition for development or redevelopment for institutional properties (e.g., schools / churches under a certain size).	M	  	Municipalities
22.	Support and partner with public and private schools in and near the watershed to incorporate Bowker Creek and healthy watersheds into school activities.		  	BCI, SD61, Community Groups
23.	Encourage and support partnerships with educational institutions and other agencies to undertake research and technical studies that further the goals of the blueprint and watershed health.			BCI, UVic, Community Groups
 Goal 2: Manage Flows Effectively				
24.	Use an integrated watershed management approach to managing and protecting surface water, drainage and groundwater including green stormwater infrastructure.		 	BCI, Municipalities
25.	Explore a comprehensive and integrated stormwater master plan that promotes inter-municipal cooperation and coordination on engineering solutions for rainwater storage, stormwater conveyance, maintaining base flows and minimizing flooding.	H		BCI, CRD, Municipalities
26.	Update stormwater modelling with updated climate change predictions to support climate resiliency and flood prevention. Consider watershed wide flood mapping to develop Flood Construction Levels and Setbacks for future construction.	H-ST		Municipalities, BCI
27.	Collaborate on infrastructure levels of service and systematically improve drainage capacity for large storm events (i.e., change out cross culverts that are pinch points and cause back-flooding)	M		Municipalities
28.	Maintain and add flow monitoring stations and data collection to inform stormwater master plan.	H-ST		CRD, Oak Bay, Saanich
29.	Identify opportunities to install small-scale street or neighbourhood scale green infrastructure to reduce flood discharges, improve water quality and support biodiversity.	M	 	Municipalities, Community Groups, Institutions

Goal Area Legend:  **Goal 1.** Cooperation & Responsibility  **Goal 2.** Manage Flow  **Goal 3.** Nature & Biodiversity  **Goal 4.** Water Quality

No.	Action	Priority H: High M: Medium ST: short term	Supplemental Goal area    	Partners
30.	Engage with landowners and explore opportunities to install large scale stormwater management facilities at the following parks, institutional and privately owned properties: - Northwest corner of the University of Victoria; - Cedar Hill Park; - Lansdowne Middle School North Campus; - Lansdowne Middle School South Campus; - Kings Road Community Nature Green Space; - Adanac Street open space.	H-ST		BCI, Municipalities, Institutions
 Goal 3: Improve and expand public areas, natural areas and biodiversity in the watershed.				
31.	Work to improve and understand biodiversity, natural assets, and urban forests in land use, parks planning and redevelopment.			All
32.	Explore invasive species prevention and management strategies that include target dates/budgets/plans for annual surveys and removal activities and embed these into municipal operational plans and budgets. Provide staff training to identify and map priority invasive species in the watershed, and to watch for and report new arrivals.	H-ST		All
33.	Collaborate on an invasive species management plan for golden willow. Refer to Bowker Creek Channel Restoration Needs and Prescriptions, 2023.	H-ST		BCI, Municipalities, Community Groups
34.	Encourage native, drought tolerant and climate adaptive plantings in all projects and redevelopment.			All
35.	Continue urban tree inventories and plantings to support the increase of urban canopy cover and create awareness about the role of trees to support biodiversity, watershed and creek health.		  	Municipalities, BCI
36.	Engage and collaborate with regional partners in considering a biodiversity strategy, inventory, and monitoring plan.			CRD, Municipalities
37.	Encourage and pursue daylighting (recognizing urban constraints) using flexible approaches such as re-routing or partial daylighting and reducing streamside setbacks as outlined in the Daylighting Feasibility Study.	H	 	BCI, municipalities, CRD and Community Groups
38.	Explore and implement mechanisms to create biodiverse corridors to improve ecosystem function (i.e. incorporate biodiversity as a priority into right-of-way guidelines).	M		Municipalities, BCI
39.	Incorporate the proposed Bowker Creek Greenway into relevant municipal plans to build a natural and biodiverse greenway along the creek with connections to regional trails e.g., Lochside Regional Trail.	H		Municipalities
40.	Develop a list of potential student restoration projects and liaise with UVic, Camosun, and local schools.			BCI, Municipalities and Community Groups
 Goal 4: Achieve and maintain acceptable water quality in the watershed				
41.	Consider restoring existing open channel sections of Bowker Creek as indicated in the reach-by-reach actions (Appendix A) and the Bowker Creek Channel Restoration Needs and Prescriptions, 2023 to improve water quality, biodiversity, urban livability, increase capacity and improve conveyance and other co-benefits.	H	 	BCI, Municipalities, Institutions, UVic Community Groups/property owners
42.	Consider harmonizing municipal stormwater bylaws and other approaches that regulate and prohibit certain types of wastes from entering the stormwater drainage systems in order to improve water quality and protect municipal infrastructure, public health and the marine shoreline environment.	M		Municipalities
43.	Consider policies requiring oil interceptor and sediment traps on private, commercial and institutional properties.			Municipalities

Goal Area Legend:  **Goal 1.** Cooperation & Responsibility  **Goal 2.** Manage Flow  **Goal 3.** Nature & Biodiversity  **Goal 4.** Water Quality

No.	Action	Priority H: High M: Medium ST:short term	Supplemental Goal area    	Partners
44.	When updating stormwater modelling consider including pollutant load modeling to identify pollutant hotspots and locations that can be targeted for contaminant reduction.			Municipalities
45.	Implement a targeted source control program to address pollutant hotspots that include policies, non- regulatory tools, methodologies, treatment devices, green infrastructure, education and outreach etc.			Municipalities
46.	Continue water quality monitoring for Bowker Creek by collecting 5 samples in a 30-day period to assess trends and concerns including 6PPD-quinone (6PPD-Q), a chemical from tire additives that is highly toxic and linked to the deaths of coho salmon and other aquatic species.			CRD, Community Groups
47.	Design green infrastructure with specific pollutant reduction targets (e.g., rain gardens removing >70% of TSS)			Municipalities
48.	Maintain and communicate a watershed Spill Response Protocol with clear roles and responsibilities and communication procedures to ensure rapid deployment of containment and clean up measures in the event of a spill.			CRD, Municipalities, Community Groups
49.	Implement best practices for erosion and sediment control.			Municipalities

Goal Area Legend:  Goal 1. Cooperation & Responsibility  Goal 2. Manage Flow  Goal 3. Nature & Biodiversity  Goal 4. Water Quality

SECTION 4.0

Creek Corridor Actions & Envisioning the Future Creek

The creek corridor is divided into 17 reaches and detailed recommendations for each reach are provided in Appendix A that range from small restoration efforts such as invasive species removal to large changes such as creek daylighting or channel re-alignment. These changes will occur as land uses change, funding becomes available, infrastructure needs upgrading or re-development occurs. A vital part of the Blueprint is illustrating the future possibilities to the public, staff, politicians, boards, and landowners. Figures are provided to illustrate possible designs. Along with improving the creek corridor and overall watershed health, significant community amenities and natural areas could be provided in an otherwise fully developed watershed.

4.1 Summary of Creek Corridor Actions

Descriptions and detailed recommendations to improve each of the 17 reaches are found in Appendix A. BCI members, municipalities, community groups and landowners can use the recommended actions and initiatives to advance the 2003 Bowker Creek Watershed Management Plan and 2026 Blueprint.

The recommended creek corridor actions were reviewed and refined as part of the Bowker Creek Blueprint Update. The recommended actions include creek restoration (invasive species removal and planting of native vegetation, bank stabilization, and naturalization of the creek channel), infrastructure upgrades (daylighting, green stormwater infrastructure and detention, flood mitigation, and climate change adaptation), and planning (land use changes, creation or upgrading of greenways, development opportunities, and property acquisitions). The actions form a blueprint for change along the creek corridor and are expected to be implemented over time as opportunities and funding arise. Timeframes for completing this work could range from short term (10 years) to long-term (50-100 years). Existing conditions and future vision for each reach are summarized in Table 4. The daylighting feasibility study and restoration prescriptions provided the information for each vision.

4.2 Restoration of Open Sections

Restoring the existing open sections of the creek (i.e., Browning Park, Photo 7) includes removing invasive plants and planting native and climate resilient trees and shrubs, widening the creek corridor, sloping banks to create a larger riparian area and expanding the floodplain to reduce flooding. If space is available, the creek channel can also be curved to mimic a natural alignment and incorporate a greenway corridor that provides habitat for wildlife and biodiversity, recreational opportunities and quiet spaces for nature appreciation and the ability to travel by foot or bicycle. Further detailed recommendations for restoring each reach are provided in the Bowker Creek Channel Restoration Needs and Prescriptions (Swell Environmental Consulting and Co., 2023). The recommended actions were developed based on a recent assessment and address small and large-scale restoration projects, channel erosion, removal of invasive species, planting of native vegetation, and addition of salmon spawning gravels.



Photo 7. Naturalized creek at Browning Park.

Table 4. Reach Existing Conditions and Future Vision Descriptions

Existing Conditions and Reach Visions			
Reach	Location	Existing Conditions	Future Vision
1	Monteith Street to creek mouth	Reach 1 flows in an open channel east and southeast from Monteith Street along the Monteith Street Community Gardens, through private property to the ocean. The riparian vegetation includes trees, shrubs, and grass. Invasive species include ivy, Himalayan blackberry, and golden willow. This reach has challenges with invasive plant species, channelization, conveyance, flooding, and erosion. It has also been identified as having archaeological significance. The creek is entirely armoured below Beach Drive and has patches of armouring above Beach Drive. The uppermost section is one of the more natural creek channel sections in the watershed.	Gently sloped banks with healthy riparian zone of native plantings including shade trees for summer cooling. Rock and gravel weirs enable fish access and healthy habitat. Erosion is infrequent; armouring and fish barriers have been removed in favour of green solutions and neighbouring property owners along the creek are engaged in creek health. A pedestrian walkway allows appreciation and recreation along the creek. Healthy eelgrass beds and marsh habitat are established in the estuary and a voluntary “no anchor zone” protects the sensitive coastal habitat.
2	St. Anne Street to Monteith Street	Reach 2 flows eastward from St. Ann Street through a pipe under Firefighter’s Park to Monteith Street. This reach has challenges with capacity and flooding.	A daylighted creek with an established greenway adjacent. The creek meanders along the edge of Firefighter’s Park and the alignment provides a setback from neighbouring properties, prevents erosion and is resilient for changes in climate.
3	Downstream of Oak Bay Tennis Bubble to St. Ann Street	Reach 3 flows east in an open armoured channel through Oak Bay High School and southeast through Bowker Creek Park to St. Ann Street. From 2015-2017, the north bank and channel through Oak Bay High School was reconstructed to increase sinuosity, create a gentler slope and planted with native riparian vegetation. Through Bowker Creek Park, there is grass with isolated pockets of landscaped native and non-native trees and shrubs. This reach has challenges with turbidity, invasive plant species, channelization, capacity, and flooding.	Deepened pools and vegetation improve habitat in the channel. The riparian area is wide and healthy with native species and shade trees that cool the creek. Armouring is removed and banks are gently sloped. A redeveloped sports track allows restoration of the south bank. Rock weirs and gravel have created spawning areas for chum salmon; and the students and neighbours of Oak Bay High School regularly monitor the creek and engage in restoration activities.
4	Oak Bay Tennis Bubble	Reach 4 flows southeast in a pipe beneath the Oak Bay Tennis Bubble. This reach has challenges with capacity and flooding.	A daylight creek that meanders around the tennis bubble, with an adjacent multi-use trail, vegetated with native species, providing green space and cool respite for citizens and wildlife.
5	Cadboro Bay Road to Oak Bay Recreation Centre	Reach 5 flows in an open entrenched channel from Cadboro Bay Road southeast to the Oak Bay Recreation Centre where it enters a pipe under the Oak Bay Tennis Bubble. Riprap erosion protection was put in adjacent to the Oak Bay Recreation Centre. Between Bee Street and Foul Bay Road, the channel is in a concrete and mortared rock channel with an adjacent walkway. The riparian vegetation at this reach includes trees, such as big leaf maple and cottonwood, blackberry, and an armoured section with no vegetation. This reach has challenges with invasive plant species, channelization, capacity, flooding, and erosion.	A restored creek channel connects watershed stewardship and nature appreciation with community wellness and active recreation.
6	Trent Street to Cadboro Bay Road	Reach 6 flows east in a pipe from Trent Street, south along Foul Bay Road, and southeast to Cadboro Bay Road. This reach has challenges with capacity.	A daylight section that flows along Florence Street and Foul Bay Road adjacent to a greenway. Traffic calming contributes to creek viewing and enjoyment. A healthy riparian area and plantings support fish habitat.
7	Richmond Road to Trent Street	Reach 7 flows in an open entrenched channel with limited floodplain lands through King’s Road Community Nature Greenspace, the Royal Jubilee Hospital and St. Patrick’s School. The channel substrate is a mixture of gravel, sand, cobble and silt. The riparian vegetation includes deciduous and coniferous trees, grass, Himalayan blackberry, golden willow, and native shrubs. This reach has issues with invasive plant species, channelization, conveyance, flooding, and erosion.	A wide corridor with a healthy riparian area that protects the creek and fish habitat and provides an active floodplain for resilience to changes in climate. The area is an example of a community creek restoration project that serves as a therapeutic corridor demonstrating the connections between ecological restoration and public health. A connected Bowker Creek Greenway provides for walking or cycling.
8	Newton Street to Richmond Road	Reach 8 flows south in a pipe from Newton Street to Kings Road under the Spirit Garden right-of-way, and then southeast to Richmond Street. This reach has challenges with capacity.	A restored living stream that brings beauty, nature and vitality, and a sense of place to the surrounding neighbourhood and a connected Bowker Creek Greenway provides for walking or cycling.
9	Pearl Street to Newton Street	Reach 9 flows southeast in an open entrenched channel from Pearl Street, beside the Townley Street right-of-way, and through the Lansdowne Middle School South Campus to Newton Street. New riprap erosion protection was installed along the east bank downstream of the culvert and upstream near the apartment building. The riparian vegetation includes trees and shrubs, mostly mature golden willow, Himalayan blackberry, scotch broom, red osier dogwood, black hawthorne, English ivy, and morning glory. This reach has challenges with invasive plant species, channelization, conveyance, flooding, and erosion.	A healthy creek meanders through the south end of Lansdowne Middle School South Campus and along Townley Street, complete with a wetland pond, forested path and outdoor classroom. Healthy native plant species protect and shade the creek and provide recreation and respite for students, neighbours and the community. A connected Bowker Creek Greenway provides for walking or cycling

Existing Conditions and Reach Visions			
Reach	Location	Existing Conditions	Future Vision
10	Clawthorpe Ave to Pearl Street	Reach 10 flows southeast from Clawthorpe Avenue in a pipe along Doncaster Drive, and east along Pearl Street to just before Townley Street. This reach has challenges with capacity.	Portions of the creek have been daylit along Pearl Street, through repurposing of road space, and creation of a new street park. The creek is daylit through Doncaster Green, and a redeveloped Hillside Centre incorporates a daylit tributary, providing naturalized green space and a vegetated riparian area, that offers shade, habitat, and cooling. A bioswale runs along Doncaster Drive, above the piped section of the creek, slowing runoff and improving water quality. A connected Bowker Creek Greenway provides for walking or cycling
11	North Dairy Road to Clawthorpe Ave	Reach 11 flows west in a pipe along North Dairy Road, and southwest along Clawthorpe Avenue to Doncaster Drive.	A naturalized creek flows near Clawthorpe and Burton Avenues offering naturalized recreation opportunities, shade, cooling, and enhanced habitat. A connected Bowker Creek Greenway provides for walking or cycling
12	Knight Ave to North Dairy Rd	Reach 12 flows southwest in an open partially armoured channel from Knight Avenue through Browning Park, private residences, and municipal road rights-of-way to Shelley Street and North Dairy Road. The banks are a mix of steep soil, concrete sandbags, riprap, gabions and lock blocks with part of the reach entrenched with no floodplain access. The channel bottom is a mix of concrete, asphalt, bedrock and boulder/cobbles with some pools. The riparian vegetation is variable and includes trees, shrubs, ornamental landscaping and many invasive species such as Himalayan blackberry, golden willow, English Ivy and laurel hedge. This reach has issues with invasive species, channelization, conveyance, flooding, and erosion.	Property acquisitions and landowner partnerships have allowed for enhancement of creek width and vegetation composition of the riparian area. Rain gardens have improved water quality by treating road runoff prior to discharge to the creek. Removal of the concrete/rock bank and channel bottom armouring has occurred with re-sloping the creek banks and planting with native vegetation, and installation of channel complexity to improve habitat. A connected Bowker Creek Greenway provides for walking or cycling
13	Garnet Road to Knight Ave	Reach 13 is the longest reach of the creek and flows south in a pipe from Garnet Road to Knight Avenue along Shelbourne Street, a highly developed commercial and transportation corridor. This reach has conveyance issues.	A daylit and partially daylighted creek have occurred along with re-development of the area, allowing the creek to flow through urban and suburban areas of Saanich. The Shelbourne Plaza has a fully daylighted Bowker Creek through a mixed-use development providing a unique community space to linger and enjoy the creek.
14	Gordon Head Rd to Garnet Rd	Reach 14 flows west in a pipe from Gordon Head Road, just south of Mackenzie Avenue, to Garnet Road. This reach has conveyance issues.	A partially daylighted creek flows through mixed suburban developments throughout this reach. A right of way allows for a pedestrian/cycling trail adjacent to the creek. Although the creek is partially or fully retained in sections it has become a community amenity for nature viewing and greenspace.
15	University of Victoria to Gordon Head Rd	Reach 15 flows in an open channel from the headwaters at the University Club of Victoria through the University of Victoria to Gordon Head Road. The reach is comprised of a concrete pond with aeration pump, and wide wetland floodplain. The riparian vegetation includes widely spaced native deciduous and coniferous trees with a shrub understory, and invasive species such as Himalayan blackberry and English ivy. This reach has the only remaining natural floodplain in the watershed. This reach has invasive species issues.	This reach has become a valuable wetland and riparian area at the headwaters of Bowker Creek. Habitat complexity is improved in the pond by the addition of large wood and rocks. Many native species populate the area including riparian and aquatic vegetation.
16	Cedar Hill Recreation Centre to Clawthorpe Ave	Reach 16 is a main tributary to Bowker Creek. It flows in a pipe beginning immediately south of the Cedar Hill Recreation Centre, east along North Dairy Road, and southeast along Doncaster Drive	This tributary to Bowker Creek has been daylit and restored flowing along the north side of North Dairy Road along Doncaster to Clawthorpe Ave. The creek is partially retained in parts but has become an appreciated community amenity with various places to sit and observe the creek.
17	Cedar Hill Park and Golf Course	Reach 17 is a main tributary to Bowker Creek, it flows southeast, mainly in an open channel, through the Cedar Hill Golf Course and Cedar Hill Recreation Centre to Cedar Hill Road. Part of the reach is culverted under the golf course. An additional tributary originates in the stormwater management rain garden at Tolmie Place and flows into the golf course pond. The riparian vegetation includes trees with shrub understory, areas of mown grass and invasive species such as golden willow. This reach has issues with channelization, erosion, and invasive species.	Improvements to this reach allow for public interaction with the creek such as viewing, interpretive/educational signage and seating. These improvements have also increased habitat and biodiversity in the park and reduced peak flows. Educational signage assists the public in understanding the importance of this reach to the entire Bowker Creek Watershed and the many benefits of restoration.

4.3 Creek Daylighting

This blueprint as well as the Daylighting Feasibility Study present a route for daylighting most of the creek over time. Daylighting is expected to occur primarily with redevelopment or with changing priorities for land use and is primarily contingent on funding above and beyond existing municipal operating budgets. In some locations, property acquisition may be required to support daylighting.

The long-term vision is to daylight as much of the creek as possible. In 2020, the BCI completed an engineering study to define a route for daylighting so that engineering and land use can be incorporated into municipal plans. The goal is to pursue daylighting as part of infrastructure replacement along with managing creek hydrology as we face changes in rainfall due to climate change. Figure 9 provides a vision of possible daylighting where the creek can be restored to a natural creek from the Daylighting Feasibility Study (2020). In different reaches there will be varying levels of land use constraints. Large open areas that have not been developed represent the most likely potential for major restoration efforts that support climate adaptation, flood mitigation, and significantly improve the creek corridor and overall health of the watershed while providing community amenities and natural areas in a highly urbanized watershed. In a suburban context such as Garnet Road, Doncaster Drive, and Pearl Street, a linear recreational corridor where partial daylighting is integrated with greenways, low volume traffic/bike lanes and more natural landscaping could be suitable (Figure 10). In an urban context such as Shelbourne Street, Foul Bay Road, and Cadboro Bay Road, partial daylighting could be integrated into streetscaping, with a pedestrian focus and cycling is moved to street or separate greenways (Figure 11).

The following figures show potential future visions for creek sections for a naturalized creek (Figure 9), and partial daylighting (Figure 9). Suburban and urban constraints (Figures 10 and 11), potential dual use dry ponds schematics at Lansdowne Middle School South Campus (former Richmond School) and Kings Road Community Nature Green Space (2661 Richmond Road) (Figure 12), and a potential campus plan for Lansdowne Middle School South Campus (formerly Richmond School) with a Stormwater Management Facility (Figure 13).

Daylighting and Partial Daylighting



Horse Creek in Bothell Washington is a daylighted creek in an urban area.

Daylighting as much of Bowker Creek as possible and restoring it to its natural habitat is the vision for the Bowker Creek Urban Watershed Renewal Initiative.

Today, the Bowker Creek watershed is highly urbanized with buildings and roads but in the past Bowker Creek was a natural winding stream with cutthroat trout and salmon. As the area was developed much of the creek was buried in pipes and culverts and its natural landscape was changed.

Daylighting is the process of removing buried pipes and restoring surface habitat to allow the creek to flow at the surface. This ecological restoration allows the return of wildlife and people. In an urban environment such as the Bowker Creek watershed there are many constraints and Bowker Creek will not be returned to its pre-development state. It will however be charted a new course where we can encourage the return of salmon, enhance tree canopy and provide many other benefits for people and wildlife.

It may not be practical to daylight all sections of Bowker Creek and thus the concept of partially daylighting or bifurcating the creek may be utilized. This would include allowing as much of the natural creek flow as possible to a shallower “creek” or channel with the remainder of flows staying in a storm sewer. The advantage is that a partially daylighted creek is much shallower than would otherwise be with full daylighting and it could have natural or retained sides and can be suited to the surrounding area and available space.

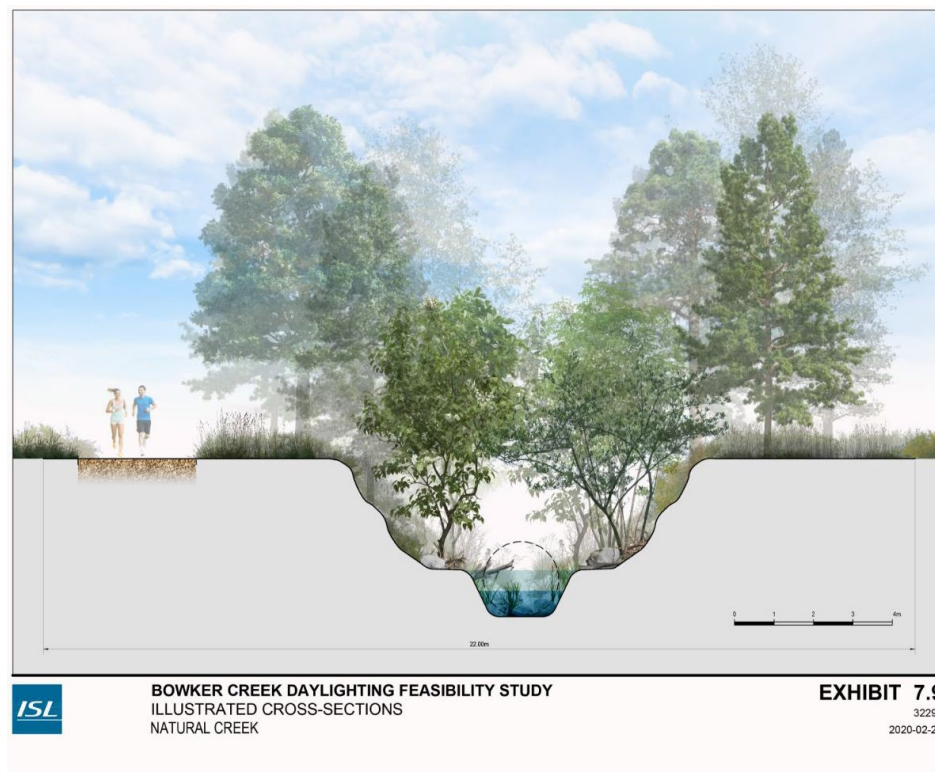


Figure 9. Natural Creek, Daylighting Feasibility Study (2020)

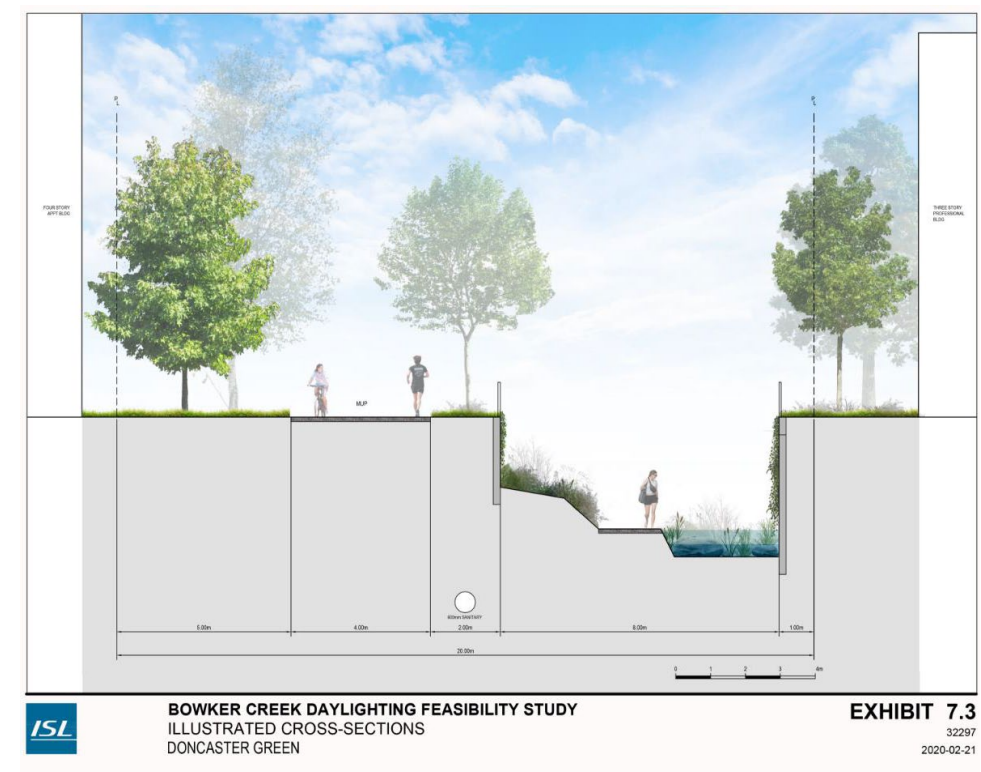


Figure 11. Suburban Context, Doncaster Green, Daylighting Feasibility Study (2020)

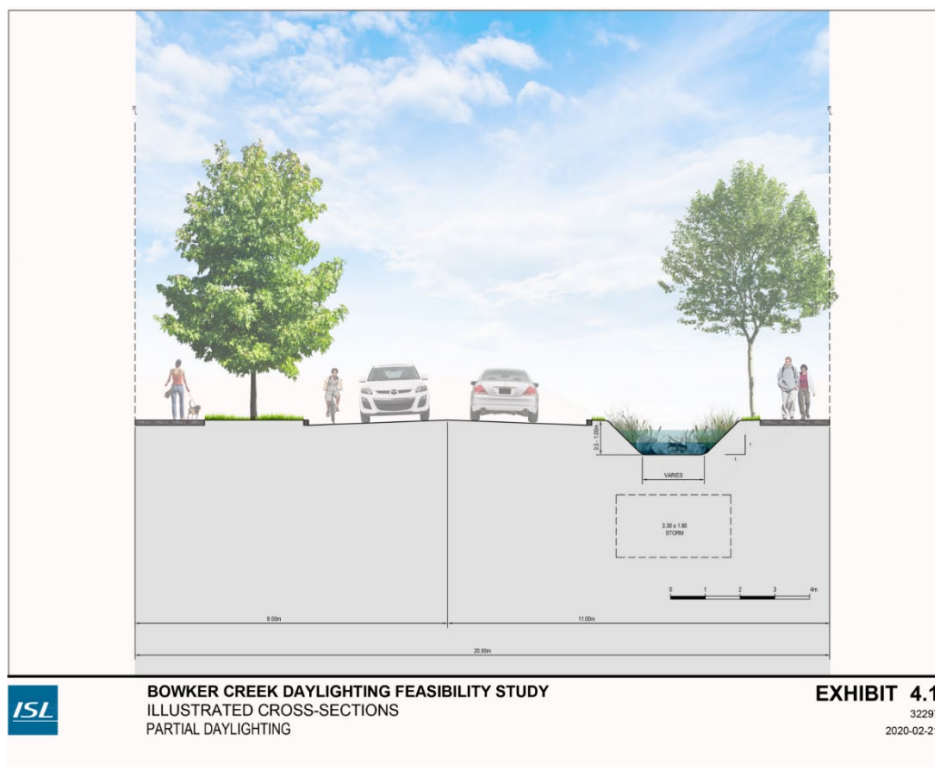


Figure 10. Partial Daylighting (dotted box showing underground pipe), Daylighting Feasibility Study (2020)

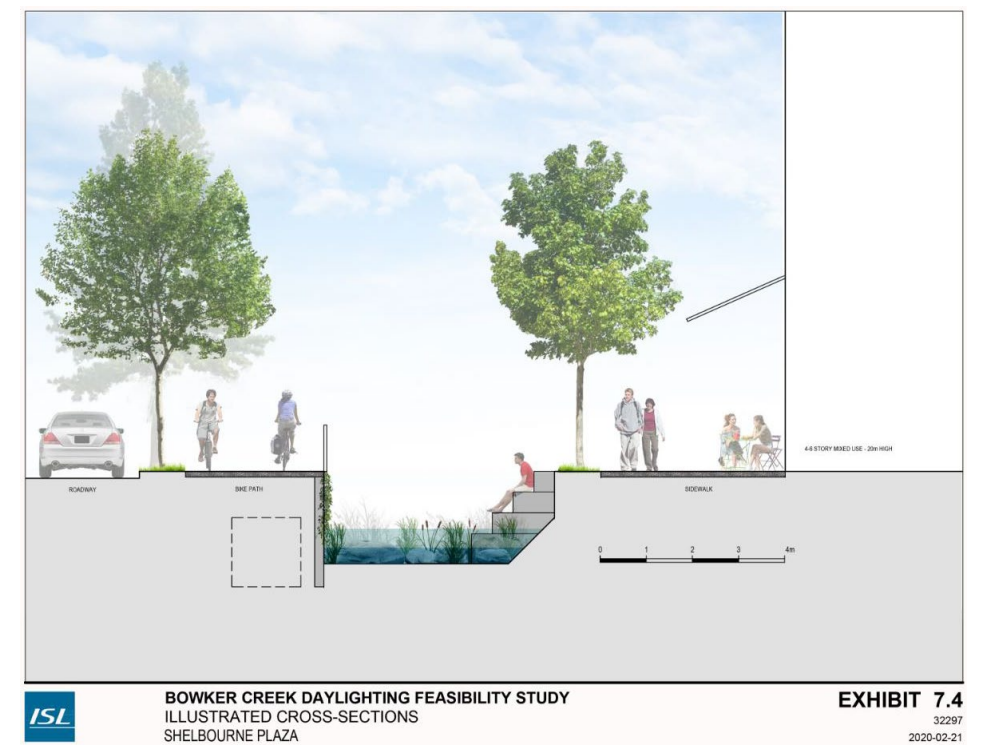


Figure 12. Urban Context, Shelbourne Plaza, (dotted box showing underground pipe), Daylighting Feasibility Study (2020)

4.4 Stormwater Management Facilities

Stormwater Management Facilities (SWMF) for detention are needed in the watershed to manage large rainfall events, mitigate downstream flooding and the impacts of climate change. Where feasible, they would also provide improved biodiversity and water quality along and in Bowker Creek, as well as improved amenity value for residents. The historic flooding areas along Bowker Creek are located downstream of Lansdowne Middle Schools, with the largest flooding area being between Haultain Street and Foul Bay Road. Urban redevelopment generally results in an increase in impervious areas, which increases the runoff, peak flows and volumes. Climate change is expected to increase the intensity of rainfall during extreme rainfall events, which will further increase peak flows and exacerbate flooding risks.

Based on the limited available large open spaces as well as potential to meet criteria, Lansdowne Middle School North Campus, Lansdown Middle School South Campus (formerly Richmond School) and Kings Road Community Nature Green Space (2661 Richmond Rd.) were investigated as potential SWMF sites as part of the Daylighting Feasibility Study. The concept for a SWMF in these areas would be to develop a space that can flood during large storm events but also provide space for the community. A low-lying area along or near the creek would be naturalized and allow for flooding/inundation during frequent storm events, i.e., 2-year storm (50% chance of occurring each year). A larger area would be developed as a “dry pond” and would flood during infrequent storm events i.e., 25-year storm (4% chance of occurring each year). This dry pond could be a park or a recreation field that still allows for community use. During infrequent storm events (25-year and 100-year), the area would be flooded for a maximum of 24 hours. This is a common practice in many cities with urban land use constraints to mitigate flooding and handle large storm events.

Figure 13 shows a potential Dual Use Dry Pond at Lansdowne Middle School South Campus and Kings Road Community Nature Green Space (2661 Richmond Rd). Figure 14 shows a potential SWMF and campus plan for Lansdowne Middle School South Campus (formerly Richmond School).

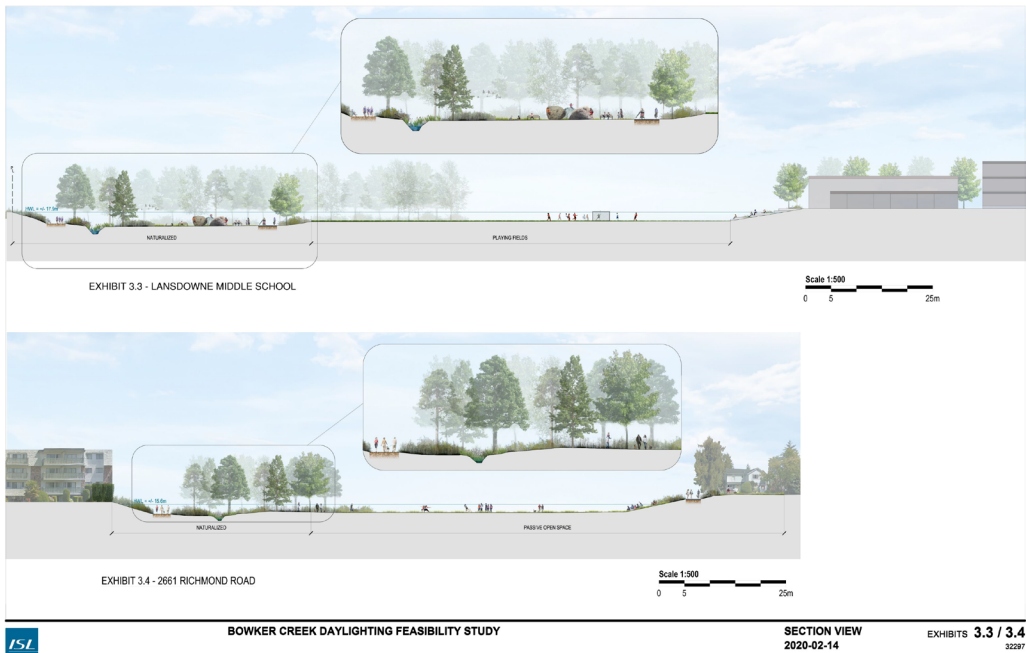


Figure 13. Dry Pond schematics for Lansdowne Middle School South Campus and Kings Road Community Nature Green Space

Stormwater Management Facility



Example of a Dual Use Dry Pond on school playing field in Edmonton AB.

A stormwater management facility (SWMF) is a system or structure designed to control the volume, rate, and quality of stormwater runoff from urban development. These facilities collect, store, treat, and/or infiltrate rainwater to reduce flooding, prevent pollution, and protect water sources. Examples include ponds, wetlands, infiltration basins, bioswales, and porous pavements. In many cases SWMF provide additional co-benefits such as improved biodiversity and improved amenity value for residents.

In dense urban areas with limited available space like the Bowker Creek Watershed, other Canadian cities are using SWMF that are dual use. For example, recreation fields can be designed to flood for short durations (24-48 hrs) during large storm events every 2-5 years. The remainder of the time the field is a dry pond that can be used for other activities. This prevents/reduces flooding of property downstream and provides resilience to our changing climate with wetter winters and more intense storms and precipitation.



Figure 14. Potential Conceptual Stormwater Management Facility at Lansdowne Middle School South Campus (formerly Richmond School).

4.5 Developing Greenways

Developing greenways along the Bowker Creek corridor is an important part of the Bowker Creek Watershed Management Plan. In 2007, a proposed greenways routing map was developed by the Bowker Creek Greenways subcommittee and was updated during the 2026 Blueprint Update and is included in this document as Map 4. The emphasis is on connectivity throughout the watershed and extension of the existing greenway at Browning Park to Oak Bay, to the Blenkinsop Greenway and Lochside Trail as well as the University of Victoria. Municipalities continue to incorporate these plans into municipal greenway plans, official community plans, local area plans, parks plans and other relevant plans. Any development or redevelopment in the watershed should be used as an opportunity to create greenways.

The proposed Greenway routing runs adjacent to the creek where possible or provides connections to the creek if not feasible. If a trail is located within 10 m of Bowker Creek, it can be assumed to be within the Streamside Protection and Enhancement Area (SPEA) under the Riparian Areas Regulation. These trails should be located as far from the high-water mark as possible. They should be narrow (1 m is optimal) and avoid the need to remove native vegetation. Surfaces should be made of porous/pervious materials when runoff has the potential to enter the creek untreated. Best Management Practices (such as sediment and erosion control, re-vegetation, planting buffers, etc.) should be used during construction to protect the riparian vegetation and the creek itself. Best Management Practices related to the Water Act and Fisheries Act, as well as possible notifications to provincial and federal governments should be used to gain approval and advice.

Greenway Corridors



A greenway is a protected, linear corridor of land used for recreation and environmental conservation, often connecting parks and communities, providing a wildlife corridor and enhancing or improving biodiversity. Greenways and greenspace make neighbourhoods more livable. As the population in the region increases and land use becomes denser, more greenspaces will be needed to support healthy communities.

Public greenways near riparian corridors serve a number of uses and benefits including activities such as walking, wildlife viewing and access to nature. Nearby access to nature improves mental health and provides convenient spaces for people to be active, which can also improve physical well-being. Multi-use trails allow for active transportation and provide a safe and accessible alternative to travel by vehicle, a key priority as communities mitigate climate change.

Establishing and restoring a greenway along Bowker Creek can also help us adapt to climate change. Incorporating trees and more pervious areas will help with rainwater management and reduce flooding downstream.

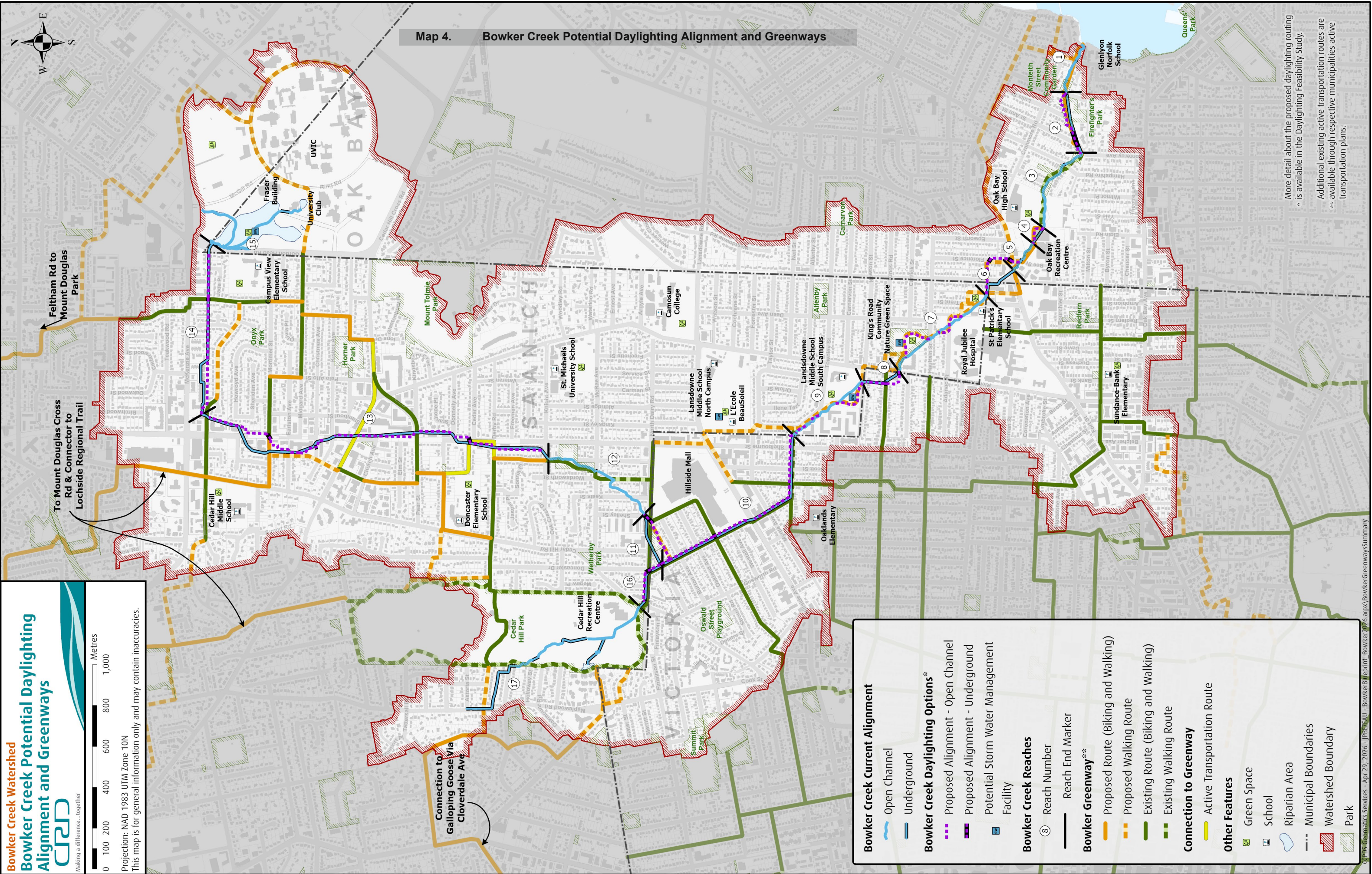
Bowker Creek Watershed
Bowker Creek Potential Daylighting
Alignment and Greenways



0 100 200 400 600 800 1,000 Metres

Projection: NAD 1983 UTM Zone 10N
This map is for general information only and may contain inaccuracies.

Map 4. Bowker Creek Potential Daylighting Alignment and Greenways



Bowker Creek Current Alignment

- Open Channel
- Underground

Bowker Creek Daylighting Options*

- Proposed Alignment - Open Channel
- Proposed Alignment - Underground
- Potential Storm Water Management Facility

Bowker Creek Reaches

- ⑧ Reach Number
- Reach End Marker

Bowker Greenway**

- Proposed Route (Biking and Walking)
- Proposed Walking Route
- Existing Route (Biking and Walking)
- Existing Walking Route

Connection to Greenway

- Active Transportation Route

Other Features

- Green Space
- School
- Riparian Area
- Municipal Boundaries
- Watershed Boundary
- Park

More detail about the proposed daylighting routing is available in the Daylighting Feasibility Study.

Additional existing active transportation routes are available through respective municipalities active transportation plans.

Key Actions for Short Term Implementation

5.1 Introduction

The 2026 Bowker Creek Blueprint Update reviewed and updated the watershed wide and creek corridor actions. Key actions were prioritized for completion in the short-term. Actions were prioritized based on alignment with municipal plans and priorities, upcoming projects, whether an action was dependent on another, and public interest. Short term is defined as within 10 years with recommendations for updates to be delivered to municipal councils by each municipality on an ongoing basis.

5.2 Key Actions for Short-term Implementation – Watershed Wide

Action No.	Action	Lead (support)
1.	Integrate Blueprint goals and actions into municipal plans, strategies and projects as they come up for review or update using common language. To support implementation of Blueprint and guide municipal staff, ensure the Bowker Blueprint goals and actions are incorporated into new plans and policies as they are being developed and into existing plans and policies as they are being updated. The wording should demonstrate how the actions address multiple priorities and align with partner goals and priorities such as climate adaptation, flood mitigation, stormwater management, green infrastructure, biodiversity, natural asset management, active transportation, urban heat effects, public health, livability, and water use. Associated Watershed Wide Action: #1	Municipalities (community groups)
2.	Identify Bowker Creek in natural asset inventories and explore options for its protection such as the development of natural asset management plans. In a changing climate, our region is expected to see greater intensity of rain events and longer summer droughts. Recognizing the importance of the ecosystem services provided by Bowker Creek, including stormwater management and biodiversity can support allocation of resources towards creek improvement activities like daylighting, and creek restoration. These improvements can reduce peak flows during rain events and increase creek base flows during the dry summer months. Where this has not already occurred, recognizing Bowker Creek as a natural asset will support multiple priorities of climate adaptation, flood mitigation, biodiversity and stormwater management. Associated Watershed Wide Action: #2	Municipalities (BCI)

Action No.	Action	Lead (support)
3.	Complete an archaeological overview assessment of the entire Bowker Creek system in partnership with involved First Nations. Bowker Creek and its watershed has cultural significance and has traditionally been a source of food and transportation. An Archaeological Overview Assessment will help to identify areas with archaeological potential along the proposed daylighting route in advance of land altering projects. The assessment will be conducted in partnership with interested First Nations. Individual projects may require additional archaeological assessment when land altering occurs. Associated Watershed Wide Action: #12	BCI (Municipalities)
4.	Develop a communication and engagement strategy to develop a culture of watershed stewardship. Implementation of many Blueprint actions are voluntary and opportunistic, which requires knowledge and commitment by interest holders. With the turnover of councils, boards, staff and volunteers, it is important to ensure key interest holders are informed and develop a culture of stewardship. The communication and engagement strategy will outline key messages and connections to climate adaptation, urban forests, biodiversity, stormwater management, flood prevention, housing, active transportation and livability for interest holders including municipal councils, partner board members, developers, landowners, and residents. Associated Watershed Wide Action: #16	BCI (community groups)
5.	Develop and implement a Strategic Land Acquisition Plan that identifies a short-list of properties for acquisition to facilitate restoring and daylighting Bowker Creek which prioritizes flood-vulnerable properties and consider incorporating properties into municipal land acquisition strategies. Create, update and/or refine land acquisition strategies to identify key properties that support the Blueprint vision as they become available or apply for redevelopment as appropriate. Consider opportunities for land acquisition to support creek restoration, greenway development and parks to make room for public pathways, creek channels, floodplains and native vegetation. Associated Watershed Wide Action: #17	Municipalities (BCI)
6.	Explore daylighting design guidelines including typical cross-sections to achieve a consistent appearance (i.e., landscaping, and signage) for a variety of urban conditions and constrains. Design guidelines are needed to provide a consistent look and feel throughout the watershed for creek daylighting. The design guidelines should include design principles and standards that will guide the character and provide clear direction for designers, planners and developers who are planning changes and evaluating site conditions, opportunities and constraints when daylighting the creek. Associated Watershed Wide Action: #20	BCI (municipalities)

Action No.	Action	Lead (support)
7.	Update stormwater modelling with updated climate change predictions to support climate resiliency and flood prevention. Modelling for the Bowker Creek Master Drainage Plan was completed in 2007. Updated modelling is required to incorporate new information such as updated climate projections and to provide a comprehensive approach to stormwater management including key pipe capacity upgrades, local site grading improvements, potential stormwater management retention or detention areas/volumes and key areas for floodplain protection. Associated Watershed Wide Action: #26	Municipalities (BCI)
8.	Maintain flow monitoring stations and data collection to inform stormwater master plan. Continuous flow monitoring at key locations provides real-time data for stormwater management in the watershed. Maintain and/or upgrade the Oak Bay flow monitoring station to continuously monitor flow volume. Consider upgrading the flow stations to measure depth and velocity, to provide an accurate stage-discharge relationship. Consider developing additional flow monitoring sites throughout Bowker Creek. Associated Watershed Wide Action: #28	CRD, Oak Bay, Saanich
9.	Explore invasive species prevention and management strategies that include target dates/budgets/plans for annual surveys and removal activities. Provide staff training to identify and map priority invasive species in the watershed, and to watch for and report new arrivals. Invasive plants grow throughout the Bowker Creek watershed and are a concern because they displace native species that provide important ecosystem functions. Significant efforts have gone into the control and removal of invasive species by municipalities and volunteer groups including Saanich's Pulling Together volunteers, Friends of Cedar Hill Park and Friends of Bowker Creek. Community efforts should continue this work and municipal focus should be directed on the monitoring and removal of priority invasive species and newly established invasive species before they colonize the watershed. Golden willow is spread throughout the watershed and partners should explore an invasive species management plan from top of creek to outlet. Associated Watershed Wide Action: #32, 33	Municipalities (community groups)
10.	Review and update short-term actions in ten years. The Blueprint actions cover varying time frames and priorities. A ten-year review of short-term actions will provide an opportunity to document accomplishments and celebrate successes, evaluate changes in context, and stay accountable to commitments and the implementation of the Blueprint.	BCI

5.3 Key Actions for Short Term Implementation at Specific Reaches

The following short-term actions apply to specific reaches of Bowker Creek.

Action No.	Action	Lead (support)
1.	Consider daylighting Bowker Creek as part of Oak Bay's new public safety building and Firefighter's Park master plan. The Daylighting Feasibility Study recommends rerouting and daylighting Bowker Creek along the north edge of Firefighter's Park. The master plan for Firefighter's Park and the Public Safety Building (if it remains at the current location) provides an opportunity to re-imagine the space and integrate a new daylight section of the creek. Associated Reach #2	Oak Bay
2.	Complete Bowker at Bee Street project impact assessment. The Bowker at Bee project aims to restore Bowker Creek, detain rainwater, and support climate adaptation, biodiversity, active transportation, and livability. Oak Bay Council directed staff to outline options for the Bowker Creek at Bee Street project based on the public engagement during the District of Oak Bay's Coolkit Program in 2022. Associated Reach #5	Oak Bay
3.	Incorporate Bowker Creek daylighting opportunities in the proposed Cadboro Bay Road / Foul Bay Road Village Plan. Redevelopment and densification are anticipated in Oak Bay to meet Provincial housing commitments. Incorporation of Bowker Creek Blueprint goals and actions into the proposed Cadboro Bay Road and Foul Bay Road Village Plan can support daylighting through redevelopment. Refer to the Daylighting Feasibility Study for potential creek alignments. Associated Reach #5, 6	Oak Bay
4.	Prepare a plan for the King's Road Community Nature Green Space (formerly BC Hydro Lands in 2010 Blueprint) that considers greenway development, creek realignment restoration and stormwater management. Long-term plans for the King's Road Community Nature Green Space are an opportunity to consider the recommendations from the Daylighting Feasibility Study (2020) for this reach. Extensive public engagement was undertaken by the District of Saanich on the park's vision, goals and management model. Work on the management model and creek restoration by staff and volunteers is ongoing. Associated Reach #7	Saanich

Action No.	Action	Lead (support)
5	Explore partnership opportunities and consider developing a master plan to restore Bowker Creek from Richmond Road to Pearl Street Reaches 7 to 9 cross municipal borders between the District of Saanich and City of Victoria and include a School District 61 property and the City of Victoria Spirit Garden. There are opportunities to create a wider and healthier creek channel and daylight underground sections to achieve the long-term vision, enhance community greenspace and improve livability through these reaches. Associated Reach #7,8,9	BCI, Saanich, Victoria, Community Groups, SD61
6.	Work in partnership to apply for grant funding to develop a feasibility study and detailed design to restore Bowker Creek on the Lansdowne Middle School South campus. The Lansdowne Middle School South campus was identified as a key area for a stormwater management facility in the Daylighting Feasibility (2020) due to its large open area and historic flooding downstream of the site. There is an opportunity to achieve many goals of the Blueprint by meandering, re-sloping and naturalizing the creek, adding a multi-use path for active transportation, and adding an outdoor classroom helping to address climate adaptation, flood prevention, stormwater management, biodiversity, water quality, livability, and access to green space goals. Associated Reach #9	BCI, SD61, Saanich, Victoria, Oak Bay, community groups
7.	Explore partnership opportunities to integrate a stormwater management facility into the Lansdowne Middle School North campus site. In the highly urbanized Bowker Creek watershed, school playing fields are some of the few open green spaces available and provide an opportunity for stormwater detention with limited impact to day-to-day use of the sites. The Conseil Scolaire Francophone de la Colombie-Britannique recently purchased 7.3 acres of land on Lansdowne North campus. The Daylighting Feasibility Study identifies this site as a potential location for a stormwater management facility. A revised stormwater management concept should be considered with the designs for the new school in partnership with SD61 and Saanich. Associated Reach #10	SD61, Saanich, Conseil Scolaire Francophone de la Colombie-Britannique
8.	Prepare a conceptual design for partial daylighting of the creek, greenway upgrades and other roadway improvements downstream of North Dairy Road. The project area will run between North Dairy Road and Hillside Avenue or Myrtle Street, following along Clawthorpe Park and Doncaster Drive. Property acquisition, right-of-way requirements and overall costs to be quantified, along with benefits of partial daylighting, such as aesthetic and water quality benefits should be assessed through the conceptual design project. Implementation (short to medium term) will occur as an integrated capital project. Associated Reach #11	Victoria

Action No.	Action	Lead (support)
9.	Explore opportunities for Bowker Creek with redevelopment of the Capital Region Housing Corporation (CRHC) development 1800 McKenzie Avenue In 2025 CRHC announced the buildings located at 1821 & 1827 McKenzie Avenue in Saanich are at the end of life and require replacement. The complex will be redeveloped as a consolidated site known as 1800 McKenzie. Bowker Creek is currently piped along the back of the property and opportunities to prepare for future daylighting can be incorporated into the site. Associated Reach #14	Saanich, CRD
10.	Work with the University of Victoria, the District of Saanich and the District of Oak Bay to maximize headwater storm storage capacity and detention for all storm events. The northwest corner of the University of Victoria was identified as a high-priority location for a stormwater management facility in the 2007 Master Drainage Plan and the 2020 Daylighting Feasibility Study, due to its relatively flat large green space, proximity to Bowker Creek and its excessive hydraulic grade line. There may be other opportunities for detention in this area including on lands owned by the District of Saanich and Oak Bay. Investigate the effectiveness, feasibility, and land availability for a stormwater management facility on or near campus as well as funding opportunities and partnerships. Associated Reach #15	BCI, UVic, Saanich, Oak Bay
11.	Develop a detailed plan for Reach 17 creek improvements through the Cedar Hill Park and Golf Course and explore funding opportunities to complete the restoration. Reach 17 has issues with erosion as well as opportunities for rainwater detention to reduce peak flows, support biodiversity and improve water quality. Development of a detailed plan and funding as outlined in the Cedar Hill Park Management Plan will outline erosion mitigation, biodiversity enhancement and public awareness initiatives. See Goal 1 Cedar Hill Park Management Plan: Move the Bowker Creek Blueprint forward. Associated Reach #17	Saanich, community groups

Conclusion

If the actions presented in the Blueprint are implemented and the Watershed Management Plan vision achieved, Bowker Creek would be restored and daylighted from its headwaters to the ocean with many ecological enhancements and restorations along the way. The established greenway along or connecting the creek would support the unique biodiversity of the south island and provide a corridor for wildlife and habitat, opportunities for connection to nature and transportation by bicycle or foot, rather than vehicle supporting both enhanced livability for residents and climate mitigation goals. Even with increased rainfall, flooding would be mitigated by a restored creek channel, green stormwater infrastructure throughout the watershed and strategic stormwater management and storage facilities. The creek would continue to be highly valued by the community who play an important role in restoration of the creek as well as ongoing tours and education. Water quality would be able to support many aquatic species including keystone species coho and chum salmon who have been re-established successfully with community hatchery efforts.

To realize the vision for the Bowker Creek watershed, ongoing collaboration and partnership is required to capitalize on re-development opportunities as well as funding methods. The Bowker Creek Initiative partners have already demonstrated their ability to do this with many accomplishments to date and an ongoing desire to engage with local and First Nations governments, community and environmental groups and other key interest holders to develop an updated plan of action with the Bowker Creek Blueprint 2026 Update.

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Photo 8. Volunteers planting native species

Creek Corridor Actions

Reach	Name	Municipality	Open	Enclosed	Length (m)
1	Monteith Street to creek mouth	District of Oak Bay	●		261
2	St. Anne Street to Monteith Street	District of Oak Bay		●	309
3	Downstream of Oak Bay Tennis Bubble to St. Ann Street	District of Oak Bay	●		469
4	Oak Bay Tennis Bubble	District of Oak Bay		●	92
5	Cadboro Bay Road to Oak Bay Recreation Centre	District of Oak Bay	●		162
6	Trent Street to Cadboro Bay Road	District of Oak Bay and City of Victoria		●	211
7	Richmond Road to Trent Street	District of Saanich	●		574
8	Newton Street to Richmond Road	City of Victoria		●	202
9	Pearl Street to Newton Street	District of Saanich	●		425
10	Clawthorpe Avenue to Pearl Street	City of Victoria		●	1,017
11	North Dairy Road to Clawthorpe Avenue	City of Victoria and District of Saanich		●	271
12	Knight Avenue to North Dairy Road	District of Saanich	●		634
13	Garnet Road to Knight Avenue	District of Saanich		●	1848
14	Gordon Head Road to Garnet Road	District of Saanich		●	885
15	University of Victoria to Gordon Head Road	District of Oak Bay and District of Saanich	●		524
16	Cedar Hill Recreation Centre to Clawthorpe Avenue	City of Victoria and District of Saanich		●	259
17	Cedar Hill Park and Golf Course (Tributary)	District of Saanich	●		1,179
	Summary	District of Oak Bay	1307	652	1958
		City of Victoria	0	1500	1500
		District of Saanich	2199	3664	5863
		TOTAL	3506	5816	9321

Reach 1: Monteith Street to Creek Mouth

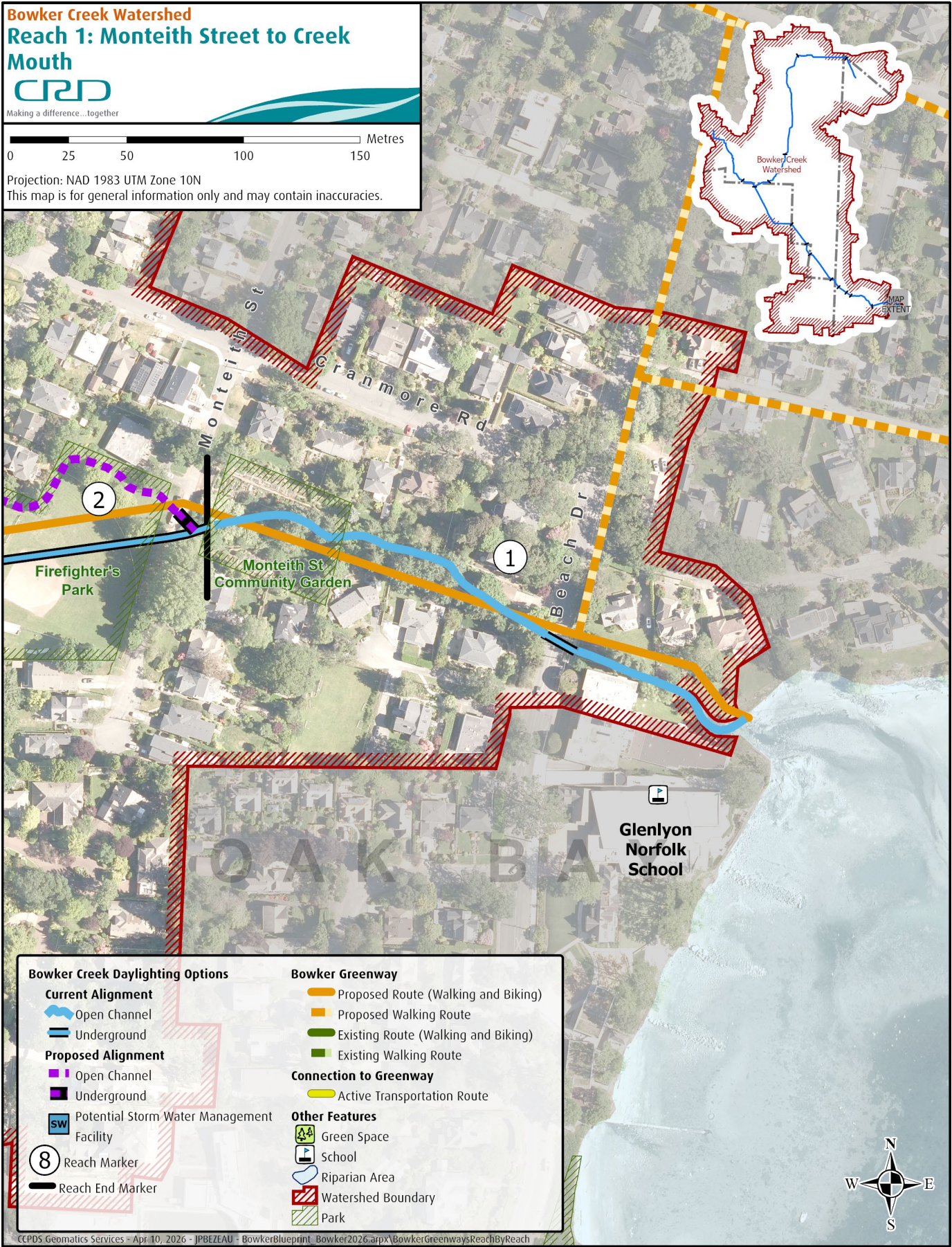


Upstream of the culvert at Beach Drive: English ivy on the concrete wall at 1762 Beach Drive, and eroding bank and english ivy at 1776 Beach Drive.



Creek mouth: Channel with concrete walls and non-native species in the riparian zone.

Reach 1 flows in an open channel east and southeast from Monteith Street along the Monteith Street Community Gardens, through private property to the ocean. The riparian vegetation includes trees, shrubs, and grass. Invasive species include english ivy, Himalayan blackberry, and golden willow. This reach has issues with invasive species, channelization, conveyance, flooding, and erosion. It has also been identified as having archaeological significance. The creek is entirely armoured below Beach Drive and has patches of armouring above Beach Drive. The uppermost section has one of the more natural creek channels in the watershed.



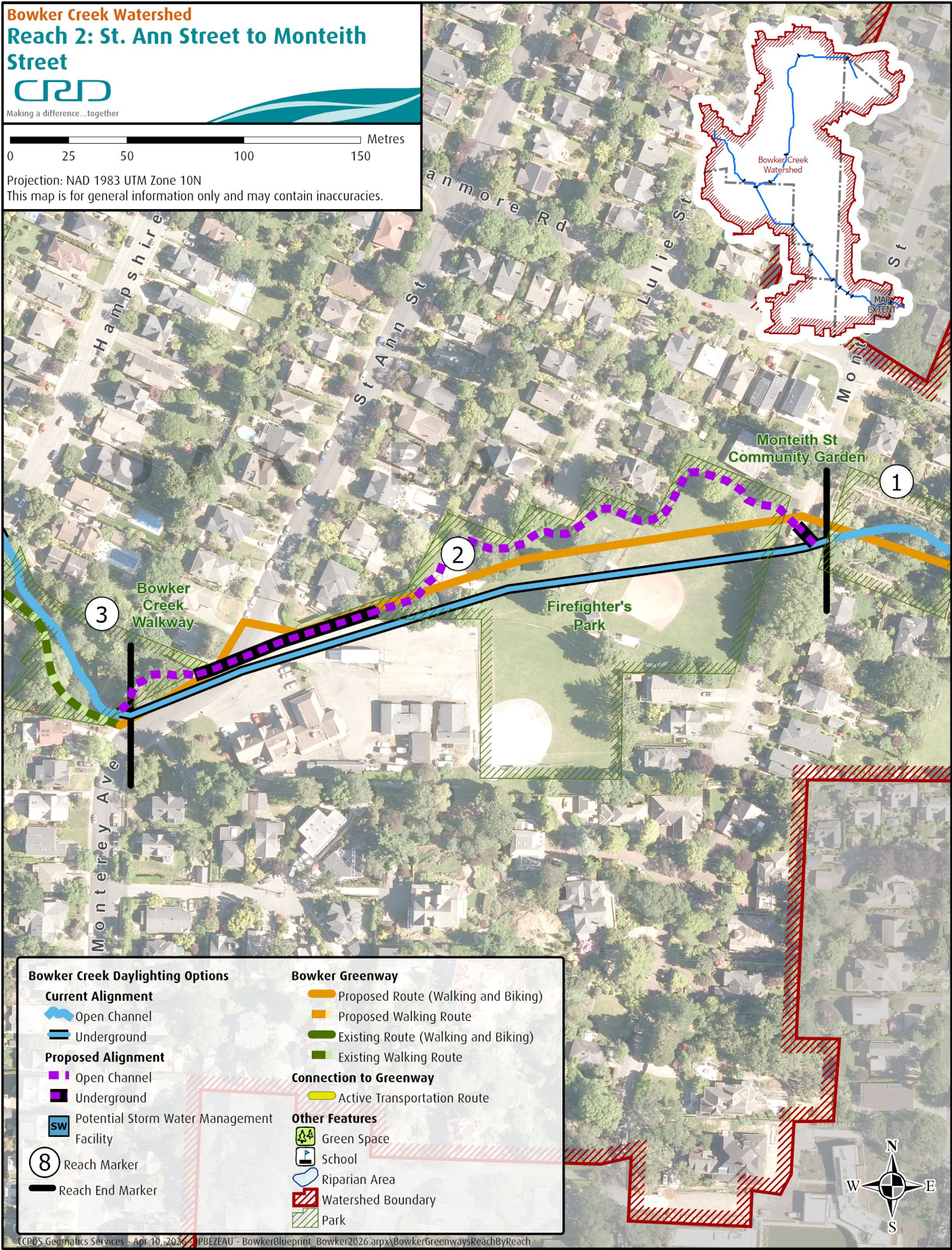
Reach 1: Monteith Street to Creek Mouth			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
1-1	Monteith Street to creek mouth	Explore opportunities to educate, support and partner with private landowners to restore and/or acquire portions of the creek within private property. Address barriers to fish spawning beds/habitat for chum. See the Bowker Creek Restoration Needs and Prescriptions (2023) for more details on specific restoration recommendations.	Oak Bay, CRD, BCI, community groups
1-2	Monteith Street to creek mouth	Remove invasive species from Monteith community gardens and private properties (ongoing). Monitor for policeman's helmet and knotweed. See Bowker Creek Restoration Needs and Prescriptions (2023) for more details on invasive species.	Oak Bay, community groups
1-3	Monteith Street to creek mouth	In the long-term, remove armouring, re-slope the banks and restore the channel in partnership with landowners or through re-development. Consider sea level rise in design.	Oak Bay, CRD, BCI, community groups
1-4	Monteith Street to creek mouth	Develop and implement a greenway strategy for this reach following land acquisition along the creek. If possible, develop a pedestrian walkway adjacent to the creek with a cycling route on Cranmore Road.	Oak Bay, CRD
1-5	Monteith Street to creek mouth	Review hydraulics for sea level rise due to climate change. This could be completed as part of the proposed stormwater master planning. See Capital Region Coastal Flood Inundation Mapping Project Summary Version, November 2021.	Oak Bay, CRD
1-6	Beach Drive culvert	Existing Beach Drive culvert presents a barrier for fish passage, is undersized for existing conditions and will be further impacted by larger rainfall events with climate change. Replace the culvert with either a bridge (preferred) or a larger culvert that will accommodate a natural bottom. The design should consider sea level rise and enable fish passage. Maintain existing upstream channel dimensions under roadway and eliminate fish barrier.	Oak Bay
1-7	Mouth / Estuary	Restore the riparian area of the estuary. Develop restoration plans and monitoring program, including enhancement of eelgrass beds and marsh habitat. Explore options for regulating moorage as well as a voluntary "No Anchor Zone" in the sensitive estuary mudflats.	Oak Bay, CRD, community groups

Reach 2: St. Ann Street to Monteith Street (Firefighters Park)



Firefighter’s Park from the top of Reach 1 at Monteith Street (view west / upstream)

Reach 2 flows eastward from St. Ann Street through a pipe under Firefighter’s Park to Monteith Street. This reach has capacity and flooding issues.



Reach 2: St. Ann Street to Monteith Street (Firefighters Park)			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
2-1	Firefighter's Park	Create a master plan for a new public safety building and Firefighter's Park that includes daylighting/partial daylighting and creation of fish habitat as well as a greenway. Refer to the Daylighting Feasibility Study (2020) for proposed alignment. Repurpose / reconfigure the parking areas. Consider the hydraulic limitations of the existing storm trunk to accommodate extreme storm events and associated potential for upstream flooding during the design phase. Refer to the Stormwater Master Plan if available. The existing storm trunk beneath Firefighter's Park should remain in place to act as an overflow during large storm events. Ensure the municipal facilities vehicle wash is connected to sanitary.	Oak Bay
2-2	Firefighter's Park	Explore an exemption to the 30 meter watercourse development protection area (DPA) for existing properties adjacent to the proposed creek daylighting.	Oak Bay
2-3	Firefighter's Park	When designing the culvert across Monterey Avenue / St. Anne Street (to facilitate daylighting) consider utilizing unused park space immediately west of Monteith. Planners and designers should also consider Firefighter's Park design during concept planning of the new public safety building and possible post-disaster design standards for culverts and/or bridges.	Oak Bay
2-4	Firefighter's Park	Investigate design options for Firefighter's Park, with daylighting, to protect existing homes and minimize erosion of the existing creek. This could be included in the proposed Bowker Creek Stormwater Master Plan.	CRD, Oak Bay
2-5	Firefighter's Park	If daylighting Bowker Creek at Firefighter's Park is more than 10 years away, then the park should be re-contoured to direct overland flood waters away from vulnerable properties adjacent to Monterey Avenue and Monteith Street.	Oak Bay

Reach 3: Downstream of Oak Bay Tennis Bubble to Monterey Avenue / St. Ann Street

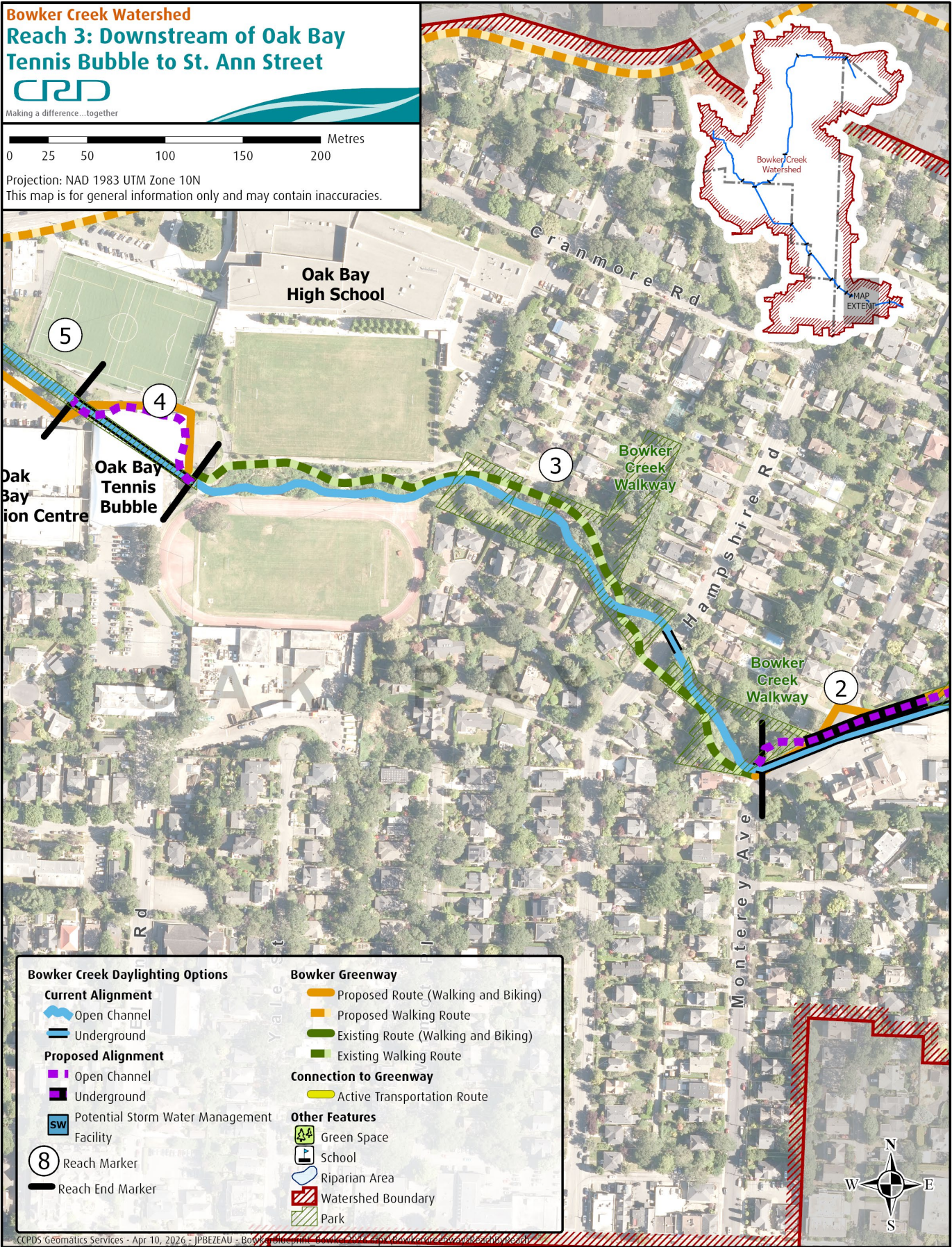


Concrete channel and new riparian plantings by the District of Oak Bay and Friends of Bowker Creek Society.



Restored channel and north bank at Oak Bay High School. Primarily native vegetation with some reed canary grass along the channel. Constructed willow bench against south wall adjacent to the running track.

Reach 3 flows east in an open armoured channel through Oak Bay High School and southeast through Bowker Creek Park to St. Ann Street. From 2015-2017, the north bank and channel through Oak Bay High School was reconstructed to increase sinuosity, create a gentler slope and was planted with native riparian vegetation. Through Bowker Creek Park, there is grass with isolated pockets of landscaped native and non-native trees and shrubs. This reach has issues with turbidity, invasive species, channelization, capacity, and flooding.



Reach 3: Downstream of Oak Bay Tennis Bubble to Monterey Avenue / St. Ann Street

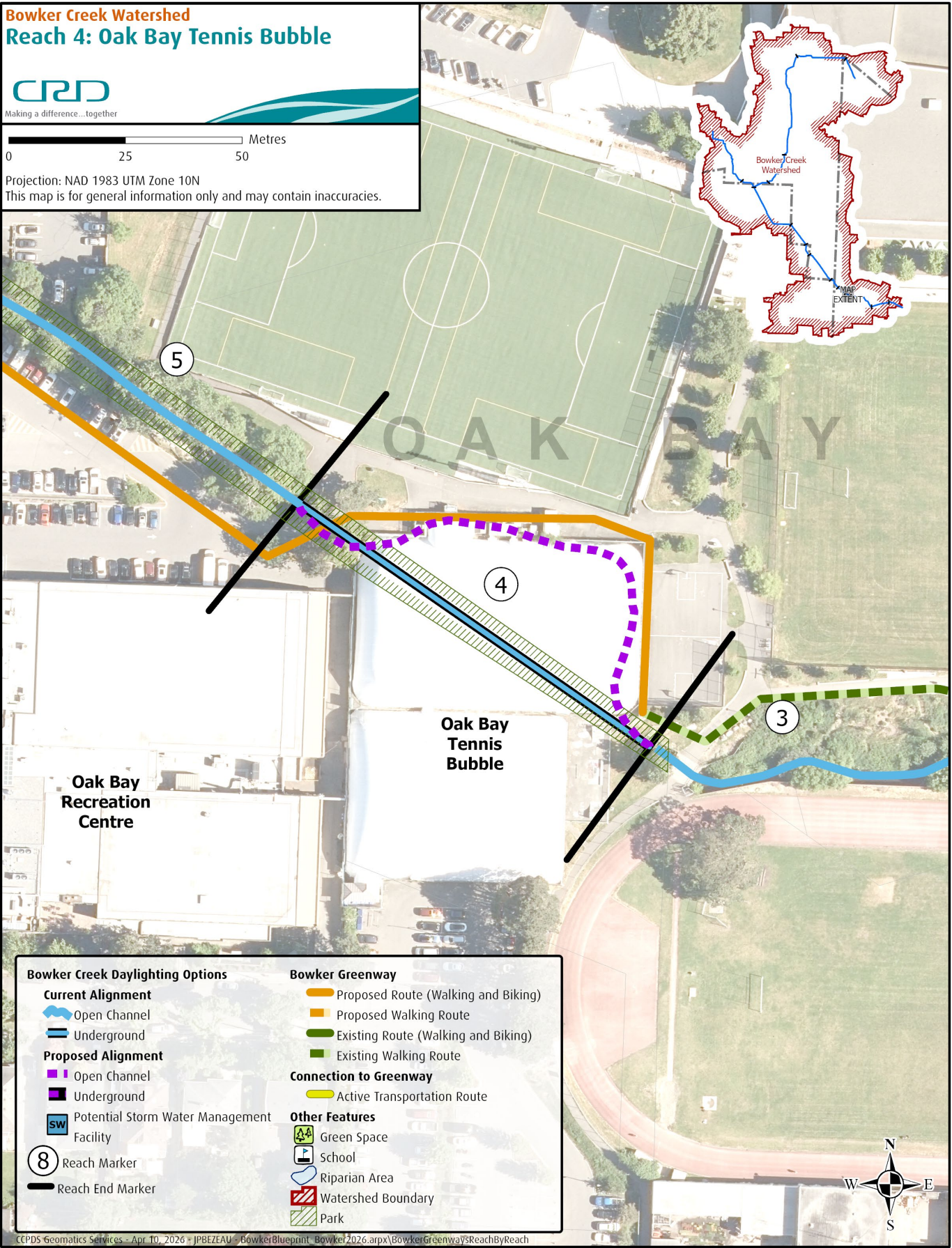
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
3-1	Oak Bay High School to Monterey Avenue	Engage, educate and partner with property owners, School District 61, Oak Bay Track Club and other interest holders on the Bowker Creek Blueprint, creek health, restoration opportunities and the Riparian Areas Protection Regulation. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for more detail.	BCI, School District 61, community groups
3-2	Oak Bay High School to Monterey Avenue	Continue to remove invasive species, plant native riparian species, widen the riparian zone and improve channel habitat and complexity. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further detail.	Oak Bay, community groups
3-3	Downstream of Tennis Bubble to Oak Bay High School	Address discharges of turbid water from the Public Works Yard.	Oak Bay
3-4	Downstream of Tennis Bubble to Oak Bay High School	Partner with the Oak Bay Track Club to plant trees and shrubs at the top of the vertical wall along the running track to provide critical shade to the creek and track users.	Oak Bay, community groups
3-5	Downstream of Tennis Bubble to Oak Bay High School	Consider long-term redevelopment of the running track which could allow restoration of the south bank of Bowker Creek. The planned 2024 track upgrade focuses on track resurfacing and does not represent an opportunity to expand the creek. The current track is constrained by the Oak Bay Parks Services / Oak Bay Public Works buildings on the south side and only has a 2-3 meter buffer on the north side between the track and retaining wall. This action should be coordinated with the long-term replacement of the Parks Services / Public Works buildings.	Oak Bay, School District 61
3-6	Oak Bay High School to Monterey Avenue	Install sensors to observe the differences in water temperatures from upstream piped reaches compared to the areas with reduced riparian cover. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for more detail.	Oak Bay, CRD
3-7	Oak Bay High School to Monterey Avenue	Prepare a concept plan for Bowker Creek Park between Oak Bay High School and Monterey Avenue to remove armouring, restore the natural channel by re-sloping banks and planting native riparian vegetation. Determine the need and priorities for pedestrian bridge rehabilitation or replacement. Determine the optimal long-term greenway, including whether cycling should be encouraged through a paved pathway or diverted to Cranmore Road.	Oak Bay
3-8	Hampshire Road culvert	The existing Hampshire Road culvert is undersized for existing conditions and will be further impacted by larger rainfall events with climate change. Replace the culvert with either a bridge (preferred) or larger culvert that will accommodate a natural bottom. The design should enable fish passage.	Oak Bay
3-9	Oak Bay High School to Monterey Avenue	During replacement of existing post-and-chain fencing, consider moving fence away from edge of stone wall in locations to improve safety and provide for more riparian plantings.	Oak Bay

Reach 4: Oak Bay Tennis Bubble



Bowker creek emerging from under the tennis bubble

Reach 4 flows southeast in a pipe beneath the Oak Bay tennis bubble. This reach has capacity and flooding issues.



Reach 4: Oak Bay Tennis Bubble			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
4-1	Oak Bay tennis bubble	Explore opportunities to daylight the creek when rehabilitation or redevelopment is needed for the tennis bubble, the piped section of Bowker Creek beneath the tennis bubble or Oak Bay Recreation Centre. Redevelop the Oak Bay Recreation Centre site with much higher density to allow for creek daylighting and improve the channel geometry and sinuosity to create natural conditions and a riparian buffer to improve stormwater management, reduce flooding risk and help adapt to climate change. The naturalized creek and creation of a greenway can be incorporated as a recreational amenity as part of the new recreation centre site increasing the access to green space, increasing livability and connectivity of the area. Refer to the Daylighting Feasibility Study (2020) for more detail.	Oak Bay
4-2	Oak Bay tennis bubble	Develop wayfinding signage for a greenway (walkway) around tennis bubble.	Oak Bay
4-3	Oak Bay tennis bubble	The existing piped section under the tennis bubble is undersized for existing conditions and will be further impacted by larger rainfall events with climate change. If daylighting is not feasible in the short to medium term, upgrade the hydraulic capacity of this reach. Consider constructing the hydraulic upgrade when the tennis bubble is being rehabilitated. Consider oversizing the upgrade to accommodate light penetration for fish passage.	Oak Bay

Reach 5: Cadboro Bay Road to Oak Bay Recreation Centre

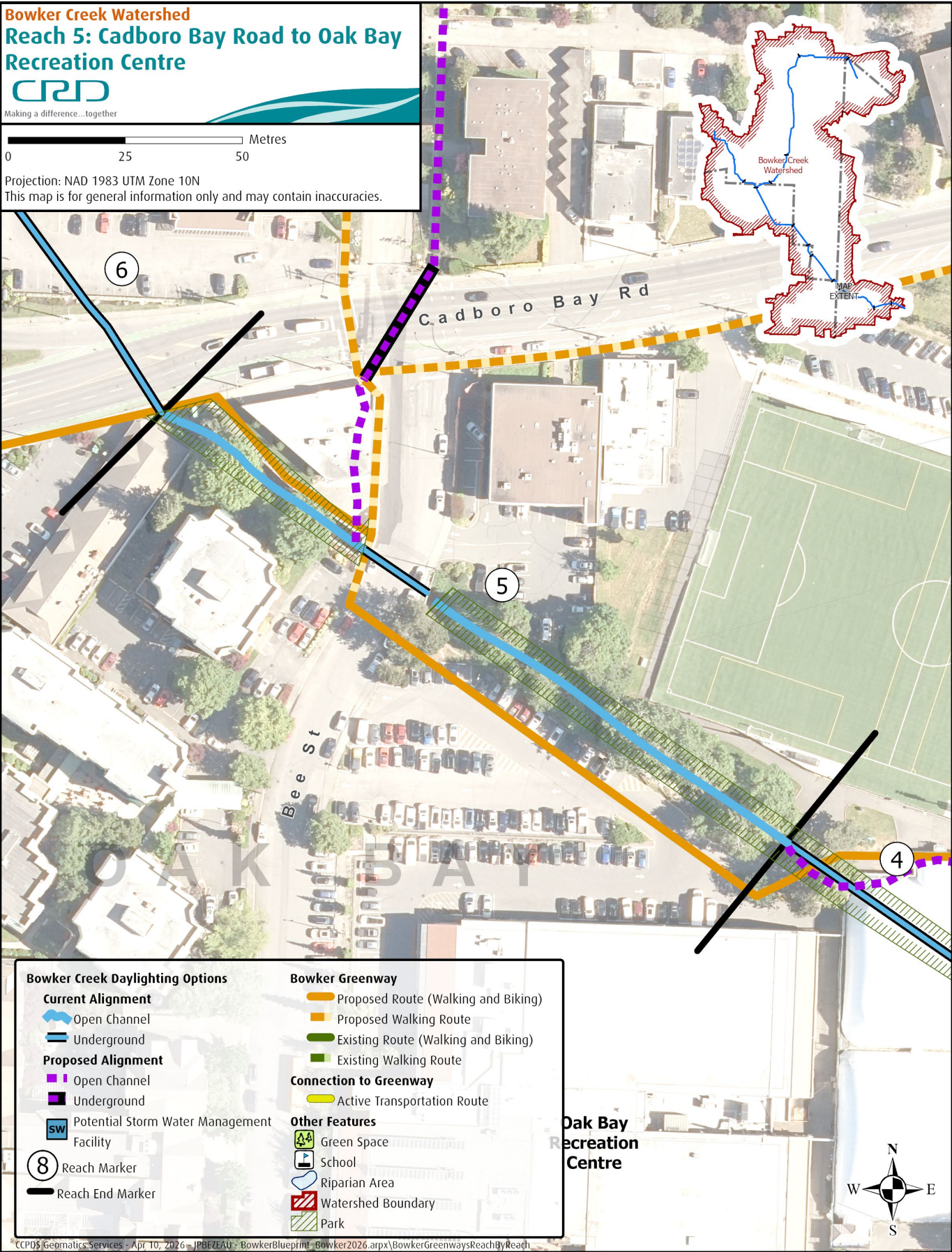


Upstream end of the reach at Bee Street: Vegetation is dominated by Himalayan blackberry in winter flows.



Vertical masonry walls and small incomplete weir with limited substrate complexity. Sword fern is growing from wall cracks.

Reach 5 flows in an open entrenched channel from Cadboro Bay Road southeast to the Oak Bay Recreation Centre where it enters a pipe under the Oak Bay Tennis Bubble. Riprap erosion protection was recently put in adjacent to the Oak Bay Recreation Centre. Between Bee Street and Foul Bay Road, the channel is in concrete and mortared rock with an adjacent walkway. The riparian vegetation at this reach includes trees, such as big leaf maple and cottonwood, blackberry, and an armoured section with no vegetation. This reach has issues with invasive species, channelization, capacity, flooding, and erosion.



Reach 5: Cadboro Bay Road to Oak Bay Recreation Centre

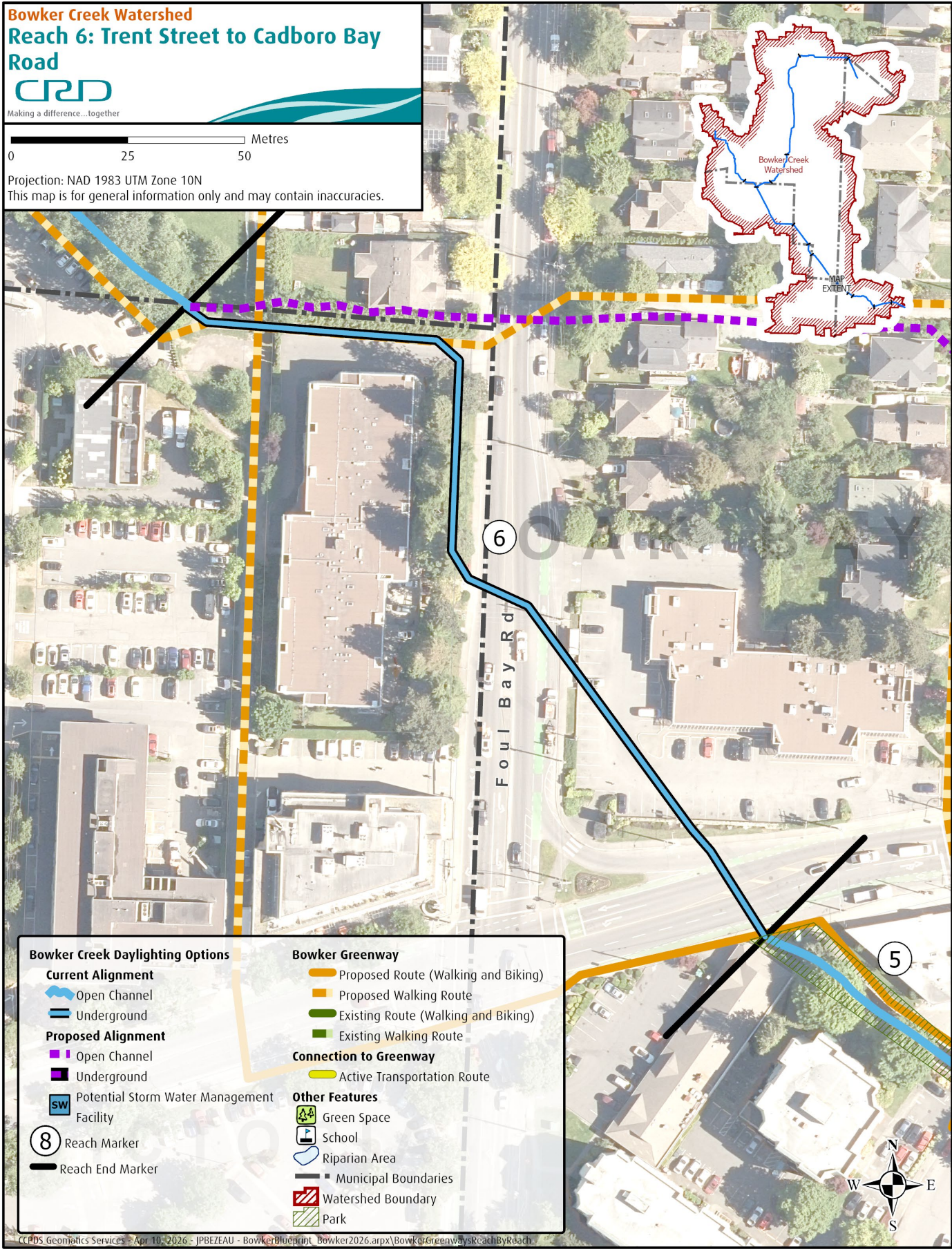
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
5-1	Cadboro Bay Road to Oak Bay Recreation Centre	Engage, educate and partner with commercial businesses and property owners on the Bowker Creek Blueprint, creek health, spread of invasive species, restoration and stormwater management opportunities, and the Riparian Areas Protection Regulation. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further detail.	Oak Bay, community groups, BCI
5-2	Cadboro Bay Road to Bee Street	Incorporate the restoration and daylighting of Bowker Creek in development of the Village Area Plan for the Cadboro Bay / Foul Bay area. Include acquiring land adjacent to the existing creek and key parcels to allow for a wider, natural creek and to facilitate creek daylighting.	Oak Bay
5-3	Cadboro Bay Road to Bee Street	In the short to medium term, increase trees and shrubby vegetation at the top of the bank for shading, install baffles/boulders for in-channel complexity to create a low flow channel and to allow more vegetation to establish between the concrete walls, and check for aquatic invasive species to prevent downstream spread. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for details.	Oak Bay
5-4	Cadboro Bay Road to Bee Street	Integrate plans from the Daylighting Feasibility Study (2020) to develop the greenway along Bee Street to Cadboro Bay Road / Florence Street. This alignment is better suited for cycling and should connect to Florence Street, reservicing the narrow path adjacent to the creek for pedestrians.	Oak Bay
5-5	Bee Street	The existing Bee Street culvert is undersized for existing conditions and will be further impacted by larger rainfall events with climate change. Replace the culvert with either a bridge (preferred) or larger culvert that will accommodate a natural bottom. The options will be further informed with the proposed modeling in the stormwater master plan.	Oak Bay
5-6	Bee Street to Oak Bay Recreation Centre	Remove invasive vegetation, particularly high priority invasive species.	Oak Bay, community groups
5-7	Bee Street to Oak Bay Recreation Centre	Maintain the flow meter at the bottom of the reach for monitoring water temperatures and flooding.	Oak Bay, CRD
5-8	Bee Street to Oak Bay Recreation Centre	To achieve Oak Bay Council direction to staff (January 16, 2023), complete the Bowker Creek at Bee Street Project Impact Analysis in concert with conceptual designs.	Oak Bay
5-9	Bee Street to Oak Bay Recreation Centre	Explore grant opportunities and complete conceptual designs for the Bowker Creek at Bee Street Project, which includes reconfiguring the Oak Bay Recreation Centre parking lot to allow reconstruction of the channel, re-sloping the banks, planting native riparian vegetation, installing a rain garden to treat parking lot runoff, and improving the pedestrian connection to Oak Bay High School and the Bowker Creek Walkway Park. The restoration could be completed in tandem with the redevelopment of the Oak Bay Recreation Centre site and tennis bubble.	Oak Bay, BCI, community groups

Reach 6: Trent Street to Cadboro Bay Road



Existing walkway west of Foul Bay Road along Bowker Creek piped section.

Reach 6 flows east in a pipe from Trent Street, south along Foul Bay Road, and southeast to Cadboro Bay Road. This reach has capacity issues.

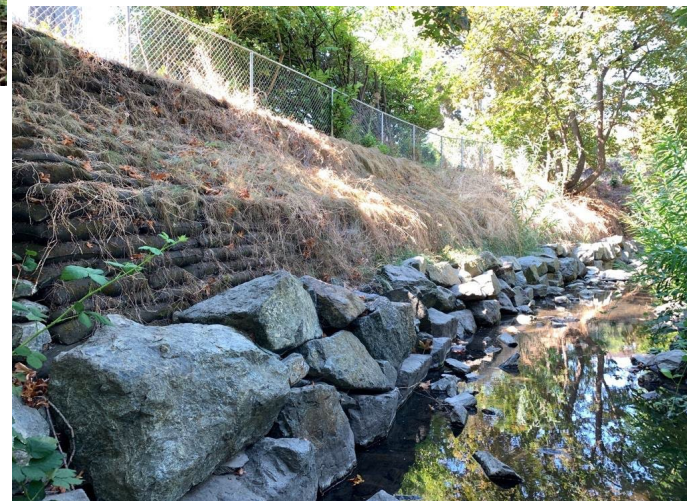


Reach 6: Trent Street to Cadboro Bay Road			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
6-1	Trent Street to Cadboro Bay Road / Bee Street	Daylight creek from east of Trent Street to Bee Street via Florence Street or Foul Bay Road when land acquisition is in place, creating fish habitat and passage. Consider using the existing piped section as a high flow bypass for large storm events. Refer to the Daylighting Feasibility Study (2020) for more detail.	Oak Bay
6-2	Trent Street to Cadboro Bay Road / Bee Street	Flooding at Trent Street (Saanich) is anticipated due to inadequate pipe capacity (primarily in Oak Bay), increasing surface water runoff, stream discharge upstream and increased intensity of rain events. Assess the capacity constraint of the existing pipe from Trent Street to Cadboro Bay Road using the proposed stormwater master plan if available. Conceptual design for hydraulic upgrading options should be carried out as needed. Solutions may include twinning the existing pipe or daylighting the creek.	Oak Bay
6-3	Foul Bay Road to Cadboro Bay Road / Bee Street	Incorporate Bowker Creek Blueprint goals and actions into the Village Area Plan for the Cadboro Bay Road / Foul Bay Road area and into planning for the Jubilee Village Area.	Oak Bay, Victoria
6-4	Foul Bay Road to Cadboro Bay Road / Bee Street	Based on redevelopment opportunities, acquire land along Foul Bay Road or Florence Street and the east-west lane north of Cadboro Bay Road. Refer to the Daylighting Feasibility Study (2020) for daylighting alignments. Consider likely assembly of low density residential and commercial lots to facilitate daylighting of specific reaches (connecting back to existing pipe as needed).	Oak Bay
6-5	Foul Bay Road to Cadboro Bay Road / Bee Street	Develop daylighting concepts along the preferred and alternate alignments, including schematic cross-sections and rendered images. Use these concepts to work with developers and residents to promote daylighting of this reach.	Oak Bay

Reach 7: Richmond Road to Trent Street

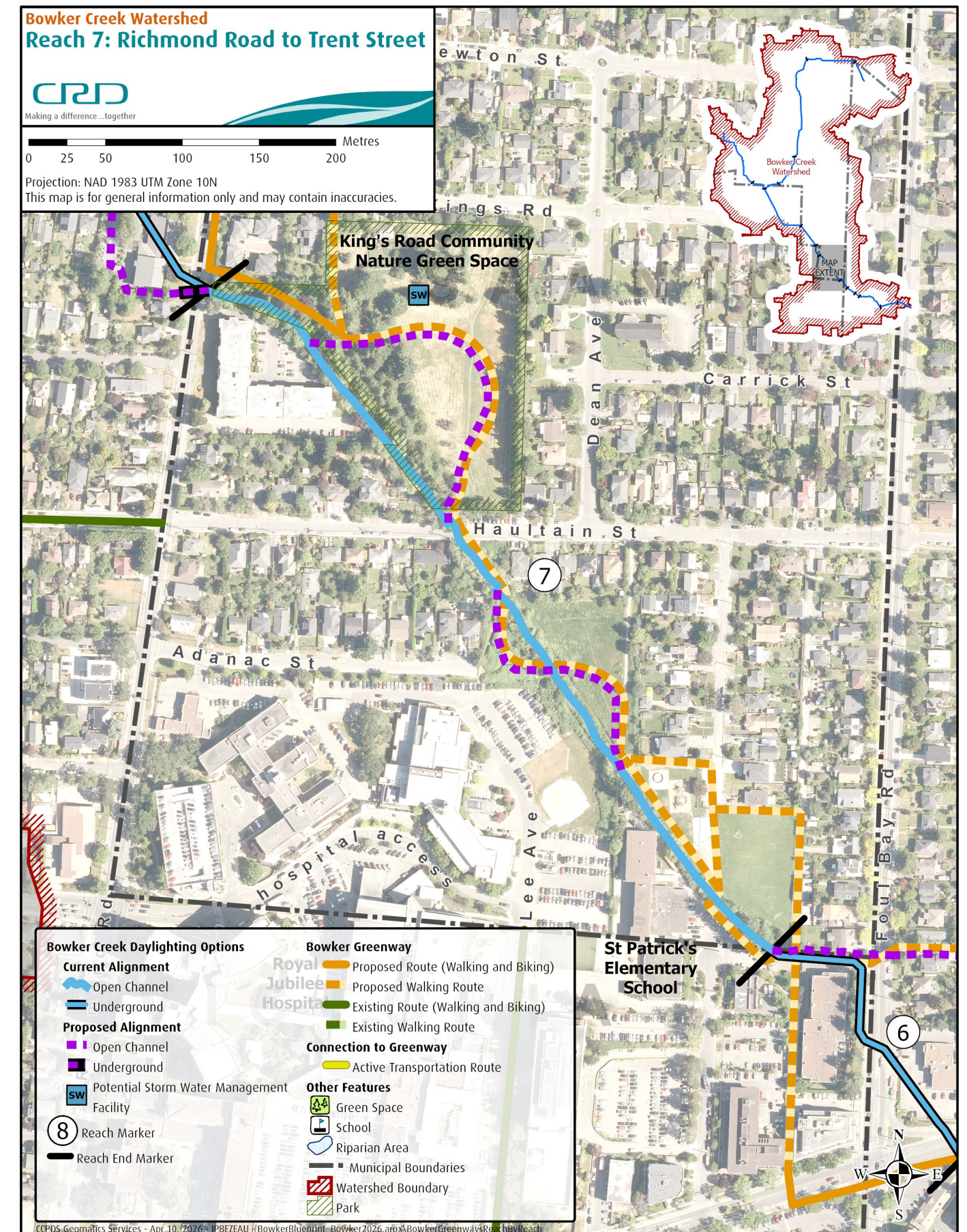


Golden willow in the channel and Himalayan blackberry, upstream of the footbridge



Riprap and MSE bags (with grass) erosion protection

Reach 7 flows in an open entrenched channel with no floodplain access southeast through King's Road Community Nature Greenspace, the Royal Jubilee Hospital and St. Patrick's school. The channel substrate is a mixture of gravel, sand, cobble and silt. The riparian vegetation includes deciduous and coniferous trees, grass, Himalayan blackberry, golden willow and native shrubs. This reach has issues with invasive species, channelization, conveyance, flooding, and erosion.



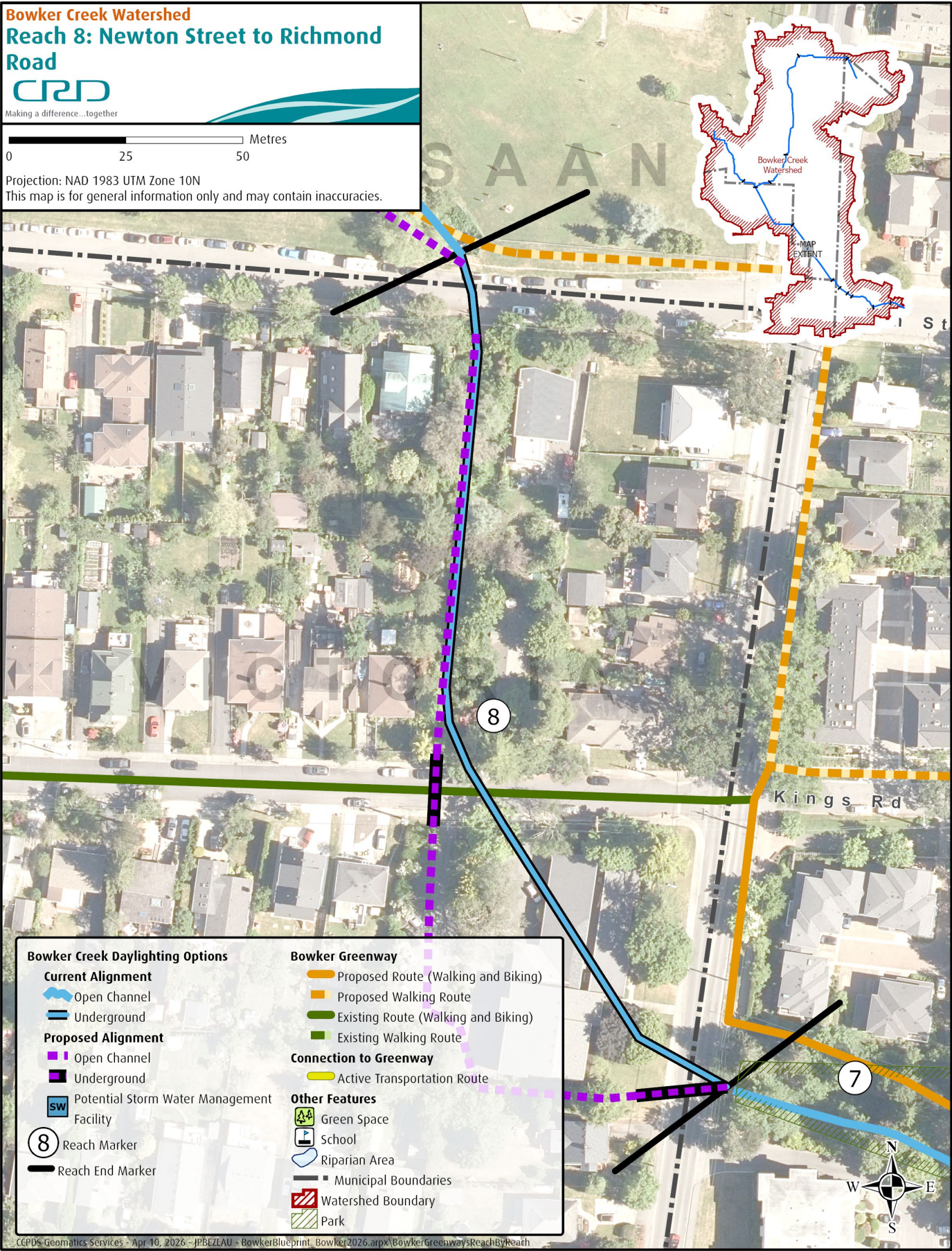
Reach 7: Richmond Road to Trent Street			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
7-1	Richmond Road to Trent Street	Engage, educate and partner with landowners and institutional property owners (i.e. St. Patrick's School Board, Royal Jubilee Hospital (Island Health) Board and Bishop of Victoria) on the Bowker Creek Blueprint, creek health, restoration opportunities, yard and garden waste storage, spread of invasive species, stormwater management opportunities and the Riparian Areas Protection Regulation. Refer to the Bowker Creek Restoration Needs and Prescription (2023) for further detail.	Saanich, Victoria, BCI, community groups
7-2	Richmond Road to Trent Street	Explore partnership opportunities between Bowker Creek Initiative, District of Saanich, City of Victoria, School District 61, Saint Patrick's School and Island Health, and consider developing a master plan to restore Bowker Creek from Richmond to Pearl Street (i.e. Reaches 7, 8 and 9).	Victoria, Saanich, School District 61, Royal Jubilee Hospital (Island Health), St. Patrick's School
7-3	Richmond Road to Haultain Street	Prepare a master plan for the King's Road Community Nature Green Space (formerly BC Hydro Lands in 2010 Blueprint) that considers greenway development, creek realignment restoration and stormwater management. Refer to the daylighting feasibility study and supplemental memo)	Saanich
7-4	Richmond Road to Haultain Street	Remove invasive species, develop erosion protection with bioengineering, and relocate the trail away from the stream. See the Bowker Creek Restoration Needs and Prescriptions (2023) for more details on specific restoration recommendations. Incorporate trail relocation into the Kings Road Community Nature Green Space plan development.	Saanich, community groups
7-5	Haultain Street to Trent Street	Develop a greenway from Haultain Street to Trent Street in stages based on available land. Stages should connect to existing roadways or pathways, the Royal Jubilee Hospital and BC Cancer Agency. Provide a pedestrian granular walkway adjacent to riparian area and a permeable paved cycling path if adequate space is available.	Saanich
7-6	Haultain Street	Existing Haultain Street culvert is undersized for existing conditions and will be further impacted by larger rainfall events with climate change. Replace the culvert with either a bridge (preferred) or larger culvert that will accommodate a natural bottom. Maintain existing channel dimensions under roadway.	Saanich
7-7	Haultain Street to Trent Street	When restoring and/or realigning the creek, restore appropriate channel morphology, sinuosity and complexity, and provide a well-developed floodplain. Where possible, provide a minimum of 15 meters planted riparian zone on each side (which would meet the Riparian Areas Regulation intent). Restoration works should include interpretive signage and education opportunities.	Saanich
7-8	Haultain Street to Trent Street	Acquire properties at the end of Adanac Street for creek restoration, greenway development and potential stormwater storage. Assess the effectiveness of this site for stormwater attenuation and determine how it may function with the potential storage facility in the King St. Community Nature Green Space as part of the Integrated Stormwater Master Plan (ISMP). If stormwater storage is not economically viable at this location, the remnant of this lot could be sold after creek re-alignment / restoration and greenway development.	Saanich
7-9	Haultain Street to Trent Street	Acquire one of the lots on the south side of Haultain Street adjacent to the creek to provide space for a wider creek cross-section and a greenway.	Saanich
7-10	Trent Street	As homes on Trent Street near the creek are redeveloped, they should be constructed at a higher elevation to minimize their flooding risk. Consider flood construction levels.	Saanich

Reach 8: Newton Street to Richmond Road



View into culvert from Reach 7 at Richmond Road

Reach 8 flows south in a pipe from Newton Street to Kings Road under the Spirit Garden right-of-way, and then southeast to Richmond Street in a large box culvert. This reach has capacity issues.



Reach 8: Newton Street to Richmond Road			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
8-1	Newton Street to Richmond Road	Explore potential property acquisition for lots on Richmond Road, Kings Road and/or Carrick Street that could be assembled for park improvements and daylighting the creek.	Victoria, Saanich
8-2	Newton Street to Richmond Road	Explore greenway routing for Spirit Garden and Richmond Road / Newton Street (walkway through Spirit Garden with cycling path on Richmond Road / Newton Street).	Victoria
8-3	Newton Street to Richmond Road	Assess the need to upgrade hydraulic capacity through City of Victoria stormwater master planning and/or the proposed Bowker Creek stormwater master plan.	Victoria
8-4	Newton Street to King's Road	Investigate opportunities to daylight Bowker Creek between Newton Street and Richmond Road. Refer to the Daylighting Feasibility Study (2020).	Victoria, Saanich
8-5	Richmond Road to Pearl Street	Explore partnership opportunities and consider developing a master plan to restore Bowker Creek from Richmond Road to Pearl Street (i.e. Reaches 7, 8 and 9).	Victoria, Saanich, School District 61/ Lansdowne South Middle School, Royal Jubilee Hospital, St. Patrick's School

Reach 9: Pearl Street to Newton Street

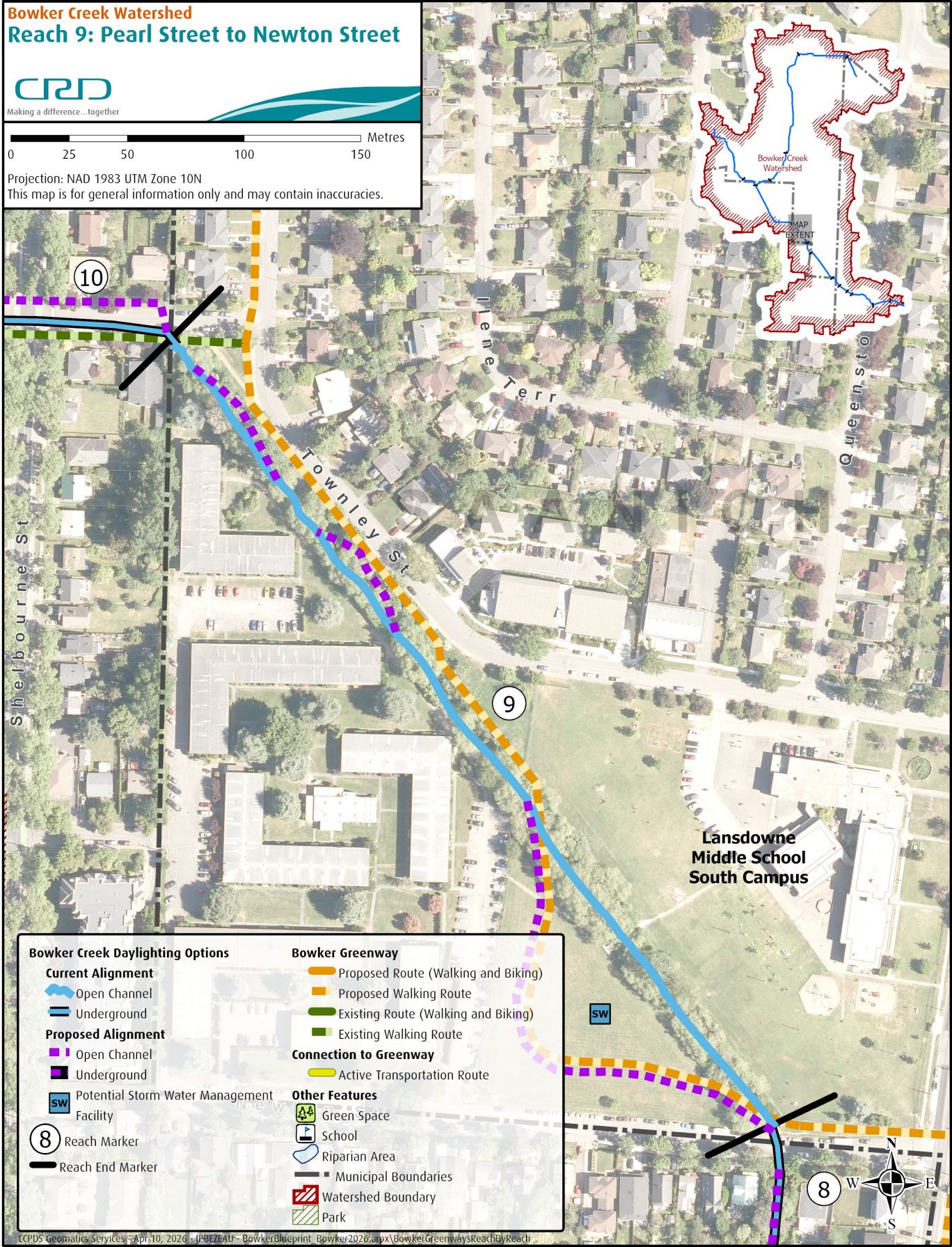


Golden willow and root mats forming pool areas in the channel. Invasive species on the bank (Himalayan blackberry, English ivy).



Riprap on west bank at the Pearl Street culvert.

Reach 9 flows southeast in an open entrenched channel from Pearl Street, beside the Townley Street right-of-way, and through the Lansdowne Middle School South Campus to Newton Street. New riprap erosion protection was installed along the east bank downstream of the culvert and upstream near the apartment building. The riparian vegetation includes trees and shrubs, mostly mature golden willow, Himalayan blackberry, scotch broom, red osier dogwood, black hawthorne, English ivy and morning glory. This reach has issues with invasive species, channelization, conveyance, flooding, and erosion.



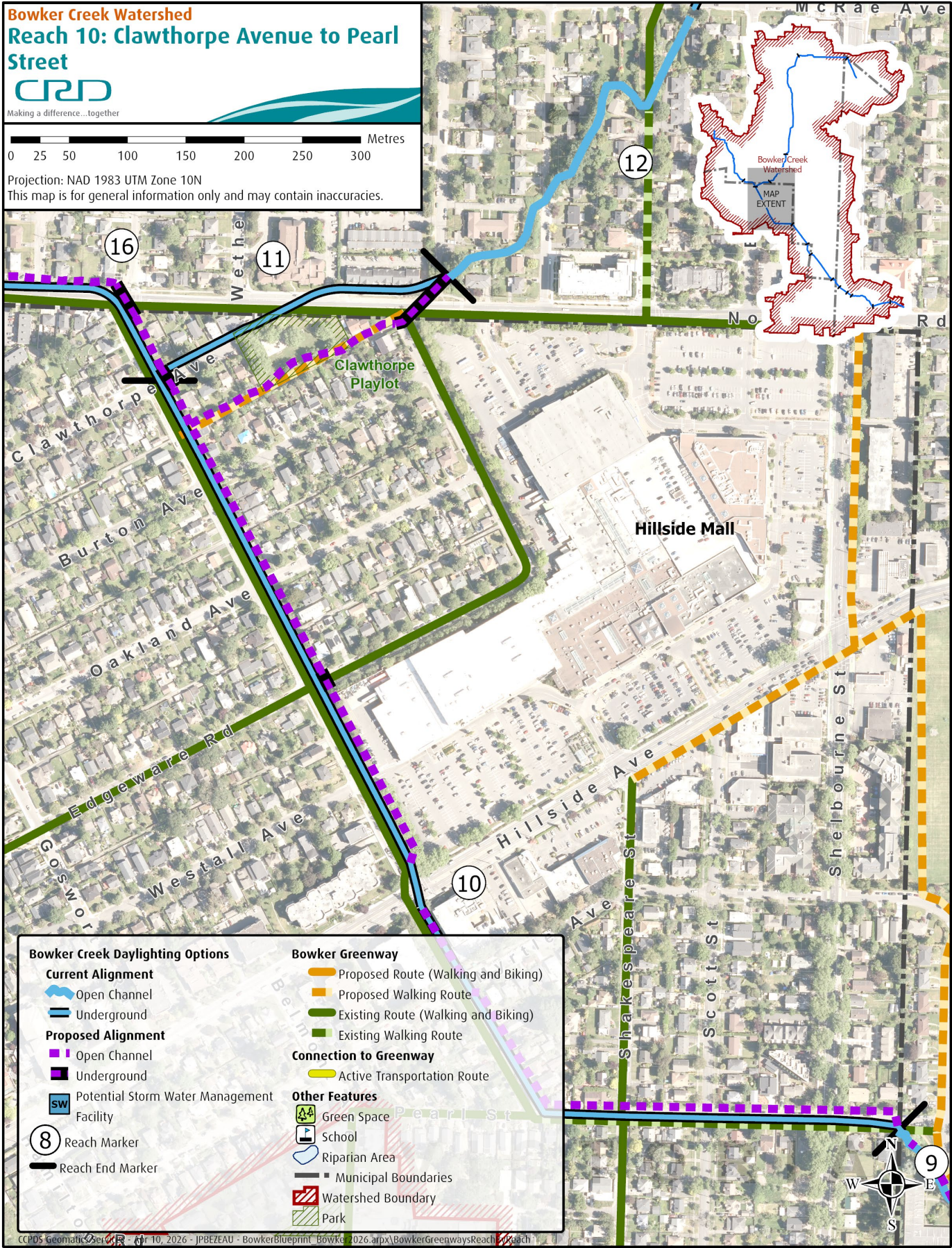
Reach 9: Pearl Street to Newton Street			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
9-1	Pearl Street to Lansdowne South Campus Along Townley Street	Engage, educate and partner with apartment building owners (Shelbourne Place) and other interest holders on the Bowker Creek Blueprint, creek health, spread of invasive species, restoration opportunities, the Riparian Areas Protection Regulation and proposed creek realignment. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further detail on restoration opportunities and the Daylighting Feasibility Study (2020) for proposed realignment options.	Saanich, BCI, community groups
9-2	Pearl Street to Lansdowne South Campus Along Townley Street	Widen the creek corridor within the current alignment and introduce minor sinuosity where feasible. If the width is constrained, a retaining wall could be installed on the east bank to maximize the riparian area along the creek. Create a more gently sloping west bank and increase the width of the riparian areas. Remove invasive species and plant native species. Create a greenway along the creek within the existing Townley Street right-of-way.	Saanich
9-3	Townley Street to Newton Street	Work in partnership to restore Bowker Creek at Lansdowne Middle South Campus, including a relocated channel with greater sinuosity, gently sloping banks and a native species riparian buffer, stormwater detention, an outdoor classroom, school recreation facilities, a greenway, and community park amenities. Review the SWMF concepts developed during the Daylighting Feasibility Study and supplemental memo (2020), the Bowker Creek Watershed Proper Functioning Condition (PFC) Assessment (2007) and the results of the proposed Bowker Creek stormwater master plan, if available, to assess the hydraulic benefit of stormwater storage at this site. The 2007 PFC Assessment (Aquatex) and the 2002 Restoration Concepts (Harder) also provide useful technical background.	Saanich, Victoria, School District 61, BCI, community groups
9-4	Townley Street to Newton Street	Develop a greenway parallel to the creek through the Lansdowne South site following restoration / realignment. Consider granular walking path along the creek (outside the riparian zone) and paved cycling path if space is available.	School District 61, Saanich
9-5	Richmond Road to Pearl Street	Explore partnership opportunities and consider developing a master plan to restore Bowker Creek from Richmond Road to Pearl Street (i.e. Reaches 7, 8 and 9).	Victoria, Saanich, School District 61/ Lansdowne South Middle School, Royal Jubilee Hospital, St. Patrick's School

Reach 10: Clawthorpe Avenue to Pearl Street



Doncaster Green looking north from Myrtle Avenue along existing Bowker Creek pipe section

Reach 10 flows southeast from Clawthorpe Avenue in a pipe along Doncaster Drive, and east along Pearl Street to just before Townley Street. This reach has conveyance issues.



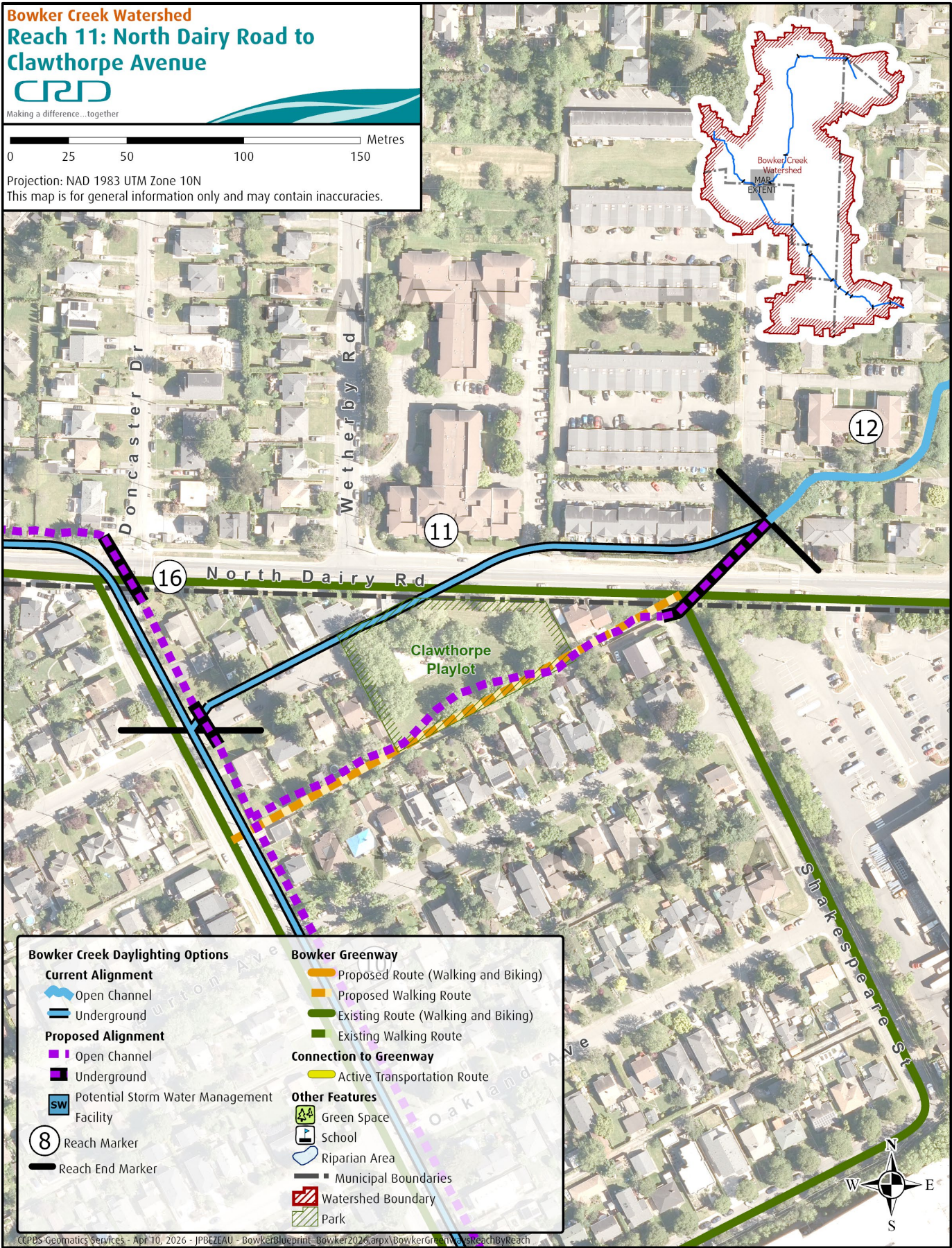
Reach 10: Clawthorpe Avenue to Pearl Street			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
10-1	Clawthorpe Avenue to Townley Street	Review the results of the proposed Bowker Creek Stormwater Master Plan update to determine the need to upgrade the hydraulic capacity of this piped section.	Victoria
10-2	North Dairy to Doncaster via Clawthorpe Avenue	Refine the daylighting route based on allowable densities and green space requirements outlined in the Official Community Plan and other policies and regulations. Consider increased density to support daylighting. Refer to the Daylighting Feasibility Study (2020) for proposed alignments.	Victoria
10-3	Clawthorpe Avenue to Townley Street	In the short to medium term, explore full or partial daylighting from North Dairy Road to Townley Street. Partial daylighting may include either a gravity diversion from the open section of the creek north of North Dairy Road to a shallow creek section or a pumped diversion from the piped section of Bowker Creek to a shallow creek. The implementation of partial daylighting should be coordinated with other roadway and greenway improvements to minimize costs. Partial daylighting could be used as a medium to long-term solution prior to sufficient redevelopment to support full daylighting. Refer to the Daylighting Feasibility Study (2020) for more detail.	Victoria
10-4	Clawthorpe Avenue to Hillside Avenue	Explore opportunities to partially daylight the creek in the Doncaster Drive right-of-way with future mobility improvements in the short term. Explore land acquisition over the long term to complete daylighting. Refer to the Daylighting Feasibility Study (2020) for more detail.	Victoria
10-5	Clawthorpe Avenue to Hillside Avenue - Hillside Mall	Adopt policies for Hillside Town Centre based on the place-based planning charrette completed as part of the Official Community Plan update with the owners of Hillside Mall on daylighting in the long-term. Refer to the Daylighting Feasibility Study (2020) for more detail.	Victoria
10-6	Hillside Avenue to Myrtle Avenue	In the short to medium term, explore ways to daylight the creek in the Doncaster Green right-of-way and/or acquire adjacent lands via redevelopment. Refer to the Daylighting Feasibility Study (2020) for more detail. Planning for street designs that support daylighting and active transportation approaches.	Victoria
10-7	Hillside Avenue to Myrtle Avenue	Apply for grant funding for short-term daylighting opportunities.	Victoria, BCI
10-8	Pearl Street from Myrtle Avenue to Townley Street	In the short-term, explore daylighting along the Pearl Street right-of-way. This may include closing specific sections of Pearl Street (e.g., Scott Street to Shakespeare Street) and/or creating a one-way roadway. The need for small local parks (via closed street) or greenways should be explored as part of a parks planning exercise. Refer to the Daylighting Feasibility Study (2020) for more detail. Update relevant policy and bylaw (SDS bylaw) to reflect desired right of way.	Victoria
10-9	Lansdown North school site	Explore partnership opportunities at the Lansdowne Middle School North Campus school site that provide flood mitigation, biodiversity habitat, place-based learning and increased community livability. The Conseil Scolaire Francophone de la Colombie-Britannique recently purchased 7.3 acres of land on Lansdowne North campus. The Daylighting Feasibility Study (2020) identifies this site as a potential location for a stormwater management facility. A revised stormwater management concept should be considered with the designs for the new school in partnership with School District 61 and the District of Saanich.	Saanich, BCI

Reach 11: North Dairy Road to Clawthorpe Avenue



Clawthorpe Park along existing Bowker Creek pipe section

Reach 11 flows west in a pipe along North Dairy Road, and southwest along Clawthorpe Avenue to Doncaster Drive.



Reach 11: North Dairy Road to Clawthorpe Avenue

Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
11-1	North Dairy Road to Doncaster Drive	Over the long term, acquire the necessary lots for daylighting along Clawthorpe Avenue and North Dairy Road.	Victoria
11-2	North Dairy Road to Doncaster Drive	Daylight the creek from Doncaster Drive to North Dairy Road, including Clawthorpe Park. Consider partial daylighting along Clawthorpe Park in the short-term. Refer to the Daylighting Feasibility Study (2020) for proposed alignment.	Victoria, Saanich
11-3	North Dairy Road to Clawthorpe Avenue	Create a greenway near the creek between Doncaster Drive and North Dairy Road including through Clawthorpe Park based on land acquired.	Victoria

Reach 12: Knight Avenue to North Dairy Road

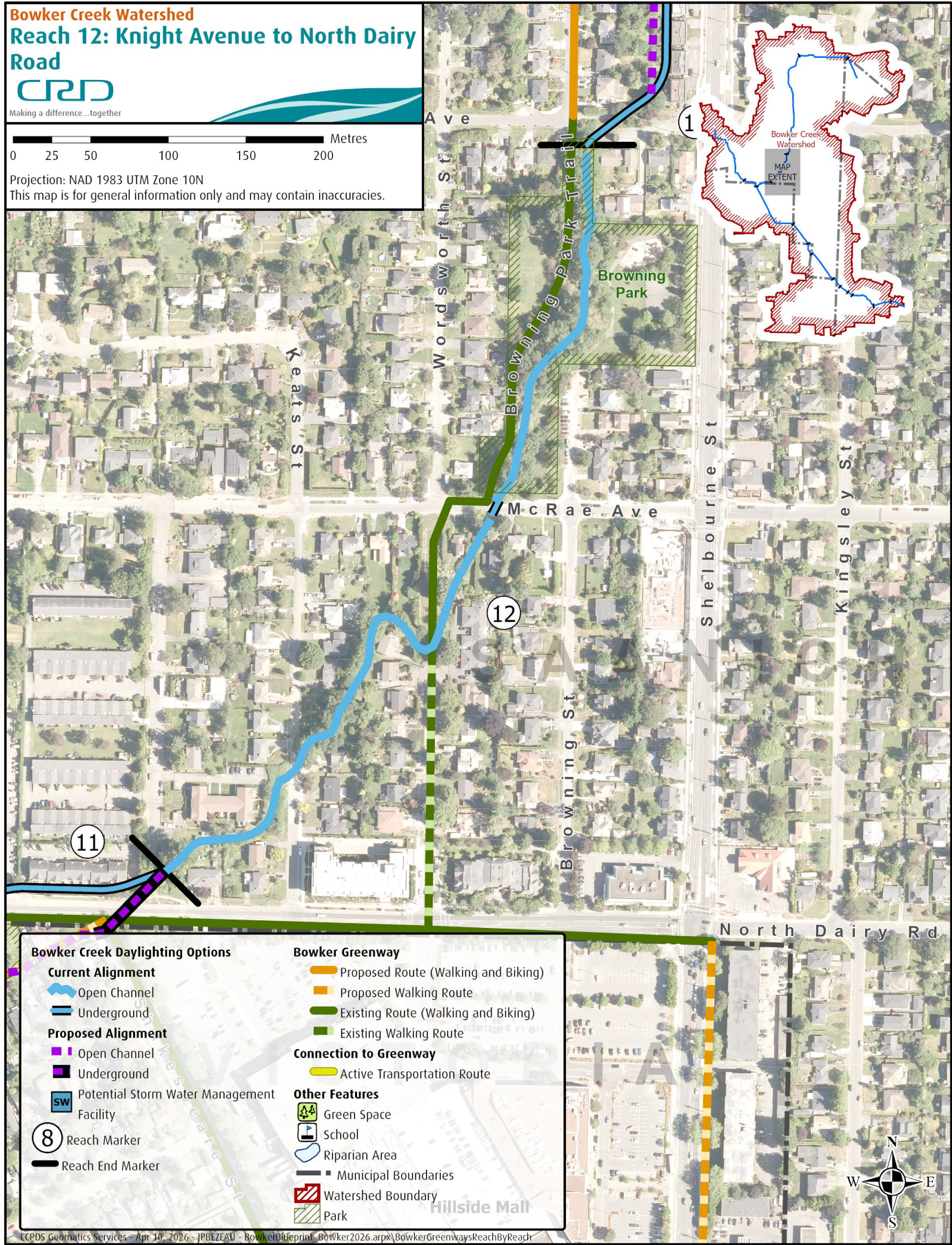


1564 North Dairy Road concrete sandbags.



Saanich Pulling Together restoration information sign draws attention to ongoing Friends of Browning Park volunteer efforts, in addition to encouraging neighbour participation and hopefully discouraging trampling.

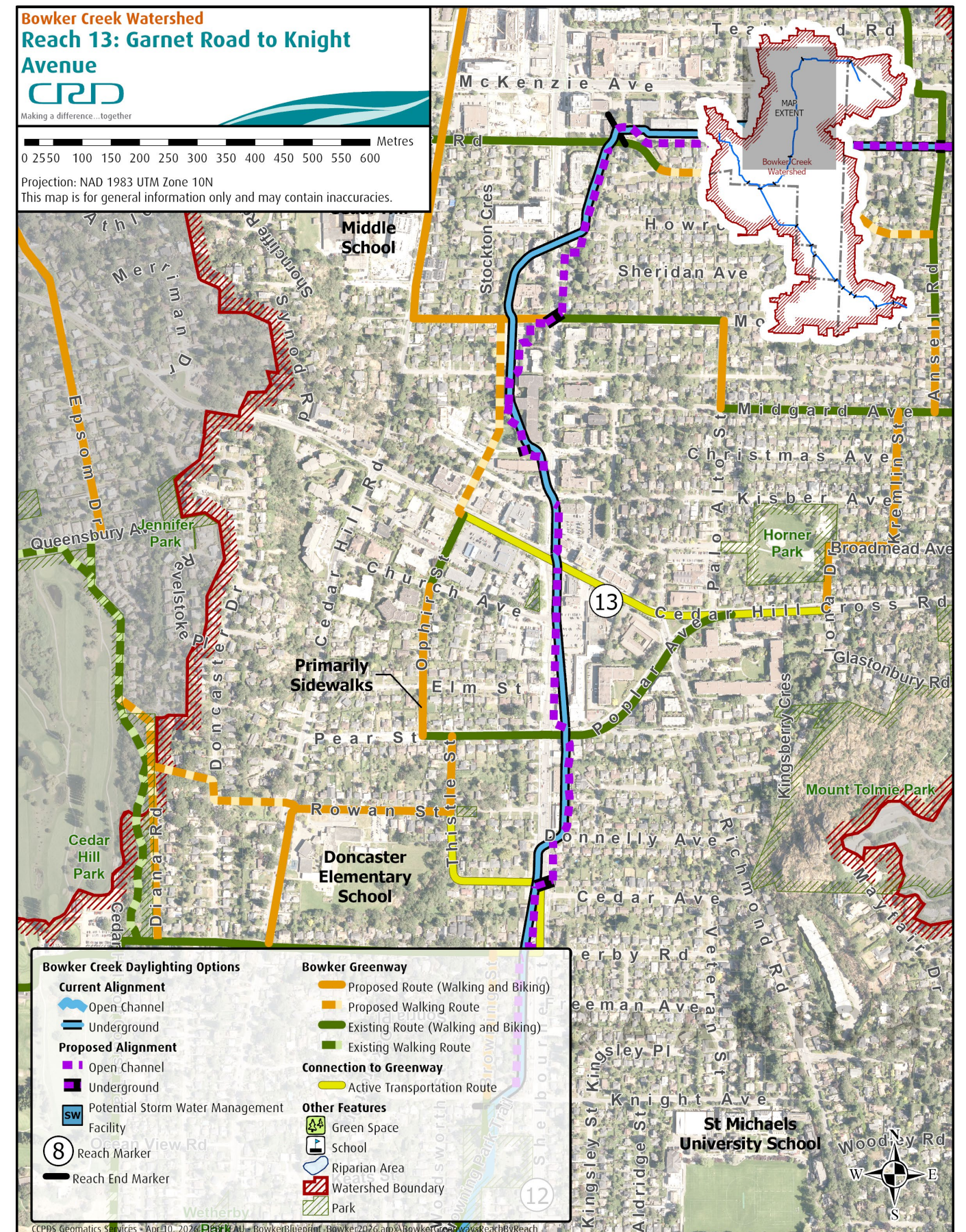
Reach 12 flows southwest in an open partially armoured channel from Knight Avenue through Browning Park, private residences, and municipal road rights-of-way to Shelley Street and North Dairy Road. The banks are a mix of steep soil, concrete sandbags, riprap, gabions and lock blocks with part of the reach entrenched with no floodplain access. The channel bottom is a mix of concrete, asphalt, bedrock and boulder/cobbles with some pools. The riparian vegetation is variable and includes trees, shrubs, ornamental landscaping and many invasive species such as Himalayan blackberry, golden willow, English Ivy and laurel hedge. This reach has issues with invasive species, channelization, conveyance, flooding, and erosion.



Reach 12: Knight Avenue to North Dairy Road			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
12-1	Knight Avenue to North Dairy Road	Encourage property owners to learn about the benefits of the creek, restoration opportunities, yard and garden waste storage and spread of invasive species. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further detail on restoration opportunities.	Saanich, BCI, community groups
12-2	Knight Avenue to North Dairy Road	Address erosion areas with bioengineering. Vegetate the west bank riparian zone along the Wordsworth Street right of way accessed from McCrae Avenue. Re-slope the bank to the degree possible while leaving room for a greenway path. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further details.	Saanich
12-3	Knight Avenue to North Dairy Road	Consider adding rain gardens within the road rights-of-way to treat runoff prior to discharge to the creek. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further details.	Saanich
12-4	Knight Avenue to North Dairy Road	In the long-term, consider opportunities to remove bank and channel bottom armouring, re-slope the banks and plant with native vegetation, and install channel complexity based on space available through redevelopment and acquisition. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further details.	Saanich
12-5	Knight Avenue to North Dairy Road	Improve the existing greenway along this reach and improve creek conditions (i.e. bank slope, bank erosion, floodplain creation, and planting of native riparian vegetation) using existing rights-of-way or obtained through agreements with property owners, acquisition or redevelopment. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further details.	Saanich
12-6	Knight Avenue to North Dairy Road	Determine the source of hydrocarbons to this reach and install a mitigation measure such as a rain garden at the drain on McCrae Avenue or upstream oil capture device. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further details.	Saanich
12-7	Browning Park	Continue to support the District of Saanich's active Pulling Together volunteer group and Saanich Parks' Natural Areas section in the removal of invasive species, planting native species, no mow zones, maintenance, protective fencing and possible educational opportunities.	Saanich, Saanich Pulling Together volunteer group, community groups
12-8	North Dairy Road & Shelley Street	Investigate additional daylighting, creek enhancement and greenway opportunities with redevelopment north of North Dairy Road. A greenway for both enhanced creek function and walking/active transportation is a priority between Clawthorpe Park and Browning Park. Refer to the Daylighting Feasibility Study (2020) for further detail.	Saanich, Victoria

An aerial photograph of a densely populated urban area, likely a city center or a large suburb. In the center of the image, there is a prominent complex of multi-story brick buildings, possibly a university campus or a large residential development. Surrounding this central area are numerous smaller houses and apartment buildings, interspersed with trees and green spaces. The foreground is dominated by tall, dry, golden-brown grasses that appear to be blowing in the wind, partially obscuring the view of the city below. In the background, a range of mountains is visible under a clear blue sky.

Reach 13 is the longest reach of the creek and flows south in a pipe from Garnet Road to Knight Avenue along Shelbourne Street, a highly developed commercial and transportation corridor. This reach has conveyance issues.



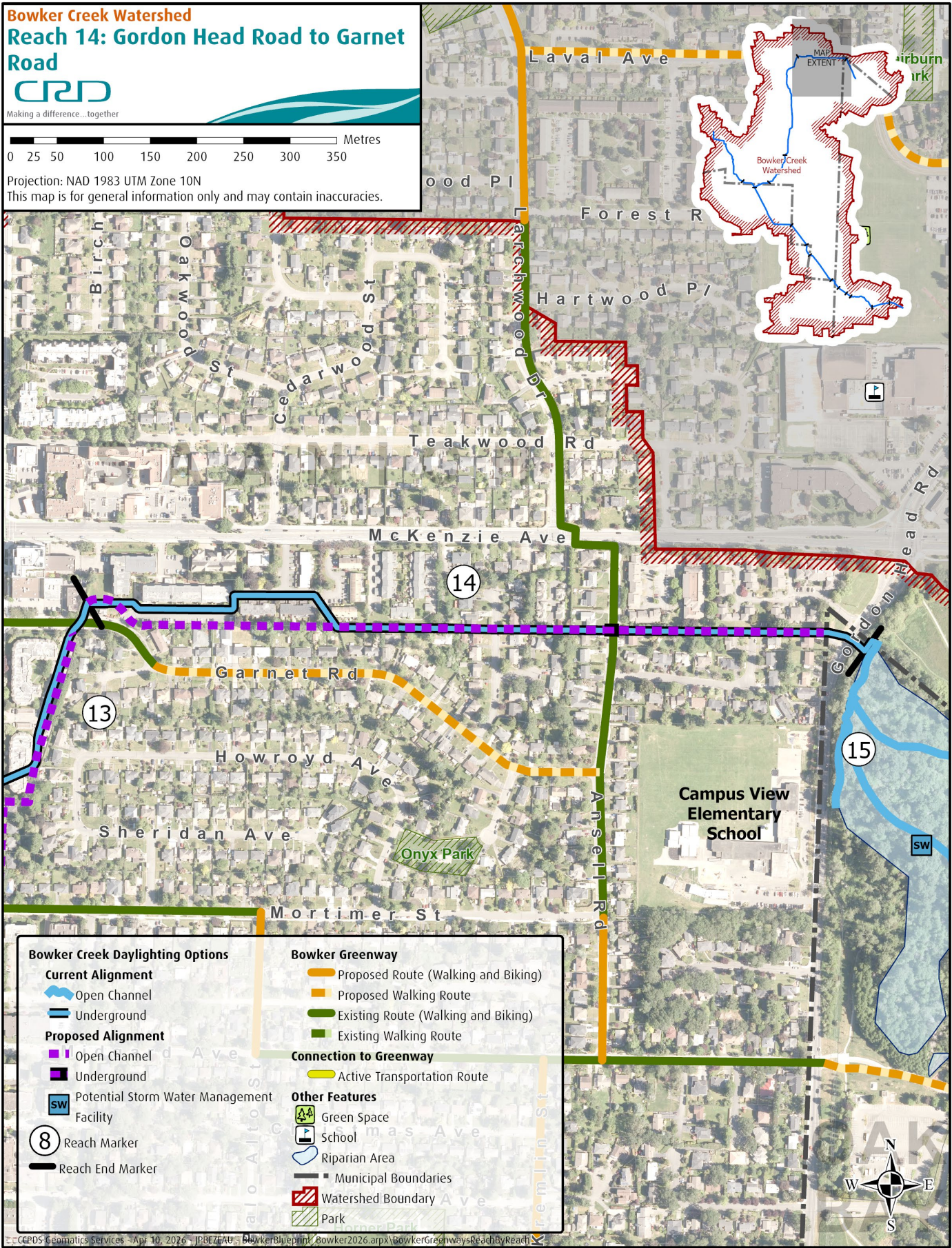
Reach 13: Garnet Road to Knight Avenue			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
13-1	Garnet Road to Knight Avenue	Incorporate the Blueprint goals and actions into the Shelbourne Valley Action Plan (SVAP) update including locations where daylighting is recommended in redevelopment plans (potentially Shelbourne Plaza). Reflect the depth of the existing Bowker Creek along the Shelbourne Valley (2.5 meters to 5 meters) into the SVAP.	Saanich
13-2	Garnet Road to Knight Avenue	Identify and incorporate key lots to acquire for daylighting into the Shelbourne Valley Action Plan. Specify land assemblies for creek daylighting based on the Daylighting Feasibility Study (2020).	Saanich
13-3	Garnet Road to Knight Avenue	Align plans for greenways on Shelbourne with daylighting opportunities for Bowker Creek. Land acquisition for the greenway should be incorporated into acquisition for daylighting where feasible. Extend and complete the "Bowker Creek Greenway", connecting to the regional trail network.	Saanich
13-4	Garnet Road to Knight Avenue	Daylight the creek and create the greenway utilizing available road rights-of-way and acquired lands. Refer to the Daylighting Feasibility Study (2020) for details.	Saanich
13-5	Garnet Road to Knight Avenue	Implement detention and infiltration opportunities during redevelopment and as part of the Shelbourne Valley Action Plan. Install rain gardens, encourage property owners to use green infrastructure, and install infiltration boulevards planted with native trees and shrubs.	Saanich
13-6	Christmas Avenue & Ophir Street	Consider acquiring lots to facilitate daylighting as outlined in the Daylighting Feasibility Study (2020). Explore opportunities for a wetland or stormwater detention facility on-site.	Saanich
13-7	Iona Drive & Kingsberry Crescent	Consider acquiring lots to facilitate wetland preservation and a wildlife corridor between Iona Drive and Kingsberry Crescent, south of Cedar Hill Cross Road	Saanich

Reach 14: Gordon Head Road to Garnet Road



Beginning of culverted section near UVic on Gordon Head Road

Reach 14 flows west in a pipe from Gordon Head Road, just south of McKenzie Avenue to Garnet Road. This reach has conveyance issues.



Reach 14: Gordon Head Road to Garnet Road			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
14-1	Gordon Head Road to Garnet Road	Incorporate the Blueprint goals and actions into the Shelbourne Valley Action Plan update and the Quadra McKenzie Plan.	Saanich
14-2	Gordon Head Road to Garnet Road	Work to acquire required lots or rights-of-way for daylighting through redevelopment or sale. Refer to the Daylighting Feasibility Study (2020) for more details.	Saanich
14-3	Gordon Head Road to Garnet Road	Create greenways along Garnet Rd. separate from the daylighted creek due to space constraints.	Saanich
14-4	Gordon Head Road to Ansell Road	Work with the Capital Region Housing Corporation (CRHC) and property owners to the south to obtain rights-of-way to facilitate partial daylighting as redevelopment occurs.	Saanich, CRD
14-5	Gordon Head Road to Garnet Road	Support daylighting the creek and create the greenway based on acquired land and rights-of-way. Refer to the Daylighting Feasibility Study (2020) for details.	Saanich

Reach 15: University Club of Victoria to Gordon Head Road

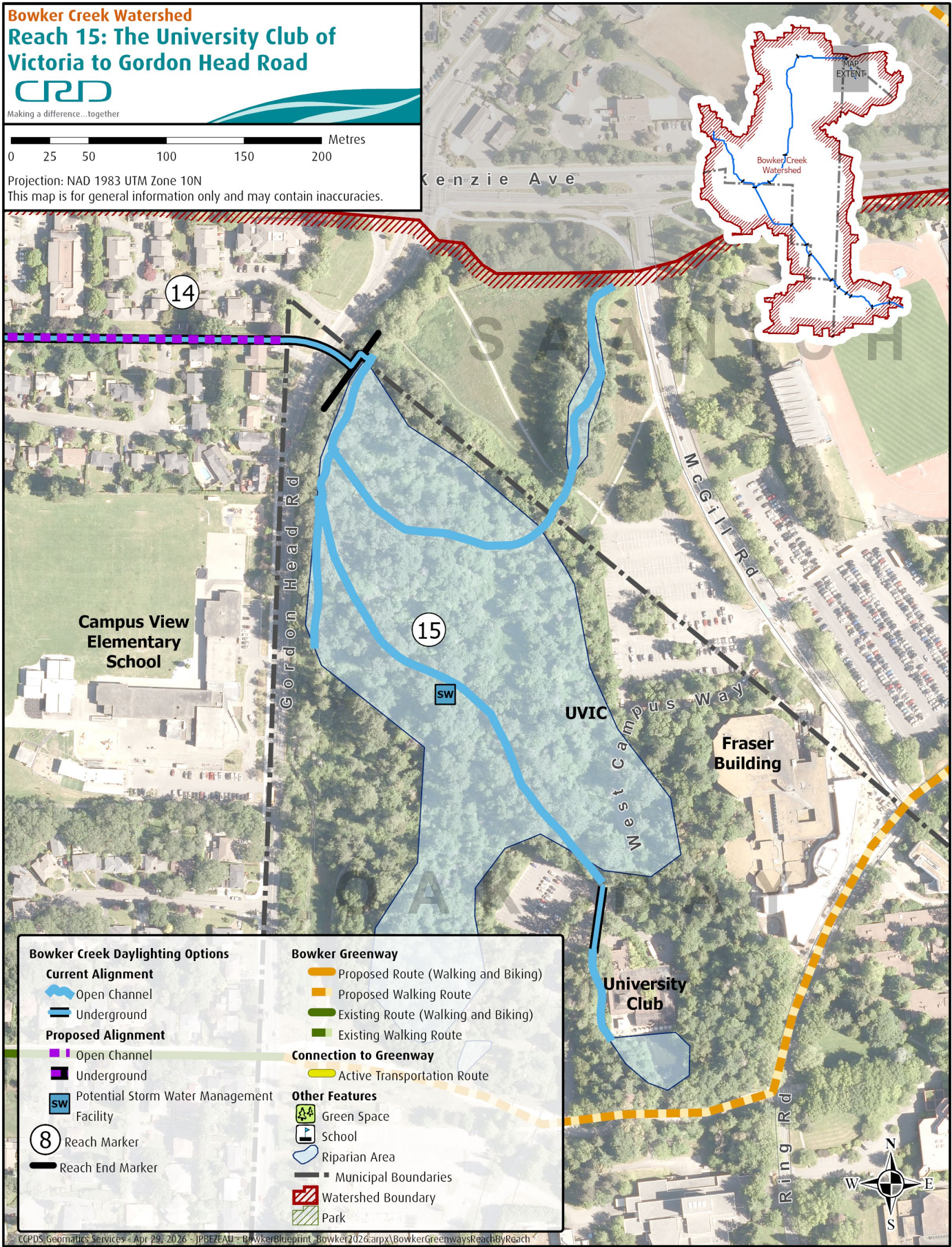


Tributary disperses in wide unconfined flows in this woody wetland.



Rain gardens at McKenzie Avenue and McGill Road

Reach 15 flows in an open channel from the headwaters at the University Club of Victoria through the University of Victoria to Gordon Head Road. The reach is comprised of a concrete pond with aeration pump and wide wetland floodplain. The riparian vegetation includes widely spaced native deciduous and coniferous trees with a shrub understory, and invasive species such as Himalayan blackberry and English ivy. This reach has the only remaining natural floodplain in the watershed. This reach has invasive species issues.



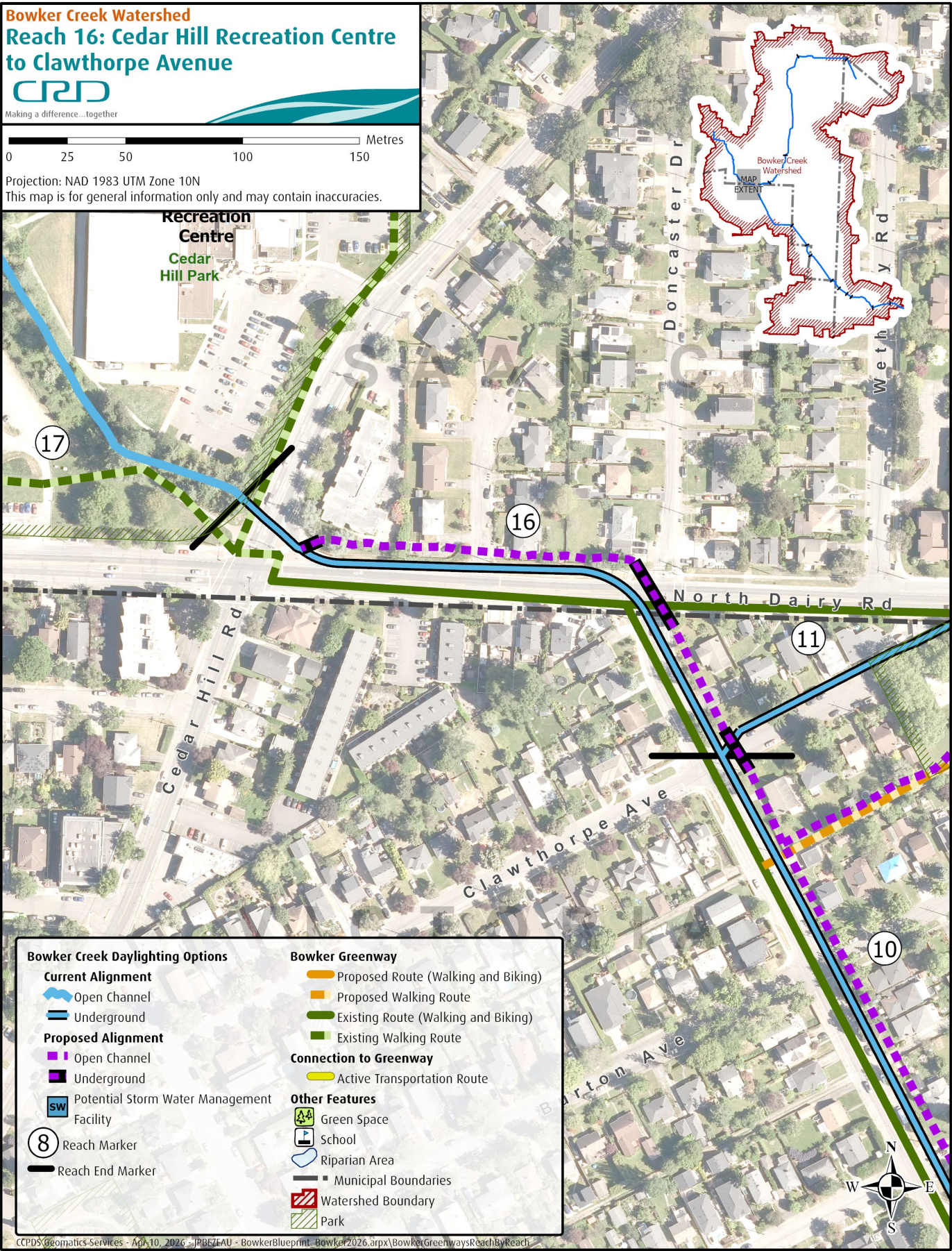
Reach 15: University Club of Victoria to Gordon Head Road			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
15-1	University of Victoria	Continue to implement campus-wide stormwater management as per the University of Victoria Integrated Stormwater Management Plan (2004) and the 2016 Campus Plan. Continue to use integrated stormwater management and green infrastructure best management practices as the campus grows to offset impervious surfaces including rainwater harvesting, street bioswales, stormwater detention and retention, permeable paving, green roof and roof storage, and other strategies.	UVic
15-2	University of Victoria	Collaborate with the University of Victoria to update the Stormwater Management Plan (SWMP) in conjunction with the District of Saanich's Integrated Stormwater Master Plan (ISMP) development and proposed Bowker Creek Stormwater Master Plan.	Saanich, UVic, Oak Bay, BCI
15-3	University of Victoria	Consider partnership opportunities to monitor stormwater flows on campus to better understand the stormwater runoff for a range of rainfall events. Flow monitoring data could be used for calibrating the updated stormwater model in the proposed Bowker Creek Stormwater Master Plan.	UVic, Saanich, Oak Bay, CRD
15-4	University of Victoria	Investigate the effectiveness, feasibility and land availability for a stormwater management facility in the northwest corner of the UVic campus. This could be completed as part of the proposed Bowker Creek Stormwater Master Plan.	UVic, Oak Bay, Saanich
15-5	University of Victoria	Continue invasive species management with a focus on priority invasive species, cessation of mowing and planting of native species. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further detail on restoration opportunities.	UVic, BCI, community groups, Saanich, Oak Bay
15-6	University of Victoria	Consider partnership opportunities to increase pond habitat complexity and riparian widening and restoration. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further detail on restoration opportunities.	UVic, BCI, community groups
15-7	University of Victoria	Explore opportunities to increase stormwater detention and infiltration in priority areas. Refer to the Bowker Creek Restoration Needs and Prescriptions (2023) for further detail.	UVic, Saanich, Oak Bay, BCI
15-8	University of Victoria - West Campus Way to Gordon Head Road	Install more interpretive signage for Bowker Creek and stormwater management	UVic, BCI, Oak Bay
15-9	University of Victoria	Engage with the UVic President and Board of Directors on opportunities to implement the Blueprint and participate in the Bowker Creek Initiative.	UVic, BCI, Saanich, Oak Bay

Reach 16: Cedar Hill Recreation Centre to Doncaster Drive & Clawthorpe Avenue



Start of underground section of Bowker Creek at corner of Cedar Hill Road and North Dairy Road.

Reach 16 is a main tributary to Bowker Creek. It flows in a pipe beginning immediately south of the Cedar Hill Recreation Centre, east along North Dairy Road, and southeast along Doncaster Drive to Clawthorpe Avenue.



Reach 16: Cedar Hill Recreation Centre to Clawthorpe Avenue

Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
16-1	Cedar Hill Road to Clawthorpe Avenue	Acquire necessary lots or right-of-way along North Dairy Road between Doncaster Drive and Cedar Hill Road for daylighting creek.	Saanich, Victoria
16-2	Cedar Hill Road to Clawthorpe Avenue	Daylight along North Dairy Road based on land acquisition and adequate assembly of land for redevelopment. Refer to the Daylighting Feasibility Study (2020) for details.	Saanich, Victoria
16-3	Cedar Hill Road to Clawthorpe Avenue	When daylighting occurs, integrate the daylighted creek into the existing greenway along North Dairy Road.	Saanich, Victoria

Reach 17: Cedar Hill Recreation Centre and Cedar Hill Park

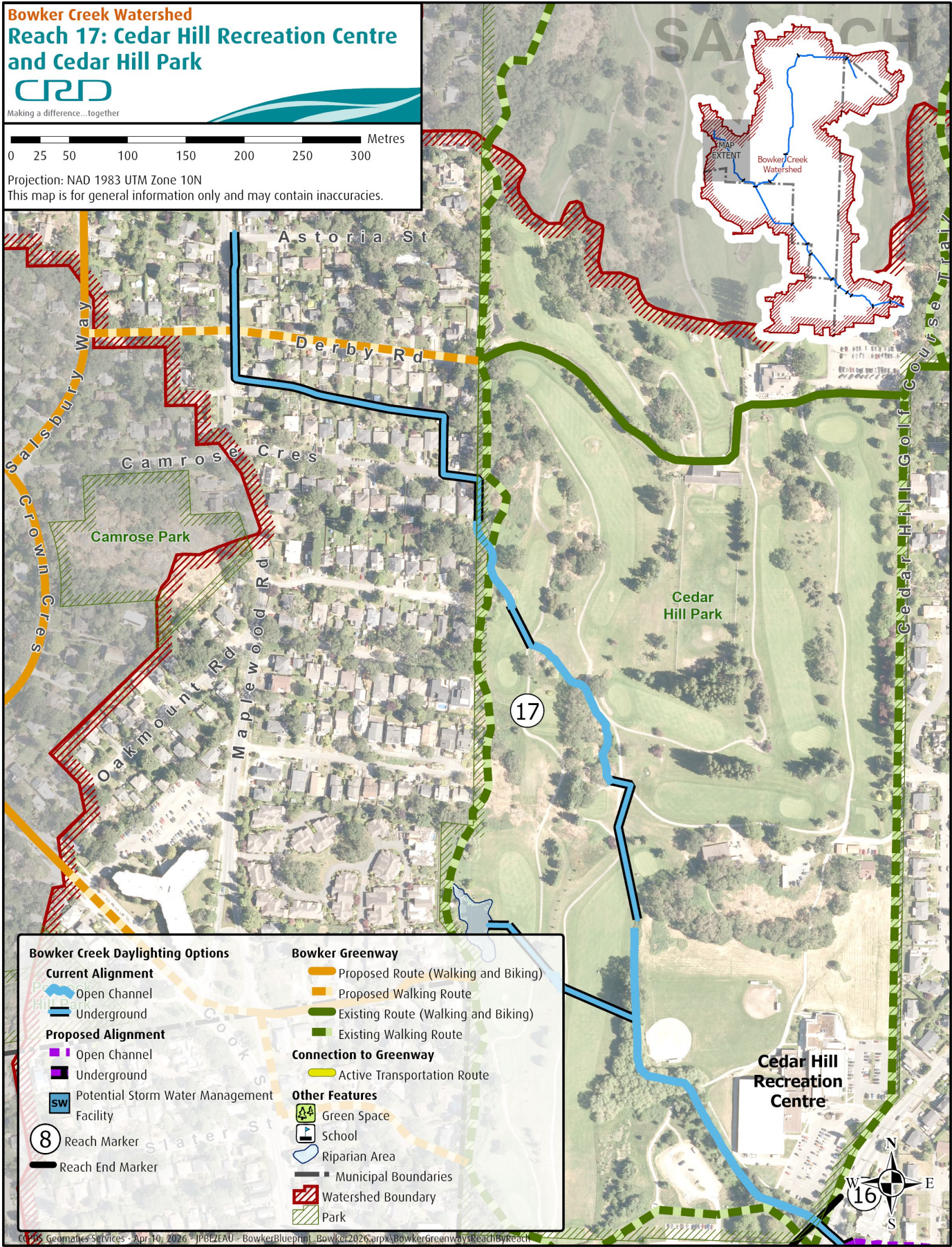


View from upper footbridge (at the top of the reach) into area of concerted volunteer efforts in invasive species removal and native plantings.



Upper section through the golf course.

Reach 17 is a main tributary to Bowker Creek, it flows southeast, mainly in an open channel, through the Cedar Hill Golf Course and Cedar Hill Recreation Centre to Cedar Hill Road. Part of the reach is culverted under the golf course. An additional tributary originates in the stormwater management rain garden at Tolmie Place and flows into the golf course pond. The riparian vegetation includes trees with shrub understory, areas of mown grass and invasive species such as golden willow. This reach has issues with channelization, erosion, and invasive species.



Reach 17: Cedar Hill Recreation Centre and Cedar Hill Park			
Reach-Action Number	Location	Actions	Bowker Creek Initiative (BCI) Partner
17-1	Cedar Hill Recreation Centre and Cedar Hill Park	Continue implementation of the Cedar Hill Park Management Plan 2020-2040 Goal 1 actions: 1.1 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 (accessible viewing, etc.). 1.2 Seek funding opportunities (grants and community partnerships) to complete the restoration as planned in Action 1.1. 1.3 Implementation of improvements to Reach 17 which includes public amenity improvements such as a viewing opportunities, interpretive/educational signage, and seating.	Saanich, community groups, Victoria
17-2	Cedar Hill Recreation Centre and Cedar Hill Golf Course	Support the Cedar Hill Golf Course to meet environmental stewardship objectives required for the Audubon Cooperative Sanctuary Program for Golf Courses which addresses wildlife/habitat protection and enhancement, biodiversity, conservation, improved water quality and public education/engagement.	Saanich, community groups
17-3	Cedar Hill Recreation Centre and Cedar Hill Golf Course	Develop a stormwater management facility between the Cedar Hill Golf Course and the Cedar Hill Recreation Centre. Refer to the Technical Memorandum - Bowker Creek at Cedar Hill Park (Reach 17) - Daylighting Feasibility Study of Cedar Hill Management Plan 2020-2024 for more details.	Saanich
17-4	Cedar Hill Recreation Centre and Cedar Hill Golf Course	Continue to remove invasive species, particularly high priority species and plant native species as recommended in the Cedar Hill Natural Areas Inventory and Restoration Recommendations	Saanich, community groups, Saanich Pulling Together volunteers
17-5	Tributary from Cedar Hill Golf Course, adjacent to Cedar Hill Recreation Centre to second footbridge to culvert outlet at upstream end of ball diamond	In the long-term, re-slope the banks and increase the riparian width to provide floodplain access and channel complexity. Refer to Bowker Creek Restoration Needs and Prescriptions (2023), Cedar Hill Park Management Plan and Cedar Hill Park Natural Areas Inventory and Restoration Recommendations for more details.	Saanich
17-6	Culvert under Golf Course and open creek channel up to 1299 Camrose Crescent.	In the long-term, reconfigure the channel to create a natural sinuous creek channel with riparian plantings on each side of the channel. Refer to the Technical Memorandum - Bowker Creek at Cedar Hill Park (Reach 17) - Daylighting Feasibility Study - Design Alternatives Review (2019, Cedar Hill Park Management Plan additional appendices) for more details.	Saanich
17-7	Cedar Hill Recreation Centre and Cedar Hill Golf Course	Apply for grant funding to create a stormwater management facility and restore the creek.	Saanich, community groups, BCI
17-8	Cedar Hill Recreation Centre and Cedar Hill Golf Course	Pursue daylighting through the Cedar Hill Golf Course. This can be done on an opportunistic basis when the golf course is undergoing restoration. Refer to Alternative 2 (Maximizing Daylighting) Refer to the Technical Memorandum - Bowker Creek at Cedar Hill Park (Reach 17) - Daylighting Feasibility Study for more details.	Saanich

The updated Bowker Creek monitoring program provides feedback on the effectiveness of some actions in the Bowker Creek Blueprint and the health of the Bowker Creek watershed. The monitoring program is designed to use available datasets and sources of information to provide a summary of watershed health metrics and to identify trends where possible. The methodology may be modified over time based on changes to CRD monitoring programs and other monitoring initiatives. The monitoring results will be produced as stand-alone documents which will be hosted on the Bowker Creek Initiative website.

Monitoring Variables

The health of Bowker Creek and its watershed will be monitored over time using the variables listed in Table and described in the Methodology section below. The plan includes parameters that are mostly based on existing monitoring programs however, some variables listed do not have watershed wide data available at the time of reporting; it is expected that results will be available for subsequent monitoring reports.

Table 1. Bowker Creek Watershed monitoring program variables.

Watershed Wide Monitoring Variables	Creek Corridor Monitoring Variables
Total impervious area	Water quality
Tree cover	Sediment quality
Riparian forest integrity	Benthic macroinvertebrate communities
Length of greenway	Length of creek above ground
Road density ¹	Restoration of open creek sections
Green stormwater infrastructure ^{1, 2}	Hydrology/Flow ^{1, 3, 2}

Methodology

Watershed Wide Variables

- Tree Cover (%):** A measurement of the estimated area of tree cover within the entire watershed, thus does not include other vegetative areas such as shrubs, grass/lawns or gardens, etc. It is estimated using the most recent land cover classification or canopy cover estimate (ideally utilizing LiDAR data) and expressed as percentage of total watershed.
- Total Impervious Area (%):** A measurement of the area of the watershed that is covered by impervious surfaces expressed as a percent of total watershed area. The impervious area is estimated using the most recent land cover classification and includes a combination of roads, buildings, sidewalks and parking lots. It is the area within a watershed that is comprised of hardened surfaces resisting infiltration. The amount of impervious surface is a direct measure of the degree of urbanization, and it strongly affects both water quality in urban areas and replenishment of groundwater. In general, the negative impact on streams increases as the percentage of impervious surface in a watershed increases.

¹ Newly added parameter.
² Watershed wide data not available at the time of reporting. To be integrated into future reports.

- Riparian Forest Integrity: (%)**
 - A measurement of the forested area within 30m on either side of the creek (with the middle of the creek as the centre line) expressed as a percent of forested area over the entire length of open creek. Riparian trees provide large organic debris for fish habitat, bank stabilization to reduce erosion, shading to moderate water temperature, and food for aquatic life.
 - A measurement of impervious surfaces (including, buildings, pavement, roads, etc.) within 30m on either side of the creek expressed as a percent over the length of open sections of the creek.
- Road Density:** An estimate of length of roads per area of watershed. Roads can carry stormwater run-off that may contain pollutants including heavy metals, hydrocarbons, and the tire wear toxin 6PPD Quinone.
- Green stormwater infrastructure²:** Green stormwater infrastructure is designed to intercept, slow, treat and store stormwater runoff from impervious surfaces (including roads). Green stormwater infrastructure can include but is not limited to rain gardens, bioswales and green roofs. The number of installations and estimate of retained stormwater of new green infrastructure installations will be tracked and displayed on a map and table format by municipality.
- Length of greenway developed: (m):** A measurement of total length of greenway within the Bowker Creek watershed. For the purpose of the Bowker Creek Blueprint⁴, greenways are considered linear corridors that connect green spaces, natural areas and communities to provide habitat corridors as well as recreation and active transportation routes. The proposed greenway routing in the Bowker Creek Blueprint will provide an important safe alternative transportation function through busy neighbourhoods (avoiding main roads). Greenways can be shared on existing roadways (with cars on roads, pedestrians on sidewalks and bicycles in bike lanes or in shared streets), while some would be multi-use trails and some areas would provide for pedestrian traffic separate from nearby cycling routes. The Bowker Creek Greenway will also serve an ecological function through providing habitat corridors; including tree canopy and habitat enhancements and where possible contribute to the restoration of riparian and aquatic habitat. Proposed and existing greenway will be mapped and the lengths calculated. Measurements are shown separately for walking paths and multi-use paths. Note that the proposed route may change over time.

Creek Corridor Monitoring Variables

- Water quality:** A measurement of key parameters including fecal bacteria indicators, temperature, dissolved oxygen, pH, specific conductance, turbidity, nitrate/nitrogen, phosphorus and metals.

Stream water quality in the urban environment reflects the various pollutants washed off roads and private property into the storm drain system. Stormwater runoff and pollutant discharges increase steadily with urbanization because of the increase in impervious surfaces, which reduces infiltration of rainfall and runoff (NCHRP 2006). It may also reflect sewage misconnections or infiltration into the storm drain system through cracked or damaged infrastructure. Untreated stormwater can have elevated pollutant levels that have been found to have significant impacts to aquatic life in receiving waters.

³ The CRD is conducting continuous stage monitoring at one location at Browning Park. At the time of reporting long term trends have not been established.
⁴ The definition of greenways may vary between municipalities, but the intentions are similar.

CRD staff sample for these water quality parameters in Bowker Creek as part of its larger stormwater monitoring program. Pollutants washing off roadways include metals from vehicle wear and leakage (e.g. copper, zinc, cadmium and lead), and fuels and other petroleum products. Nutrients such as phosphorus and nitrogen are also commonly found in urban runoff, as is soil from construction activities and erosion (NCHRP 2006). A list of parameters analyzed from Bowker Creek water quality monitoring is provided in Table 2. Sample results are compared to British Columbia Ministry of Environment and Parks (BC ENV) approved and working water quality guidelines for the protection of aquatic life. For fecal bacterial, indicators BC recreational water quality guidelines are used.

Table 2 Summary of parameters analyzed from water quality samples between 2011 - 2024

Class of contaminant/type of analysis	Specific Parameter
Bacteria	<i>Escherichia coli</i> (<i>E.coli</i>)
Field Parameters*	Temperature, dissolved oxygen, pH, specific conductance, turbidity, ortho-phosphate, nitrate
Lab Analysis	Nitrate/nitrogen, total phosphorus, organic carbon, suspended solids, total and dissolved metals

*The CRD and partners are sampling for 6PPD Quinone, a tire wear toxin that has been linked to mortality events in coho salmon. 6PPD Quinone should be included in future monitoring results, however at the time of this report, sampling results are not yet available.

2. **Sediment Quality:** A measurement of certain contaminants that adhere to the sediment in the stream bottom and will accumulate over time. The CRD initiated a sediment sampling program in 1993 to better assess certain types of contaminants found in stormwater. The CRD samples for metals and polycyclic aromatic hydrocarbons (PAHs). PAHs are a group of chemicals which naturally occur in coal, oil and gasoline, and as combustion by-products of these and other substances. Examples of substances containing low molecular weight PAHs (LPAHs) include gasoline and diesel fuel, and high molecular weight (HPAHs) are found in substances like asphalt and tar. HPAHs are more toxic than LPAHs, which can more easily evaporate or break down. Sample results are compared to CRD Marine Sediment Quality Guidelines (MSQG), Canadian Council of Ministers of Environment (CCME) Interim Sediment Quality Guidelines (ISQG) and CCME Probable Effects Levels (PEL).
3. **Benthic Invertebrates:** Benthic macroinvertebrate community structure has been used as an indicator of Bowker Creek health. The CRD collected baseline benthic invertebrate data in Bowker Creek in 2007 using Benthic Index of Biotic Integrity (BIBI) protocol and metrics. Since adoption of the 2010 Blueprint, benthic invertebrate sampling was completed using Canadian Aquatic Biomonitoring Network (CABIN) and the Reference Condition Approach (RCA) developed by Environment and Climate Change Canada (ECCC). CABIN is a standardized method developed for assessing the health of streams using invertebrate richness, community structure and diversity indices. The CABIN protocol involves collecting benthic macroinvertebrate samples, along with habitat and water quality data, and comparing the community to a modeled reference site community. The program provides an assessment of similarity to the reference community which provides an assessment of how impacted a creek is. The assumption is that if a site does not resemble the range of reference communities to which it is predicted based on the habitat variables at the test site, then there must be some anthropogenic stress exerted on the community. An example output is provided in Figure 1.
 - A site that falls within the 90% confidence ellipse is designated 'Similar to Reference'.
 - A test site that falls within the 90% and 99% confidence ellipses is designated 'Mildly Divergent'.
 - A test site that falls within the 99% and 99.9% confidence ellipses is designated 'Divergent'.
 - A site that falls outside of the 99.9% confidence ellipses is designated 'Highly Divergent'.

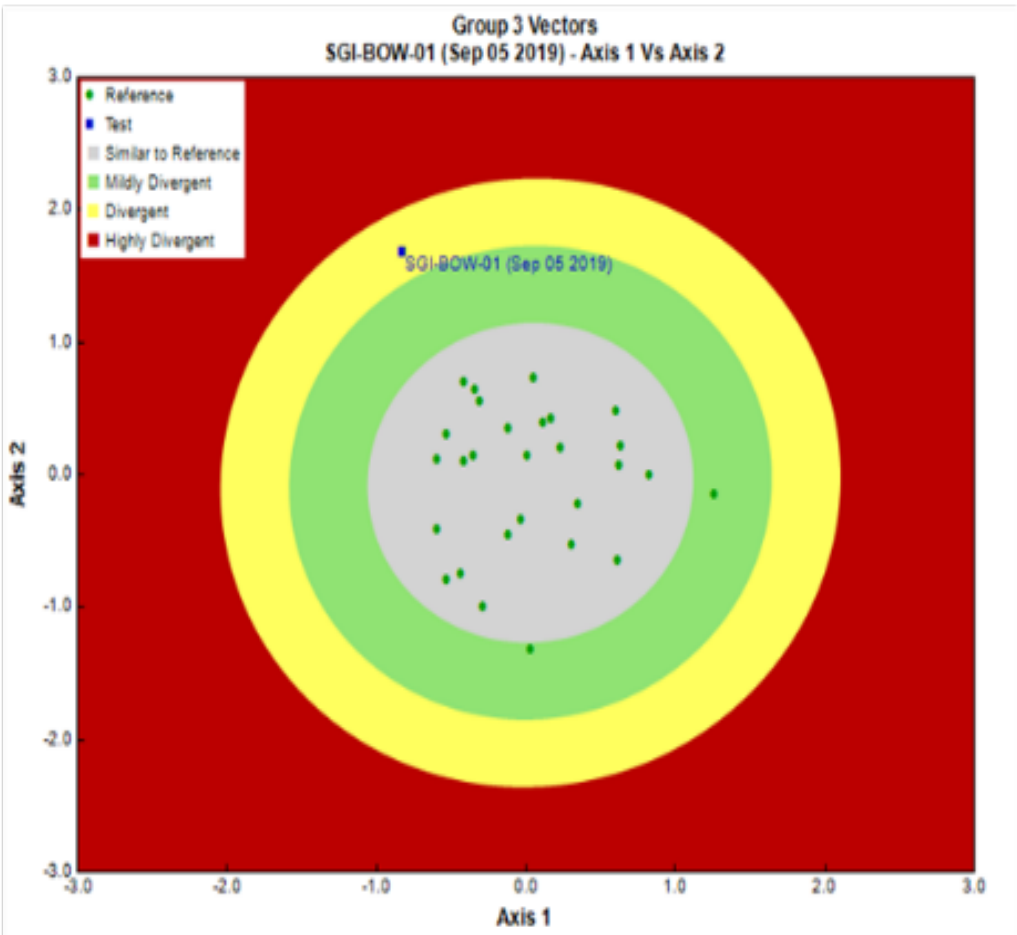


Figure 1 Example CABIN output comparing the test site to the modelled reference community.

In addition to a creek health assessment, the number and abundance of different taxa, their feeding behaviors, lifespans and tolerance to pollutants and other stressors provide information about invertebrate community richness and diversity.

4. **Creek length above ground:** (m and %) a measurement of the total length of creek course that flows on the surface (above ground); expressed in meters and as a percent of total length of creek. This variable can change by daylighting or culverting sections of the creek.
5. **Restoration of open creek sections:** (m) a measurement of and description of creek banks and riparian areas that have been restored by waddle fencing or other means by improving bank slopes, removing invasive species and planting native species.
6. **Hydrology/Flow:** Hydrology metrics can provide an indication of how “flashy” a creek is due to impervious surfaces in urban watersheds. Appropriate flow variability parameters for monitoring should be identified and included in future monitoring reports. The CRD is conducting continuous stage monitoring at one location at Browning Park. At the time of reporting long term trends have not been established.

Monitoring Frequency

A Bowker Creek monitoring program report should be produced every five years to provide a measure of watershed health and to assess trends where possible. At the time of reporting, the program variables should be re-assessed to reflect any changes to existing datasets, protocols, monitoring programs and updated Best Practices⁵. Water quality, sediment quality and land cover datasets are the primary sources of information used for use in this monitoring program. CRD staff collect water quality data biannually at the mouth of the creek (wet and dry season samples). Every five years, CRD conducts a more comprehensive monitoring assessment throughout the creek including water quality, sediment quality and collection of benthic invertebrates. Land cover classification is used for estimating tree cover and impervious surfaces and should be acquired every five years where possible including LiDAR data for estimates of canopy cover. At the time of reporting, the province was processing a BC wide LiDAR dataset that will be used for the next iteration of the land cover classification.

⁵ The CRD is working on a pilot watershed assessment methodology. The watershed assessment methodology may replace the Monitoring Program parameters once available and agreed upon by BCI partners.

