



Bracing for Rain



Understanding municipal
approaches to stormwater
management in the
Capital Regional District

A Peninsula Streams Society publication



About this report

This report provides a snapshot of how selected Capital Regional District municipalities are addressing stormwater management through policy, planning, and green infrastructure. Using a best-practice assessment framework developed from current research and professional input, it identifies municipal strengths, highlights opportunities for improvement, and establishes a baseline to support future collaboration and more resilient watershed management across the region.

Acknowledgements

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This edition has been adapted by Georgia Strait Alliance from the original research report to provide a concise, reader-friendly overview of the findings.



We acknowledge and respect that this work was carried out on the traditional territories of the Coast and Straits Salish peoples, including the Lekwungen peoples—represented today by the Songhees and Esquimalt Nations—and the ƳSÁNEĆ peoples, including ƳJOŁŁP (Tsartlip), BOĆÉĆEN (Pauquachin), STÁUTƳ (Tsawout), ƳSIKEM (Tseycum), and MÁLEXEŁ (Malahat) Nations. We also acknowledge and are grateful for the research, knowledge, and perspectives shared by local Nations, which helped inform this study.



Contents

- 5** Rethinking Stormwater
- 6** The Regional Picture
 - 7** Comparing Municipal Approaches
 - 8** Overall Assessment
- 10** Municipal Profiles
 - 11** Central Saanich
 - 14** Esquimalt
 - 17** Langford
 - 20** North Saanich
 - 23** Oak Bay
 - 25** Saanich
 - 28** Sidney
 - 31** Victoria
 - 34** View Royal
- 37** Looking Ahead
- 38** Appendices

Rethinking Stormwater

From headwaters to deep waters

Stormwater systems across North America have long been designed to do one thing: move water away from cities as quickly as possible. Built on traditional “grey” infrastructure—pipes, sewers, and tanks—these systems treat stormwater as waste rather than a resource. While effective at drainage, they often overlook water quality, ecosystem health, and natural hydrological processes.

These legacy systems, rooted in 19th-century sewer design, are increasingly mismatched with modern urban landscapes. As rain flows over roads, rooftops, and parking lots, it collects pollutants and carries them into rivers, lakes, and ultimately the ocean—contributing to long-term ecological degradation and rising infrastructure costs.

In response, green stormwater approaches are gaining ground. Nature-based solutions such as rain gardens, permeable surfaces, and bioswales manage water where it falls, slowing, filtering, and absorbing runoff. These systems offer multiple benefits, from improved water quality and flood reduction to enhanced climate resilience.

However, despite strong evidence, implementation remains uneven and limited in scale.



The Regional Picture

Why stormwater management matters in the CRD

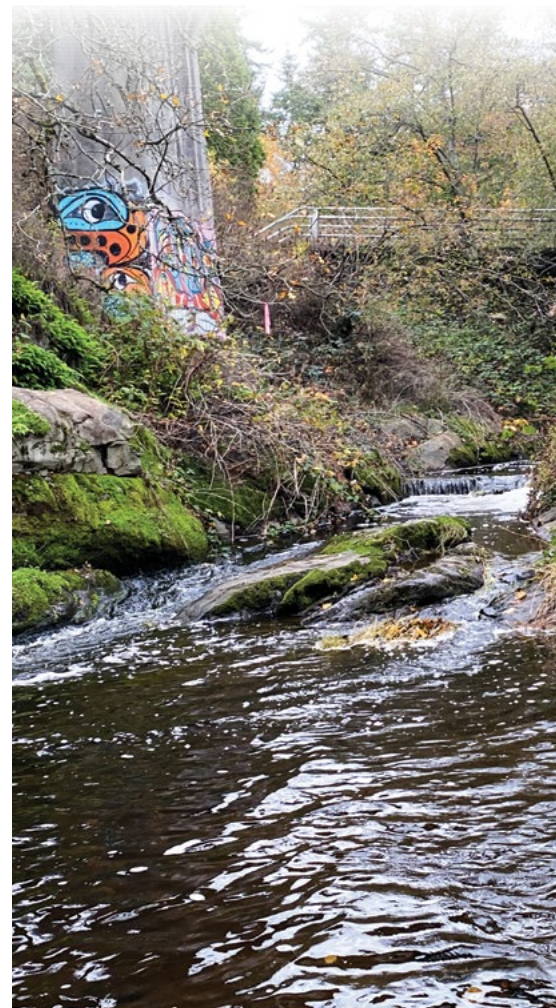
In the Capital Regional District (CRD), rapid urban growth and the expansion of impervious surfaces are placing increasing pressure on watersheds, infrastructure, and coastal ecosystems. As a result, stormwater management is no longer solely a municipal service function; it has become central to maintaining regional water quality and ecological health.

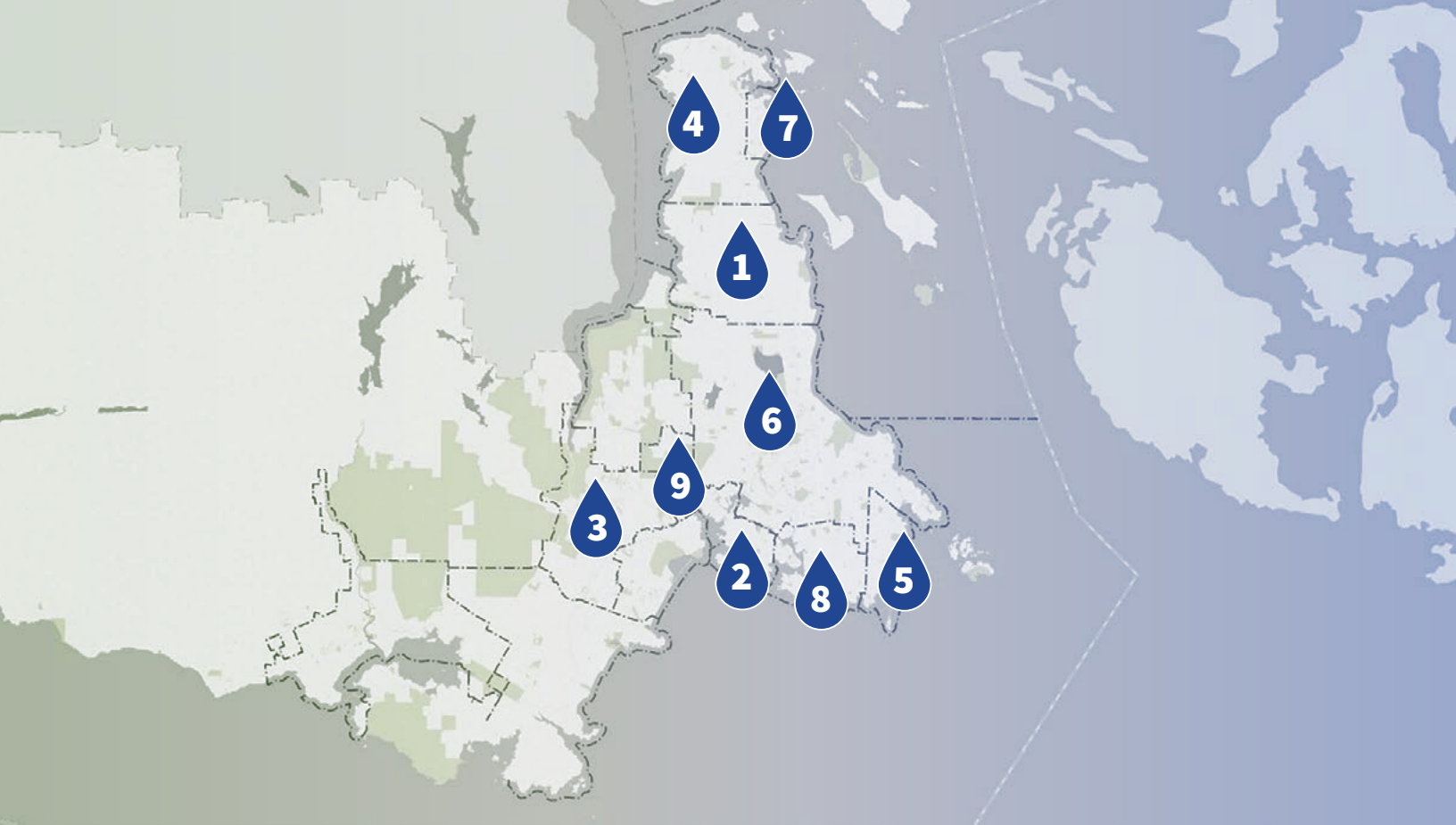
Despite its importance, there is still limited understanding of how municipalities are responding to these challenges through policy and practice. This study begins to address this gap through a structured review of municipal policies

within the CRD. Its aim is to develop a comparative reporting framework, grounded in a standardized assessment matrix, to evaluate current municipal approaches across the region.

The framework synthesizes key findings by scoring selected municipalities on stormwater management performance and identifying major strengths, gaps, and areas for improvement.

Overall, this assessment seeks to strengthen understanding of current practice and to support more informed municipal and regional decision-making on future stormwater management.





Comparing Municipal Approaches

Assessment framework & overall findings

To support consistent regional comparison, a set of standardized criteria and a scoring system were developed from existing literature to assess stormwater management approaches across selected municipalities in the CRD. An evaluation matrix was created and is included in the Appendices.

Municipal bylaws, council policies, and publicly available planning documents were reviewed and assessed against the criteria outlined in Appendix 2. Each municipality was then scored to allow comparison across jurisdictions.

This assessment is not intended as a critique, but rather as a baseline to support information sharing, identify emerging best practices across municipalities, and inform future work.

This framework was applied to:

- 1 Central Saanich**
- 2 Esquimalt**
- 3 Langford**
- 4 North Saanich**
- 5 Oak Bay**
- 6 Saanich**
- 7 Sidney**
- 8 Victoria**
- 9 View Royal**

Map from maps.crd.bc.ca

Scoring method *The scoring scale was as follows:*



0 - Not met: No alignment with the criteria



1 - Limited alignment: Addresses only minor or general elements



2 - Partial alignment: Meets several key elements



3 - Strong alignment: Meets most elements

For each municipality, an overall score was calculated by averaging results across all criteria. These averages were then grouped into a three-level rating system:

A (Strong performance): 2.0–3.0

B (Moderate performance): 1.0–1.9

C (Limited performance): 0.0–0.9

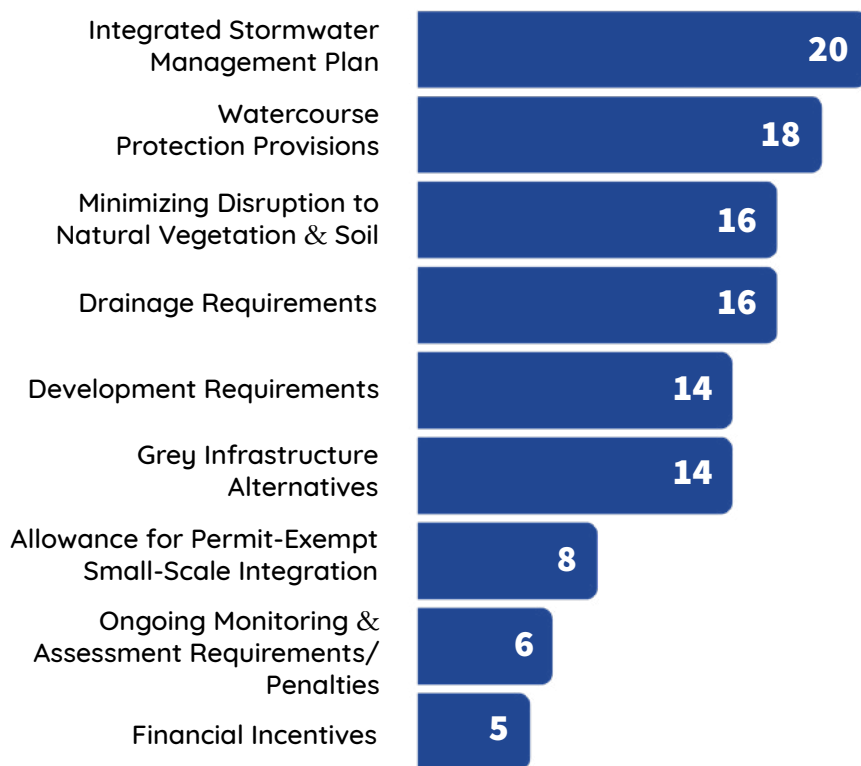
To add nuance within each category, a “+” or “–” was used. A “+” indicates a score near the top of the range, while a “–” indicates a score near the lower end.

Overall assessment of selected CRD municipalities

Key Takeaways

- Eight of nine municipalities achieved a B-range rating or higher.
- Watercourse protection was consistently strong.
- Financial incentives remain uncommon.
- Few municipalities support permit-exempt small-scale green infrastructure.

Total score by criteria



Central Saanich

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 1.8

B+

Esquimalt

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 1.1

B-

Langford

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 1.8

B+

North Saanich

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 1.4

B

Oak Bay

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 0.9

C+

Saanich

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 1.4

B

Sidney

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 1

B-

Victoria

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 2

A-

View Royal

- Integrated planning
- Watercourse protection
- Vegetation & soil
- Drainage
- Development
- Grey infrastructure
- Small-scale projects
- Monitoring
- Incentives

Average score 1.7

B



Municipal Profiles

A closer look at each municipality

Central Saanich • Esquimalt • Langford • North Saanich
Oak Bay • Saanich • Sidney • Victoria • View Royal



CENTRAL SAANICH

The District of Central Saanich demonstrates a relatively well-developed approach to stormwater management, supported by publicly accessible resources and planning documents. Its website includes a dedicated stormwater management section that links to the District's Integrated Stormwater Management Plan (ISMP) and to Peninsula Streams Society, reflecting a collaborative approach to watershed stewardship. The ISMP outlines coordinated efforts between the municipality, the business community, the agricultural sector, and local environmental partners to implement stormwater management objectives. In addition, the Official Community Plan identifies opportunities for public education programs, including partnerships with schools and educational organizations to increase awareness of water pollution and storm drain systems.



Overall, Central Saanich shows an emphasis on collaboration and education as key components of its stormwater strategy.



Integrated Stormwater Management Plan

Key Insights

Watershed-based approach focused on reducing erosion and protecting water quality in the Hagan-Graham KÉNNES, Tetayut, and McHugh-Noble watersheds, while promoting green stormwater infrastructure (GSI) as a key management strategy.

Bylaws & Documents

- Integrated Stormwater Management Plan (2009)



Watercourse Protection Provisions

Key Insights

Stormwater runoff is managed through monitoring and reporting, with regulations that prohibit pollution and require setbacks from watercourses to protect aquatic systems.

Bylaws & Documents

- CRD Core Area Stormwater Quality Management Bylaw (1997)
- Surface Water Management Plan Bylaw No. 1606, 2010; Soil Removal and Deposit Bylaw No. 1544, 2006; Building Bylaw No. 2014, 2019



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Tree removal is restricted, particularly in erosion-prone areas, while land disturbance is regulated and requires replacement planting. Increasing permeable soil depth is also encouraged to support infiltration.

Bylaws & Documents

- Tree Management Bylaw No. 2065 (2021)
- Soil Removal and Deposit Bylaw



Drainage Requirements

Key Insights

Focus on on-site retention and soil infiltration to manage surface water close to where it falls, supported by engineered runoff control plans when infiltration is not feasible, promotion of best management practices (BMPs) on private property, and increased stormwater capture and detention capacity in agricultural areas to support land productivity and reduce hydrological stress.

Bylaws & Documents

- Surface Water Management Plan Bylaw No. 1606 (2010)
- Integrated Stormwater Management Plan (2009)
- Official Community Plan Bylaw No. 2100 (2003)



Development Requirements

Key Insights

Erosion control during construction through retention of woody debris and organic matter on-site, alongside planning policies that encourage innovative, site-sensitive housing and subdivision design to reduce stormwater generation at the source.

Bylaws & Documents

- Surface Water Management Plan Bylaw No. 1606 (2010)
- Official Community Plan Bylaw No. 2100 (2003)



Grey Infrastructure Alternatives

Key Insights

Requirement for a runoff control plan for developments exceeding 200 m² of impervious surface, and policy direction to limit total impervious cover to 25% or less while supporting stream restoration initiatives.

Bylaws & Documents

- Surface Water Management Plan Bylaw No. 1606 (2010)
- Official Community Plan Bylaw No. 2100 (2003)



Allowance for Permit-Exempt Small-Scale Integration

Key Insights

Potential for downspout disconnection areas where residents can redirect rainwater to rain gardens, bioswales, or other green infrastructure without a permit, provided specific design requirements are met.

Bylaws & Documents

- Integrated Stormwater Management Plan (2009)



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Penalty provisions of up to \$50,000 for contravention of the Tree Management Bylaw, ongoing water quality monitoring, and recommendations for regular evaluation and reporting on stormwater initiatives.

Bylaws & Documents

- Bylaw No. 2065 (2021)
- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1, 1997 (CRD)
- Integrated Stormwater Management Plan (2009)



Financial Incentives

Key Insights

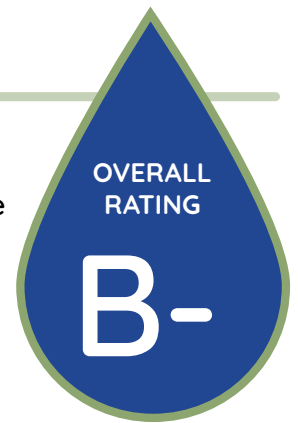
Recommendation to develop funding strategies and support NGOs and community programs in accessing funding to advance stormwater management initiatives.

Bylaws & Documents

- Integrated Stormwater Management Plan (2009)

ESQUIMALT

The Township of Esquimalt’s website includes a dedicated “Sewers and Drains” page that provides residents with key contact information for the Engineering and Public Works Department and the Development Services Department. The page also offers access to relevant bylaws related to subdivisions and servicing, along with a catch basin map and practical flood-prevention tips for households provided by the Capital Regional District. These resources reflect a primarily informational approach focused on service delivery and public guidance rather than a comprehensive standalone stormwater management framework.



Overall, Esquimalt demonstrates a practical approach to stormwater management, supported by planning policies, development requirements, and green infrastructure practices.



Watercourse Protection Provisions

Key Insights

Stormwater pollution control through investigation, monitoring, and reporting, restrictions on pollution, flow obstruction, and enclosure of watercourses, setback requirements from natural watercourses, and pesticide use restrictions through permit requirements.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Watercourse and Drainage Regulation Bylaw No. 2971 (2019)
- Building Regulation Bylaw No. 2899 (2017)
- Pesticide Use Reduction Bylaw No. 2686 (2008)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Regulation of altering, cutting, damaging, or removing protected trees, along with replanting requirements, and policy direction to encourage the retention and protection of trees and natural habitat where possible.

Bylaws & Documents

- Tree Protection Bylaw No. 3076 (2022)
- Official Community Plan Bylaw No. 2922 (2018)



Drainage Requirements

Key Insights

Requirements for development plans and specifications to address potential impacts on the municipal drainage system and watercourses, and policy direction to encourage permeable paving and on-site stormwater infiltration to achieve no net runoff from driveways.

Bylaws & Documents

- Subdivision and Development Servicing Bylaw No. 3128, 2023; Watercourse and Drainage Regulation Bylaw No. 2971, 2019
- Official Community Plan Bylaw No. 2922 (2018)



Development Requirements

Key Insights

Requirement that post-development flows not exceed pre-development flows into the Municipal Drainage System, along with support for developing best management practices, rainwater harvesting, and green stormwater techniques such as rain gardens and bioswales to slow, treat, and reduce runoff before it enters local waterways.

Bylaws & Documents

- Subdivision and Development Servicing Bylaw No. 3128 (2023)
- Official Community Plan Bylaw No. 2922 (2018)



Grey Infrastructure Alternatives

Key Insights

Maximizing the ratio of planted and pervious surfaces to impervious areas, using permeable paving to enhance infiltration, designing paved areas to direct runoff toward vegetated zones, and incorporating drought-resistant vegetation and trees within paved areas to improve on-site stormwater retention and reduce surface runoff.

Bylaws & Documents

- Official Community Plan Bylaw No. 2922 (2018)



Allowance for Permit-Exempt Small-Scale Integration

Key Insights

Discretionary authority for the Director to waive written report requirements for minor works in the municipal drainage system, provided the works will not impair stormwater quality, alter flow patterns, increase flood or environmental risk, or interfere with watercourse function.

Bylaws & Documents

- Watercourse and Drainage Regulation Bylaw No. 2971 (2019)



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Ongoing water quality testing by the CRD, fines of up to \$10,000 per day of violation, including penalties of up to 6 months imprisonment or fines, and escalating penalties, ranging from warnings to \$100 and \$250 for repeated offences.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Watercourse and Drainage Regulation Bylaw No. 2971 (2019)
- Building Regulation Bylaw No. 2899 (2017)
- Subdivision and Development Servicing Bylaw No. 3128 (2023)
- Pesticide Use Reduction Bylaw No. 2686 (2008)

LANGFORD

The City of Langford's website does not provide dedicated information on stormwater infrastructure. However, the City of Langford Official Community Plan Bylaw No. 1200 (2024) identifies the importance of regional collaboration, noting that the City should work with adjacent municipalities to develop a coordinated flow routing strategy for managing major storm events. The OCP also emphasizes the role of public engagement, highlighting opportunities for community outreach and education on the benefits of maintaining stormwater infrastructure, as well as encouraging water conservation practices.



Overall, Langford's approach is primarily policy-driven at the planning level, with an emphasis on collaboration and awareness rather than detailed operational guidance.



Watercourse Protection Provisions

Key Insights

Prohibition of pollution and obstruction of watercourses, including restrictions on discharging harmful substances into waterways, setbacks of 30 m from the natural boundary of watercourses and requirements to map watercourses in development plans, protection of fish habitat and prevention of slope instability and erosion near sensitive ecosystems, requirements to avoid obstructing stormwater flow in drainageways and watercourses, and ongoing stormwater pollution monitoring, investigation, and reporting at the regional level.

Bylaws & Documents

- Watercourse Protection Bylaw No. 550 (2001)
- Zoning Bylaw No. 300 (1999)
- Building Bylaw No. 1160 (2008)
- CRD Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Requirements for excavated or deposited soil areas to be covered with at least four inches of topsoil and stabilized with grass or vegetation to prevent erosion, regulation of the alteration or removal of protected trees, conservation of snags and dead trees for habitat where safe, and policy direction to collaborate with developers to retain vegetation and natural cover.

Bylaws & Documents

- Soil Removal and Deposit Bylaw No. 1800 (2017)
- Tree Protection Bylaw No. 2206 (2017)
- Zoning Bylaw No. 300 (1999)
- Official Community Plan Bylaw No. 1200 (2024)



Drainage Requirements

Key Insights

Requirement that subdivisions and developments maintain site water quality and minimize erosion, with encouragement of engineered wetlands and ponds to meet water quality and runoff rate targets, alongside a Green Development Checklist that promotes optional or rezoning-linked stormwater practices such as rain gardens, detention ponds, green roofs, and the use of at least 50% permeable paving for hard surfaces.

Bylaws & Documents

- Subdivision and Development Servicing Bylaw No. 1000 (2025)
- Zoning Bylaw No. 300 (1999)



Development Requirements

Key Insights

Requirement for comprehensive development projects to achieve LEED certification or meet the Green Development Checklist minimum as a condition of rezoning, while the checklist remains optional for other developments; potential requirement for a professional engineer-prepared stormwater management report for subdivision or building permits; requirement for a site mitigation plan where discharges to watercourses may occur; and design requirements to ensure no net increase in stormwater discharge, including mandatory oil and sediment removal controls for industrial developments.

Bylaws & Documents

- Zoning Bylaw No. 300 (1999)
- Building Bylaw No. 1160 (2008)
- Subdivision and Development Servicing Bylaw No. 1000 (2025)



Grey Infrastructure Alternatives

Key Insights

Authority for the City Engineer to allow or require on-site stormwater infiltration and detention where soil conditions are suitable, and flexibility to permit flat concrete curbs when bioswales are incorporated into approved stormwater management plans.

Bylaws & Documents

- Subdivision and Development Servicing Bylaw No. 1000 (2025)



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Enforcement through fines of up to \$10,000 for violations, with each day of a continuing offence treated as a separate violation, and fines of up to \$5,000 for contraventions of the Tree Protection Bylaw, also applied on a per-day basis.

Bylaws & Documents

- Soil Removal and Deposit Bylaw No. 1800 (2017)
- Watercourse Protection Bylaw No. 550 (2001)
- Tree Protection Bylaw No. 2206 (2024)



Financial Incentives

Key Insights

Policy direction to promote integrated wastewater management technologies that deliver social, economic, and environmental benefits.

Bylaws & Documents

- Official Community Plan Bylaw No. 1200 (2024)

NORTH SAANICH

The District of North Saanich demonstrates a relatively comprehensive approach to water and stormwater management through both public information resources and long-term planning policies. Its website includes a dedicated Water, Sewage, and Drainage page that provides information on drinking water sources, sewage and septic maintenance, and drainage and stormwater management. The drainage section identifies major streams and creeks within the district and includes information on outfalls and other system components. The stormwater section also links to the District's Drainage Master Plan, the CRD's Bylaw No. 2922 regulating waste discharge into sewers, and regional rainwater management and harvesting resources.



The Official Community Plan Bylaw No. 1587 (2025) further strengthens this framework by stating the District's intention to develop additional bylaws to improve stormwater management. It also identifies opportunities for informal public education programs focused on environmental protection, major watercourses, and sensitive ecosystems, while emphasizing collaboration with agencies such as the Capital Regional District and the Ministry of Transportation.

Overall, North Saanich shows a stronger integration of planning, public information, and intergovernmental collaboration than many municipalities in the region.



Integrated Stormwater Management Plan

Key Insights

Watershed-based stormwater management focused on the Tseycum Creek and McDonald Park Road drain watersheds, with long-term strategies to improve drainage and water quality through bylaws, policies, and best management practices.

Bylaws & Documents

- Integrated Stormwater Management Plan, 2023; Drainage Master Plan, 2023



Watercourse Protection Provisions

Key Insights

Stormwater pollution control through investigation, monitoring, and reporting, existing setback requirements, and recommendations to expand streamside protection and enhancement areas (SPEAs) to strengthen riparian protection.

Bylaws & Documents

- CRD Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Building and Plumbing Bylaw No. 1150 (2007)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Regulation of soil removal and stripping/grading activities where they may impact streams, creeks, watercourses, drainage systems, or waterworks infrastructure, and permit requirements for tree removal—particularly where it may affect watercourses or protected trees.

Bylaws & Documents

- Soil Removal and Fill Deposit Bylaw No. 255 (1978)
- Tree Protection Bylaw No. 1548 (2022)



Drainage Requirements

Key Insights

Existing drainage provisions, policy direction toward more environmentally sensitive drainage approaches, and recommended use of ditches, detention ponds, rain gardens, and other green infrastructure approaches.

Bylaws & Documents

- Subdivision and Development Control Bylaw No. 246 (1991)
- Official Community Plan Bylaw No. 1587 (2025)
- Integrated Stormwater Management Plan (2023)



Development Requirements

Key Insights

Minimal developer requirements for rainwater management, alongside recommendations to strengthen standards, support best management practice implementation, restore natural water balance by maintaining pre-development flows, and apply stricter development requirements in riparian areas.

Bylaws & Documents

- Subdivision and Development Control Bylaw No. 246 (1991)
- Integrated Stormwater Management Plan (2023)



Grey Infrastructure Alternatives

Key Insights

Requirement for piped storm drainage in most subdivisions with allowance for open drainageways, alongside policy direction recognizing existing use of roadside ditches and natural drainage courses and encouraging the preservation of open watercourses and integration of green drainage approaches where feasible.

Bylaws & Documents

- Subdivision and Development Control Bylaw No. 246 (1991)
- Official Community Plan Bylaw No. 1587 (2023)



Ongoing Monitoring and Assessment Requirements/Penalties

Key Insights

Fines ranging from \$100–\$500 plus up to \$100 per day for infractions, penalties of up to \$50,000 per offence under the Tree Protection Bylaw, and fines of up to \$500 per day and/or imprisonment up to six months under Soil Removal and Fill Deposit Bylaw, alongside ongoing water quality monitoring by the CRD.

Bylaws & Documents

- Subdivision and Development Control Bylaw No. 246 (1991)
- Tree Protection Bylaw No. 1548 (2022)
- Soil Removal and Fill Deposit Bylaw No. 255 (1978)
- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)

OAK BAY

The District of Oak Bay website does not include a dedicated page on stormwater management. However, the District of Oak Bay Official Community Plan Bylaw No. 4620 (2014) emphasizes collaboration and participation in regional initiatives as a key approach to environmental and water resource management. The OCP outlines the District's intention to engage in the CRD Regional Sustainability Strategy, the Integrated Watershed Management Program, and inter-municipal working groups to support ecosystem protection and improve water quality.



The District also participates in the Bowker Creek Initiative, a collaborative effort coordinated by the CRD involving local governments, community members, and organizations aimed at restoring and enhancing the health of the Bowker Creek watershed. In addition, the OCP highlights the importance of working with partner organizations to support public awareness and education initiatives focused on stewardship and the protection of sensitive, rare, and threatened ecosystems.

Overall, Oak Bay's approach is strongly centred on regional collaboration and watershed-level stewardship rather than standalone municipal stormwater guidance.



Watercourse Protection Provisions

Key Insights

Stormwater pollution monitoring, investigation, and reporting through the CRD, pesticide use restrictions via permit requirements, basic setback requirements from natural boundaries in building and plumbing regulations, restrictions on development within 7.62 m of stream high water marks in alignment with the BC Riparian Areas Regulation, and policy direction to establish a Watercourses Development Permit Area to strengthen riparian protection.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Pesticide Use Bylaw No. 4518 (2011); Building and Plumbing Bylaw No. 4247 (2005)
- Zoning Bylaw No. 3531 (2025)
- Official Community Plan Bylaw No. 4620 (2014)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Regulation of altering, cutting, damaging, or removing protected trees, including replanting requirements, and policy direction to preserve and renaturalize land by retaining existing vegetation, topography, and hydrology wherever possible.

Bylaws & Documents

- Tree Protection Bylaw No. 4742 (2005)
- Official Community Plan Bylaw No. 4620 (2014)



Drainage Requirements

Key Insights

Promotion of maximizing absorbent soils and reducing impervious surfaces to enhance natural infiltration, along with support for green drainage techniques such as rainwater collection, bioswales, rain gardens, and other low-impact stormwater management approaches.

Bylaws & Documents

- Official Community Plan Bylaw No. 4620 (2014)



Grey Infrastructure Alternatives

Key Insights

Requirement for properties discharging water to connect to the public sewer system unless an engineer or geoscientist determines that site conditions allow natural infiltration or an approved onsite stormwater management system, along with policy direction to encourage the use of permeable materials such as permeable pavers and permeable asphalt to support infiltration.

Bylaws & Documents

- Public Sewer Bylaw No. 3891 (1996)
- Official Community Plan Bylaw No. 4620 (2014)



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Fines of up to \$10,000 for contraventions of pesticide use and tree protection regulations, ongoing water quality monitoring by the CRD, and penalties under public sewer regulations ranging from \$200 to \$2,000 and/or imprisonment up to six months.

Bylaws & Documents

- Pesticide Use Bylaw No. 4518 (2011)
- Tree Protection Bylaw No. 4742 (2020)
- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Public Sewer Bylaw No. 3891 (1996)

The District of Saanich website includes a dedicated Stormwater Management page that provides comprehensive information on flooding, erosion, water quality, natural assets, green stormwater infrastructure (GSI), and stormwater management systems. It also outlines current infrastructure configurations and provides access to municipal bylaws and policies related to stormwater management. In addition, the page links to external guidance and resources from the CRD and the City of Vancouver to support planning and implementation of GSI. The website further notes that the District is currently in the process of developing an Integrated Stormwater Management Plan (ISMP).



The Saanich Official Community Plan Bylaw 2023, No. 10000, reinforces this approach by outlining ongoing collaboration with the Capital Regional District and Island Health in monitoring water quality in significant streams and lakes. Saanich is also actively involved in the Bowker Creek Initiative, a collaborative partnership between local governments, community members, and organizations aimed at protecting and enhancing the health of the Bowker Creek watershed.

Overall, Saanich demonstrates a well-developed approach to stormwater management, combining comprehensive public resources, infrastructure planning, and strong regional collaboration.



Watercourse Protection Provisions

Key Insights

Stormwater pollution monitoring, investigation, and reporting through the CRD, restrictions on pollution and development near watercourses, protection of streamside areas through development permit requirements, pesticide use restrictions and integrated pest management approaches, and policy direction to support the daylighting of channelized or culverted watercourses where feasible.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Watercourse and Drainage Regulation Bylaw No. 7501 (1996)
- Streamside Development Permit Area (SDPA); Pesticide Bylaw No. 9054 (2010)
- Integrated Pest Management Policy (2025)
- Official Community Plan Bylaw No. 10000 (2023)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Protection of riparian areas by restricting alterations to soil and vegetation within 30 m of streams, regulation of soil removal and deposition, and controls on the alteration, damage, or removal of protected trees.

Bylaws & Documents

- Streamside Development Permit Area (SDPA)
- Soil Removal and Deposit Bylaw No. 9842
- Tree Protection Bylaw No. 9272 (2014)



Drainage Requirements

Key Insights

Requirements to account for impervious surface area in subdivision planning and stormwater management, along with a Stormwater Management Development Permit Area that applies to institutional developments increasing impervious cover by 250 m² or more and promotes onsite measures that replicate natural runoff, including ponds, constructed wetlands, sand filtration, and innovative road and curb designs.

Bylaws & Documents

- Subdivision Bylaw No. 7452 (1995)
- Stormwater Management Development Permit Area



Development Requirements

Key Insights

Provision allowing subdivision drainage to cross private land with landowner consent, guidance permitting the use of parklands for approved surface stormwater management facilities such as engineered wetlands, and policy direction to enhance onsite stormwater infiltration and groundwater recharge through redevelopment.

Bylaws & Documents

- Subdivision Bylaw No. 7452 (1995)
- Surface Stormwater Management Development Guidelines (SSMDG)
- Official Community Plan Bylaw No. 10000 (2023)



Grey Infrastructure Alternatives

Key Insights

Allowance for buildings to be disconnected from the municipal stormwater drainage system with District approval, provided that alternative stormwater drainage or detention systems are implemented and maintained.

Bylaws & Documents

- Building Bylaw No. 9529 (2019)



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Fines of up to \$50,000 for violations of the Soil Deposit and Removal Bylaw No. 9842 (2022), penalties ranging from \$1,000 to \$5,000 under the Tree Protection Bylaw No. 9272 (2014), district responsibility for watering and maintaining newly planted trees for one year before inclusion in an ongoing maintenance program under Subdivision Bylaw No. 7452, and ongoing water quality monitoring by the CRD.

Bylaws & Documents

- Soil Deposit and Removal Bylaw No. 9842 (2022)
- Tree Protection Bylaw No. 9272 (2014)
- Subdivision Bylaw No. 7452 (1995)
- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)



Financial Incentives

Key Insights

Recommendation to explore alternative stormwater funding models to support integrated stormwater systems.

Bylaws & Documents

- Official Community Plan Bylaw No. 10000, 2023

SIDNEY

The town of Sidney's Official Community Plan Bylaw No. 2240 (2022) outlines an integrated approach to green stormwater management, emphasizing its incorporation across a range of municipal initiatives. The plan highlights the development of environmentally sensitive management practices while underscoring the collaborative nature of implementation. It identifies the Town's intention to work closely with the District of North Saanich, the District of Central Saanich, WSÁNEĆ Nations, the Capital Regional District, and the Victoria Airport Authority.



To support these efforts, the Official Community Plan proposes enhanced jurisdictional coordination, improved data sharing, and strengthened collaboration with local organizations and community groups. It further promotes a peninsula-wide approach to identifying and managing natural assets, alongside long-term initiatives focused on knowledge sharing and public education to increase environmental awareness.

Overall, Sidney's approach is strongly centred on regional cooperation, integrated planning, and ecosystem-based management.



Watercourse Protection Provisions

Key Insights

Stormwater pollution monitoring, investigation, and reporting through the CRD, restrictions on pollution and obstruction of streamflow with measures to restore fish passage and prevent enclosure of watercourses, setbacks of at least 15 m from natural boundaries for properties abutting watercourses, and policy direction to protect creeks, streams, and riparian areas in their natural condition.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Watercourse and Drainage Regulation Bylaw No. 1318 (1997)
- Zoning Bylaw No. 2275 (2024)
- Official Community Plan Bylaw No. 2240 (2022)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Permit-based removal of protected trees with replacement requirements based on tree size and species, encouragement of vegetation retention in new developments, minimization of excavation footprints during construction, and requirements for replanting with native, site-appropriate species that support erosion control.

Bylaws & Documents

- Tree Preservation Bylaw No. 2138 (2017)
- Official Community Plan Bylaw No. 2240 (2022)



Drainage Requirements

Key Insights

Promotion of nature-based stormwater management approaches where feasible and site conditions allow, incorporation of climate-resilient landscaping and planting, and ongoing review and evaluation of development impacts in environmentally sensitive areas.

Bylaws & Documents

- Official Community Plan Bylaw No. 2240 (2022)



Development Requirements

Key Insights

Requirement for oil and grease interceptors for paved or impervious parking areas to treat stormwater runoff before it enters the municipal drainage system, and policy direction to minimize excavation footprints during construction and identify sediment runoff risks through pre-construction best practices.

Bylaws & Documents

- Building Regulations Bylaw No. 2016 (2012)
- Official Community Plan Bylaw No. 2240 (2022)



Grey Infrastructure Alternatives

Key Insights

Encouragement of permeable surface materials and onsite surface water retention, discouragement of impervious surfaces, and limits on driveway and access hard surfacing to minimize impacts, including a maximum of 10% hard surfacing within 10 m of the natural boundary.

Bylaws & Documents

- Official Community Plan Bylaw No. 2240 (2022)



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Requirement for dense developments to register a restrictive covenant outlining stormwater system details and maintenance responsibilities, offences under provincial enforcement provisions for contraventions of drainage regulations, fines ranging from \$1,000 to \$50,000 and/or imprisonment up to six months for tree protection violations, and ongoing stormwater quality monitoring by the CRD.

Bylaws & Documents

- Zoning Bylaw No. 2275 (2024)
- Watercourse and Drainage Regulation Bylaw No. 1318 (1997)
- Tree Preservation Bylaw No. 2138 (2017)
- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)

VICTORIA

The City of Victoria's website provides a brief overview of stormwater management and green stormwater infrastructure (GSI), along with links to the City's stormwater utility and Rainwater Rewards program. These resources highlight financial and incentive-based approaches to encourage improved on-site stormwater management practices among residents and property owners.



The City's Sanitary Sewer and Stormwater Utilities Bylaw, Amendment Bylaw No. 12 (2024) further supports this approach by establishing the rainwater management credit program. This program is designed not only to offer fee reductions for properties that implement enhanced stormwater management systems, but also to support educational initiatives aligned with program objectives and requirements. In addition, Victoria participates in the Bowker Creek Initiative, a collaborative partnership between local governments, community members, and organizations aimed at protecting and enhancing the ecological health of the Bowker Creek watershed.

Overall, Victoria's approach combines regulatory tools, financial incentives, and regional collaboration to support stormwater management outcomes.



Watercourse Protection Provisions

Key Insights

Stormwater pollution monitoring, investigation, and reporting through the CRD, pesticide use restrictions through permit requirements, and restrictions on pollution, enclosure of watercourses, and removal of vegetation, trees, and soil.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Pesticide Use Reduction Bylaw No. 07-094 (2008)
- Sanitary Sewer and Stormwater Utilities Bylaw No. 14-071 (2019, as amended 2024)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Regulation of altering, cutting, damaging, or removing protected trees with associated replanting requirements, and restrictions on removing trees, vegetation, or soil within the municipal stormwater system without approval where it may impair stormwater quality.

Bylaws & Documents

- Tree Protection Bylaw No. 21-035
- Sanitary Sewer and Stormwater Utilities Bylaw No. 14-071 (2019, amended 2024)



Drainage Requirements

Key Insights

Allowance for stormwater to be managed through approved onsite systems designed by qualified professionals rather than requiring connection to the municipal stormwater sewer system, along with rainwater management standards promoting green infrastructure practices such as rain gardens, permeable paving, rain barrels, cisterns, and green roofs to meet city targets and support eligibility for incentive programs.

Bylaws & Documents

- Sanitary Sewer and Stormwater Utilities Bylaw No. 14-071 (2019, amended 2024)
- Rainwater Management Standards



Development Requirements

Key Insights

Requirement for oil and grease interceptors for paved or impervious parking areas to treat stormwater runoff before it enters the municipal drainage system, and policy direction to minimize excavation footprints during construction and identify sediment runoff risks through pre-construction best practices.

Bylaws & Documents

- Building Regulations Bylaw No. 2016 (2012)
- Official Community Plan Bylaw No. 2240 (2022)



Grey Infrastructure Alternatives

Key Insights

Allowance for stormwater to be managed through approved onsite systems designed by qualified professionals rather than being required to drain into the municipal stormwater sewer system, along with Rainwater Management Standards that promote and incentivize the use of green stormwater infrastructure and best management practices.

Bylaws & Documents

- Sanitary Sewer and Stormwater Utilities Bylaw No. 14-071 (2019, amended 2024)
- Rainwater Management Standards



Allowance for Permit-Exempt Small-Scale Integration

Key Insights

Permission for low-density residential properties with less than 300 m² of impervious surface to install onsite rainwater management systems, provided they meet city design standards and key performance criteria outlined in the Rainwater Management Standards (do-it-yourself version).

Bylaws & Documents

- Rainwater Management Standards



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Fines of up to \$10,000 per offence (with each day constituting a separate offence), penalties ranging from \$500 to \$50,000 for tree protection violations, and penalties ranging from \$250 to \$10,000 for pesticide use violations, alongside ongoing CRD stormwater quality monitoring and five-year reassessment requirements for continued eligibility under rainwater management incentive program.

Bylaws & Documents

- Sanitary Sewer and Stormwater Utilities Bylaw No. 14-071 (2019, amended 2024)
- Tree Protection Bylaw No. 21-035 (2021)
- Pesticide Use Reduction Bylaw No. 07-094 (2008)
- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Rainwater Management Standards



Financial Incentives

Key Insights

Requirement for property owners to pay a stormwater user fee based on an impervious surface factor calculated from total impervious area, alongside a credit program that reduces utility costs for properties implementing green design principles that minimize impervious surfaces in accordance with rainwater management standards.

Bylaws & Documents

- Sanitary Sewer and Stormwater Utilities Bylaw No. 14-071, 2019, as amended by Bylaw No. 12, 2024
- Rainwater Management Standards

VIEW ROYAL

The Town of View Royal website includes a page on sewage and drainage that provides basic information on the municipality's sewage system and drainage services. The content offers a general overview of how these systems function within the Town, but limited detailed information is provided regarding stormwater infrastructure or management practices.

The Official Community Plan Bylaw No. 881 (2011) provides further direction on the Town's approach to stormwater-related issues. It outlines the intention to collaborate with adjacent municipalities, the Capital Regional District, and other agencies to develop coordinated flood strategies for major storm events and to support the protection of local and regional watersheds.



Overall, View Royal's approach is primarily guided by high-level planning objectives focused on intergovernmental collaboration and watershed protection rather than detailed operational stormwater guidance.



Integrated Stormwater Management Plan

Key Insights

Planning for current and future drainage infrastructure needs, with recommendations to transition from a Master Drainage Plan approach to an Integrated Stormwater Management Plan (ISMP) for more holistic stormwater management.

Bylaws & Documents

- Master Drainage Plan, 2017



Watercourse Protection Provisions

Key Insights

Stormwater pollution monitoring, investigation, and reporting through the CRD, requirements for site plans including setbacks to natural boundaries and restrictions on pollution or enclosure of watercourses, controls on soil deposit and removal to protect watercourses, and zoning requirements establishing a 30 m setback from natural watercourses.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Storm Water Regulation Bylaw No. 902 (2015)
- Soil Deposit/Removal Bylaw No. 869 (2013)
- Zoning Bylaw No. 900 (2014)



Minimizing Disruption to Natural Vegetation & Soil

Key Insights

Regulation of altering, cutting, damaging, or removing protected trees with replanting requirements, regulation of soil deposit and removal activities, and policy direction for construction planning and design to protect natural vegetation and soil.

Bylaws & Documents

- Tree Protection Bylaw No. 1069 (2022)
- Soil Deposit/Removal Bylaw No. 869 (2013)
- Official Community Plan Bylaw No. 881 (2011)



Drainage Requirements

Key Insights

Requirement for stormwater to be disposed of on-site or to the municipal drainage system without causing nuisance or interference with drainage systems or watercourses, basic service connection design guidance, and requirement for a consulting engineer-prepared stormwater management plan for subdivisions and developments addressing site drainage needs.

Bylaws & Documents

- Storm Sewer Bylaw No. 902 (2015)
- Land Use Bylaw No. 35 (1990)
- Municipal Drainage Plan (2017)
- Building Bylaw No. 1111 (2023)



Development Requirements

Key Insights

Requirement that post-development drainage conditions match pre-development levels to the satisfaction of the Director of Engineering, along with grading and slope standards to prevent water accumulation and ensure compliance with stormwater performance targets, and requirements to manage soil, dust, and water runoff during construction.

Bylaws & Documents

- Subdivision and Development Servicing Bylaw No. 985 (2017)
- Storm Water Regulation Bylaw No. 902 (2015)
- Building Bylaw No. 1111 (2023)



Grey Infrastructure Alternatives

Key Insights

Requirement that stormwater not connected to the municipal drainage system be discharged to a natural watercourse by sheet flow only, rather than through artificial conveyance methods.

Bylaws & Documents

- Building Bylaw No. 1111 (2023)



Allowance for Permit-Exempt Small-Scale Integration

Key Insights

Discretionary authority for the Director to waive certain written report requirements where proposed works are considered minor and unlikely to have significant impacts.

Bylaws & Documents

- Storm Sewer Bylaw No. 902 (2015)



Ongoing Monitoring & Assessment Requirements/Penalties

Key Insights

Ongoing stormwater quality monitoring by the CRD, fines of up to \$10,000 per day for violations of stormwater regulations, property owner responsibility for maintaining stormwater facilities, recommendations for regular inspection and maintenance of drainage infrastructure, and penalties ranging from \$1,000 to \$50,000 for tree protection offences.

Bylaws & Documents

- Core Area Stormwater Quality Management Extended Service Establishment Bylaw No. 1 (1997)
- Storm Sewer Bylaw No. 902 (2015)
- Master Drainage Plan (2017)
- Tree Protection Bylaw No. 1069 (2022)

Looking Ahead

A baseline for future action

This baseline study provides a snapshot of how selected municipalities across the Capital Regional District are currently addressing stormwater management through their bylaws, policies, and planning documents. It highlights both shared strengths and important differences in municipal approaches, offering a valuable starting point for regional learning and collaboration.

The findings show that while most municipalities have begun incorporating stronger stormwater management requirements and nature-based approaches into their policies and bylaws, there remains significant opportunity to build on this progress. Persistent challenges—including limited funding, fragmented governance, unclear regulatory frameworks, and divided responsibilities—continue to slow implementation. At the same time, there are clear opportunities to advance stormwater management through greater collaboration across jurisdictions, more consistent standards, expanded use of green infrastructure, and the development of practical guidance and tools for developers, practitioners, and property owners.

Rather than evaluating municipal performance, this assessment establishes a regional baseline to support knowledge sharing, identify emerging best practices, and inform future policy development. As municipalities continue to adapt to climate change, protect watershed health, and strengthen community resilience, this review provides a useful foundation for future research, collaboration, and coordinated action across the CRD.



Appendices

Criteria & Scoring

The matrix was developed based on a review of academic literature, practitioner resources, and expert input, including the Green Bylaws Toolkit (2021) and Dhakal & Chevalier (2017) on barriers to green infrastructure. These insights were refined through interviews with experts and adapted into a practical evaluation tool for municipal context.

The framework captures two complementary dimensions: high-level design, education, and collaboration elements, and more detailed policy instruments embedded in municipal bylaws, OCPs, and design guidelines.

Table 1. Design, Education, and Collaboration Criteria for Stormwater Management

POLICY MEASURE	DESCRIPTION	EXAMPLES
Policy and Design Criteria Manual for Stormwater Management	A long-term planning and technical tool guiding stormwater design, performance standards, and watershed protection through sustainable and green infrastructure approaches.	• Provide step-by-step design guidance and performance benchmarks for phased drainage systems • Establish clear criteria for developers • Outline an overarching drainage philosophy
Collaborative Governance Approaches	Establishes formal and informal mechanisms to support coordination across governments, agencies, and stakeholders for watershed and stormwater management.	• Create regional watershed-level committees or agencies • Fund research, data collection, and education initiatives • Strengthen coordination across departments and external partners
Community Engagement and Educational Approaches	Enhances public awareness and participation in watershed protection and green infrastructure adoption through education and outreach.	• Public outreach and awareness campaigns • Integrate stormwater education into K-12 and post-secondary curricula • Establish awards or recognition programs for best practices

Table 2. Standard Criteria Matrix for Stormwater Policy

POLICY MEASURE	DESCRIPTION	EXAMPLES
Integrated Stormwater Management Plan	Promotes long-term stormwater strategies using green infrastructure to protect water quality and natural hydrology.	• Require green infrastructure in new developments • Protect and restore natural watercourses • Promote infiltration through swales, basins, and vegetation
Watercourse Protection Requirements	Regulates activities to prevent pollution and physical alteration of natural waterways and supports habitat restoration.	• Restrict and penalize dumping into streams • Require fish-friendly infrastructure design • Restore buried streams (“daylighting”)
Minimizing Disruption to Natural Vegetation and Soil	Limits disturbance during construction to preserve natural infiltration capacity and ecosystem function.	• Protect permeable soils during construction • Avoid slope disturbance affecting groundwater flow • Require minimum absorbent soil layers in developments
Drainage Requirements	Encourages use of natural drainage systems rather than conventional piped infrastructure.	• Use grass-lined ditches instead of curbs • Require on-site infiltration of roof runoff • Incorporate absorbent soils in new developments
Development Requirements	Ensures developments do not increase runoff volume, flow rate, or water pollution, particularly in sensitive areas.	• Maintain pre-development runoff levels • Require oil/grit filtration for industrial runoff • Implement sediment control plans prior to construction
Grey Infrastructure Alternatives	Promotes replacement of impervious surfaces with permeable materials to enhance infiltration.	• Use permeable paving for driveways • Increase on-site vegetated/pervious areas • Reduce curb requirements in low-traffic areas
Permit-Exempt Small-Scale Integration	Supports small-scale or homeowner-led green infrastructure by reducing permitting barriers.	• Exempt small GSI projects from permits • Allow rainwater harvesting systems • Provide simplified design guides and fast-track approvals

Table 2. Standard Criteria Matrix for Stormwater Policy (continued)

POLICY MEASURE	DESCRIPTION	EXAMPLES
Ongoing Monitoring and Enforcement Requirements	Establishes monitoring systems and enforcement mechanisms to ensure compliance with stormwater regulations.	• Require system monitoring and maintenance • Integrate monitoring infrastructure into designs • Apply fines for pollution or vegetation removal
Financial Incentives	Encourages adoption of green infrastructure through economic incentives and long-term funding mechanisms.	• Rebates for residential GSI installation • Support innovation in cost-effective stormwater solutions • Develop long-term funding strategies for infrastructure investment

References

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Original Research Report

Bracing for Rain: A cross-municipal analysis of stormwater policy in the Capital Region

peninsulastreams.ca/wp-content/uploads/2026/01/Bracing-for-Rain-A-cross-municipal-analysis-of-stormwater-policy-in-the-Capital-Region.pdf

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Working together for healthier watersheds



About Peninsula Streams Society

Peninsula Streams Society works with communities to restore and protect watersheds, streams, shorelines, and the ecosystems that sustain them through restoration, education, and stewardship.

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By working with nature rather than against it, municipalities can build communities that are more resilient to climate change while protecting the streams, wetlands, and coastal ecosystems that connect us all.

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