

AGENDA
TOWN OF LAKE COWICHAN
Public Works and Environmental Services
Committee meeting to be held on
Tuesday, December 1st, 2015 at 5:00 p.m.



Page #

1. CALL TO ORDER

INTRODUCTION OF LATE ITEMS (if applicable)

2. APPROVAL OF AGENDA

3. BUSINESS ARISING AND UNFINISHED BUSINESS

- (a) Redesign of Welcome Sign at Wye Entrance – Update.
- (b) Sidewalks for North Shore Road – Update on Engineering Study.
- (c) **Ongoing Items Still Being Addressed:**
 - (i) Bike BC Grant Programme.

4. DELEGATIONS AND REPRESENTATIONS

5. CORRESPONDENCE

None.

6. REPORTS

None.

7. NEW BUSINESS

- (a) Municipal World November 2015 Article "Stormwater Fees You Pave, You Pay".
- (b) Municipal World November 2015 Article "Strength Through Partnerships".
- (c) 2015 Sewer CCTV Inspection and Smoke Testing Programme.

3

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8. NOTICES OF MOTION

9. PUBLIC RELATIONS ITEMS

10. MEDIA/PUBLIC QUESTION PERIOD

11. ADJOURNMENT

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Dec 1/15

Stormwater Fees

You pave, you pay



by Dianne Saxe
with Paula Boutis

As growing urbanization increases impermeable surfaces, and climate change disrupts our infrastructure systems, stormwater management will become a bigger concern for municipalities.

What is the best way to pay for stormwater management? It's not a mystery. Decades of economic theory and practice have demonstrated the simple truth that increasing the price of a conduct or activity will reduce the activity.

In 2011, we wrote about the innovative stormwater fees adopted by Kitchener, Ontario, following English and American precedents. Instead of funding stormwater management through fees for municipal water, which penalizes heavy water users such as laundries, these municipalities fund the cost of managing stormwater another way: through taxes on those who create stormwater management problems by having large impervious surfaces, such as flat (non-green) roofs and parking lots. Simply put: you pave, you pay.

Not only are stormwater fees a fairer way of charging for stormwater management, they also create an important financial incentive for property owners and tenants to reduce the impervious surfaces on their land. This has major environmental advantages.

Since 2011, an increasing number of municipalities have adopted or enhanced stormwater management charges.

For example, the cities of Kitchener and Waterloo increased the effectiveness of their program with a stormwater utility and credit initiative in January 2013. The credit program offers local property owners financial incentives for reducing the amount of stormwater runoff and pollutants that enter the municipal stormwater management system from their property. The program offers incentives – including lower monthly stormwater management fees – to all ratepayers who demonstrate best practices in managing stormwater runoff. The stormwater credits can offset up to 45 percent of the stormwater portion of each property's utility bill.

Mississauga, a sprawling suburb just west of Toronto, will have its own stormwater charge effective January 1, 2016. A stormwater charge will be applied to all properties that are serviced by the city's stormwater drainage system. In 2016, each property will be charged \$100 per "billing unit." Billing units are roughly based on total impervious area. Multi-residential and non-residential property owners (such as condominiums, apartments, and businesses) will be assigned one billing unit for every 267 square metres of hard surface on their property.

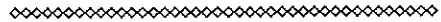
Individual residential properties will be grouped into one of five tiers by size – from extra-small to extra-large. The roofprint area of every single residential property has been individually assessed by remote sensing, using aerial imagery.

Homes will be put into tiers based on their roofprint; this imagery will be updated annually. The smallest homes are assessed 0.5 stormwater billing units. Very large, single-detached homes are assessed 1.7 stormwater billing units.

Multi-unit residential and commercial industrial properties are eligible for reduced fees (up to 50 percent off) if they reduce runoff into the municipal sewer system or improve its quality. For example, reducing the 100-year post-development flow to pre-development conditions is eligible for up to 40 percent off. Enhanced onsite water quality treatment is eligible for up to 10 percent. Onsite capture of the first 15 millimetres of rainfall during a single rainfall event is eligible for up to 15 percent. A pollution prevention plan can be worth five percent.

A similar incentive system for single-family homes is under consideration by the environment committee.

The City of Victoria is making similar changes, with this year marking the



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end of paying for stormwater charges on property tax bills. By the fall of 2015, Victoria is also adopting a user-pay system, connecting the impact that the property has on the stormwater system directly to the bill, with a small portion for roads and rights of way remaining on the bill. The bill will be charged on the following characteristics:

- ▶ the building footprint for hard or impervious surfaces;
- ▶ the cost of street cleaning (the length of street frontage on one's property is part of the calculation);
- ▶ an intensity code (i.e., is the property low-density residential, multi-family residential, commercial/industrial, or civic/institutional); and
- ▶ a codes of practice program (if a property has more than 10 parking spaces, the owner will be charged for a program that works to keep pollutants out of the stormwater system).

Victoria has also developed a "rainwater management rewards" system. Best practices in rainwater management will be encouraged through rebates, credits, and reductions off the annual stormwater bill. The goal is to increase the amount of rainwater going back into the natural water cycle, resulting in the cleaning and slowing of stormwater.

Rainwater harvesting and use is also being promoted.

Other Canadian municipalities that have these types of programs include Saskatoon and Edmonton.

There are numerous environmental advantages to stormwater charges, and to the incentive they provide to reduce impervious surfaces in urban areas. The fast, polluted runoff from large paved areas not only costs municipalities a fortune to manage, it also pollutes surface water and is a major cause for closing public beaches. Large impervious areas also create urban heat islands in summer, exacerbating the effects of climate change, and create heat stress for both wildlife and humans, especially the disadvantaged.

Designated stormwater charges are also more likely to provide adequate funding for wet weather management, because the funds come directly from the stormwater charge, and need not be drawn from general revenues or compete with the cost of drinking water supply or of sanitary sewage treatment.

Staff at the City of Toronto have said that they are well aware of these multiple advantages, but that there has been no political will to adopt stormwater fees based on impervious areas

in the city. But, if numerous other municipalities can do it, why can't Toronto?

A hint comes from the real estate industry, which in August 2012, declared its united opposition to a new formula for calculating Toronto's stormwater service charges. Toronto real estate associations then argued that, since existing developed properties would not be able to reduce their impermeable area without prohibitive retrofit costs, an impermeable rate structure would not result in reduced runoff.

Meanwhile, the Toronto Green Development Standard, adopted by city council in December 2009, does place restrictions on the volume and quality of stormwater runoff from a site. Various standards have been developed, depending on what type of development it is – e.g., low-rise residential or non-residential, mid- to high-rise (any use), mid- to high-risk residential, and all non-residential. However, this does nothing to encourage retrofitting or offer incentives for properties to institute practices that reduce stormwater runoff. Surely a system of stormwater charges can be developed to work with existing sites to manage any inequities that might otherwise arise. *M/W*

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by Marni Turek and Craig Orr

Public Works

Dec 1/15

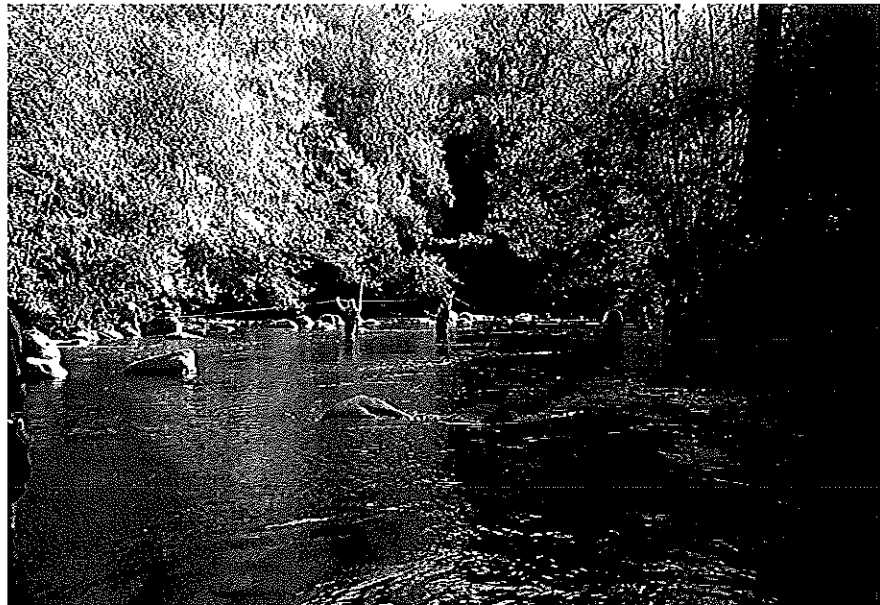
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Strength through Partnerships

Coquitlam River stakeholders partner to develop a new kind of watershed plan

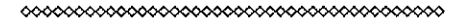
Municipalities are constantly faced with the challenge of addressing the immediate needs of people, while sustaining a healthy environment and future wellbeing. Within this context, it is important to understand that healthy watersheds provide communities with key ecosystem services, such as clean water, flood control, climate regulation, abundant fish and wildlife, and more. These ecosystem services also provide humans with important cultural, spiritual, and health benefits that contribute to a healthy community.¹ In the Coquitlam River watershed, a new kind of watershed plan has been developed – one that recognizes the important linkages between healthy watersheds and healthy humans by endeavouring to fully integrate ecosystem services and related measures of human wellbeing into the decision-making process. This unique approach to watershed planning is the first of its kind in Canada.²

The cities of Coquitlam and Port Coquitlam, together with Kwikwetlem First Nation, have aligned their efforts on a watershed-wide scale, setting aside political boundaries to make progress on important watershed issues. This was made possible through their collaboration with the Coquitlam River Watershed Roundtable, whose mission is to facilitate collaborative resolution of urban growth and natural resource use pressures; inform and educate people about these matters; and promote and support conservation of a sustainable, healthy watershed. The roundtable is using proven methods of



Students from British Columbia Institute of Technology take part in Level 1 Fish Habitat Assessment on the lower Coquitlam River. Collaborative research initiatives like this help to fill data gaps to improve the health assessments. Being limited by data upfront is not a barrier in the open standards approach. Data can be acquired as feasible along the way.

adaptive management to create a results-based watershed plan, built on the principles of partnership and collaboration, and recognizing the linkages between ecosystem services and human health and wellbeing. The Lower Coquitlam River Watershed Plan (LCRWP) highlights the



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MARNI TUREK holds a B.Sc. (Thompson Rivers University/University of British Columbia) in Environmental Chemistry. Marni is the Roundtable Coordinator for the Coquitlam River Watershed Roundtable. She has a background in municipal government, having worked for eight years as a sustainability manager in public works and engineering.

The co-authors appreciate and acknowledge the contributions from Margaret Birch, Environmental Services Coordinator for the City of Coquitlam and Steve Brown, Manager of Public Works for the City of Port Coquitlam in collaborating on this article.

1 F.S. Chapin III, G.P. Kofinas, and C. Folke (eds), *Principles of Ecosystem Stewardship: Resilience-based Natural Resource Management in a Changing World*, 2009, Springer Science and Business Media.
2 Abby Hook, Hook Environmental, personal communication.

The Coquitlam River watershed is still a place of many natural features, including several species of salmon. The word Coquitlam, or Kwikwetlem, is derived from the Coast Salish language and means "red fish up the river," which refers to the red sockeye that once teemed up the Coquitlam River in thousands. While the dam, urbanization, and demands on water have decimated the iconic sockeye, many other species are rebounding. After nearly two decades on the Endangered Rivers list, the Coquitlam River was removed from the list in 2014 due to the formation of the roundtable and the commitment by the cities of Coquitlam and Port Coquitlam to progress towards developing this watershed plan.

need to protect and restore key ecosystem services, and showcases that challenges can be overcome through creative partnerships and effective collaboration.³

The Coquitlam River Watershed and the Need for a Watershed Plan

The Coquitlam River watershed is a partially-urbanized watershed that drains 261 square kilometres of the North Shore Mountains in the lower mainland of British Columbia. As an important source of drinking water and hydroelectric power for the Metro Vancouver region, the upper watershed is a protected area and boasts a vast headwater wilderness, including the Coquitlam Lake Reservoir above the Coquitlam Lake Dam. Below the dam is the lower Coquitlam River watershed, which includes at least 30 watercourses. The lower Coquitlam River runs through Coquitlam and Port Coquitlam and the traditional territory and reserve lands of the Kwikwetlem First Nation. An estimated 156,700 residents live in the lower Coquitlam River watershed.

This lower watershed is heavily urbanized (over 75 percent of the lands are developed) and faces a variety of resource and land use pressures. It has been significantly impacted by human activity over the last century; yet, until now, the lower Coquitlam River watershed has lacked its own watershed plan.

Differences between commercial, industrial, real estate, recreational, and environmental interests in the watershed were rarely resolved to the satisfaction of all parties, and cooperation was elusive. There was no central forum where all parties could work together to address existing problems and proactively plan through consensus-based solutions that considered the broader interests of the parties and the watershed. Realizing that a different approach was required to improve decision

making amongst the many stakeholders in the watershed, the cities of Coquitlam and Port Coquitlam and the Kwikwetlem First Nation, assisted by a multi-sector steering committee, led a stakeholder and engagement process that led to the creation of the roundtable. As a result of this deliberative and collaborative process, the roundtable has a strong foundation – with a mission statement, a common vision and values statement, guiding operating principles, and a clear governance structure.

Due to the many watershed pressures evident in the lower watershed, the roundtable recognized early in its visioning process the value of developing a watershed plan that would:

- ▶ address a comprehensive and integrated scope of issues;
- ▶ recognize and integrate the important linkages between ecological health and human wellbeing;
- ▶ characterize existing conditions and potential pressures, and identify strategies needed to ensure the future health of the watershed;
- ▶ identify measurable and achievable goals;
- ▶ complement other studies and fill information gaps;
- ▶ involve the community; and
- ▶ help track improvement in watershed health.

The challenge was how to deliver an innovative solution to advance watershed governance in a realistic and timely manner across multiple jurisdictions on a watershed-wide scale, while being respectful of capacity and resources.

Regionally, Metro Vancouver municipalities committed to undertake integrated stormwater management planning for every urban watershed by 2014; however, due to the overall percentage of undeveloped lands in the upper watershed, a plan of this nature for the Coquitlam River did

not qualify. Falling outside of any legislated mandate, the roundtable needed to find a cost-effective approach and secure the necessary funding through external sources. In order to meet the needs of the partners and address these challenges, the roundtable was tasked with finding a process that could be comprehensive enough to address the complexities and interconnected nature of watershed planning, while being flexible enough to account for the areas where there was limited availability of data and few resources. Recognizing the need for a plan that was practical and affordable, the roundtable set forth with the goal of developing a cost-effective, collaborative watershed plan that could be achieved within a realistic time frame.

The Need for an Adaptive Management Approach

The partners found a cost-effective approach, proven successful in other watersheds, known as the Open Standards for the Practice of Conservation.⁴ This five-step adaptive management approach seeks to integrate both ecological and human wellbeing concepts into the watershed planning process. Its key benefits include the ability to:

- ▶ better link actions to desired impacts;
- ▶ build in an evaluation framework from the beginning;
- ▶ synthesize all different types of information;
- ▶ use an iterative process allowing for faster implementation; and
- ▶ account for ecological and human goals, which link through the provision of ecosystem services.

Traditionally, integrated stormwater management planning involves data collection, monitoring, mapping, and hydrological analyses that require significant resources. The open standards methodology uses existing resource information, community-based and traditional ecological and cultural knowledge, and local experts to fill the data gaps, thereby providing significant cost and time savings. As development of the watershed plan may guide future land use decisions, the roundtable

³ <www.coquitlamriverwatershed.ca/content/watershed-plan>.

⁴ <www.cmp-openstandards.org>.

sought funding from organizations that support healthy-living values and could influence growth in this area (Real Estate Foundation of British Columbia, Metro Vancouver, and Seattle-based Bullitt Foundation). Though the open standards approach has been used throughout the United States for conservation planning, and in the Pacific Northwest for watershed planning, this is the first application of this tool for watershed planning in Canada, and among the first applications to fully integrate both ecological and human wellbeing goals.

Watershed Planning Process

Between 2012 and 2015, the roundtable engaged over 60 partners in the municipal, provincial, regional, federal, and First Nations governments, aggregate industry, arts and culture, education, outdoor recreation, real estate development sectors, and stewardship groups to work together to create the LCRWP. The first phase of the planning process involved developing conceptual models by answering the following key questions:

- ▶ What do we care about and think is critical?
- ▶ How healthy are the things that we care about?
- ▶ What pressures are affecting the things we care about?
- ▶ Which pressures are the worst?
- ▶ What factors are contributing to the current situation?

Table 1
Healthy Watershed Components

Ecological Components	Human Wellbeing Components
<ul style="list-style-type: none"> • Coquitlam River System • Riparian Areas • Salmon • Natural Areas 	<ul style="list-style-type: none"> • Liveable Communities • Human Health and Safety • Resource Industries • Recreation • Cultural and Spiritual Values • Stewardship

Guided by the vision of a healthy watershed, the roundtable began identifying key ecological and human wellbeing components that would make a healthy watershed, and conducting health assessments. Ten ecological and human wellbeing components were identified, as shown in Table 1.

A subsequent exercise identified eight key pressures as affecting or threatening the 10 healthy watershed components: development, stormwater, invasive species, water extraction, recreation, vandalism/illegal activities, mainstream cultural norms, and mining. Conceptual models were developed to describe how these key pressures affect key components, and participants summarized the contributing factors and existing strategies, or opportunities and activities that could effect change.

The second phase involved developing a strategic plan to identify priority strategies that address the root causes as to why a pressure persists, and to ensure that

measurable and realistic goals are in place. This step involved deciding how to overcome critical threats and restore degraded components, identifying specific objectives that were imperative and the specific actions required to achieve those objectives. The strategic plan will be used to record goals and measures to determine success. It includes an inventory of specific strategies that the roundtable can implement, as feasible and practical, to further the goal of improved health of the watershed.

While the process to develop the watershed plan occurred over a duration of three years, the pace of work was manageable, and participants remain committed and engaged. Through 36 workshops and meetings involving 2,100 in-kind hours from 18 organizations, the watershed plan was successfully launched on Earth Day, April 22, 2015. The financial cost to develop the watershed plan was offset by external funding totaling \$150,000 cash, as well as partnership in-kind contributions totaling



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\$71,300. The Lower Coquitlam River Watershed Plan is a living document that will change with time under the principle of adaptive management.

The roundtable partners will continue to apply for grants specific to supporting the implementation of the priority strategies and the day-to-day management of the plan. Clearly identifying implementation partners and resources (funding and in-kind) will be a factor in successful implementation of the plan.

Conclusion

The collaborative partnership between the cities and Kwikwetlem, along with an adaptive planning approach, has proven effective in delivering an innovative solution to advance watershed governance in a realistic and timely manner across multiple jurisdictions, and on a watershed-wide scale. This is a significant step forward in advancing the concept and consideration of ecosystem services – including cultural and spiritual services. Incorporating resilience thinking and consideration of ecosystem services and human wellbeing holds significant promise of a new paradigm in sustainable development and watershed stewardship. As people continue to put more and more pressure on ecosystems, it will become increasingly important to understand and promote the value of healthy watersheds to community and human wellbeing. As the roundtable and current medical and social research are showing, chances of achieving success ultimately depends on acknowledging the shared and multiple benefits of healthy watersheds, and working collectively to get there.

Collaboration between the cities of Coquitlam and Port Coquitlam and the Kwikwetlem First Nation has been an extraordinary experience, given the multi-jurisdictional nature of the Coquitlam River watershed. As the roundtable guides strategies for action through the watershed plan, it applauds its forward-thinking municipal and First Nation partners and the many watershed sectors for making the implementation of the plan a realistic possibility. This collaboration demonstrates how collective support can extend beyond the borders of political jurisdictions, ensuring physical watershed boundaries are taken into account when decisions related to water resources are made. MW

HOT OFF THE PRESS

The idea of participating in government, and using technology to help individuals do so, has become a legitimate political reality, especially with younger and tech-savvy citizens. There is a robust and growing civic-hacking movement around the world that channels the creativity and problem-solving skills of civic-minded citizens into addressing the challenges of modern governments.

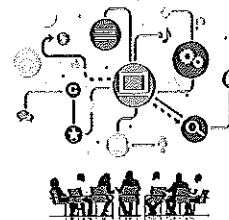
In this thoughtful examination of our democratic roots, the evolving expectations of our government, and the context of today's technologically-rich environment, author Rick Aitken debunks the idea that everyone hates government, pointing to an abundance of evidence demonstrating that, when given a way to interact directly with government, citizens will take the opportunity to do so again and again, with the only reward being contribution.

Citizens are ready to help share the workload, says Aitken. "Local government will need to be open to, prepare for, and not be overly cautious of the opportunities that will present themselves. Governments that understand the importance of participation, and that protect the rights of their citizens to do so, can capitalize on these opportunities."

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