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Report #EEP 11-17

REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY 23 FEBRUARY 2011

SUBJECT **INTEGRATED WATERSHED MANAGEMENT – IMPLEMENTATION STRATEGY**

ISSUE

To present an implementation strategy for initial components of an Integrated Watershed Management (IWM) approach for the existing Core Area Stormwater Quality Program.

BACKGROUND

The Core Area Liquid Waste Management Committee (CALWMC) received an IWM presentation at its 28 July meeting and requested that staff return with an implementation strategy for the core area.

Currently, the Stormwater Quality Program works primarily to reduce the environmental impact of stormwater-carried contamination at the shoreline. The program oversees stormwater quality monitoring and reporting, promotes adoption of a model stormwater bylaw and develops non-regulatory source control tools and strategies along with some outreach and education for the core municipalities. IWM is a more holistic approach that maps watersheds, identifies stressors and develops strategies to effectively manage the quality and quantity of the water cycle through each watershed.

Under an IWM approach, the Stormwater, Harbours and Watersheds Program (SHWP) will continue to meet Capital Regional District (CRD) commitments under Chapter 10 of the Core Area Liquid Waste Management Plan, maintain key existing monitoring functions at an appropriate level to support municipal efforts to locate and repair sources of stormwater contamination and SHWP staff will continue to work closely with municipal engineering staff. Some resources will be reallocated to incorporate components of an IWM approach into the program.

A switch from detailed annual reporting on stormwater investigations to biennial reporting, but maintaining a flow of information to the municipalities with a brief report on program activities in the alternate years, will free up resources for increased environmental sampling in watersheds and updates to the shoreline monitoring program. Development and support of a model stormwater bylaw for the municipalities has been an important activity in the last eight years and focus can now be shifted to maintaining the model bylaw and expanding existing source control initiatives to improve the quality of stormwater entering municipal infrastructure and being discharged to the nearshore marine environment.

The 2011 components of the IWM implementation strategy (Appendix A) include: developing low-impact development monitoring protocols, working with municipalities to define watershed health monitoring objectives, hosting a workshop for municipal staff to gain knowledge about watershed protection strategies, assessing existing watershed inventory information and addressing any gaps, creation of educational material to inform the public about IWM and prioritizing watersheds for development of specific management plans.

Changes to the program's work plan will be discussed with the municipalities through the Inter-municipal IWM Group. Staff will report back to this committee on the outcome of this approach in fall 2011, including the results of the work plan for 2011 and a proposed work plan for 2012.

ALTERNATIVES

1. That the Core Area Liquid Waste Management Committee direct staff to proceed with the Integrated Watershed Management Program Plan implementation strategy.

2. That the Core Area Liquid Waste Management Committee direct staff to prepare an alternate implementation strategy for the Integrated Watershed Management Program Plan.

FINANCIAL IMPLICATIONS

Work related to the Integrated Watershed Management Program Plan (IWMPP) in 2011 will be performed under the existing budget for the Core Area Stormwater Quality Program. Some functions will be reduced to free up resources for new work plan tasks.

ENVIRONMENTAL IMPLICATIONS

Moving to a watershed-focused program will allow the CRD to support the core area municipalities with new strategies for environmental protection, including an increased focus on dealing with watershed stressors near the source rather than at the municipal infrastructure or receiving environment level. Additionally, the strategy will support municipal efforts in watersheds that cross municipal boundaries and provide guidance towards measuring watershed and receiving environment health to better assess program actions and municipal efforts.

CONCLUSION

By developing an implementation strategy for the proposed IWMPP that balances existing authority, resources and staffing, staff can provide an enhanced service and work cooperatively with municipalities to protect watersheds.

RECOMMENDATION

That the Core Area Liquid Waste Management Committee direct staff to proceed with the Integrated Watershed Management Program Plan implementation strategy.

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Concurrence

GH/DG:km
Attachment: 1

Core Area
Integrated Watershed Management Program
Implementation Strategy

2011 to 2012

23 February 2011

Introduction

This strategy takes the goals in the Proposed Integrated Watershed Management Program Plan (IWMPP) prepared by Capital Regional District (CRD) Stormwater, Harbours and Watersheds Program (SHWP) in July 2010 and, as shown in the tables beginning on page 5, lays out actions by which these goals can be addressed over the two-year period of 2011-2012.

During implementation, there will be collaboration between the CRD, municipalities and other partners to ensure an informed and coordinated process. There will also be periodic assessments to determine the effectiveness of IWMPP actions in terms of the triple bottom line; that is, are the actions delivering useful benefits in a cost-effective manner?

This strategy is primarily intended as an internal document for SHWP to guide activities and as a discussion document for the Inter-municipal Integrated Watershed Management Committee and may be updated from time-to-time to reflect changing municipal needs, pollution issues, protection needs or other relevant items.

Implementation is restricted to the components from the IWMPP that are achievable within the strategy time period and, other than those that are specifically flagged for future action, tasks that require changes in program mandate are not discussed here. Some actions, especially around climate change, require other actions outside this plan to occur before implementation is possible.

Actions will be coordinated under the Stormwater Quality Program component of SHWP. In selecting and prioritizing actions, attention was paid to remaining within the envelope of the existing authority, budget and staffing of the program.

Prioritization Process

In September 2010, staff met with the Inter-municipal Integrated Watershed Management Committee and also held internal meetings to assess the actions in the IWMPP. Based on these exercises, the actions were divided into short-term actions (deliverable in 2011-2012) and long-term actions (flagged for future consideration) and actions that must wait until other projects outside the IWMPP are completed. Prioritization was determined after considering:

- ease of implementation
- cost and/or funding
- priority
- prerequisite for other action items
- "bang for the buck"
- municipal needs and/or interest

Goals, Strategies and Actions

This plan has four goals, which are addressed by strategies and supporting actions for the CRD, municipalities and other entities. The supporting actions are linked and reinforce each other; their implementation requires collaboration and integration to ensure they are not undertaken in isolation. Actions are grouped in logical blocks rather than into strategies as was done in the IWMPP. This is because some strategies can have similar actions in common (such as coordination on technical issues). It makes sense to plan an action once rather than address it multiple times.

Goal 1. Protect clean water and effectively manage flows

Properly functioning hydrology and clean water is paramount to achieving healthy watersheds, creating sustainable communities and protecting property from flooding and overwhelming existing stormwater infrastructure. The intent of this goal is to treat rainwater as a resource, by preventing contamination and encouraging natural hydrologic functions, so that we can eliminate the need to treat it as waste and to manage water quality and quantity at the source to reduce the costs of reactive downstream strategies.

Goal 2. Protect and enhance terrestrial, aquatic and nearshore marine habitats

Healthy watersheds and shorelines provide significant hydrological and ecological services and functions including: purification of air and water, surface flow regulation, mitigation of floods and droughts, erosion control and stream bank stabilization, detoxification and decomposition of wastes, generation and renewal of soil and soil fertility, pollination of crops and natural vegetation, control of agricultural pests, dispersal of seeds and nutrients, maintenance of biodiversity, protection from ultraviolet rays, stabilization of climate, moderation of temperature extremes and the force of winds and waves, support of diverse human cultures, beauty and spiritual sustenance.

Goal 3. Improve the resiliency and adaptive capacity of watersheds to a changing climate

Global climate change is widely recognized as one of the world's greatest environmental, social and economic threats. It is virtually certain that the climate will continue to warm and become increasingly variable over the coming decades. Our region is increasingly vulnerable to the impacts of climate variability and these changes put ecosystems and infrastructure at risk.

Goal 4. Pursue effective and collaborative watershed management and stewardship

Watersheds are not confined by administrative boundaries demarking the various municipalities and electoral areas of the Capital Region. As a result, IWM requires collaboration and coordination between many land and water managers within and among various levels of government. To minimize impacts to downstream municipalities and to ensure sustainability of vital ecosystems and watershed hydrology

local governments need to work together to control and conserve hydrology, ensure biodiversity, minimize land degradation and maximize economic, social and environmental objectives. Effective and collaborative management and stewardship, along with innovation, monitoring and assessment, maintenance and reinvestment will help to achieve this goal.

GOAL 1. PROTECT CLEAN WATER AND MANAGE FLOWS EFFECTIVELY

		Lead	Start Date
Use existing and innovative approaches that mimic natural hydrology and improve watershed health			
1.1	Compile research and provide tools on: • low impact development • use of amended soils, soil types and infiltration rates	CRD	2011
1.2	Determine low impact development (LID) monitoring objectives and develop monitoring program	consultant/CRD	2011
1.3	Continue monitoring effectiveness of CRD green roof and living wall	CRD/BCIT	ongoing
1.4	Work with municipalities and developers to identify LID monitoring opportunities and create partnerships to enable monitoring of the effectiveness of a variety of LID techniques as they are installed	CRD	ongoing
1.5	Use existing, innovative and cost-effective approaches for improving water quality and managing flows (i.e., street sweeping)	municipalities	2011-2012
1.6	Consider standard design guidelines	municipalities	2012
Effectively monitor water quality and quantity and assess impacts on receiving environment			
1.7	Work with municipalities to identify watershed and nearshore health monitoring objectives (within constraints of LWMP and in accordance with senior government regulations)	CRD/IWM committees	2010-2011
1.8	Continue annual reporting and monitoring program and modify as needed to provide municipalities with information to locate sources of contamination	CRD	ongoing
1.9	Define watershed health indicators and ensure they are incorporated into monitoring or other reporting structures	CRD	2010-2011
1.10	Review existing monitoring program and revise to achieve watershed health monitoring objectives	CRD/consultant	2010-2011
1.11	Reevaluate effectiveness of storm drain monitoring for contamination	CRD	2011
1.12	Determine how to best reallocate existing monitoring funds to meet priority watershed health objectives	CRD/IWM committee	2011
1.13	Consider triple bottom line for implementation of Best Management Practices	all	2011
1.14	Develop updated design storms for the region using the best available forecasts for future climate	CRD/consultant	2011-2012
1.15	Investigate how to effectively evaluate flow and quality data, determine data needs and how to use them	CRD	ongoing
1.16	Develop a pilot program to monitor hydrology and flows for priority watersheds and stormwater catchment areas	CRD	as funds are available
1.17	Investigate partnerships with other levels of government and academic institutions and MMAG to share information, obtain required data and identify potential funding sources	CRD	ongoing
1.18	Develop partnerships with academic institutions and local researchers to meet research needs	CRD	2011-2012

	Item already being done
	Planned for 2011
	Planned for 2012
	Start date to be determined

		Lead	Start Date
Education and outreach			
1.19	Provide education with an aim to change impact causing behaviours on: • rainwater quality and quantity issues • low impact development	CRD	ongoing
1.20	Coordinate an annual municipal workshop for IWM	CRD	2011-2012

	Item already being done
	Planned for 2011
	Planned for 2012
	Start date to be determined

GOAL 2. PROTECT AND ENHANCE TERRESTRIAL, AQUATIC AND MARINE HABITATS

		Lead	Start Date
Determine CRD role and authority for protecting and enhancing habitat			
2.1	Work with core area municipalities to determine aspects of habitat protection that would benefit from coordination with the aim of improving watershed and nearshore marine health	CRD	2011
2.2	Determine if coordinated habitat protection requires amendment or creation of establishing bylaw	CRD	2012
Mapping and inventories			
2.3	Compile existing mapping and inventories (urban forests, sensitive areas, species at risk, invasive species) and make available on Natural Areas Atlas and Harbours Atlas	CRD and municipalities	ongoing
2.4	Determine if there are any major gaps in inventory information and obtain funding to complete inventory for missing information	CRD	2011
2.5	Identify priorities areas for protection or restoration and recommend appropriate management strategies and procedures	CRD and municipalities	2012
Education and Outreach			
2.6	Develop a coordinated outreach and education program to inform the public about: • form and function of coastal and riparian areas • the services that ecosystems provide and identify how residents can contribute to the preservation of these services and functions	CRD	2011-2012

	Item already being done
	Planned for 2011
	Planned for 2012
	Start date to be determined

GOAL 3. IMPROVE RESILIENCY AND ADAPTIVE CAPACITY OF WATERSHEDS TO A CHANGING CLIMATE

		Lead	Start Date
Encourage preservation and protection of natural systems that improve the adaptive capacity of the natural environment			
3.1	Work with CRD Climate Action Program and compile research on potential ecosystem shifts as a result of climate change	to be determined	TBD
Participate in vulnerability assessment of regional watersheds and shorelines			
3.2	Work with CRD Environmental Engineering and municipalities to identify vulnerable aspects of stormwater infrastructure, creeks and shoreline as a result of increased precipitation and higher sea level	to be determined	TBD
3.3	Provide input into CRD and/or municipal vulnerability assessments from a watershed and shoreline perspective	to be determined	TBD

	Item already being done
	Planned for 2011
	Planned for 2012
	Start date to be determined

GOAL 4. PURSUE EFFECTIVE AND COLLABORATIVE WATERSHED MANAGEMENT AND STEWARDSHIP

		Lead	Start Date
Work collaboratively to address regional watershed priorities, issues and coordinated management for Core Area			
4.1	Continue meeting with municipal and community IWM committees	municipalities and CRD	ongoing
4.2	Work with core area municipalities to define IWM actions that they will work towards	municipalities	ongoing
4.3	Designate municipal representatives to sit on an IWM working group and encourage their regular participation in discussions	municipalities	2010
4.4	Define criteria and required data needed to evaluate watersheds	CRD/IWM committees	2011
4.5	Identify priority watershed issues for the core area	CRD/IWM committees	Jan-Jun 2011
4.6	Develop a triple bottom line lens for the overall IWM approach	CRD/IWM committees/consultant	2011
4.7	Revisit existing watershed management plans (i.e., Millstream and Craigflower) to determine implementation status and determine if a more coordinated approach is required	CRD	2011
4.8	Identify priority inter-municipal watersheds in the core area and determine if any require the development of a specific watershed management plan	CRD/IWM committees	2011-2012
4.9	Define funding options and participating partners for development of individual watershed management plans	CRD/IWM committees	as required
Liaise with other governments and First Nations on IWM issues			
4.10	Discuss IWM with provincial and federal ministries to determine their involvement and discuss potential funding for implementation	CRD	2011
4.11	Initiate discussions with local First Nations regarding IWM	CRD	2011
4.12	Discuss how traditional ecological knowledge can be incorporated into IWM	CRD and First Nations	2011
4.13	Determine how to involve First Nations in IWM	CRD and First Nations	2012
Determine regional and municipal responsibilities for IWM components			
4.14	Work with core area municipalities to define specific IWM actions that they will work towards to complete IWM plan (see Metro Vancouver LWMP as an example)	CRD/IWM committees	ongoing
4.15	Develop implementation strategy for IWM for the core area	CRD and municipalities	ongoing
Provide regular updates to elected officials			
4.16	Annual reports (to CRD Board and municipal councils)	CRD	ongoing
4.17	Staff reports/updates to councils	CRD/municipal staff	ongoing
4.18	Presentations and workshops	CRD	as needed

	Item already being done
	Planned for 2011
	Planned for 2012
	Start date to be determined

		Lead	Start Date
Regular updates to partners			
4.19	IWM committee member updates to their organizations (at staff meetings, community association meetings, etc.)	municipal staff	ongoing
4.20	Presentations to municipal councils	CRD and municipalities	ongoing
Education and Outreach			
4.21	Determine outreach needs and develop public education and outreach programs on the values and benefits of IWM, and how the public can steward items such as: • rainwater retention and infiltration and reduction of impervious surfaces • environmentally sensitive and significant areas • ecosystem services and function • form and function of coastal and riparian areas	CRD	ongoing
4.22	Inform public about vulnerabilities to climate change in relation to watersheds	CRD and municipalities	2012
4.23	Provide regular updates and outreach to residents/websites (CRD, partner sites) via: • listserves • social media • community association newsletters • community newsletters (In Our Backyard, Camosun and UVic newsletters, SHWP newsletter) • regional newspapers (Oak Bay, Victoria, Saanich News, for example) • other media (Times-Colonist, Monday Magazine, TV, radio) • displays and information at community events	CRD	ongoing
Increase knowledge and capacity among CRD and municipal staff			
4.24	Work with municipal staff to determine where coordinated training and workshops would be beneficial and cost effective	CRD	2010-2011
4.25	Develop, coordinate or deliver training and workshops to staff on: • environmental site design and smart development principles • low impact development technologies	CRD	ongoing
4.26	Encourage staff to seek out opportunities for watershed/stormwater protection/enhancement certification	CRD/municipalities	as required

	Item already being done
	Planned for 2011
	Planned for 2012
	Start date to be determined