

12. Built & Natural Infrastructure

12.1 Overview

Infrastructure plays a significant role in ensuring that future growth is financially sustainable, and that Colwood is able to meet its goal of being carbon neutral, energy positive, and water smart. Directions for transportation infrastructure – including facilities for pedestrians, cyclists, transit-users, and drivers – are outlined in Section 8.

Colwood’s high-quality drinking water comes from the nearby Sooke Lake Watershed. Fewer than one-third of Colwood residents are on the sanitary sewer system, with the majority of households using septic tanks. Septic fields are used to disperse and drain the settled wastewater into the extensive gravels beneath Colwood.

Due to the particular geology of Colwood, stormwater drainage is very efficient. Bioswales, soak-away pits and other naturalized infrastructure are therefore very effective at managing rainwater in Colwood. There is a strong opportunity to utilize the free services of ecosystems to manage stormwater, rather than relying on costly built infrastructure.

This OCP places significant value on natural assets across the community, letting nature do the work often provided by built infrastructure, while supporting greenhouse gas emission reduction goals.

12.2 Objectives and Policies

Objective: 12.2.1

To deliver services and manage public assets in a financially and environmentally responsible manner.

POLICY 12.2.1.1 GROWTH MANAGEMENT

Align investment decisions about future streets, public realm infrastructure, and infrastructure for water, rainwater, and sanitary sewer with growth management strategies in the Capital Regional District's Regional Growth Strategy, and in Section 6 (Growth Management), of this OCP, recognizing that one of the most effective tools in minimizing infrastructure costs is through compact urban form.

POLICY 12.2.1.2 LIQUID WASTE MANAGEMENT

Require that all new development be connected to sewer, with the exception of an accessory dwelling unit or a strata title conversion to a duplex.

POLICY 12.2.1.3 ASSET MANAGEMENT

Apply a holistic and life-cycle approach to asset management, in which the full costs associated with development are considered by utilizing decision-support tools such as the Province of BC's Community Lifecycle Infrastructure Costing Tool (CLIC), which accounts for: local and regional capital costs for roads, water and sanitary infrastructure, waste management, transit, and other community services such as schools and emergency service providers; and external costs associated with climate change, air pollution, and motor vehicle collisions. Conduct financial impact assessments of new development proposals that estimate the long-term financial relationships that the developments will have to municipal finances at the rezoning stage.

POLICY 12.2.1.4 ROAD LENGTH PER RESIDENT

Establish a target ratio for road length per resident that is 6-7 meters or less, which is a threshold that supports higher active transportation modes and reduces municipal infrastructure costs.

IMPLEMENTATION

- ACTION: The City should develop an Assets Management Strategy that include a life-cycle and full-cost approach as described in this section.
- TIMING: Before 2023

POLICY 12.2.1.5 EDUCATION

Implement demonstration projects and work with partners to establish educational programs for water conservation, wastewater and rainwater management, and solid waste management.

IMPLEMENTATION

- ACTION: Conduct a long-term needs assessment of fire hall infrastructure to support planning integration of new fire hall sites in development areas if required.
- TIMING: Before 2023

POLICY 12.2.1.6 EMERGENCY SERVICES INFRASTRUCTURE PLANNING

Ensure that emergency services infrastructure such as new fire halls are incorporated into corporate planning as needed to address demands created by new development.

Objective: 12.2.2 To protect and conserve water resources.

POLICY 12.2.2.1 CONSERVATION STRATEGIES

Monitor demand and implement conservation strategies that include requirements and incentives for xeriscaping and continued water restrictions, greywater use, and rainwater harvesting.

POLICY 12.2.2.2 WATER QUALITY PROTECTION

Protect Colwood's three watersheds from contamination through reduction of point and non-point source pollution, and through watershed planning in partnership with neighbouring and regional jurisdictions.

Objective: 12.2.3 To manage rainwater in a manner that optimizes conservation, protects ecosystems, and maintains quality.

POLICY 12.2.3.1 INTEGRATED RAINWATER MANAGEMENT PLANNING

Develop a rainwater management plan or bylaw that includes best practices for rainwater drainage and groundwater recharge, that:

- a. Maintains base flows and reduces the frequency and magnitude of peak flows;
- b. Minimizes impervious surfaces in order to naturally capture, convey, and infiltrate rainwater rather than directing it to the storm system;
- c. Includes strategies to mitigate rainwater runoff impacts;
- d. Includes low impact biofiltration systems on select streets and public parking areas, and uses enhanced rainwater management treatments such as bioswales and raingardens;
- e. Incorporates rainwater features that form part of the broader open space and habitat network; and
- f. Improves the quality of water flowing into the downstream habitats including the marine foreshore.

IMPLEMENTATION

- ACTION: The City should develop an inventory of existing natural infrastructure (consistent with Policy 12.2.3.2) and develop a Rainwater Management Plan.
- TIMING: Before 2023



Road side rain garden



Landscaping in rights-of-way to reduce the heat island effect.

POLICY 12.2.3.2 NATURAL GREEN INFRASTRUCTURE

Develop an inventory of existing natural green infrastructure that provide rainwater management services, and protect the functioning of those natural assets.

POLICY 12.2.3.3 BUILT GREEN INFRASTRUCTURE

Develop new green infrastructure that applies an integrated rainwater management approach, by:

- a. Requiring developments to include raingardens, bioswales, soak-away pits, and other landscaping measures that naturally manage rainwater;
- b. Designing green infrastructure systems in conjunction with public grey infrastructure systems such as roads, sidewalks, and other areas of the built public realm.

Objective: 12.2.4

To manage wastewater in a manner that optimizes conservation.

POLICY 12.2.4.1 GREY WATER MANAGEMENT

Encourage site-scale grey water management in larger developments.

Objective: 12.2.5

To apply a zero-waste approach to solid waste management.

POLICY 12.2.5.1 REGIONAL COLLABORATION

Collaborate with other jurisdictions to apply a zero waste approach to solid waste management, as per Section 10: Climate Change.

Objective: 12.2.6

To reduce the heat island effect.

POLICY 12.2.6.1 LANDSCAPING

Provide landscaping in rights-of-way and other areas to combat the heat island effect, in conjunction with policies providing direction for tree protection and enhancement in Section 11: Park Areas and Natural Assets.