Still Creek Integrated Stormwater Management Plan

GVRD

www.gvrd.bc.ca

Contents

Still Creek Integrated Watershed Management Plan

1. Sustainability

The Sustainable Region Initiative identifies the need for a series of management plans to address delivery of services according to the principles of sustainability. The plans set strategic direction and formalize policies and actions for regional mandates that provide for the health and economic benefit of the region, and that take a long-term view to ensure that resources used today are still available for future generations.

Sustainability and Still Creek

The Still Creek watershed covers an area of approximately 28 km^2 within the Cities of Vancouver and Burnaby. It is a highly urbanized watershed with a population of over 100,000 residents. Throughout its recent history, Still Creek has been channelized and enclosed and bears little resemblance to the original waterway. Still Creek floods during heavy rains and causes disruption to business, residents and visitors. There are few cost-effective engineered solutions to reduce flooding in the watershed. The Integrated Stormwater Management Plan (ISMP) recognizes that flooding has occurred throughout the history of Still Creek, and will continue during heavy rainfall events.

The Still Creek ISMP proposes goals, strategies and actions that will reduce the impacts of flooding, steer Still Creek toward a more sustainable future, and over time allow Still Creek and its watershed to once again be considered the community amenity it once was. The City of Vancouver and City of Burnaby have adopted their own version of this plan. Most of the goals, strategies and actions within the plan are primarily the responsibilities of the cities, but in accordance with the principles of sustainability, the GVRD plans to work with the cities on the collaborative actions in this plan to help achieve the broader environmental and social goals.

2. Stormwater/Drainage in Still Creek

The Still Creek ISMP provides the direction and sets priorities for the GVS&DD and municipalities in the sustainable management of stormwater within part of the Still Creek Brunette Drainage Area. The SCBDA is one of five mandated drainage areas in which the GVS&DD is responsible for maintaining and operating the main channels to convey stormwater flows in a manner that is consistent with the principles of sustainability. The remaining infrastructure including most pipes, catch basins and smaller waterways remain the responsibility of the municipalities. Similarly, development, bylaws and land use planning within the drainage areas are the responsibility of the municipalities.

The Still Creek ISMP was developed through the collaborative efforts of the City of Vancouver, the City of Burnaby, the GVS&DD, regulatory agencies, and the watershed community and residents.

3. Goals, Strategies and Actions of the Still Creek ISMP

GOAL 1: REDUCE FLOOD IMPACTS ON PEOPLE, PROPERTY, AND THE STREAM CHANNEL AND STRIVE TO RESTORE A MORE NATURAL FLOW REGIME.

Strategy 1-1: Implement On-site source Control Measures to Reduce Peak Runoff Rates and Volumes, Increase Base Flows (i.e., low summer flows), and Improve Water Quality

- All actions associated with this strategy are municipal.

Strategy1-2: Develop and Implement Neighbourhood-scale Rainwater Management Facilities and Plans to Reduce Runoff, Increase Base Flows, and Improve Water Quality

- All actions associated with this strategy are municipal.

Strategy1-3: Develop and Implement Watershed-scale Rainwater Facilities and Plans to Reduce Flooding and Flood Impacts within the Still Creek Corridor

Collaborative actions

- Assess channel conditions on an annual basis and pursue channel conveyance/stability improvements.
- Develop a hydraulic model to assess hydraulic structures as they near the end of their serviceable life and upgrade inadequate structures as appropriate.

Strategy 1-4: Improve Integration of Drainage Infrastructure Management and Maintenance Practices among Vancouver, Burnaby and the GVRD

GVS&DD Actions

- Increase coordination with municipalities to allow for more effective maintenance and channel conveyance improvements to convey the 25 year flow events.
- Develop a hydraulic model to assess impacts of channel impediments on flow conveyance.

Collaborative actions

- Create a technical coordination group to coordinate operations and maintenance activities in the watershed.

GOAL 2: REDUCE STREAM EROSION AND DOWNSTREAM SEDIMENTATION TO LEVELS APPROACHING A MORE NATURAL STREAM

Strategy 2-1: Reduce Excessive Stream Erosion and Sedimentation

Collaborative Actions

- Identify areas of high erosion potential and develop suitable remedial measures.
- Employ bio-engineering measures where appropriate to reduce erosion.
- Investigate the feasibility of sediment capture facilities.

Strategy 2-2: Reduce Sediment-Laden Discharges from Construction Sites

Collaborative Actions

- Investigate the utility of producing a consolidated best practices guide to allow for harmonized sedimentation management and best practices among GVS&DD, Vancouver and Burnaby.

GOAL 3: PROTECT AND ENHANCE STREAMSIDE AND AQUATIC HABITATS

Strategy 3-1: Maintain Open Channel Watercourses

Collaborative actions

- Daylight Still Creek where appropriate and feasible during redevelopment of the properties adjacent to the creek channel.

Strategy 3-2: Improve Fish Access and In-stream Habitat Quality for Fish and Wildlife

GVS&DD Actions

- Assess the feasibility of adding aeration structures to Still Creek to improve the dissolved oxygen levels.
- Improve fish access at Cariboo Dam.

Collaborative actions

- Improve culvert access and passage for fish, and remove channel obstacles.
- Improve in-stream habitat where appropriate and feasible.

Strategy 3-3: Provide Continuous Streamside Vegetation to Protect and Enhance Habitat for Aquatic and Terrestrial Species

Collaborative actions

- Assess encroachments onto GVS&DD and municipal statutory rights-of-way throughout the watershed.
- Pursue a long-term acquisition and dedication of an integrated greenway along the Still Creek corridor.
- Develop an overall streamside planting plan.
- Continue to promote the use of existing access points to the stream corridors.
- Minimize disruptions to sections of the creek corridors that provide sensitive habitat refuges.

Strategy 3-4: Encourage Watershed Stewardship

Collaborative actions

- Create public information programs for watershed stewardship.

GOAL 4: PROTECT AND ENHANCE FOREST AND TREES IN THE WATERSHED

Strategy 4-1: Maximize Tree Cover in the Watershed

- The actions associated with this strategy are a municipal responsibility.

GOAL 5: PROTECT AND IMPROVE WATER QUALITY

Strategy 5-1: Prevent Contaminants from Entering Watercourses and Stormdrains

Collaborative actions

- Establish non-point source pollution control for private properties.
- Continue to operate the cross connection inspection program.
- Enhance major culvert inspection and maintenance.
- Research benefits and challenges of infiltration-type catch basins.
- Continue with source control programs.
- Investigate the potential for a neighbourhood-scale water quality treatment facility.

- The remaining actions are municipal.

Strategy 5-2: Monitor Water Quality and Respond to Results

Collaborative actions

- Continue the fecal coliform monitoring program.
- Use benthic invertebrates as a measure of stream health.
- Coordinate chemical analysis of water quality.

- The remaining actions are municipal.

GOAL 6: MAINTAIN AND INCREASE NATIVE SPECIES BIODIVERSITY

Strategy 6-1: Protect and Enhance Remaining Habitat Reservoirs and Refuges

Collaborative actions

- Focus recreational activities in areas that are already disturbed.

Strategy 6-2: Connect Habitat Reservoirs and Refuges

Collaborative actions

- Restore a Still Creek Greenway as a primary and secondary habitat corridor.
- Link the Still Creek Greenway to other existing and planned Greenways.

- The remaining actions are municipal and institutional.

Strategy 6-3: Improve Habitat Quality and Complexity for Wildlife

Collaborative actions

- Manage natural and urban areas for biodiversity.
- Designate refuge areas for wildlife breeding and rearing.
- Assess potential problem species (invasive species).
- Include biodiversity measures in urban forest management.
- Minimize conflicts between off-leash areas and habitat areas.
- Increase the area and effectiveness of wetlands in the watershed.

Strategy 6-4: Promote Native Vegetation and Control Invasive Species

Collaborative actions

- Create long-term pilot projects for invasive species removal.

- Support Streamkeepers efforts at native planting.

GOAL 7: CONNECT PEOPLE WITH THE WATERSHED AND ITS STREAMS

Strategy 7-1: Create a Variety of Experiences along the Stream Corridors

- The actions associated with this strategy are a municipal responsibility.

Strategy 7-2: Provide Multiple Opportunities for People to Access the Streams

Collaborative actions

- Create opportunities for enhanced canoe and kayaking access in Still Creek.
- Negotiate public use in statutory rights-of-way where feasible.

Strategy 7-3: Develop an Integrated Watershed-wide Bike and Pedestrian System

Collaborative actions

- Create trail connections from town centres to watercourses.
- Create additional loop trails with Central Valley Greenway.

Strategy 7-4: Identify Opportunities for Land Owners to Optimize Public and Private Benefits Along the Streams

Collaborative actions

- Encourage landowners to rehabilitate and daylight enclosed sections of Still Creek.
- Create a Still Creek Integration competition.

- The remaining actions are municipal.

GOAL 8: PROVIDE STREAM RELATED EDUCATION

Strategy 8-1: Create and Enhance Environmental Education Opportunities throughout the Watershed

- The actions associated with this strategy are a municipal responsibility.

4. Implications of GVS&DD Actions

There is no anticipated current increase in capital expenditures by the GVS&DD in the Still Creek watershed as a result of this plan. Any future improvements that have budgetary implications will be assessed. There may be a minor impact on future annual operating costs as more information is obtained by GVS&DD staff on implementing and maintaining sustainable practices such as the use of more environmentally friendly bioengineering techniques.

5. Adaptive Management

The Still Creek ISMP will be re-assessed in twelve years as required by the Liquid Waste Management Plan. Water quantity and quality will continue to be monitored. Operations staff are monitoring the staff time required in implementing some of the GVS&DD action items and the collaborative action items. Should these actions impact on current core functions, a review of operation and maintenance practices in the watershed will be undertaken. The GVRD Brunette Basin Coordinating Committee will continue its ongoing role of coordinating the implementation of this and other long range stormwater management plans within the Brunette Basin.