

**AGENDA**  
**ENVIRONMENT AND NATURAL AREAS ADVISORY COMMITTEE**  
**Saanich Municipal Hall Committee Room No. 2**  
**Wednesday, September 17, 2019, 6:00– 8:00 PM**

---

- Pg. 1
1. **ADOPTION OF MINUTES** (attachment)
    - Adoption of June 15, 2019 minute excerpt: Item 3. Storm & Wastewater Management
    - Adoption of the July 2, 2019 minutes
  2. **CHAIR’S REMARKS**
- Pg. 13
3. **CLIMATE ACTION STATUS REPORT** (attachment)
    - Presentation by the Manager of Sustainability
  4. **ENA AWARDS GUIDELINES & RECEPTION WRAP UP**
    - Discussion led by the Mgr. of Environmental Services & Committee Clerk
  5. **CRD ELK/BEAVER LAKE INITIATIVE**
    - Presentation by the Mgr. of Environmental Services
- Pg. 20
6. **UPDATES**
    - BC Government Action Plan: Policy Consultation Paper – District of Saanich’s Formal Submission (attachment)
    - New Report: Environmental Law Centre, University of Victoria – Cleaning up CRD Waterways and Beaches (attachment)
- Pg. 36
7. **COMMITTEE ROUNDTABLE**

The Chair introduced Lesley Hatch, Manager of Underground Services, who provided the committee with a high-level overview of the stormwater management policies, initiatives and projects. The following was highlighted:

- The Department's guiding legislation and policies are the BC Environmental Mgt. Act and the Core Area Liquid Waste Management Plan (The Plan).
- The Plan covers matters related to:
  - Ocean outfalls (discharge)
  - Stormwater management
  - Water sampling (CRD has jurisdiction)
  - Harbour Management
  - Watershed Protection, and
  - Source Control
- CRD water sampling is a touch point for Saanich staff.
- Issues identified are reported to, and actioned by the District.
- The CRD's water quality report underscores the importance of managing and meeting targets related to outflows.
- Saanich relies on a number of Bylaws to help manage stormwater, including (but not limited to): the Drain Connection Bylaw; Sub-division Bylaw and Watercourse and Drainage Bylaw.
- Schedule H of the Sub-division Bylaw No. 7452 identifies two categories of land with regard to the engineering standards related to stormwater management. These categories are: Colquitz and Waterfront.
- Council's Strategic Plan provided direction for the development of a Master Drainage Plan.
- Staff are currently analyzing baseline data to develop a foundational model. The foundational model will be used to shape the plan going forward.
- Climate change considerations will be included in the updated Schedule H of Bylaw No. 7452.
- Infrastructure applications will now consider climate change.
- The District has made a concerted effort to replace or reline wood stave underground pipes.
- The creeks and waterways project will include funding programs for shoreline erosion, infiltration and stabilisation programs.
- Staff have recently completed work on the Stormwater Asset Management Plan.
- The cost associated to the plan is approximately \$3.5M. 80% of the required funds are in place.
- The District will look to the Investing in Canada Infrastructure plan to secure funding for stormwater infrastructure improvements.
- Staff routinely liaise with the CRD with regard to spill management and mitigation and waterway maintenance.

**MINUTES**  
**SPECIAL MEETING ENVIRONMENT AND NATURAL AREAS ADVISORY COMMITTEE**  
Held at Saanich Municipal Hall, Committee Room #2  
**July 2, 2019 at 6:04 p.m.**

Present: Chair: Councillor Rebecca Mersereau

Members: Kevin Brown, Al-Nashir Charania, Kyle Empringham, George Klima, Ryan Senechal and Carmel Thomson.

Staff: Adriane Pollard, Manager Environmental Services; and, Jeff Keays, Committee Clerk

Guest: Mayor Haynes, Ex-Officio

Regrets: Alfred Birch; and, Emily Truman

---

**MINUTES**

**MOVED by A. Charania and Seconded by K. Brown “That the minutes of the Environmental and Natural Areas Advisory Committee meeting held May 15, 2019, be adopted as amended.”**

**CARRIED**

**CHAIR’S REMARKS**

The Chair acknowledged the committees participation in the two joint site-visits with members of the Parks, Trails & Recreation Advisory Committee on June 19 (Mt. Doug), and June 27 (Cuthbert Holmes Park).

The Chair thanked both committee members & staff for making time to attend the special meeting, which has been called to facilitate a more thoughtful and detailed discussion on the proposed Environmental Policy Framework. The following was highlighted:

- After surveying committee members to confirm interest, the Chair called the special meeting in recognition of the following:
  - There is new information (the full report wasn’t brought to the committee) for the committee to consider that will enable a more in depth review of the proposed framework.
  - Staff recommended additional interim measures to Council, that weren’t identified in the presentation received by the committee in April.
  - The Chair had shared some candid comments and concerns at the June 10, 2019 Committee of the Whole meeting that a member of the committee expressed concern about – this meeting will provide an opportunity for clarification.
  - Council’s decision to postpone consideration of the Environmental Policy Framework Proposed Work Plan to the July 8, 2019 Committee of the Whole meeting provides the committee with an opportunity to provide additional feedback (should they wish).

- The special meeting has been called to give the committee an opportunity for further discussion & deliberation, so allocating time for questions and discussion within this two-hour meeting block is the priority.
- The proposed meeting format is a deviation to the regular procedure in that it would grant committee members up to 10 minutes each for questions and comments (questions may be directed to staff or other committee members), which will afford everyone adequate speaking time.
- The speaking order will be determined by the seating order, rotating clockwise. In the event a member is not ready to speak when called upon, the Chair would return to them later in the meeting.
- After consulting the committee about their preferences and clarifying that it is not an expectation of advisory committee's to hear or take into consideration public comments, the Chair indicated that members of the public in attendance would not have an opportunity to address the committee or ask questions.
- Saanich has an obligation to provide a safe work environment that is free of bullying and harassment; accordingly, the Chair reminded everyone in attendance of these expectations.

Committee discussion ensued, the following was noted:

- There will be no presentation, The Manager of Environmental Services is here in a resource capacity to answer any questions arising from committee's consideration of the June 10 report.
- Committee is not obligated to hear from the public. This is at the discretion of the Chair, and by extension the committee.
- Should the committee make a recommendation to Council tonight, it would rise and be tabled as late correspondence at the July 8 meeting for Council's consideration.
- The members of the committee were appointed by Council to consider and make recommendations from a community perspective. Noting that the previous meeting afforded the general public with an opportunity to speak to the matter, it would be more appropriate that tonight's discussion be limited only to committee members.
- The discussion will be captured in the minutes and (after adoption) will form a permanent public record.
- Any recommendations put to a vote of the committee will be recorded in accordance with the District's standard recording procedures.
- The minutes will remain as draft minutes until they are adopted by the committee at the September 18, 2019 meeting.
- Committee may make recommendation for Council's consideration; however, the committee does not have the authority to give direction to Council.
- The committee reached consensus that discussion on the matter would be limited to committee members, as the public will have numerous opportunities to engage with Council in the future.

## **MOTION**

**Moved by A. Charania, and Seconded by K. Empringham, "That the Environment and Natural Areas Advisory Committee suspend the rules of procedure to allow the meeting to be conducted in the proposed format."**

**CARRIED**



## ENVIRONMENTAL POLICY FRAMEWORK DISCUSSION

Committee discussion ensued, the following was noted:

Member A. Charania, stated:

- Thank you to Saanich staff on their important work to date.
- The framework should be solution-focused, not just a reaction to criticisms of the previous plan.
- If the desired outcome is a focused policy solution for matters relating to biodiversity conservation, climate change and environmental stewardship, then it is incumbent to improve, refine and enhance those policies and programs already in place, or were previously recommended.
- Need to work with our First Nations partners, including the Lekwungen peoples, or the Songhees and Esquimalt Nations, and the WSÁNEĆ peoples, to ensure that they are at the table and help co-create the policy framework.
- We have to get this right.

Member G. Klima stated:

- Thank you to staff for their efforts on this important work.
- The opportunity for the committee to provide feedback on the Proposed Work Plan is greatly appreciated.
- The development of the framework is a significant undertaking and a massive body of work in a short time.
- Meaningful and effective public engagement processes remain a concern.
  - Staff need to flesh out what this means, and how it will be undertaken.
  - Town Halls alone can no longer be considered an accurate representation of the community as whole as Town Halls are not accessible (for a myriad of reasons) to large segments of the community.
  - These segments need to be engaged in an equally meaningful manner.

Member K. Brown, stated:

- Proposed framework is a sincere attempt by staff address in a meaningful way the shortcomings of the previous process.
- Significant focus on developing a robust public engagement process is paramount.
- The interim options as presented in Table 4 of the May 30, 2019 report are vital to protecting the natural environment while the full “Natural Saanich” framework is being developed.
- Significant concern with opportunity cost of rescinding the EDPA, specifically with regard to environmental protection, will the proposed interim measures and tools effectively mitigate these gaps?
- What are the significance of the colours and check marks?

In response to questions from the member, the Manager of Environmental Services stated:

- The interim measures were not included in the original direction from Council.
- They are a result of subsequent Council discussions on the matter.
- Table 4 outlines a number of tools available to the District.
- The colour coding pertains to the specific measures effectiveness.
  - Green = Effective
  - Yellow = Potentially or conditionally effective

- Red = Ineffective
- There are limitations to each tool or interim measure
- A Development Permit Area – Category A, (DPA) protects biodiversity in the natural environment and is considered the most effective (green in all categories) measure.
- Protections pertaining to matters such as fill, blasting, sub-division are relative to the DPA guidelines.
- A Streamside Development Permit Area (existing) protects natural environment prior to development permit process.
- A Natural State Covenant is not effective in the pre-development stage.
- An Enhanced Zoning Bylaw would be development oriented, and wouldn't protect natural environment in the pre-development or in a land alteration phases.
- Enhanced Tree, Fill and Development Applications should be considered as low-hanging fruit as they are easily achievable and relatively effective, as example:
  - Enhanced Fill Bylaw = stop wetland infill
  - Enhanced Tree Bylaw = protect other at-risk species
- Additional environmental protection can be achieved by tweaking provisions of existing policies and programs.

In response to the questions from the Chair, the Manager of Environmental Services stated:

- The interim measures would be applicable District wide.
- Inter-departmental feedback will be considered after Council provides direction.
- The question before Council, if approved, would direct staff to “implement interim measures, as recommended in [the] report.”

Member C. Thomson, stated:

- Impressed with the comprehensive nature of the proposed work plan.
- Every step or milestone of the proposed plan provides opportunities for check-in with Council and/or to solicit feedback/input from the public.
- The time frame remains a concern as the final decision may be passed onto the next iteration of Council, where the outcome is an even greater relative unknown.
- Bringing this forward sooner, rather than later, would be beneficial.
- It is important that the three pillars of sustainability (triple bottom line: environmental, social and economic sustainability) as outlined in the Official Community Plan were included highlighted, and further that they recognize, and recommend integration with other factors of influence.
- The proposed Stewardship Program correctly acknowledges that more can be done to actively assist landowners with major stewardship responsibilities.
- There are an abundance of community groups, organizations and agencies that can help to inform and augment the education and awareness aspects of any proposed stewardship initiatives.
- The Province by way of edict, have a significant role to play in this initiative as well.
- Pleased that staff have recommended the inclusion of scientist led, volunteer “citizen science” as it presents the public with a meaningful opportunity to participate in ground-truth data collection and long-term monitoring.
- The Technical Advisory Committee, in addition to scientists, should also include persons with experiential and localized knowledge.
- The interim measures are vitally important; accordingly, Council's consideration is appreciated.

- The recommendations from the Diamond Head report should be clearly listed for review, and Council’s consideration as they were intended as interim in the previous iteration.
- The addition of a part time staff person could help to expedite implementation.

Member, K. Empringham stated:

- Engagement opportunities are clearly identified throughout the proposed work plan.
- Public engagement should be more holistic than a Town Hall.
- The precautionary principle should be used a guideline.
- Low-hanging fruit, or easy policies should be implemented.
- There is a bulk of credible and valuable information to draw from.
- It is strongly cautioned that this not be kicked down the road.

Member R. Senechal, stated:

- Preference should be given to performance based approaches, as prescriptive approaches can be onerous, and labour intensive to measure success.
- Staff resources will however be required to measure success.

Councillor Mersereau inquired if there were any additional comments or questions from the committee members, before offering her summary comments; being none, the Chair stated the following:

- Planning/Environmental Services staff have delivered on what they were asked to do.
- It is evident that lessons were learned after the rescindment of the previous EDPA.
- Public engagement drives the process and is paramount to its success; however, concern remains that there may be too much engagement/public input encumbering the process.
- How do we develop a program that considers, and is shaped by common elements?
- In the absence of commonality, subsequent discussions become increasingly difficult.
- The open-endedness of this process coupled with the absence of practical applications and examples makes this process challenging.
- As example, Milestone 2 – Assess, what does this look like in practice?
  - Assessment, as presented is seemingly endless with regard to scope.
  - What does this endlessness mean with regard to data collection?
  - There is ambiguity as to how it would play out in practice.
  - In this context prudent fiscal responsibility proves difficulty, particularly when faced with so many unknowns.
  - The absence of clearly defined goals and objectives remains a barrier to meaningful public engagement and consultation.
- Numerous Environmental Stewardship objectives from the 2015—2018 Strategic Plan remain incomplete. This needs to be addressed honestly vis á vis the proposed work plan.
- Difficult decision lie ahead, particularly when considering the priorities and competing interests for municipal resources.
- Climate adaption can serve as a lens for the development programs and initiatives aimed at mitigating, and protecting the natural environment against its deleterious effects.
- In addition to this process there is a demonstrated need to overhaul Saanich’s Tree Bylaw in a manner that assists the community in their efforts to maintain our biodiversity.
- The development of regulatory, financial and stewardship tools should be undertaken in a systematic, and transparent manner.

- A tool with which to measure the success of the framework has been seemingly overlooked.
- In the absence of a measurement tool, objectively reviewing the success of various programs, tools or initiatives on their own merit is very difficult.
- Any proposed framework should be developed in accordance to the following criteria: effectiveness; cost; practicality and existing programs/resources.
- The repeal of the EDPA has shaken the confidence of some residents.
- Existing municipal programs and tools could have been resourced appropriately, thus increasing their effectiveness, if the previous iteration of EDPA wasn't so focused on regulations.
- Will the proposed interim measures help achieve goals, and more importantly what are the goals, or objectives of these measures?
- What is the opportunity cost vis á vis other municipal programs and initiatives, and is it ultimately worth it if the outcome results in the reallocation of resources away from other municipal programs and initiatives.
- This isn't an ideological debate, rather, we're attempting to balance effectiveness and value within the context of resource scarcity, jurisdictional authority (limitations), and the ongoing impacts of climate change.

The Chair concluded their remarks with the following question: How do we capture, articulate and incorporate the valuable comments and suggestions from the preceding roundtable, into a coherent and appropriate recommendation for Council's consideration? Committee discussion ensued. The following was highlighted:

- It would be appropriate to use the staff recommendation as a starting point, amendments and revisions can be suggested and implemented.
- Not supporting a framework at this time is akin to the previous Council's thinking, and subsequent re-consideration of the matter.
- It is clear that the community needs to come together in order to move forward; accordingly, it is incumbent upon Council to ensure that any recommendation

In response to a question from a committee member the Clerk stated:

- In the event that there is a motion/recommendation arising from this committee it would be considered as late correspondence at the July 8, 2019 Committee of the Whole Meeting.
- It would be provided to Council for their information and consideration as appropriate.
- With no formal motion on the floor at this time, it is impossible to determine if the motion would be considered as an amendment.
- Council Procedure Bylaw, 2015, No. 9231, Section 35 lays out the rules for secondary motions allowed during debate.
- Section 37 of Bylaw 9231 states that amendments must be strictly relevant to the main motion and not alter in a material way, or be contrary to the principle embodied in the main motion.
- It is the prerogative of the Chair to determine and rule any proposed amendment in order or otherwise.

Committee discussion resumed, the following was noted:

- The previous comments, and clarification, by the Chair is appreciated.

- The process has been messy, and developed within the vacuum of the repealed EDPA.
- It is difficult to balance concrete actions/outcomes with those that are vague, or not fully articulated.
- Building upon the current recommendation is a good start.
- It would be beneficial for the program to employ a project manager to keep the program moving forward.
- No reference to Indigenous knowledge or engagement, the District should consider this particularly in light of the TRC and UNDRIP reports and directions.
- It is likely that some facets of the strategy will be carried over into the next term of Council for implementation.
- Resources associated to operationalization will need to be allocated regardless of financial impact.
- This would not be without precedent, with regard to common good, as seatbelts and bike helmets are overwhelmingly accepted as required, despite additional costs.
- Mapping, and groundtruthing will never be completely perfect; however, this isn't to suggest that it's not worthwhile, but rather what is scope and at what cost, and in light of previously mentioned competing priorities.
- The benefits of Change Management is often overlooked; however, using a Change Complexity Analysis to identify how difficult this proposed (change) framework will be.
- The more complex, the more carefully the project will need to be managed with regard to both people and tasks.
- Where will funding for new incentive programs be appropriated from? And at what will the impact be to proposed (new) or existing programs, in light of the oft referenced, competing priorities.
- The repealed EDPA was the genesis of this proposed work plan.
- It will be difficult to overcome the negative discourse associated with the previous EDPA. What can the District do to overcome this challenge?
- Developing an appeal process at the outset would not be appropriate, as this process would be contingent on the requirements of specific programs.
- Do we need to undertake additional data collection? What do we currently have, what might we require?
- Data collection should be prioritized and undertaken in order to support and inform framework programs and initiatives.
- Data regarding biodiversity can be never ending, and is likely to be a massive undertaking.
- Biodiversity data should be collected to inform what we don't know.

In response to questions from the committee the Manager of Environmental Services stated:

- Saanich is in developing government-to-government protocols with local indigenous governments and communities. These protocols, once enacted, will inform how they wish to be engaged by us going forward.
- First Nations are identified as Government and Stakeholders in the Terms of Reference.
- Consultations with local First Nations is included in the Terms of Reference.
- First Nation governments and community leaders will be included on the Technical Advisory Committee.
- What maps will be used as a part of the framework has not been determined yet.
- There is no prescriptive appeal process with regard to properties potentially captured by mapping exercises; however, this is matter that could be developed through public engagement.

- Residents do have the ability to make a direct appeal to Council; however Council only has the authority to act upon matters that are within their purview (matters related to Building
- Environmental Services doesn't have the capacity to develop certain types of maps.
- There is a significant amount of existing data that hasn't been analyzed, or used.
- There are other sources of reported data available to the District.
- There are countless examples of models from across the globe for further study and consideration.
- The biodiversity throughout the District is incredibly diverse, and cannot be easily captured; accordingly, data collection will be focused on what we can study. New and existing data can be studied, with relevant data extrapolated and applied to modelling.
- Milestone one will include a policy gap analysis, while milestone three will see new proposed bylaws, policies and stewardship incentives brought forward in the progress report for Council's consideration.

Committee discussion resumed, the following was noted:

- A technical advisory committee that would be tasked with supporting the development of the draft plan (goals and objectives) would be of great benefit.
- Council would consider any recommendations put forward by the committee at the July 8, 2019 Committee of the Whole meeting.
- A technical advisory committee will require a Terms of Reference that will be approved by Council.

## **MOTION**

**MOVED by K. Empringham and Seconded by K. Brown "That the Environmental and Natural Areas Advisory recommend that Council consider the following recommendations as an alternate direction to staff:**

- 1. Develop a terms of reference for a technical advisory committee to support staff in preparing the draft goals and objectives for the initiative, and subject to input from the public and Council; and**
- 2. As part of Milestone One work with the technical advisory committee to further refine the scope for the environmental policy framework and data collection, and develop an evaluation matrix for the selection of policy tools; and,**
- 3. Allocate resources for a temporary staff position to manage the environmental database mapping, and GIS production; and,**
- 4. Direct staff to identify implications, administrative costs and likely effectiveness of the proposed interim measures."**

Committee discussion ensued, the following was noted:

- There is a potential that an alternate approach, such as the question on the floor, could result in delays. We must remain mindful and vigilant that this does not occur.
- Any process should avoid being overly prescriptive.

- The District is in the process of developing engagement protocols for Government to Government relations with local indigenous communities. These protocols will inform Saanich as to how these communities wish to be engaged with.
- Recommendation No. 4 would be implemented under the question currently on the floor of Council, accordingly there is no concerns with it being included as part of the recommendation currently before the committee.
- The intent of the analysis noted in recommendation No. 4 is to determine potential operational impacts on the various departments assigned to carry-out implementation and/or enforcement.

**The MOTION was then PUT and CARRIED**

**ADJOURNMENT**

The meeting adjourned at 9:15 p.m.

**NEXT MEETING**

Next meeting is scheduled for September 17, 2019

---

Councillor Mersereau, Chair

I hereby certify these Minutes are accurate.

---

Committee Secretary

\*\*\*\*\*

Please note:

The following report: *Response to Saanich's  
Climate Emergency Declaration – New 2030  
Target*, was considered and approved by Saanich  
Council at the Special Meeting of Monday  
August 19, 2019

\*\*\*\*\*



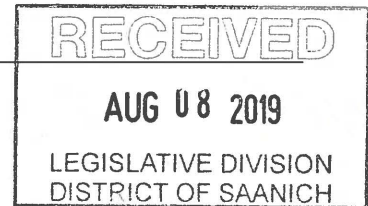


The Corporation of the District of Saanich

*C/w 19 Aug 19*

# Report

**To:** Mayor and Council  
**From:** Sharon Hvozanski, Director of Planning  
**Date:** August 8, 2019  
**Subject:** Response to Saanich's Climate Emergency Declaration - New 2030 Target  
 File: 2560-50 • 100% Renewable Saanich



## RECOMMENDATION

1. That Council adopt new climate targets of:
  - a. Achieving 50 % reduction of community-wide greenhouse gas (GHG) emissions below 2007 levels by 2030; and
  - b. Reaching net zero emissions before 2050 as a complement to the target of becoming a 100% Renewable Energy Community.
2. That Council direct staff to amend the Terms of Reference for the updated Climate Plan: 100% Renewable and Resilient Saanich, and replace the target of 80% reduction in GHG emissions below 2007 levels by 2050 with the new climate targets.

## PURPOSE

At the March 25, 2019 meeting, Council responded to a correspondence from the Capital Regional District with respect to Climate Emergency Declaration and made a motion that:

“The District of Saanich declare a climate emergency and work towards achieving carbon neutrality in the municipality by 2030.”

This is the first of two reports staff will bring to Council in response to Saanich's climate emergency declaration. The purpose of this report is to provide background information and rationale for staff's recommendation on adopting new climate targets according to the Intergovernmental Panel on Climate Change (IPCC)'s new 2030 target. Bringing this report forward first will help inform the final phase of the Climate Plan public engagement and the accelerated actions as well as keep the Climate Plan development on schedule as much as possible. A second report which outlines the proposed accelerated climate actions is planned to be presented in late September or early October after the internal staff review process is complete.

## DISCUSSION

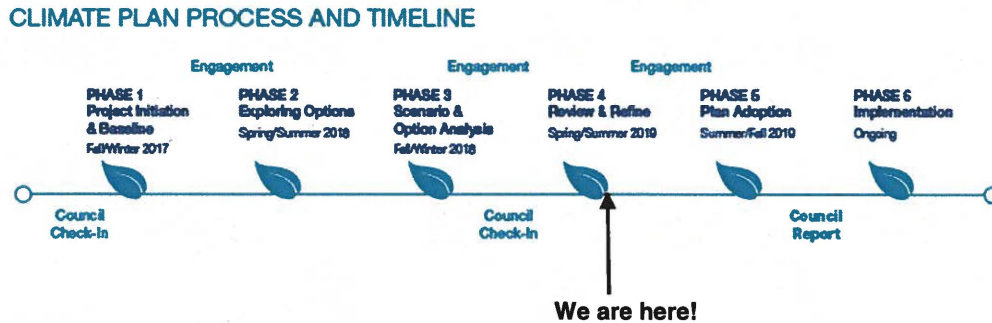
### Background

On October 2, 2017, Council gave direction for staff to update Saanich's Climate Action Plan, and endorsed the following community-wide targets:

- To become a 100% Renewable Energy Community by 2050; and
- To achieve an 80% reduction in community greenhouse gas (GHG) emissions by 2050 (below 2007 levels).

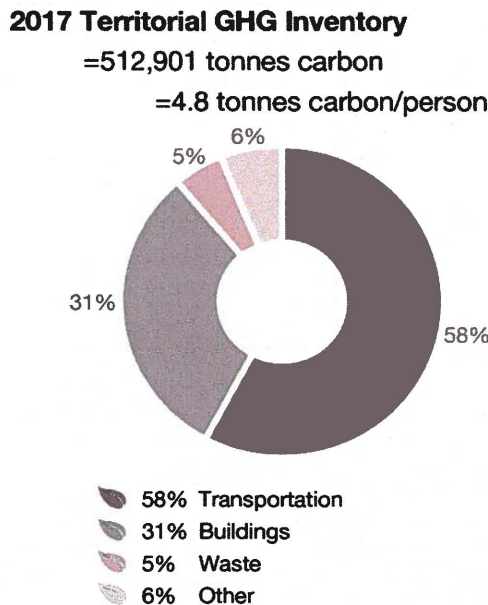
At the time of adopting these targets, the target of 80% GHG reduction below 2007 levels by 2050 was consistent with the research from the Intergovernmental Panel on Climate Change (IPCC) as well as BC Climate Leadership Plan published in 2016.

With those targets, staff began the process of updating the Saanich Climate Action Plan (completed in 2010) and Climate Adaptation Plan (completed in 2011) and developing a new Climate Plan that tackles the twin challenges of climate change mitigation and adaptation. The final Climate Plan: 100% Renewable and Resilient Saanich is anticipated to be presented to Council in fall 2019.



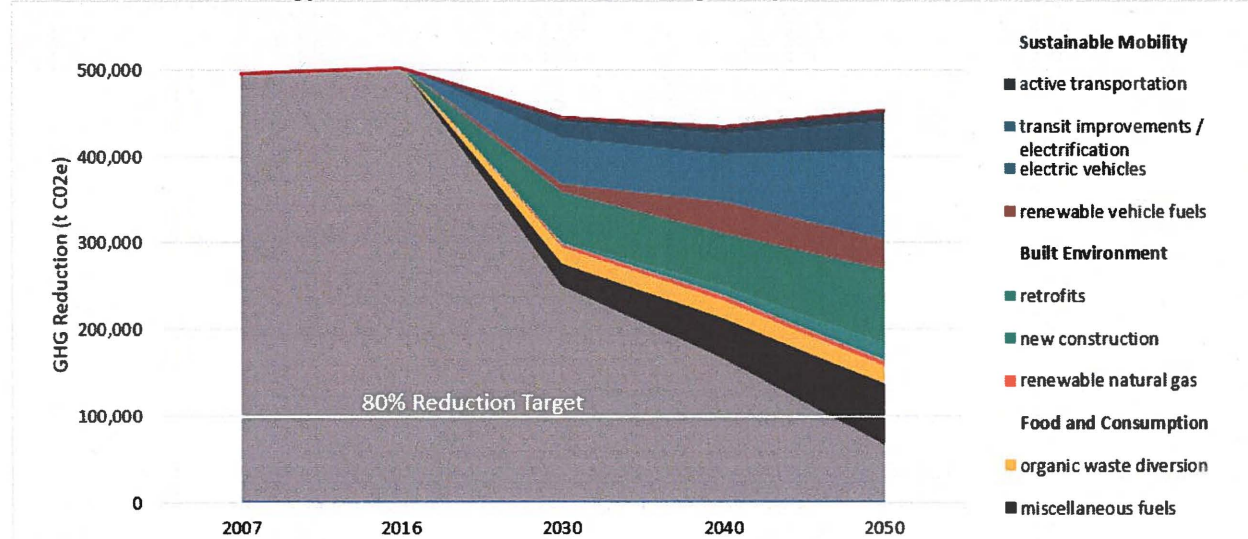
**Figure 1: Climate Plan Process and Timeline**

During the plan development, a community energy and emissions inventory was completed to measure GHG emissions from different sectors in Saanich (see Figure 2 below).



**Figure 2: 2017 Territorial GHG Inventory**

Energy and emissions modeling was used to develop scenarios and inform draft climate actions to achieve the set targets. Below is a wedge diagram that illustrates a pathway to achieving 100% renewable energy and 80% GHG reduction targets by 2050.



**Figure 3: Pathway to achieving 80% GHG Reduction by 2050**

The key findings from the scenario development exercise include:

- Vehicle electrification and existing building retrofits have the biggest GHG reduction potential (20.5% and 17.9% of total community GHG reductions respectively); and
- However, they alone are not sufficient (halfway to the 80% reduction target). A host of other measures have to be taken as well.

### Intergovernmental Panel on Climate Change's New 2030 Target

To limit global warming to 1.5°C, the Intergovernmental Panel on Climate Change (IPCC) suggested in a special report released in October 2018 that global net carbon emissions will need to decline by 45% from 2010 levels by 2030, reaching net zero around 2050 and net negative after. Less than 12 years are left for the world to change its current trajectory of carbon emissions.

The IPCC's Special Report outlined the significant and more severe global impacts associated with 2.0°C of global warming as compared to a 1.5°C increase in temperature, and urged a strengthened international response to reduce emissions and avoid these grave impacts.

The potentially grave impacts include considerable changes in regional climate characteristics (e.g. extreme heat, heavy precipitation, drought, and sea level rise); impacts on biodiversity and ecosystems, including species loss and extinction; climate related risks to health, livelihoods, food security, water supply, human security, and economic growth. There are limits to adaptation and adaptive capacity of human and natural systems even at 1.5°C of warming; adaptation is expected to be more challenging and limits to adaptive capacity become more pronounced at higher levels of warming. Failing to stabilize global temperatures at 1.5°C above pre-industrial levels will significantly compromise progress toward sustainable development, eradication of poverty and reducing inequalities.



The report signals that rapid and far-reaching transitions in energy, land, transportation, buildings, and industrial systems are required in unprecedented scale. A wide selection of mitigation options and a significant increase of investments in those options are necessary. The need for fossil fuels will ultimately need to be eliminated through significant efficiency improvement and transition to renewable energy sources. In addition to emissions reductions, carbon dioxide removal (CDR) from the atmosphere will be needed through measures such as reforestation, land restoration and projects that capture and store carbon.

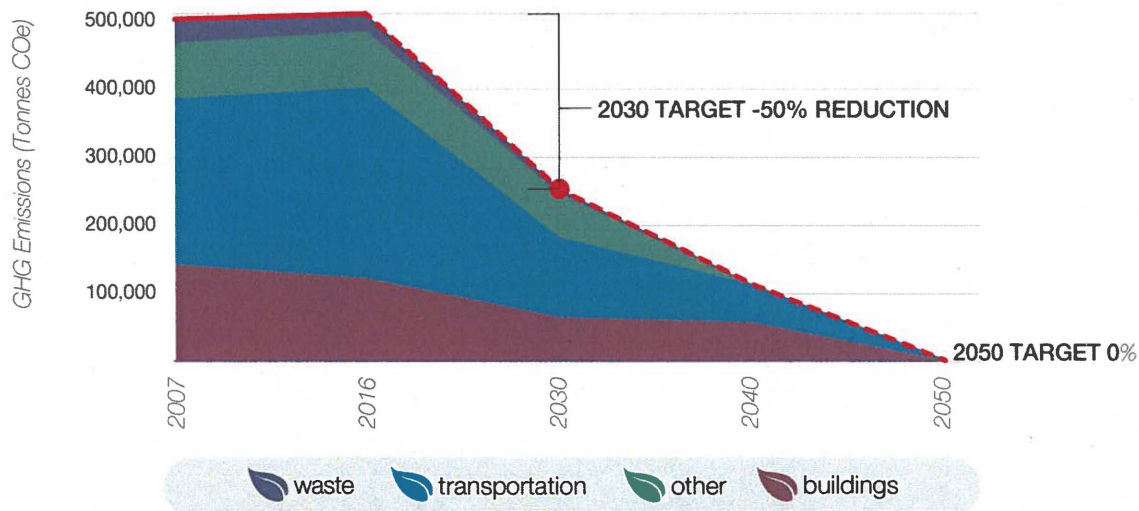
**Global and Regional Movement**

Since the release of the IPCC Special Report, a growing number of local governments around the world have declared a climate emergency, recognizing the importance of accelerating actions to curb global warming as well as preparing for climate change. Locally, the Capital Regional District (CRD) responded with a climate emergency declaration on February 13, 2019. Saanich Council made its own climate emergency declaration on March 25, 2019.

**Aligning Saanich’s Climate Targets with 1.5°C**

As the updated Climate Plan is yet to be finalized, Saanich is in a unique position to be able to revise targets and propose accelerated actions to reflect the latest understanding of actions needed to limit global warming to 1.5°C.

The IPCC Special Report made it clear that a target of 80% GHG reduction on a 2050 time horizon will not be sufficient. Proposed new targets of 50% GHG reduction (below 2007 levels) by 2030 and net zero emissions by 2050 will compel more ambitious climate action and be more consistent with the global GHG reduction needed to limit global warming to 1.5°C.



**Figure 4: Proposed new 2030 and 2050 targets**

An accelerated GHG reduction pathway will exceed the original climate mitigation targets set forth for the updated Climate Plan and help avoid significantly greater costs and efforts to adapt to climate change.

If the new targets are adopted, Council would direct staff to amend the Terms of Reference for the updated Climate Plan: 100% Renewable Saanich and replace the target of 80% reduction in GHG emissions below 2007 levels by 2050 with the new climate targets.

Committing to a 50% reduction target by 2030 requires a massive increase in zero emission vehicles and retrofits of a substantial share of Saanich's building stock. Additional time might be needed to complete energy modeling and new scenario development as well as to consider new or strengthened climate actions. Staff will endeavour to minimize the impact of additional analysis on current schedule of Climate Plan development.

### **Working towards Carbon Neutrality**

There are two ways to achieve carbon neutrality:

#### **1. Eliminate carbon emissions completely (reductions)**

Taking this approach to achieve carbon neutrality by 2030 would mean eliminating all fossil fuel burning and transitioning to 100% renewable energy in Saanich in less than 12 years, a dramatically more aggressive GHG reduction target than the current and proposed climate targets and shortening the timeline to achieve carbon neutrality by 20 years. Achieving such a target will be extremely challenging in the absence of similar commitments, policy alignment and resource support from provincial and federal governments. Currently, the CleanBC plan, released by B.C. Government in December 2018, is expected to put the province on track for 75% of its target - 40% reduction below 2007 levels by 2030. Updates are expected on how it will meet the remaining 25%. Canada's target for GHG emission reductions by 2030 is 30% below 2005 levels (or 523 megatonnes of CO<sub>2</sub>e).

In addition to transitioning to 100% renewable energy, carbon dioxide removal measures such as reforestation, restoration of coastal ecosystems could support further emission reductions. However, preliminary exploration in this area indicates that their potential to achieve emission reductions could be very limited in the short term, and they are unlikely to have a significant impact on the 2030 target as it takes time for ecosystems to restore and grow. It is proposed that Saanich collaborate with other local governments, First Nations and the CRD to better understand the technical feasibility and scalability of restoring local ecosystems to remove carbon dioxide. Partnership with potential stakeholders such as other levels of government, owners of large land/natural area and research institutions can be sought to support this effort. This action will be included in the draft Climate Plan: 100% Renewable and Resilient Saanich for evaluation and prioritization with other climate actions.

#### **2. Balance carbon emissions with carbon removal (offsets)**

Although there is no known precedence of any Canadian municipalities taking this approach to become a carbon neutral community, it is theoretically possible to achieve carbon neutrality by 2030 by means of purchasing carbon offsets.

The financial impact could be substantial. Assuming Saanich achieves 50% GHG reduction target by 2030, there would still be approximately 250,000 tonnes of GHG emissions that need to be offset that year for Saanich to become carbon neutral. The cost to offset 250,000 tonnes of GHG emissions in the community would be \$6.25 million based on a cost of \$25 per tonne of CO<sub>2</sub>e<sup>1</sup>. This approach would divert significant financial resources away from the emissions reduction efforts locally.

---

<sup>1</sup> B.C.'s public sector organizations (PSOs) are already required to be carbon neutral each year. Most PSOs will achieve that through the purchase of offsets procured by the Climate Risk and Investment Branch of the Ministry of Environment at a cost of \$25 per tonne of CO<sub>2</sub>e. The cost of offsets may be higher in the future.



The offsets used for the community's emissions will have to be generated outside of Saanich's municipal boundary (Carbon removal projects within Saanich would be counted as reductions, described in the section above) and would likely contribute to global emissions reduction. However, purchasing offsets have limited direct benefits to local residents, businesses or the local environments. Offsets availability, financial feasibility, and associated trade-offs are also important implications to consider.

In short, there is currently no clear path on how to achieve carbon neutrality in the community by 2030 through emissions reduction; however, aligning our climate targets with IPCC Special Report's recommendations is a major step towards achieving carbon neutrality by 2050. Staff will continue to explore options on how to accelerate climate work towards carbon neutrality and make recommendations for Council to consider in the future.

## **ALTERNATIVES**

1. That Council approve the recommendation as outlined in the staff report.
2. That Council provide alternate direction to staff.

Alternative direction could include: continuation of the Climate Plan: 100% Renewable and Resilient Saanich development with the original target of 80% GHG reductions by 2050 below 2007 levels; adopting a new target of achieving carbon neutrality by 2030 and delaying the Climate Plan: 100% Renewable and Resilient Saanich delivery in order to consider options to achieve the new target.

## **FINANCIAL IMPLICATIONS**

There are no immediate implications related to the District of Saanich Financial Plan. Additional energy and emissions modeling would be required, however Staff believe this work could be covered in the current departmental budget. If determined otherwise, a separate report outlining any financial shortfall would be presented to Council for review and consideration.


## **STRATEGIC PLAN IMPLICATIONS**

There are no implications related to the District of Saanich 2015 - 2018 Strategic Plan.

## **CONCLUSION**

In response to Council's Climate Emergency Declaration in March 2019, staff believes it is appropriate for Council to endorse new climate targets to be in alignment with the latest Intergovernmental Panel on Climate Change recommendations, specifically:

- a. Achieving 50% reduction of community-wide greenhouse gas (GHG) emissions below 2007 levels by 2030; and
- b. Reaching net zero emissions before 2050 as a complement to the target of becoming a 100% Renewable Energy Community.

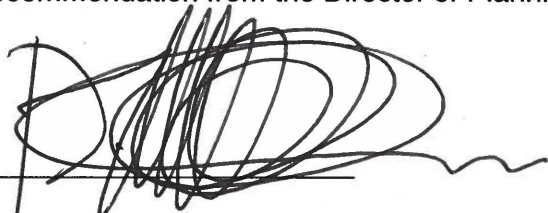
Prepared by:   
Ting Pan  
Manager of Sustainability

Approved by:   
Sharon Hvozdzanski  
Director of Planning

TP/jsp

**ADMINISTRATOR'S COMMENTS:**

I endorse the recommendation from the Director of Planning.

  
Paul Thorkelsson, Administrator

1410-04 Council  
xref: 2560-50  
Plastic Bags

Council Sep 4/19



The Corporation of the District of Saanich

Report



To: Council  
From: Councillors Mersereau & Taylor  
Date: August 29, 2019  
Subject: Formal Submission to the BC Government's Plastics Action Plan

RECOMMENDATION

That Council endorse the enclosed letter as a formal submission from the District of Saanich to the BC Ministry of Environment and Climate Change Strategy in response to the Plastics Action Plan: Policy Consultation Paper, and direct staff to submit it to the Province by the September 18, 2019 deadline.

BACKGROUND

The BC Government, through the Ministry of Environment & Climate Change Strategy's [Plastics Action Plan: Policy Consultation Paper](#), has signaled an interest in regulatory changes to reduce the generation of solid waste and plastics, and increase recycling. The Province is currently soliciting feedback on options to achieve these goals from individuals as well as organizations through a formal stakeholder submission process.

Through consultation with Saanich staff to consider options for making a formal submission, it was determined that it was not possible to obtain staff support to prepare a submission at the direction of Council in time to meet the September 18, 2019 deadline for submissions. Accordingly, Councillors Taylor & Mersereau prepared the enclosed draft response for Council's consideration as a formal submission from the District. The submission is based in part on recent discussions held at the CRD concerning bans for some materials, and the recent endorsement by the Environment & Natural Areas Committee and subsequently Council, of recommendations to improve recycling rates for beverage containers.

Prepared by

Rebecca Mersereau  
Saanich Councillor

Ned Taylor  
Saanich Councillor

URL for the Plastics Action Plan Policy Consultation Paper:  
[https://cleanbc.gov.bc.ca/app/uploads/sites/436/2019/08/CleanBC\\_PlasticsActionPlan\\_ConsultationPaper\\_07252019\\_B.pdf](https://cleanbc.gov.bc.ca/app/uploads/sites/436/2019/08/CleanBC_PlasticsActionPlan_ConsultationPaper_07252019_B.pdf)

Attachments: Draft formal submission for the Plastics Action Plan Policy Consultation

cc: Sharon Hvozdanski, Director of Planning;  
Brent Reems, Director of Building, Bylaw, Licensing & Legal Services





## The Corporation of the District of Saanich

### Draft Formal Submission from the District of Saanich on the BC Government's Plastics Action Plan: Policy Consultation Paper

The District of Saanich is pleased to provide this formal submission in response to the Ministry of Environment and Climate Change Strategy's recent *Plastics Action Plan: Policy Consultation Paper*. Local governments are on the front lines of solid waste management and recycling operations, and as such stand to be impacted significantly by the proposed regulatory changes. Accordingly, we hope this input will meaningfully inform the Province's policy development in the months to come. We welcome further opportunities to provide input on the regulatory framework for recycling and use of plastics as it evolves. Our input below is provided under headings that correspond with the categories of actions presented in the consultation paper.

#### **Bans on Single-Use Packaging**

The District strongly urges the Province to move forward with provincial bans for plastic packaging under the *Environmental Management Act*. Specifically, bans for items such as plastic bags and polystyrene foam are supportable and viable in the short-term and should be implemented as soon as possible. This is due to the many precedents for similar bans that exist at the provincial/state and municipal level, the limited recycling options for these materials, their well-documented negative environmental impacts, and the demonstrated ability of consumers and businesses to respond quickly due to widespread availability of alternative materials. The District also supports quick action to phase-out single-use plastics similar to the forthcoming European Union regulation, to include items such as straws, cutlery, plates and other food and beverage containers, soft plastic packaging and single-use hard plastic containers. All bans on the production and use of plastic products should be sensitive to exceptions that may be warranted for health and safety reasons.

Provincial bans on the production and use of the aforementioned materials would be significantly more effective and efficient than the patchwork of approaches that would emerge if local governments have to develop their own regulatory bans. A consistent province-wide approach would improve certainty for residents, for businesses, and for manufacturers. It is also likely to spur significant innovation in the development of materials with lower environmental impacts, which may not materialize from individual local government bans due to limited market sizes. Most importantly, province-wide bans are likely to be the most effective in terms of reducing the generation of plastics and reducing pressure on landfills.

If the Province does not proceed quickly toward provincial bans, it is critical that the current uncertainty surrounding local government authority and jurisdiction with respect to bans on the use of materials such as plastic bags be rectified as soon as possible, so that local governments can advance their constituents' interests in more ambitious environmental stewardship in the absence of provincial leadership.

#### **More Recycling Options**

The District is also supportive of expanding the range of materials that can be recycled to increase diversion from landfills, whether through an extension of the existing Extended Producer Responsibility Program or other avenues. This is an important strategy to reduce the impacts of consumption and increase diversion from landfills, thereby extending the life cycle of landfills commonly operated by local governments.

## **Reducing Plastics Overall**

The District supports the Province developing recycled content performance standards in conjunction with the federal government in order to reduce the generation of new plastics. This approach also importantly will create more demand for recycled products, which could help stabilize the existing global recycling market that suffers from volatility and creates ongoing uncertainty for existing recycling programs and those who invest time and energy in responsible participation in those programs.

## **Expanding Plastic Bottle and Beverage Container Returns**

The District supports the expansion of the current deposit-refund system to all types of single-use beverage containers as proposed in the consultation paper, and urges the Province to increase the refundable deposit amount to a minimum of 10 cents. Experiences in other jurisdictions demonstrate that higher deposit amounts can significantly increase return rates, in some cases close to 100%.

In closing, we appreciate this opportunity to inform this very important process. We are pleased to see the Province stepping up into a leadership role in response to growing public concern about the ubiquitous nature and harmful effects of plastics in our environment, and we urge the Province to act quickly in this regard.

Signature

Mayor



1300-50 BC ; x1et  
2560-50 plastic bag red.

**Clerksec - Provincial Plastics Policy and Engagement**

POSTED	60V
COPY TO BR SH	
INFORMATION	<input type="checkbox"/>
REPLY TO WRITER	<input type="checkbox"/>
COPY RESPONSE TO LEGISLATIVE DIVISION	
REPORT	<input type="checkbox"/>
FOR	
ACKNOWLEDGED	

**From:** "Plastics ENV:EX" <Plastics@gov.bc.ca>  
**To:** "Plastics ENV:EX" <Plastics@gov.bc.ca>  
**Date:** 8/29/2019 3:57 PM  
**Subject:** Provincial Plastics Policy and Engagement

**RE: Action on Plastics – Website and Policy Consultation Paper**

On July 25, 2019 Environment and Climate Change Strategy Minister, George Heyman, launched a province-wide, public engagement on the topic of reducing plastic waste.

The Ministry of Environment and Climate Change Strategy is inviting you to provide feedback on new policy opportunities and proposed amendments to the Recycling Regulation of the *Environmental Management Act* by September 30, 2019 to address plastic waste.

Visit the Clean BC Plastics Action Plan [website](#) to read the [Policy Consultation Paper](#) and learn more about the solutions being considered. Instructions on how to provide comments are provided in the Policy Consultation Paper. A [news release](#) is also available.

Further details on the webinars being conducted for stakeholders, on the policy paper and proposed revisions to the Recycling Regulation of the *Environmental Management Act* will follow shortly.

**Overview**

Government is proposing action in four connected areas to reduce plastic pollution and use less plastic overall:

- Bans on single-use packaging:** Determining which types of plastic packaging to phase out altogether, as well as any necessary exemptions, such as those for health, safety and accessibility to keep products available for the people that need them.
- Dramatically reduce single-use plastic in landfills and waterways:** Requiring producers to take responsibility for more plastic products, ensuring more single-use items like sandwich bags, straws and cutlery get recycled.
- Plastic bottle and beverage container returns:** Expanding the deposit-refund system to cover all beverage containers – including milk and milk-substitutes – with a 10-cent refundable deposit, keeping millions more containers out of landfills and waterways.
- Reducing plastics overall:** Supporting effective ways to prevent plastic waste in the first place and ensuring recycled plastic is re-used effectively.

**Share the Policy Consultation Paper**

Please forward this correspondence to organization and association members and others who may wish to comment on the proposed changes. The ministry welcomes all suggestions.

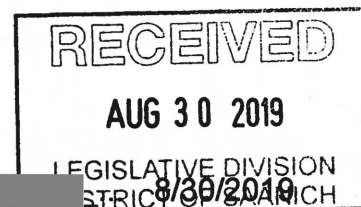
Alternatively, you may wish to include the following in your forthcoming newsletter or circular for your members:

**Do you have any thoughts on how we can reduce plastic waste in B.C.?**

The government of B.C. wants your opinion on a range of possible solutions it's considering.

Just fill out the quick survey before September 30: [www.cleanbc.ca/plastics](http://www.cleanbc.ca/plastics)

And help to set our province on a path to a more sustainable future.



Thank you for your time and consideration. We look forward to receiving your feedback.



Environmental Standards Branch  
Ministry of Environment and Climate Change Strategy

*We are engaging on how to best reduce plastic waste; have your say here!*

---



# Plastics Action Plan

## POLICY CONSULTATION PAPER





The ministry is seeking feedback on new policy opportunities and proposed amendments to the Recycling Regulation of the Environmental Management Act by September 18, 2019 to address plastic waste.

Instructions on how to provide comments are provided on the last page of this consultation paper.



## Introduction

British Columbians want action on plastic waste. Too often plastic packaging and single use items end up as litter in our communities, waste in landfills or debris in lakes, rivers and oceans. Plastic pollution hurts wildlife and harms ecosystems, and it is increasing year after year. The Ministry of Environment and Climate Change Strategy recognizes that new steps are needed and is proposing action in four connected areas.

### 1 BANS ON SINGLE-USE PACKAGING



Determining which types of plastic packaging to phase out altogether, as well as any necessary exemptions, such as those for health, safety and accessibility to keep products available for the people that need them.

### DRAMATICALLY REDUCE SINGLE-USE PLASTIC IN LANDFILLS & WATERWAYS



Requiring producers to take responsibility for more plastic products, ensuring more single-use items like sandwich bags, straws and cutlery get recycled.

### PLASTIC BOTTLE AND BEVERAGE CONTAINER RETURNS



Expanding the deposit-refund system to cover all beverage containers — including milk and milk-substitutes — with a 10-cent refundable deposit, keeping millions more containers out of landfills and waterways.

### REDUCING PLASTICS OVERALL



Supporting effective ways to prevent plastic waste in the first place and ensuring recycled plastic is re-used effectively.

Through the release of this consultation paper, B.C. is engaging on the development of new policy options and seeking feedback on proposed amendments to improve existing programs.

B.C. has been actively involved in the development of a Canada-wide Strategy and Action Plan on Zero Plastic Waste (Strategy and Action Plan), and will continue to support and align with longer-term proposed federal initiatives to ban harmful single-use plastics.

## Dramatically Reducing Plastic Use

### DEVELOPING A PATH FORWARD WITH NEW POLICY OPTIONS

The Ministry of Environment and Climate Change Strategy (the ministry) recognizes that waste prevention is the highest priority. Plastic bans have been adopted in different forms in different jurisdictions to address the growing problem of plastic pollution — for British Columbia, it's critical that we solicit public input on what forms potential bans on plastic packaging could take. For instance, there may be items of interest to British Columbians which are not covered by the proposed federal ban and that are within B.C.'s jurisdictional authority, or that are a priority due to B.C.'s coastal and remote geography.

There are also actions being taken by local governments in B.C. that could be supported by a provincial harmonized approach. B.C. proposes to collaborate with all levels of government both to avoid duplicating regulatory initiatives, and to progress actions that would have an immediate impact and protect B.C.'s environment. In addition, B.C. proposes to work with the federal government to develop national recycled content standards to ensure that in the longer term any new plastics and packaging produced contain recycled plastic.

#### NEW POLICY OPTIONS

- » Consider provincial bans for plastic packaging under the *Environmental Management Act*.
- » Support the development of recycled content performance standards being led by the federal government.



*More than 40% of plastic is used only once. We can do our part to change this, and we want your thoughts and ideas on how to do it best.*

## Expanding Recycling and Recovery

### AMENDMENTS TO THE RECYCLING REGULATION

By expanding recycling and recovery of plastics that are in use, we can significantly reduce the waste that accumulates in landfills and waterways. By doing this as efficiently as possible, we can improve the supply of clean recycled plastics for re-manufacturing. When this strategy is combined with higher recycled content standards for products, it can reduce the need for new plastics to be created.

Both expanding producer responsibility and expanding B.C.'s beverage container return system can be achieved through changes in existing regulations. B.C. currently regulates Extended Producer Responsibility (EPR) for many products, requiring producers (manufacturers, distributors and retailers) of designated products to take responsibility for the life cycle of their products, including collection and recycling. This shifts the responsibility from taxpayers, local government or Indigenous communities to the producers and consumers of a product.

By requiring producers to be accountable, EPR programs reduce waste by incentivizing producers to design products that are recyclable and durable in order that they can be recovered for future use instead of going to disposal. This further supports a circular economy approach to waste management where resources are continually conserved and reused as raw materials.

B.C. proposes to expand existing EPR by including single-use items and packaging-like products under the Recycling Regulation<sup>1</sup> to ensure that these items are being managed responsibly through EPR programs prior to any potential federal bans coming into force (estimated for 2021 and beyond).

B.C. is able to move quickly in this regard as the North American leader with more than twenty-two EPR programs already in place. Expanding EPR to cover these items enables B.C. to capture any items that are beyond the scope or exempted from any federal ban.

<sup>1</sup> <https://bit.ly/2Oaqi5n>



The proposed amendments also include an update to the beverage container deposit system that would reduce the prevalence of littered single-use bottles in the environment and landfills by an estimated 50 million bottles per year.

As these actions would result in an increase in plastic items to be recycled, the Province would work with the federal government to develop national recycled content standards — ensuring that new single-use plastics and packaging-like products are produced using recycled plastic content.

#### PROPOSED AMENDMENTS TO THE RECYCLING REGULATION

- » Add 'packaging-like products' and 'single-use items' as obligated products to the Recycling Regulation to be recovered and recycled by producers.
- » Add all single-use beverage containers to the deposit-refund system.
- » Amend the refundable deposit amount to 10 cents for all beverage containers.
- » Allow electronic refund options for beverage containers in addition to cash.

*Too often plastic packaging and single use items end up as litter in our communities, waste in landfills or debris in lakes, rivers and oceans. Plastic pollution hurts wildlife and harms ecosystems, and it is increasing year after year.*



## We Want Your Input

### HERE ARE SOME SOLUTIONS WE ARE CONSIDERING

#### BANS ON SINGLE-USE PACKAGING



*Determining which types of plastic packaging to phase out altogether, as well as any necessary exemptions, such as those for health, safety and accessibility to keep products available for the people that need them.*

The *Environmental Management Act*<sup>2</sup> (EMA) governs the management of waste in British Columbia, to protect public health and the environment. The EMA allows for the banning of packaging by prohibiting, regulating or restricting the use or sale of packaging materials. British Columbia is considering bans as a policy option for plastic packaging and would like input on viable approaches.

Bans can be an effective policy tool to prevent plastic waste from occurring in the first place and help reduce the use of plastics that are commonly found in the environment and littered in our communities. Bans can also be used to divert recyclable plastics away from landfills to recycling facilities. They are also used to stop the use of plastics that are not recyclable or are considered difficult to recycle and manage.

Plastic packaging includes items such as plastic films (e.g., plastic bags, pouches or wraps) and containers (e.g., bottles, cups, tubs, and other hard plastics) that are used to package food and beverage products, consumer goods, cosmetics and personal care items.

Recent studies have shown that plastic packaging accounts for approximately 47% of all plastic waste discarded, and the majority of single-use plastics are used as packaging<sup>3</sup>.

<sup>2</sup> <https://bit.ly/1FETB2d>

<sup>3</sup> <https://bit.ly/32OHPTJ>



## EXAMPLES OF BANS

- » The European Union will ban single-use plastic products (plastic cotton swabs, cutlery, plates, straws, drink stirrers and sticks for balloons), as well as cups, food and beverage containers made of polystyrene foam and all products made from oxo-degradable plastics by 2021.
- » Many US states such as Maine, Vermont, California, and New York have enacted bans on plastic packaging including plastic bags and polystyrene foam.

### B.C. Local Governments:

- » The City of Vancouver single-use item reduction strategy includes bans for plastic straws, foam cups and foam take-out containers beginning in 2020.
- » More than 23 communities in B.C. have been actively working on developing bans for single-use plastic items such as bags and straws.

Plastic packaging bans are typically implemented through the following approaches:

- » **Bans to regulate the sale or use:** regulate the supply of certain plastic packaging into the marketplace or prevent or restrict the use of certain plastic packaging — e.g., a ban on the use of polystyrene foam in packaging and takeout containers and cups, or a ban on an identified type of packaging, such as a ban on plastic bags to contain or transport goods at the point of sale.
- » **Disposal bans:** prohibit the disposal of plastics that instead can be readily recycled. These bans are typically implemented at the disposal site located within the jurisdiction applying the ban — e.g., an energy-from-waste facility or landfill — and at transfer facilities where wastes are aggregated for transport to a final disposal facility. Bans on the disposal of materials, such as plastics, are implemented after systems are in place to collect and recycle the banned materials (such as those created under EPR programs).

Globally there are a number of new regulations banning plastics. Bans on the sale of plastic bags have been introduced in 65 countries, as well as many regional and local jurisdictions. The federal government recently announced their intention to ban harmful single-use plastics as early as 2021 to reduce pollution from single-use plastic products and packaging, such as shopping bags, straws, cutlery, plates, and stir sticks.

British Columbia communities have also taken significant steps to implement strategies, including bans, levies or fees on plastic bags. Beyond plastic bags, many B.C. communities are pursuing single-use plastic bans on items including plastic bags and straws, polystyrene foam, disposable cups and takeout food containers.

The City of Victoria was the first municipality in B.C. to ban plastic bags in July 2018 through a business licensing bylaw. Municipalities may regulate in relation to a number of areas under the *Community Charter*. On July 11, 2019 the B.C. Court of Appeal ruled, however, that the intent of the bylaw was for the *protection of the natural environment* and therefore under the *Community Charter*, municipalities wishing to exercise their regulatory authority for protection of the natural environment are required to obtain Provincial approval. The Province is currently reviewing all aspects of the decision and recognizes that local governments need clarity on what their authorities are and the process for acting on those authorities should they so desire. Feedback from this engagement process will inform actions and processes moving forward.

*Recent studies have shown that plastic packaging accounts for approximately 47% of all plastic waste discarded, and the majority of single-use plastics are used as packaging.*



When policy tools, such as a ban, are evaluated, it is important to consider all impacts and to ensure that viable alternatives are available. For example, research has shown that switching from single-use plastic bags to single-use paper bags results in simply trading one set of environmental costs for another. A single-use paper bag can require up to four times as much energy to manufacture and produces two times the greenhouse gas emissions when compared to a single-use plastic bag; however, they are bio-degradable and do not persist in the environment like plastic bags do. Successful policies have included the use of bans, generally in combination with levies and fees to decrease unnecessary single-use consumption and to encourage the reuse of bags and other sustainable alternatives. It is critical to find the right policy approach that results in the fewest unintended consequences.

In addition, exemptions to the ban are often required where no viable alternative is found, or to ensure that the essential safety, health, and wellness of all individuals is maintained. For the remaining plastic packaging and single-use plastics, EPR programs are necessary to ensure these materials can be collected and recycled back into new packaging and products.

- » **Do you think bans on plastic packaging should be implemented in B.C.? What plastic packaging products are a priority for B.C. to ban?**
- » **What types of bans should be considered (examples include bans on sale of a certain type of packaging or ban on use of a certain type, or bans on disposal)?**
- » **If a ban was applied, how should exemptions be considered?**
- » **Bans can be implemented in some form by all levels of government due to the different regulatory powers in place. Are there bans best suited for implementation at the federal, provincial or local government level? Should local governments be given the authority to ban problematic plastic items in their community? What types of bans should be considered?**

## 2 MORE RECYCLING OPTIONS



*Dramatically reduce single-use plastic in landfills and waterways: requiring producers to take responsibility for more plastic products, ensuring more single-use items like sandwich bags, straws and cutlery get recycled.*

### EXPANDING PRODUCER RESPONSIBILITY FOR PACKAGING-LIKE PRODUCTS AND SINGLE-USE ITEMS

British Columbia is a national leader in recycling with the widest range of regulated items collected — its existing province-wide Extended Producer Responsibility (EPR) program regulates recycling of packaging and paper products. The inclusion of packaging-like products and single-use items in the Recycling Regulation would expand the type of plastic products that producers are required to collect for recycling from sectors that may include, but are not limited to, residential and municipal properties province-wide.

Packaging-like products are materials that are sold as a product but are in turn used as packaging. This includes re-usable plastic containers, freezer/sandwich bags, canning jars, wrapping paper, and moving boxes. Single-use items are materials that are not necessarily packaging but similarly serve a one-time purpose. This includes plastic straws, stir sticks, cutlery and 'disposable' items purchased in multiples, such as plates, bowls, cups, and party supplies that could be easily diverted in a manner similar to packaging and packaging-like products. This change would require an amendment to the Recycling Regulation.

- » **Do you have comments or suggestions regarding the ministry's proposal to include packaging-like products in the Recycling Regulation? Are there any packaging-like products you believe should be exempt from the Recycling Regulation?**
- » **Do you have comments or suggestions regarding the ministry's proposal to add single-use items to the Recycling Regulation? Are there any single-use items you feel should be exempt from the Recycling Regulation?**



# 3

## EXPANDING PLASTIC BOTTLE AND BEVERAGE CONTAINER RETURNS



*Improving the deposit-refund system to cover all beverage containers — including milk and milk-substitutes — with a 10-cent refundable deposit, keeping millions more containers out of landfills and waterways.*

### EXPANDING RECOVERY AND RECYCLING OF BEVERAGE CONTAINERS

Expanding the EPR deposit-refund system to cover all beverage containers and standardizing the refundable deposit to 10 cents, as well as modernizing the system, would capture and recycle millions more single-use containers, while reducing consumer and retailer confusion over what is and is not covered under a deposit-refund program.

Beverage containers that are currently excluded from the deposit-refund system would now be included, such as milk and milk substitutes (e.g., rice milk, soya milk, flavoured milk, and the array of milk-like products including energy drinks and caffeinated milk beverages). Milk and related products are currently under the residential packaging and paper products schedule of the Recycling Regulation. Obligating these products under the beverage container deposit-refund schedule would provide the needed incentive for greater returns from residents and would capture all containers from commercial generators (e.g., restaurants, schools, offices) that are currently exempted from the Recycling Regulation.

This change would require an amendment to the Recycling Regulation, which currently has a range of deposit-refund amounts from 5 to 20 cents depending on the container type. Creating a uniform 10 cent deposit-refund for all beverage containers translates into an estimated additional 50 million beverage containers diverted from landfills and our environment. Most plastic beverage containers sold today have a 5 cent deposit and are frequently discarded, yet beverage containers with a 10 cent deposit, such as beer cans/bottles, are returned more often by consumers.

The Recycling Regulation currently requires all refunds for returning beverage containers to be paid in cash. Modernizing the Recycling Regulation to also allow refunds to be electronic and paid in an alternative form of cash (e-transfer, cheque, in-store credit, charitable donation, or similar alternatives), would increase ease and efficiency for the consumer. An example includes convenience options such as drop-and-go systems where customers set up an account, tag their mixed bag of containers and drop it in an automated receiving system. Bags are later picked up and sorted, and credit is applied to the customer's account. The existing depot network and cash refunds would still be maintained as an option to ensure those individuals and communities depending on cash refunds continue to have access to this immediate source of income.

Other jurisdictions have seen success with raising deposit-refund rates, expanding to more products and modernizing return systems. Oregon's recovery rate was stagnant at 65% in 2016 until a doubling of deposit-refunds from 5 to 10 cents (for all beverage containers), coupled with enhanced return options such as drop-and-go bags, resulted in an overall return rate of 90% in 2018. In 2008, Alberta increased deposit-refunds to a minimum 10 cents and expanded the program to include milk and related products, resulting in total recovery rates since increasing from 75% to 85%.

In two years' time, B.C would review the impact of the deposit rate changes to determine if further increases to the beverage container deposit rate are required to improve the recovery rate.

- » **Do you have comments or suggestions on the ministry's proposal to include milk and milk substitutes in the beverage container deposit-refund schedule?**
- » **Do you have comments or suggestions on the ministry's proposal to create a uniform 10 cent deposit-refund for all beverage containers?**
- » **Do you have comments or suggestions on the ministry's proposal to allow refunds to be electronic and paid in an alternative form of cash (e-transfer, cheque, in-store credit, charitable donation, or similar alternatives)?**

## 4 REDUCING PLASTICS OVERALL



*Supporting effective ways to prevent plastic waste in the first place and ensuring recycled plastic is re-used effectively.*

### DEVELOPMENT OF NATIONAL RECYCLED CONTENT PERFORMANCE STANDARDS

Recycled content performance standards (standards) go hand in hand with extended producer responsibility programs. EPR programs collect and recycle the materials, turning them into recycled plastic commodities. Standards create the demand for recycled plastic materials by requiring a minimum content of recycled plastic in new packaging and products.

Standards help producers of plastic products to design products with recyclability in mind, which helps to eliminate products that are hard to recycle. Having a common national standard provides clarity and avoids a patchwork approach across provinces and territories for producers. National standards also incentivize and complement government procurement policies and targets requiring purchased plastic products to contain recycled plastic. Procurement policies at all levels of government can stimulate and support market development in this area.

Increasing the levels of recycled plastic content in products can also result in greenhouse gas emissions reductions to help meet the goals set out in CleanBC<sup>4</sup>, the Government's plan to reduce carbon pollution. The production and manufacturing of packaging and products, including the increasing use of plastics, generates greenhouse gas emissions. These emissions can be substantially mitigated by ensuring that packaging and products are reused and, once they reach the end of their life, are collected to be recycled back into new packaging and products. This reduces the need to produce more plastic from virgin materials and fossil fuels.

Recycling plastic beverage containers, for example, has been shown to reduce greenhouse gas emissions by almost 70% compared to producing plastic from virgin resources<sup>5</sup>.

As noted earlier, B.C. has been actively involved in developing the Canada-wide Action Plan on Zero Plastic Waste<sup>6</sup> which identifies the federal government as leading the development of national performance requirements and standards for plastics. British Columbia has a significant opportunity to collaborate and influence the development of these standards, in particular with the proposed recycled content standard.

- » **What should B.C. consider in the development of a national standard on recycled content and any associated targets?**
- » **Do you have comments or suggestions on any related provincial policies or actions?**

*Recycling plastic beverage containers, for example, has been shown to reduce greenhouse gas emissions by almost 70% compared to producing plastic from virgin resources.*



<sup>4</sup> <https://cleanbc.gov.bc.ca/>

<sup>5</sup> <https://bit.ly/30UDrkd>

<sup>6</sup> <https://bit.ly/2Q0QVtP> and <https://bit.ly/2XbqmAx>



## Implementation

The actions proposed in this consultation paper will further advance the reduction, diversion and recyclability of plastics and other single-use items in B.C.

Feedback received will help B.C. determine other potential actions that should be developed or further consulted upon at the provincial level. Your input is welcomed regarding other potential products for inclusion in the Recycling Regulation, or other policy initiatives to minimize plastic waste.

All comments received through webinars, meetings, mail or email by 18 September 2019 will be compiled for review by ministry staff before final drafting of the regulatory amendments. This is expected to be completed in 2019.

*By expanding recycling and recovery of plastics that are in use, we can significantly reduce the waste that accumulates in landfills and waterways.*



## Additional Information Sessions

The ministry will conduct a series of webinars on the proposed revisions. The webinars will review the information contained in this consultation paper and provide an opportunity to ask questions and provide comments.

If you are interested in participating in a webinar, please contact the email below:  
Email: [Plastics@gov.bc.ca](mailto:Plastics@gov.bc.ca)

## Providing Feedback

The ministry welcomes comments on the information and proposals outlined in this consultation paper, and has provided the following opportunities for feedback:

- 1. Complete the public survey at:**  
<https://cleanbc.gov.bc.ca/plastics>
- 2. Send a formal submission to:** [Plastics@gov.bc.ca](mailto:Plastics@gov.bc.ca)  
**Read the guidelines for formal submissions at:**  
<https://cleanbc.gov.bc.ca/plastics>
- 3. Email your comments to:** [Plastics@gov.bc.ca](mailto:Plastics@gov.bc.ca)
- 4. Mail your comments to:**  
*Ministry of Environment and Climate Change Strategy –  
Recycling Regulation Amendments  
PO Box 9341 Stn Prov Govt  
Victoria, BC V8W 9M1*

All comments received through the public survey, formal submission, webinars, mail or email by September 18, 2019 will be compiled for review by ministry staff before final drafting of the amendments to the Recycling Regulation or other policy changes. This is expected to be completed in 2019.

Please note that each organization's submission with opinions and identifiers could be made public either through a decision by the Ministry or if a Freedom of Information request is made under the *Freedom of Information and Protection of Privacy Act*.

*Thank you for your time and comments.*

British Columbia News

## Province seeks feedback to ban, reduce, recycle more plastics

<https://news.gov.bc.ca/20313>

Thursday, July 25, 2019 10:15 AM

**Victoria** - British Columbians are invited to have their say on proposed new actions to reduce the plastic waste polluting the province's waterways, environment and landfills.

"The message from British Columbians is loud and clear – we need to take action to reduce plastic waste, especially single-use items like water bottles and plastic bags that often find their way into our waters, streets and environment," said George Heyman, Minister of Environment and Climate Change Strategy. "We have all seen the striking images of animals and fish being caught up in everyday plastic waste like grocery bags or beer can loops that ensnare these beautiful creatures and it cannot continue. I look forward to hearing from people about how we can all play a part in reducing plastic pollution and plastics use overall."

British Columbians are encouraged to share their opinions in an online survey and read the Province's consultation paper: [cleanbc.ca/plastics](https://cleanbc.ca/plastics)

Government is proposing action in four connected areas to reduce plastic pollution and use less plastic overall:

- **Bans on single-use packaging:** determining which types of plastic packaging to phase out altogether, as well as any necessary exemptions, such as those for health, safety and accessibility, to keep products available for the people who need them
- **Dramatically reduce single-use plastics in landfills and waterways:** requiring producers to take responsibility for more plastic products, ensuring more single-use items like sandwich bags, straws and cutlery get recycled
- **Plastic bottle and beverage container returns:** expanding the deposit-refund system to cover all beverage containers – including milk and milk-substitutes – with a 10-cent refundable deposit, keeping millions more containers out of landfills and waterways
- **Reducing plastic waste overall:** supporting effective ways to prevent plastic waste in the first place and making sure recycled plastic is reused effectively

"B.C.'s system is the envy of North America," said Brock Macdonald, CEO, Recycling Council of BC. "By bringing industry to the table, extended producer responsibility (EPR) programs make it possible for materials to be recycled much more efficiently. That's good for business and good for the environment. Today's addition is a targeted and strategic increase to B.C.'s already expansive series of EPR programs."

The Province is also reviewing new ways to make plastic recycling easier, including a proposed system of electronic refunds for empty bottle returns. This would eliminate the need to sort bottles and provide the option to have refunds processed electronically or donated to community organizations.

"Surfrider Foundation Canada strongly supports the Government of British Columbia's consultations regarding meaningful action to eliminate and reduce plastic waste and pollution," said Lilly Woodbury, representative, Surfrider Foundation Canada. "This timely discussion will set out the next major steps in British Columbia's ongoing efforts to build a prosperous and pollution-free province. We highly encourage all British Columbians to step up and be heard at this crucial time."

While B.C. is a North American leader with 22 industry-led recycling programs, the Province is working with counterparts Canada-wide to develop national standards specifying the minimum amount of recycled plastic in new packaging and products.

These proposed changes support the Province's CleanBC efforts to reduce pollution and divert waste from landfills



“We have a responsibility to British Columbians to curb the significant impacts of plastic pollution on our environment and marine life,” said Andrew Weaver, leader of the BC Green Party caucus. “Taking action on plastic waste is a priority the BC Green caucus shares with this government, as well as with the local governments that have already shown leadership in this area. I look forward to hearing from British Columbians on their priorities for action on plastics.”

British Columbians are encouraged to comment on the recommendations until Sept. 18, 2019.

### Quick Facts:

- B.C. is a leader in creating industry-led EPR recycling programs, currently with more programs than any other jurisdiction in North America.
- B.C.'s 22 industry-led EPR recycling programs cover 14 different product categories of consumer products such as packaging, electronics and electrical products, residual solvents, beverage containers, tires and household hazardous wastes.
- 315,000 tonnes of plastics, such as those in electronics, beverage containers and other packaging are already captured annually in B.C.'s EPR programs.
- Data demonstrates that shifting from the current range of five to 20 cents, to a flat rate of 10 cents, would increase the return rate of beverage containers.
- The existing program for packaging and paper products was recently expanded to include other soft plastics, including laminated/zippered pouches, crinkly plastics such as bags in cereal boxes and foil-lined potato chip bags, all of which can be taken to almost 200 recycling depots throughout the province.
- To address marine-sourced plastics and abandoned vessels, the Province appointed Sheila Malcolmson, MLA for Nanaimo, as the minister's special advisor on marine plastic debris.

### Learn More:

Learn more about the Province's approach to plastics: <https://cleanbc.gov.bc.ca/plastics>

Learn more about the industry-led blue box program: <https://recyclebc.ca/>

Learn more about CleanBC: <https://cleanbc.gov.bc.ca/>

To read the release in Traditional Chinese, visit: [https://news.gov.bc.ca/files/NR\\_Plastics\\_Chinese.pdf](https://news.gov.bc.ca/files/NR_Plastics_Chinese.pdf)

To read the release in Punjabi, visit: [https://news.gov.bc.ca/files/Punjabi-NR\\_Plastics.pdf](https://news.gov.bc.ca/files/Punjabi-NR_Plastics.pdf)

### Media Contacts

**Ministry of Environment and Climate Change Strategy**  
Media Relations  
250 953-3834



# **Cleaning up CRD Waterways and Beaches**

## **Update of *Reinventing Rainwater Management***

An ELC Clinic report prepared for:  
Veins of Life Watershed Society

Law Student: Anisa Nadji  
Articled Student: Andrea Lesperance  
Supervisors: Erin Gray and Calvin Sandborn, QC

JUNE 2019



The content of this report is legal information and should not be relied on as legal advice.

## TABLE OF CONTENTS

I.	Context .....	4
II.	Introduction .....	4
III.	Stormwater in the Capital Region .....	5
1.	Public Health – High Health Concern Ratings Continue .....	8
2.	Environmental Health: Chemical Contaminants – 45% of Samples Show High or Moderate Environmental Concern Ratings.....	10
3.	Watercourse Monitoring .....	11
4.	Creek Water Quality – Creeks With Poor or Moderate Water Quality .....	11
5.	Victoria Harbour Contaminants – Highest Levels of Many Contaminants out of All Coastal Sites Sampled..	14
i.	Alkylphenols .....	15
ii.	PCDDs.....	16
iii.	TBBPA.....	16
iv.	Organotins .....	17
v.	PCBs.....	17
vi.	HBCD .....	18
vii.	PBDEs .....	19
6.	Stormwater in the News .....	20
IV.	2019 Follow-up Recommendations .....	22
V.	Conclusion .....	35

## I. CONTEXT

The Veins of Life Watershed Society has initiated clean ups and restoration plans in the Victoria Harbour and the Gorge waterway since 1995. It has worked with multiple municipalities in order to encourage contaminant source control measures, encourage the modernization of sewage and stormwater infrastructure and advocate for education programs. Its efforts have been most effective with the municipalities of Esquimalt, Victoria, View Royal, the Highlands and Saanich, and has led to significant cleanup of the Gorge and Harbour. This report is a follow-up to the influential report done by the UVic Environmental Law Centre for the Society in 2010.

## II. INTRODUCTION

Rainwater is a major source of pollution and problem for the health of our water bodies.<sup>1</sup> Urban stormwater runoff, which originates from rainwater, results in a significant amount of pollution; indeed, the United States Environmental Protection Agency cites stormwater runoff as the *principal contributor to water quality impairment of waterbodies nationwide*.<sup>2</sup> Stormwater plays a similar role in Canada.

Urban stormwater runoff is the result of many contributing factors. The way in which clean rainwater becomes harmful stormwater runoff is a multi-step process: chemicals, pollutants and toxins on urban landscapes resulting from various human activities (such as driving and construction) are transported by rainwater into the sewer system.<sup>3</sup> When rainwater hits the ground, instead of naturally being absorbed and filtered by natural soil and vegetation, an increase in impervious surfaces (in the form of paved streets, sidewalks and roofs) reduces the ability of the environment to absorb and filter. Therefore, the rain runs across these impervious landscapes and collects pollutants such as gasoline, oils, grease, antifreeze, solvents, pesticides, herbicides, fertilizers, paint chips, heavy metals, PCBs, PAHs, road salt, and detergents. Ultimately, this polluted stormwater runoff enters our storm sewer systems and eventually reaches our water bodies.<sup>4</sup>

Pollutants in water bodies pose numerous risks to the health of humans and marine wildlife. These are outlined below in Part II, sections 1-2. These harmful pollutants are introduced in a number of ways, including:

<sup>1</sup> Gordon McGuire et al., "Re-inventing Rainwater: A Strategy to Protect Health and Restore Nature in the Capital Region" (24 February 2010), online: *University of Victoria Environmental Law Centre* <[http://www.elc.uvic.ca/wordpress/wp-content/uploads/2014/12/Re-Inventing-Rainwater-Management\\_2010Feb.pdf](http://www.elc.uvic.ca/wordpress/wp-content/uploads/2014/12/Re-Inventing-Rainwater-Management_2010Feb.pdf)> [2010 ELC Report].

<sup>2</sup> National Research Council, "Urban Stormwater Management in the United States" (15 October 2008), at vii, online: US EPA <[https://www3.epa.gov/npdes/pubs/nrc\\_stormwaterreport.pdf](https://www3.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf)>.

<sup>3</sup> 2010 ELC Report, *supra* note 1 at p. 16.

<sup>4</sup> *Ibid.*

1. Outdated stormwater infrastructure: Sanitary sewage can overflow into the stormwater sewer. This can occur when sanitary sewer and stormwater sewer pipes are placed in proximity to each other, when old pipes leak, when pipes are mistakenly cross-connected, etc. -- and it can result in fecal coliform entering water bodies. This can lead to serious human health problems like gastrointestinal issues and other infections, such as E. coli, salmonella, hepatitis, polio, tapeworms and rotavirus.<sup>5</sup>
2. Toxins carried through stormwater: Toxins are introduced into stormwater from urban landscape runoff, as well as from cross connections from outdated stormwater infrastructure, as mentioned above. These toxins threaten the health of wildlife. For example, PCBs in stormwater runoff have been found to be a huge threat to the survival of Orcas. These toxins have also resulted in the closure of shellfish beds, and threaten the health of Burrard Inlet fish, salmon fish streams - just to name a few.<sup>6</sup>
3. Velocity of stormwater: Stormwater travels through the sewer pipes at a high velocity, which erodes the stream banks, silts water, and changes meandering streams into drainage ditches. This is exacerbated by the elevated temperature and toxicity of stormwater, which further decimate fish populations.<sup>7</sup> Mismanaged storm water is arguably the main reason why so many of our urban fish streams have been damaged and destroyed.

### III. STORMWATER IN THE CAPITAL REGION

Veins of Life Watershed Society has informed us that several federal departments including Environment and Climate Change Canada, Transport Canada, and Fisheries and Oceans Canada have urged the Capital Regional District (CRD) municipalities to implement solutions for the mismanagement of rainwater; however, most of the municipalities have done little to address the issue.<sup>8</sup>

In 2010, the University of Victoria Environmental Law Centre produced the report *Re-inventing Rainwater Management in the Capital Region* (the 2010 ELC Report) with the Veins of Life Watershed Society.<sup>9</sup> The 2010 ELC Report outlined stormwater mismanagement in the Capital Region and recommended strategies to address the problem. The recommendations were:

1. Reform the policies and legislation of all governments in the region to ensure the implementation of Low Impact Development (LID) across the landscape.

<sup>5</sup> *Ibid* at p. 17.

<sup>6</sup> *Ibid* at p. 18.

<sup>7</sup> *Ibid* at p. 18.

<sup>8</sup> *Ibid* at p. 10.

<sup>9</sup> *Ibid*.

2. Form collaborative partnerships with stewardship groups, developers, homeowners, planners, engineers and other experts, and all levels of government to implement LID across the landscape
3. Shift drainage system financing from property taxes to Rainwater Utility charges, with fees based on actual use to motivate residents to manage rainwater onsite and reduce use of storm sewers.
4. Use Rainwater Utility charges to finance necessary infrastructure upgrades, comprehensive LID programs, and a new Regional Rainwater Strategy and Commission.
5. Ensure the implementation and enforcement of the CRD Model Storm Sewer and Watercourse Protection Bylaw across the entire Capital Region.
6. Establish a Capital Regional District Rainwater Commission to undertake an integrated watershed management approach for managing regional rainwater.
7. Base this integrated management approach on an environmental protection perspective for maintaining a healthy hydrologic cycle and a liquid waste management perspective.
8. Create a long-term, comprehensive Regional Integrated Watershed Management Plan that is incorporated into the Regional Growth Strategy, the implementation of which would be a commitment by each municipality through its regional context statement and bylaw amendments.
9. Base the Plan on the overarching provincial goals for rainwater management:
  - Volume Reduction (Put water back into the ground);
  - Water Quality (Preserve or improve the water); and
  - Rate Control/Detention (Hold back the water).
10. Commit to the mandatory targets in the Plan.
11. The proposed Rainwater Commission take steps to ensure that:
  - Stringent performance-based regulations are established across all watersheds of the Region;
  - A comprehensive set of financial motivations encourage the implementation of LID across the Region; and
  - Local governments adjust Development Cost Charges to create incentives for LID.
12. The proposed Rainwater Commission work with all CRD municipalities to implement LID practices in their own buildings and streets and encourage the implementation of LID Demonstration Projects.

13. The proposed Rainwater Commission work with Local Governments to ensure that obsolete stormwater infrastructure is upgraded by taking the following steps:
  - Identify the infrastructure problems by restoring and enhancing the stormwater monitoring program;
  - Repair and replace obsolete infrastructure by a set date;
  - Accelerate replacement of Oak Bay’s Combined Sewer System; and
  - Install state-of-the-art “end-of-pipe” stormwater treatment where needed and appropriate, guided by a careful inventory of problematic outfalls that require such measures. However, priority should be given to upstream preventative LID measures.
14. The proposed Rainwater Commission launch an intensive educational strategy for residents, developers, businesses, stewardship groups, schools, and others who can improve rainwater management.
15. The proposed Rainwater Commission provide resources and support to local stewardship groups to promote watershed restoration and protection.
16. The proposed Rainwater Commission collaborate with community groups and educational institutes to conduct more extensive water quality monitoring.
17. The proposed Rainwater Commission publish a biennial “State of the Watershed” Report. Among other things, this Report should include:
  - A report card on the health of each of the watersheds in the Capital Region;
  - Documentation of total impervious cover in the Capital Region and of the trends in effective impervious cover for each municipality;
  - Targets for reducing total impervious cover, mitigating existing impervious cover, replacing obsolete infrastructure, installing end-of-pipe treatments, etc.;
  - Goals for re-opening shellfish harvesting area and re-establishing urban salmon streams;
  - Data currently compiled for the Stormwater Quality Annual Reports; and
  - Data regarding stormwater discharge into key fresh waters in addition to currently monitored sites.

There has been some progress on implementing some recommendations in the 2010 ELC Report. First, there has been an increase of rain gardens created around the Capital Region as well as other LID practices (examples include Fisherman’s Warf rain garden, Dockside Green, the University of Victoria Medical Sciences Building and McKenzie entrance, Ecole Victor Brodeur and the BC Cancer Centre).<sup>10</sup>

<sup>10</sup> Capital Regional District, “Rainwater Management Tour” (accessed 30 April 2019), online: <<https://www.crd.bc.ca/education/green-stormwater-infrastructure/rainwater-management>>.

Second, the City of Victoria implemented another key recommendation: in 2016 Victoria established a Stormwater Utility charge on property owners in the City. This charge is based on a property's total impervious area and the length of its street frontage, and is therefore tied to a property's impact to the stormwater system. The Stormwater Utility charge is used to fund the upgrading of the outdated stormwater systems – and to create a powerful incentive for property owners to reduce the impact of impervious surfaces and resulting stormwater problems on their properties.<sup>11</sup>

Third, some municipalities have implemented the CRD's *Model Storm Sewer and Watercourse Protection Bylaw* (Model Bylaw).<sup>12</sup> These municipalities are: Victoria, the Town of View Royal, the District of Saanich and those on the Saanich Peninsula (the Districts of Central Saanich, North Saanich, and the Town of Sidney).<sup>13</sup>

Although the implementation of some of the 2010 ELC Report's recommendations, as described above, is a step toward improved stormwater management, there are still many strategies that have yet to be implemented by all the municipalities, and most importantly there is no integrated approach to address the stormwater issue across water bodies. As stormwater continues to be a serious environmental and public health problem, municipalities must take stronger action and must do so on an urgent basis.

There is no doubt that the Capital Regional District needs to do far more to deal with the stormwater problem. The compelling information below demonstrates the ongoing and urgent need for stormwater reform – and the continuing overwhelming effect of stormwater on human life and wildlife.

## 1. Public Health – High Health Concern Ratings Continue

In 2017 the CRD assessed 167 stormwater discharges for *E. Coli*. These discharges were in the following jurisdictions: the City of Colwood, Township of Esquimalt, City of Langford, District of Oak Bay, Saanich, Victoria, View Royal, Esquimalt First Nation, Songhees First Nation and Department of National Defence.<sup>14</sup>

<sup>11</sup> City of Victoria, "Stormwater Utility" (accessed 14 May 2019), online: <<https://www.victoria.ca/EN/main/residents/water-sewer-stormwater/stormwater/stormwater-utility.html>>.

<sup>12</sup> Capital Regional District, DRAFT *Model Bylaw, A bylaw to regulate discharges to the municipal stormwater drainage system* (4 January 2007), online: <[https://www.crd.bc.ca/docs/default-source/es-watersheds-pdf/model-storm-water-watercourse-protection-bylaw.pdf?sfvrsn=499a8fc9\\_4](https://www.crd.bc.ca/docs/default-source/es-watersheds-pdf/model-storm-water-watercourse-protection-bylaw.pdf?sfvrsn=499a8fc9_4)> [*Model Bylaw*].

<sup>13</sup> Though some of the municipalities adopted the Model Bylaw with some changes, these changes are minor and do not weaken the bylaw from a stormwater management perspective. Interview of Dale Green, Capital Regional District, by Calvin Sandborn and Anisa Nadji (21 February 2019) [*Dale Green*].

<sup>14</sup> Capital Regional District, "Core Area Stormwater Quality 2017 Annual Report" (2017), online: <<https://www.crd.bc.ca/docs/default-source/crd-document-library/annual-reports/environmental-protection/integrated->

In these 167 stormwater discharges, 96 (58%) were found to have one or more *E. Coli* count greater than 200 colony-forming units.<sup>15</sup> The CRD considers this level of contamination to indicate “sources of sewage or animal waste with potential to cause adverse effects for public health from primary recreational activities (e.g. swimming, diving)”.<sup>16</sup> The number of discharges with high public health concern ratings has fluctuated throughout the years: as of 2017, there were 31 high-rated discharges, which was a decrease from 1993 (49 discharges), but an increase from 2004 (28 discharges).<sup>17</sup> It should be noted that while some previously high-rated discharges have lowered recently, some low-rated discharges have increased.<sup>18</sup> Clearly, this is a complex issue with many contributing factors.

**Explanatory Note:** The CRD bases the level of public health concern on potential for human contact and contamination levels. The following parameters are used to assess the public health concern level:

- Fecal coliform concentrations in the stormwater discharge;
- Discharge flow;
- Location of the discharge; and
- Public use of the shoreline.<sup>19</sup>

The rating is determined by using the total of the fecal coliform rating and the shoreline use rating. A rating of 2 or 3 is considered “low,” 4 is considered “moderate,” and 5 or 6 is considered “high.”<sup>20</sup>

[watershed-management/core-area/2017-core-area-stormwater-quality-annual-report.pdf?sfvrsn=72d1f3ca\\_2](https://www.crd.bc.ca/docs/default-source/crd-document-library/annual-reports/environmental-protection/integrated-watershed-management/core-area/2017-core-area-stormwater-quality-annual-report.pdf?sfvrsn=72d1f3ca_2) > [CRD Core Area Annual Report].

<sup>15</sup> *Ibid* at p. 1.

<sup>16</sup> *Ibid*.

<sup>17</sup> *Ibid* at p. 4.

<sup>18</sup> *Ibid*.

<sup>19</sup> Capital Regional District, “Core Area Stormwater Report 2017 Supplemental Data” (2017), at Appendix G “CRD Public Health and Environmental Concern Rating System” at p.1, online: <[https://www.crd.bc.ca/docs/default-source/crd-document-library/annual-reports/environmental-protection/integrated-watershed-management/core-area/2017-core-area-stormwater-report-supplemental-data.pdf?sfvrsn=f558f1ca\\_2](https://www.crd.bc.ca/docs/default-source/crd-document-library/annual-reports/environmental-protection/integrated-watershed-management/core-area/2017-core-area-stormwater-report-supplemental-data.pdf?sfvrsn=f558f1ca_2)> [CRD Core Area 2017 Supplemental Data].

<sup>20</sup> *Ibid* at Appendix B “Core Stormwater Public Health Ratings” at p. 5.



**Table 1. Fecal Coliform Rating Criteria and Public Shoreline Use Rating Criteria**

Fecal Coliform Rating		Public Shoreline Use Rating	
Rating	Criteria	Rating	Criteria
1	No flow measured or FC count consistently under 200 CFU/100 mL	1	Low contact (e.g., inaccessible, beach walking)
2	FC count between 200 and 5,000 CFU/100 mL	2	Secondary contact (e.g., kayaking)
3	FC count greater than 5,000 CFU/100 mL	3	Primary contact (e.g., swimming, scuba diving)

Source: *CRD Core Area 2017 Stormwater Quality Supplemental Data Report*, core area<sup>21</sup>

## 2. Environmental Health: Chemical Contaminants – 45% of Samples Show High or Moderate Environmental Concern Ratings

In 2017 the CRD collected 31 sediment samples from stormwater collection systems.<sup>22</sup> Of those samples collected, eight were found to have a moderate environmental concern rating (26% of samples), while six were found to have a high environmental concern rating (19% of samples).<sup>23</sup>

**Table 2. Criteria for Determining the Contaminant Rating**

Contaminant Rating	Criteria for Determining the Contaminant Rating
Low	Sum of the individual ratios of Cn/MSQG (TEU) is less than 1.0
Moderate	Sum of the individual ratios of Cn/MSQG (TEU) is greater than or equal to 1.0, but no individual parameter exceeds, or is equal to, a value of 0.75
High	The ratio Cn/MSQG is greater than, or equal to, 0.75 for any single parameter

Source: *CRD Core Area 2017 Stormwater Quality Supplemental Data Report*, core area<sup>24</sup>

<sup>21</sup> *Ibid* at Appendix G, “CRD Public Health and Environmental Concern Rating System” at p. 1.

<sup>22</sup> *CRD Core Area Annual report*, *supra* note 14 at p. 2.

<sup>23</sup> Environmental concern rating is assessed based on the contaminant rating of discharge sediments, which is measured by finding the ratio between sediment concentration of eight metals and two groups of organics (Cn/MSQC). *CRD Core Area 2017 Supplemental Data*, *supra* note 19 at Appendix G, “CRD Public Health and Environmental Concern Rating System” p. 1.

<sup>24</sup> *Ibid* at Appendix G, “CRD Public Health and Environmental Concern Rating System” p. 2.

### 3. Watercourse Monitoring

The CRD monitors various creeks twice per year in order to assess water quality and watershed health. In 2017 the CRD monitored the following three creeks more extensively,<sup>25</sup> and found:

#### *Coloquitz Creek:*

- The concentrations of copper, aluminum, zinc, phosphorus and suspended solids could “result in adverse effects for aquatic life;”<sup>26</sup> and
- Elevated level of bacteria revealed sewage contamination.<sup>27</sup>

#### *Colwood Creek:*

- The water quality at the mouth of the creek was good; however, the water quality upstream was worse.<sup>28</sup>

#### *Tod Creek:*

- The water quality at the mouth of the creek was good overall, but the water quality upstream was “unlikely to be able to support aquatic life.”<sup>29</sup>

### 4. Creek Water Quality – Creeks with Poor or Moderate Water Quality

The CRD categorized the creeks by overall water quality as follows:

- Poor: Bowker Creek, Ceclina Creek, upstream Todd Creek
- Moderate: Bee Creek, Coloquitz Creek, Colwood Creek, Douglas Creek, Hospital Creek, Noble Creek and Selleck Creek
- Good: Craigflower Creek, Mill Stream and Goldstream River, Tod Creek Mouth<sup>30</sup>

Benthic invertebrates live in healthy streams, and for this reason their presence can be a good indicator of stream health. The CRD has collected data on the presence of benthic invertebrates in the major creeks and found that *downstream locations in Cecelia Creek, Coloquitz Creek, Bee Creek and Bowker Creek are not in good health.*<sup>31</sup>

<sup>25</sup> CRD Core Area Annual Report, *supra* note 14 at p. 9.

<sup>26</sup> CRD Core Area Annual report, *supra* note 14 at p. 9.

<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.*

<sup>29</sup> *Ibid.*

<sup>30</sup> *Ibid* at p. 10.

<sup>31</sup> *Ibid.*

The recent data shows that indicators of risks to environmental and public health continue to fluctuate, as new contaminants are introduced into discharge areas that have previously been categorized as low-rated for public or environmental health concerns. This inconsistency and fluctuating contaminant inputs clearly demonstrate that more must be done to prioritize stormwater management.



Source: CRD Core Area 2017 *Stormwater Quality Annual Report*<sup>33</sup>

Note: that this map shows areas of the CRD most heavily impacted by stormwater.

<sup>32</sup> *Ibid* at p. 5.

<sup>33</sup> *Ibid*.



34

Source: CRD Core Area 2017 *Stormwater Quality Annual Report*<sup>35</sup>

Note: that this map shows areas of the CRD most heavily impacted by stormwater.

<sup>34</sup> *Ibid* at p. 6.

<sup>35</sup> *Ibid*.



## 5. Victoria Harbour Contaminants – Highest Levels of Many Contaminants out of All Coastal Sites Sampled

According to Ocean Wise “Pollution Tracker,”<sup>36</sup> Victoria Harbour contains a large number of contaminants.<sup>37</sup> For many of these contaminants, Victoria Harbour has the highest level of the 51 coastal locations sampled.<sup>38</sup>

Four different areas of the Victoria Harbour are sampled by Ocean Wise; in three of four, Victoria Harbour was ranked highest of all sampled locations for the contaminants listed below:<sup>39</sup>

- *Victoria Harbour 1*: Alkylphenols, PCCD/Fs, TBBPA;<sup>40</sup>
- *Victoria Harbour 2*: Organotins, PCBs;<sup>41</sup>
- *Victoria Harbour 3*: HBCD, PBDEs;<sup>42</sup> and
- *Victoria Harbour 4*: No contaminants are ranked highest, but several contaminants are ranked second and third highest.<sup>43</sup>

These contaminants are all highly toxic and dangerous for human health as well as marine and terrestrial wildlife.<sup>44</sup> A number of these contaminants arrive in these waterways via stormwater runoff.

<sup>36</sup> Ocean Wise, “Pollution Tracker” (2017), online: *Pollution Tracker* <[pollutiontracker.org](http://pollutiontracker.org)> [*Pollution Tracker*].

<sup>37</sup> *Ibid.*

<sup>38</sup> *Ibid.*

<sup>39</sup> *Ibid.*

<sup>40</sup> *Ibid.*

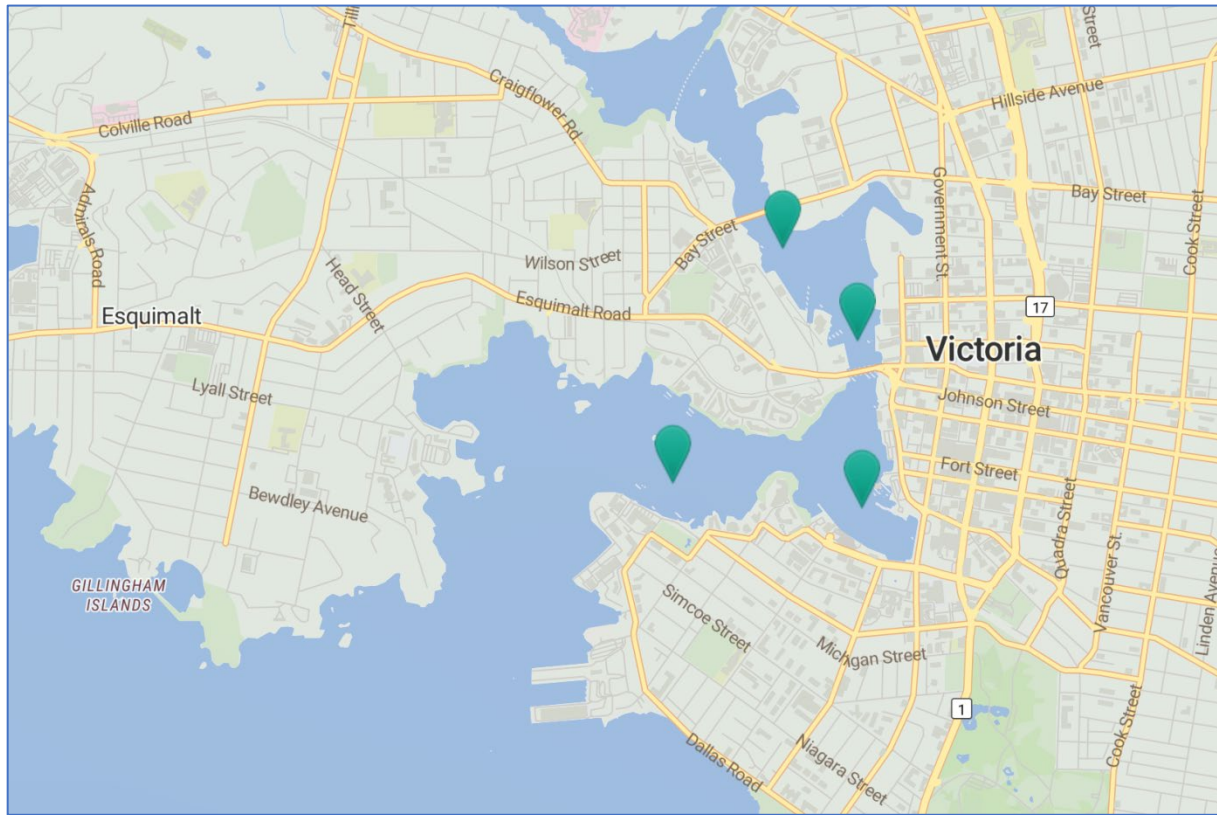
<sup>41</sup> *Ibid.*

<sup>42</sup> *Ibid.*

<sup>43</sup> *Ibid.*

<sup>44</sup> *Ibid.*

Table 3. Victoria Harbour Sample Areas



45

Credit: [www.pollutiontracker.org](http://www.pollutiontracker.org) <sup>46</sup>

### i. Alkylphenols

*Victoria Harbour area 1 is the most contaminated site coast-wide for Alkylphenols (APs).*<sup>47</sup> APs are used as surfactants in many agents such as detergents, wetting agents, and dispersing agents.<sup>48</sup> They are used in construction, metal processing, the oil and gas industry, the pesticide industry, and other industries.<sup>49</sup>

<sup>45</sup> *Ibid.*

<sup>46</sup> *Ibid.*

<sup>47</sup> *Ibid.*

<sup>48</sup> *Ibid.*

<sup>49</sup> C Garrett & PS Ross, "Recovering resident killer whales: A guide to contaminant sources, mitigation, and regulations in British Columbia" (Sidney, BC: Fisheries and Oceans Canada, Canadian Technical Report of Fisheries and Aquatic Sciences 2894, 2010), online: Fisheries and Oceans Canada <<http://www.dfo-mpo.gc.ca/Library/341729.pdf>> [Recovering Resident Killer Whales].

APs enter the waterways through stormwater runoff, sewer overflows and wastewater discharge and are immensely toxic to marine life.<sup>50</sup> Most widely used APs are Nonphenol (NP) and Nonylphenol ethoxylates (NPEs). NP and NPEs are endocrine disruptors and thus upset regular hormonal processes.<sup>51</sup> For example, from 1976-1981 NPs were part of an insecticide formulation that was sprayed in the Atlantic provinces and was later found to be responsible for the decrease in salmon in the Atlantic.<sup>52</sup>

## ii. PCDDs

Other contaminants for which the Victoria Harbour area 1 has the highest contamination levels are polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs).<sup>53</sup> These compounds are created as a by-product of industrial practices, including the production of pesticides, combustion or waste products, wood treatment, pulp and paper production and even vehicle use.<sup>54</sup>

These compounds have been linked to immune disorders, reproduction disorders and cancer in humans.<sup>55</sup> High concentrations of such compounds may also be a contributing factor to the decline in salmon stocks.<sup>56</sup> Mammals exposed to PCDDs can be affected in many ways including reproductive issues, fetal abnormalities, immune suppression, and increased death rates.<sup>57</sup>

## iii. TBBPA

Victoria Harbour area 1 is also ranked most contaminated for tetrabromobisphenol A (TBBPA).<sup>58</sup> TBBPA is a brominated flame retardant, used in electronic equipment, vehicle parts and other appliances.<sup>59</sup> Brominated flame retardants are toxic to wildlife, including aquatic and terrestrial organisms. They affect their development, reproduction and survival.<sup>60</sup> For example, in

<sup>50</sup> *Pollution Tracker*, supra note 36.

<sup>51</sup> *Pollution Tracker*, supra note 36; A Soares et al., "Nonylphenol in the environment: a critical review on occurrence, fate, toxicity and treatment in wastewaters." (2008) 34:7 Environ. Int. 1033-1049; Environment Canada and "Canadian Environmental Protection Act, 1999, Priority Substances List Assessment Report, Nonylphenol and its Ethoxylates" (April 2001), at p. 14, online: <[https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt\\_formats/hecs-sesc/pdf/pubs/contaminants/psl2-lsp2/nonylphenol/nonylphenol-eng.pdf](https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/hecs-sesc/pdf/pubs/contaminants/psl2-lsp2/nonylphenol/nonylphenol-eng.pdf)>.

<sup>52</sup> *Pollution Tracker*, supra note 36, "Alkylphenols" (accessed 30 April 2019), online: <http://pollutiontracker.org/contaminants/alkylphenols/>; Fairchild et al. "Pollutants in river run-off from forest spraying and effects on Atlantic salmon. Presentation" (2010) in Burt MDB & Wells PG, eds, *Threats to the health of the Bay of Fundy: potential problems posed by pollutants*, BoFEP Technical Report No. 5.

<sup>53</sup> *Pollution Tracker*, supra note 36.

<sup>54</sup> *Ibid.*

<sup>55</sup> K Srogi, "Levels and congener distributions of PCDDs, PCDFs and dioxin-like PCBs in environmental and human samples: A review" (2008) 6:1 Environm Chem Lett 1-28; World Health Organization "Exposure to dioxins and dioxin-like substances: A major public health concern" (2010) at p. 3, online: <<https://www.who.int/ipcs/features/dioxins.pdf>>.

<sup>56</sup> *Pollution Tracker*, supra note 36, "PCDD/Fs" (accessed 14 May 2019), online: <<http://pollutiontracker.org/pcdd-fs/>>.

<sup>57</sup> *Recovering Resident Killer Whales*, supra note 49.

<sup>58</sup> *Pollution Tracker*, supra note 36.

<sup>59</sup> *Ibid.*

<sup>60</sup> Environment Canada, "Screening Assessment Report" (November 2013) at p. 18, online: <[http://www.ec.gc.ca/ese-ees/BEE093E4-8387-4790-A9CD-C753B3E5BFAD/FSAR\\_TBBPA\\_EN.pdf](http://www.ec.gc.ca/ese-ees/BEE093E4-8387-4790-A9CD-C753B3E5BFAD/FSAR_TBBPA_EN.pdf)>.

zebrafish embryos, TBBPA exposure has resulted in hemorrhage, malformations, decreased heart rate and death.<sup>61</sup>

#### iv. Organotins

*Organotins are found at their highest concentrations of all 51 sampled locations in Victoria Harbour area 2.* Organotins are used as stabilizers in PVC plastic products and are also used as pesticides.<sup>62</sup> The most toxic of these synthetic organometallic compounds are tributyltin (TBT) and triphenyltin (TPT).<sup>63</sup>

*Organotins enter the ocean through wastewater, as well as through industrial waste and landfill waste, all of which can be collected by rainwater, and end up in stormwater.*<sup>64</sup> Organotins are especially dangerous because they can dissolve in water and attach to organic material,<sup>65</sup> which results in them surviving for months or even years. TBTs in particular are toxic to many species and disrupt the endocrine process of invertebrates.<sup>66</sup> They also have a particularly strong effect on molluscs: they can cause imposex, where females develop male sex organs.<sup>67</sup> This effect impacts the survival of the species as females can become unable to reproduce at normal rates and can even become sterile, affecting the entire species population.<sup>68</sup> TPTs also have detrimental effects on fish, and cause malformations such as impaired swimming ability, eye deformities and other behaviour issues.<sup>69</sup>

#### v. PCBs

Polychlorinated biphenyls (PCBs) are also highly toxic and are also found at their highest concentrations in Victoria Harbour area 2.<sup>70</sup> Prior to 1970, PCBs were legal for import, sale and manufacturing and were generally found in electronic equipment and in many other processes

<sup>61</sup> *Pollution Tracker, supra* note 36, “TBBPA” (accessed 14 May 2019), online: <http://pollutiontracker.org/contaminants/tbbpa/>; Jessica M. McCormicker *et al.*, “Embryonic exposure to tetrabromobisphenol A and its metabolites, bisphenol A and tetrabromobisphenol A dimethyl ether disrupts normal zebrafish (*Danio rerio*) development and matrix metalloproteinase expression” (2010) 100:1 *Aquat Toxicol* 255-262.

<sup>62</sup> Canadian Council of Ministers of the Environment, “Canadian water quality guidelines for the protection of aquatic life: Organotins – Tributyltin, triphenyltin, and tricyclohexyltin” (1999) at p. 1, online: <<http://ceqg-rcqe.ccme.ca/download/en/200>>.

<sup>63</sup> Jones Bernardes Graceli *et al.*, “Organotins: A review of their reproductive toxicity, biochemistry, and environmental fate” (2013) 36:1 *Reproductive Toxicol* 40-52.

<sup>64</sup> *Pollution Tracker, supra* note 36.

<sup>65</sup> Environment and Climate Change Canada “Priority Substances of Interest in the Georgia Basin. Profiles and background information on current toxics issues” (2004) online: <<http://ec.gc.ca/pabg-gbap/default.asp?lang=En&n=5D36FOCE-1>>; Blanca Antizar-Ladislao *et al.* “Environmental levels, toxicity and human exposure to tributyltin (TBT)-contaminated marine environment – A review” (2008) 34:1 *Environ Int* 292-308 [*Environmental levels, toxicity and human exposure to tributyltin*].

<sup>66</sup> *Pollution Tracker, supra* note 36.

<sup>67</sup> *Environmental levels, toxicity and human exposure to tributyltin, supra* note 65.

<sup>68</sup> Gil Rilov *et al.*, “Unregulated use of TBT-based antifouling paints in Israel (eastern Mediterranean): High contamination and imposex levels in two species of marine gastropods” (2000) 192 *Mar Ecol Prog Ser* 229-238.

<sup>69</sup> Lijao Wu *et al.*, “Developmental toxicity of organotin compounds in animals” (2014) 1 *Front Mar Sci*.

<sup>70</sup> *Pollution Tracker, supra* note 36.



such as the manufacturing of plastics and paper.<sup>71</sup> Use of old electronic equipment containing PCBs is authorized until “the end of the equipment’s service life”.<sup>72</sup>

*PCBs can enter our waterways through wastewater discharge.*<sup>73</sup> They threaten the health of marine life and consequently the health of humans who consume said marine life.<sup>74</sup> PCBs have been found to disrupt the endocrine process, which, as mentioned above, can result in developmental, reproduction and hormonal issues.<sup>75</sup> PCBs have been linked to an increased risk of developing infectious diseases and cancer in marine mammals. Orcas are considered to be the most PCB-contaminated marine mammals worldwide.<sup>76</sup> In humans, acute exposure to PCBs can lead to immunological and neurobehavioral effects.<sup>77</sup>

#### vi. HBCD

Victoria area 3 is the most contaminated site for hexabromocyclododecane (HBCD) in all the 51 locations sampled.<sup>78</sup> HBCD is a flame retardant used in foams, upholsteries and drapes.<sup>79</sup> The main way that it reaches marine waterways is through landfill runoff.<sup>80</sup> HBCD can affect immune function, thyroid function, neurological systems as well as reproductive function in various organisms.<sup>81</sup> In addition, its exposure has led to developmental neurotoxicity in mice, as well as increased liver weight and thyroid function in rats.<sup>82</sup> The United States Environmental Protection Agency states that chemically induced effects on thyroid function in other animals must be considered relevant in relation to humans, and as such similar effects may be seen in humans with such chemical exposure.<sup>83</sup>

<sup>71</sup> *Ibid.*

<sup>72</sup> U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, “Toxicological Profile for Polychlorinated Biphenyls (PCBs)” (November 2000), online: <<https://www.atsdr.cdc.gov/toxprofiles/tp17.pdf>> [Toxicological Profile for Polychlorinated Biphenyls (PCBs)].

<sup>73</sup> *Pollution Tracker*, *supra* note 36.

<sup>74</sup> *Ibid.*

<sup>75</sup> *Recovering resident killer whales*, *supra* note 49.

<sup>76</sup> Peter S Ross, “Fireproof killer whales: Flame retardant chemicals and the conservation imperative in the charismatic icon of British Columbia” (2006) 63:1 *Can. J. Fish. Aquat. Sci.* 224-234.

<sup>77</sup> *Toxicological Profile for Polychlorinated Biphenyls (PCBs)*, *supra* note 72.

<sup>78</sup> *Pollution Tracker*, *supra* note 36.

<sup>79</sup> Environment Canada & Health Canada, “Screening Assessment Report on Hexabromocyclododecane,” (November 2011) online: <<https://www.ec.gc.ca/ese-ees/7882C148-8AE4-4BA4-8555-668C49F91500/HBCD%20-%20FSAR%20-%20EN.pdf>>.

<sup>80</sup> Cynthia A de Wit, Dorte Herzke, Katrin Vorkamp, “Brominated flame retardants in the Arctic environment – trends and new candidates” (2010) 408:1 *Sci Total Environ* 2885-2918.

<sup>81</sup> *Ibid.*; Robert J Letcher et al., “Exposure and effects assessment of persistent organohalogen contaminants in arctic wildlife and fish” (2010) 408:15 *Sci Total Environ* 2995-3043.

<sup>82</sup> Per Eriksson et al., “Impaired behaviour, learning and memory, in adult mice neonatally exposed to hexabromocyclododecane (HBCDD)” (2006) 21:1 *Environ Toxicol and Pharmacol* 317-322.

<sup>83</sup> Leo T.M. van der Ven et al., “A 28-Day Oral Toxicity Study Enhanced to Detect Endocrine Effects of Hexabromocyclododecane in Wistar Rats” (2006) 94:2 *Toxicol Sci* 281-292.

## vii. PBDEs

Victoria area 3 also is the most contaminated site for polybrominated diphenyl ethers (PBDEs).<sup>84</sup> PBDEs are another type of flame retardant. They can enter waterbodies through landfill runoff and wastewater treatment plants.<sup>85</sup> PBDEs are endocrine disruptors that can lead to developmental complications in reproduction, immune systems and neurological systems.<sup>86</sup> Studies have shown that PBDEs are transferred from seal and whale mothers to their children in utero, and through lactation.<sup>87</sup>

As mentioned, though those listed are the contaminants that were found in the highest concentrations in the Victoria Harbour compared to all other sampling regions, there were also many contaminants that were found in their second-highest concentrations in the Victoria Harbour areas:

- *Victoria Harbour 1*: HBCD, Lead, Organotins, PBDEs, PPCPs.
- *Victoria Harbour 2*: PBDEs.
- *Victoria Harbour 3*: Alkylphenols, PCDD/Fs.
- *Victoria Harbour 4*: PCBs, PCDD/Fs.<sup>88</sup>

Other contaminants are also recorded at varying levels in the Victoria Harbour, including: HBCD, lead, organotins, PBDEs, PPCPs, legacy pesticides<sup>89</sup>, PAHs, PCBs, PFCs, cadmium and mercury. These contaminants should also be considered a serious matter of concern.<sup>90</sup>

<sup>84</sup> *Pollution Tracker*, supra note 36.

<sup>85</sup> *Ibid.*

<sup>86</sup> Eric Akortia et al., "A review of sources, levels, and toxicity of polybrominated diphenyl ethers (PBDEs) and their transformation and transport in various environmental compartments" (2016) 24:1 *Environ Rev* 253-273.

<sup>87</sup> Héloïse Frouin "Transfer of PBDEs and chlorinated POPs from mother to pup during lactation in harp seals *Phoca groenlandica*" (2012) 417-418 *Sci Total Environ* 98-107.

<sup>88</sup> *Pollution Tracker*, supra note 36.

<sup>89</sup> Legacy pesticides are organochlorine pesticides; they were previously used in agriculture and in pest control. They enter waterbodies thorough waste water discharge. These pesticides have toxic effects on humans and other organisms. *Ibid.*

<sup>90</sup> *Ibid.*

## 6. Stormwater in the News

### Stormwater Overflows, Pollution and Flooding in the News

*“...every time it rains after a dry period, it’s as if a giant toilet flushes animal feces, fertilizers, pesticides, oils, road salts, heavy metals and other contaminants into municipal stormwater systems, which in turn send torrents of polluted water directly into watersheds.”*

*George Le Masurier, Watershed Sentinel*<sup>91</sup>

Heavy rainfall events continue to cause the CRD to issue public advisories to avoid beaches and water bodies in Greater Victoria due to sewage overflows from stormwater flooding. From November 2018 to February 2019, there were four wastewater discharge advisories in the CRD.<sup>92</sup> In 2017 the Gorge Swim Fest was cancelled due to water contamination, caused by cross contamination between sewage pipes and stormwater pipes that feed into the Gorge Creek.<sup>93</sup>

Matthew McCrank, the senior manager of infrastructure operations with the CRD has commented that the infiltration of stormwater into the sanitary sewer system “is a common problem around the region.”<sup>94</sup> The system is not designed to anticipate heavy rain events and the CRD’s wastewater pipes are not all sealed off, which means stormwater can enter the wastewater system.<sup>95</sup> Some municipalities continue to drain stormwater through their wastewater systems.<sup>96</sup>

Increasing residential and commercial development without implementing effective drainage systems can cause flooding. In 2017 a farm owner launched a law suit against the District of Central Saanich for

<sup>91</sup> George Le Masurier, “Sponge Cities: Can innovations stop surface runoff from killing our waters?” *Watershed Sentinel* (2019 February 14), online: <<https://watershedsentinel.ca/articles/sponge-cities/>>.

<sup>92</sup> There were wastewater discharge advisories on November 4, December 11 and December 28, 2018, and January 23, 2019. “Heavy rain causes wastewater discharge into areas of Saanich and Oak Bay” *CHEK News* (2018 November 4), online: <<https://www.cheknews.ca/heavy-rain-causes-wastewater-discharge-into-areas-of-saanich-and-oak-bay-505412/>>; “Storm causes wastewater overflows along Greater Victoria shorelines” *CTV Vancouver Island* (2018 December 11), online: <<https://vancouverisland.ctvnews.ca/storm-causes-wastewater-overflows-along-greater-victoria-shorelines-1.4214111>>; “Heavy rains cause sewage overflows at Victoria area beaches” *Times Colonist* (2018 December 28), online: <<https://www.timescolonist.com/news/local/heavy-rains-cause-sewage-overflows-at-victoria-area-beaches-1.23566593>>; “Wastewater discharge advisory for shorelines in Saanich and Oak Bay following heavy rain, CRD” *CHEK News* (2019 January 23), online: <<https://www.cheknews.ca/wastewater-discharge-advisory-for-shorelines-in-saanich-and-oak-bay-following-heavy-rain-crd-527678/>>; Capital Regional District, “Resolved Alerts,” Alerts and Notices, online: <<https://www.crd.bc.ca/about/alerts-notice>>.

<sup>93</sup> “Source of Gorge Creek water contamination located” *CBC News* (2017 October 25), online: <<https://www.cbc.ca/news/canada/british-columbia/esquimalt-water-contamination-located-1.4370155>>.

<sup>94</sup> Travis Paterson, “Heavy rains force sewage overflows on beaches across Greater Victoria” *Sooke New Mirror* (2019 January 4), online: <<https://www.sookenewsmirror.com/news/heavy-rains-force-sewage-overflows-on-beaches-across-greater-victoria/>>.

<sup>95</sup> *Ibid.*

<sup>96</sup> *Ibid.*

poor land use management, because ten acres of their prime agricultural land could no longer be farmed due to increased flooding over the last ten years.<sup>97</sup>

## Oil Tank Leaks in the News

*“Unknown to [homeowners], they might have a leak in their tank. During the first heavy rainfall, that creates a spill that typically enters our creeks and waterways through our storm drainage system.”*

*Keili Bartlett, Oak Bay News<sup>98</sup>*

Harley Machielse, Director of Engineering for the District of Saanich, has commented that Saanich usually has five home oil tank spills a year.<sup>99</sup> Between 2012 and 2017, there were 21 oil spills from above ground oil tanks in Saanich.<sup>100</sup>

Old decommissioned oil tanks are usually emptied and left in the ground. Saanich has implemented a new bylaw that no longer allows old oil tanks to be buried, but rather requires them to be removed.<sup>101</sup> Unfortunately, this bylaw does not address existing old oil tanks that are buried around the municipality.<sup>102</sup> Decommissioned tanks can still cause contamination as they may fill with water and slowly leak into surrounding soil.

Many homeowners are not aware that they may have old oil tanks buried on their property, nor are they aware of the environmental destruction these tanks can cause.<sup>103</sup> For example, in 2012 an old buried oil tank spilled from a property in Saanich, through a storm drain, and into the Gorge Waterway. An environmental remediation team had to remove the tank plus 80 kilograms of “sludge”, 1,900 litres of oily water, and over 12 tonnes of contaminated soil.<sup>104</sup> The homeowners were not aware that there was an old buried oil tank on their property.

<sup>97</sup> Carla Wilson, “Lawsuit focuses on farmland flooding in Central Saanich” *Times Colonist* (2017 July 23), online: <<https://www.timescolonist.com/news/local/lawsuit-focuses-on-farmland-flooding-in-central-saanich-1.21315704>>.

<sup>98</sup> Keili Bartlett, “Your unused oil tank could cost you” *Oak Bay News* (2018 October 11), online: <<https://www.oakbaynews.com/news/your-unused-oil-tank-could-cost-you/>>.

<sup>99</sup> *Ibid.*

<sup>100</sup> Wolf Depner, “Saanich aims to help homeowners dump their oil tanks for heat pumps” *Victoria News* (2019 March 1), online: <<https://www.vicnews.com/news/saanich-aims-to-help-homeowners-dump-their-oil-tanks-for-heat-pumps/>>.

<sup>101</sup> Bill Cleverley, “Saanich will no longer allow burying old oil tanks” *Times Colonist* (2014 May 1), online: <<https://www.timescolonist.com/news/local/saanich-will-no-longer-allow-burying-old-oil-tanks-1.1018120>>.

<sup>102</sup> *Ibid.*

<sup>103</sup> Kendall Hanson, “Nanaimo couple’s retirement plans on hold after leaking oil tank discovered” *CHEK News* (2018 October 31), online: <<https://www.cheknews.ca/nanaimo-couples-retirement-plans-on-hold-after-leaking-oil-tank-discovered-504228/>>.

<sup>104</sup> Louise Dickson, “Former homeowners must pay for oil tank leak in Saanich” *Times Colonist* (2015 February 21), online: <<https://www.timescolonist.com/news/local/former-homeowners-must-pay-for-oil-tank-leak-in-saanich-1.1770366>>.



## IV. 2019 FOLLOW-UP RECOMMENDATIONS

Section II described how some of the 2010 ELC Report recommendations have been implemented by some Capital Region municipalities; however, many have yet to be implemented at all and none has been implemented throughout all 13 Capital Region municipalities. The following recommendations must be implemented in order to adequately address the stormwater management issues described in the previous section:

### **RECOMMENDATION #1: ENSURE THE IMPLEMENTATION AND ENFORCEMENT OF THE CRD MODEL STORM SEWER AND WATERCOURSE PROTECTION BYLAW ACROSS THE ENTIRE CAPITAL REGION**

The CRD has produced the Model Bylaw for all of Greater Victoria. As discussed in the 2010 ELC Report, this type of bylaw is important for stormwater management, as it regulates and addresses the *source* of contaminants in stormwater by banning the discharge of contaminants into storm sewers. The Model Bylaw regulates what can and cannot be put in the drains by specific industries.<sup>105</sup>

Of the 13 municipalities in the CRD, only six are now governed by provisions of the Model Bylaw. These include: Victoria and View Royal, which adopted the Model Bylaw with some changes;<sup>106</sup> Saanich, which already had in place a Watercourse and Drainage Bylaw that addresses the topics in the Model Bylaw, though is weaker in some regards, and especially so in its penalty provision<sup>107</sup>, and the Saanich Peninsula municipalities (Central Saanich, Sidney and North Saanich), which all are now covered by the CRD's recent *Storm Sewer and Watercourse Protection Bylaw for the Saanich Peninsula*, (a modified version of the Model Bylaw).<sup>108</sup> The changes mentioned have not substantively weakened the bylaws when compared with the Model Bylaw,<sup>109</sup> other than Saanich, which should consider whether to strengthen aspects of its bylaw.<sup>110</sup> The municipalities that have not adopted the Model Bylaw, or any version of it, are:

<sup>105</sup> 2010 ELC Report, *supra* note 1 at 77-78.

<sup>106</sup> City of Victoria, Bylaw No. 14-071, *Sanitary and Sewer and Stormwater Utilities Bylaw* (2015 March 13); Town of View Royal, Bylaw No. 902, *Storm Water Regulation Bylaw* (2015 July7).

<sup>107</sup> District of Saanich, Bylaw No. 7501, *Watercourse and Drainage Regulation Bylaw, 1996*, online: <<https://www.saanich.ca/assets/Local~Government/Documents/Bylaws~and~Policies/watercourse-and-drainage-regulation-bylaw-1996-no-7501.pdf>>.

<sup>108</sup> CRD Bylaw No. 4168, *Storm Sewer and Watercourse Protection Bylaw for the Saanich Peninsula*, online: <<https://www.crd.bc.ca/education/stormwater-wastewater-septic/at-work/stormwater/peninsula-stormwater-bylaw>>.

<sup>109</sup> Dale Green, *supra* note 13.

<sup>110</sup> For example, the Model Bylaw prohibits the discharge of “business waste” (defined as “waste which is produced on a commercial, industrial or institutional property”—with some exemptions if regulated by a code of practice, etc.), whereas the Saanich bylaw does not contain this prohibition. As another example, the Model Bylaw exempts uncontaminated water from its discharge prohibition, provided it does not contain chlorine or chloramine; whereas the Saanich bylaw does not include the chlorine/chloramine prohibition. In a similar vein, the Model Bylaw requires permitted waste from street, hydrant and water main flushing to be dechlorinated; whereas the Saanich bylaw does not require this dechlorination.

Langford, Oak Bay, Esquimalt, Colwood, the District of Sooke, the District of Metchosin and the District of Highlands.

It is imperative that the remaining seven municipalities adopt the Model Bylaw. As watersheds cross municipal boundaries, there must be uniform adoption across the Capital Region to ensure that activities that discharge contaminants are not prohibited in one part of a water body, but allowed in another. Uneven adoption also results in confusion and inconvenience for businesses that operate in more than one municipality.<sup>111</sup>

## **RECOMMENDATION #2: UPDATE THE CRD MODEL STORM SEWER AND WATERCOURSE PROTECTION BYLAW TO ADDRESS CURRENTLY EXEMPTED PRACTICES**

The Model Bylaw is a good first step, but it should be improved. Currently it exempts from its prohibitions the discharge of water from firefighting activities<sup>112</sup> and other potentially toxin-carrying activities, including waste from landscaping maintenance, non-commercial car washing (commercial car washing is included in the activities for which waste discharge is prohibited), building washing and driveway washing.<sup>113</sup> However, these activities can still result in harmful runoff; for example, products used in firefighter activities often contain ingredients that are toxic to wildlife including fish and other aquatic organisms.<sup>114</sup> In addition, car washing detergents can contain harmful compounds and car washing can result in automobile fluid—such as oil, anti-freeze and transmission fluid—flowing into storm drains.

The CRD should amend the Model Bylaw to consider how the current exemptions, including firefighting and non-commercial car washing, may be better regulated to prevent contaminating storm water. One way to do so is with the use of Best management practices. Best management practices in relation to rainwater management are created to slow, store, infiltrate, evaporate and detain runoff from impervious surfaces.<sup>115</sup> They allow rainwater to be absorbed by the earth rather than directed into storm sewers. For example, a Code of Practice for commercial vehicle wash operations is included as a Schedule to the CRD's Sewer Use Bylaw, which is a source control bylaw for sewers operated by the CRD.<sup>116</sup> Though firefighting

<sup>111</sup> 2010 ELC Report, *supra* note 1 at p. 77.

<sup>112</sup> Model Bylaw, *supra* note 12 at s. 2(3).

<sup>113</sup> *Ibid* at s. 2(2).

<sup>114</sup> Thomas Cortina, "Environmental impact of foam" *IFSEC Global* (2008 April 29), online:

<<https://www.ifsecglobal.com/uncategorized/environmental-impact-of-foam/>>; see also U.S. Forest Service, "Wildland Fire Chemical Products Toxicity and Environmental Concerns General Information" (1998 July 9), online: <<https://www.fs.fed.us/rm/fire/documents/envissu.pdf>>.

<sup>115</sup> District of Saanich, "Stormwater Management" online: <<https://www.saanich.ca/EN/main/community/sustainable-saanich/environmental-planning/stormwater-management.html>>.

<sup>116</sup> Capital Regional District, Bylaw No. 2922 (Consolidated) *A Bylaw to Regulate the Discharge of Waste into Sewers Connected to a Sewage Facility Operated by the Capital Regional District* (2016 November 10), at Schedule N, online:

<<https://www.crd.bc.ca/docs/default-source/crd-document-library/bylaws/liquidwasteseptagesewersourcecontrolandstormwater/2922---capital-regional-district-sewer-use-bylaw-no-5-2001B.pdf?sfvrsn=0>>; see also Capital Regional District "Environmental Regulations & Best Management Practices, Vehicle

may be considered separately from other activities, as it is an emergency response, reasonable regulations are possible. An industry news publication suggests a number of measures to aid collecting foam solutions used in firefighting after use including: blocking storm drains; and damming, diking or diverting the foam/water solution until it can be disposed of properly. The publication also discusses less toxic foams that are available for firefighting training.<sup>117</sup>

### **RECOMMENDATION #3: IMPLEMENT RAINWATER UTILITY CHARGE; USE TO FINANCE DRAINAGE SYSTEM, UPDATED INFRASTRUCTURE AND A COMMISSION**

The 2010 ELC Report recommended the implementation of a Rainwater Utility charge. A Rainwater Utility charge is a local public service charge that is determined based on characteristics of a property. This charge takes into consideration impervious area on the property and street frontage, which contribute to stormwater runoff.

The Rainwater Utility charge program includes financial incentives for property owners to take steps to reduce runoff. For example, creating rain gardens or using permeable pavement. The Rainwater Utility charge program is based on the user-pay principle.<sup>118</sup> When rainwater services are funded by property taxes, the amount of tax paid is calculated based on property value assessment; however, with a Rainwater Utility charge, payment is related to how much the property contributes to the stormwater problem. For this reason, it is a more fair system – and creates a powerful incentive to reduce impervious surfaces and impacts of the property on the stormwater problem. Another deficiency with stormwater charges being included in property taxes is that stormwater may have to compete for funding with popular budget items, such as parks, and may not receive the funding it requires.<sup>119</sup>

An important purpose for the Rainwater Utility charge is that its funds can go towards updating old stormwater infrastructure – which is of vital importance in order to prevent sewer-stormwater contamination.<sup>120</sup>

In addition, Rainwater Utility charges apply to tax exempt entities (such as hospitals, churches, and governments). Under a regime in which property taxes fund rainwater management, as these entities do not pay property taxes, they would not be contributing to rainwater management funds no matter how much they contribute to the need for these services.<sup>121</sup>

Wash Operations in the Capital Region” (revised March 2007), online: <[https://www.crd.bc.ca/docs/default-source/source-control-pdf/bmp-vehicle-wash.pdf?sfvrsn=cb1f88c9\\_2](https://www.crd.bc.ca/docs/default-source/source-control-pdf/bmp-vehicle-wash.pdf?sfvrsn=cb1f88c9_2)>.

<sup>117</sup> Robert Avsec, “How safe is firefighting foam?” FireRescue1 (2016 October 17), online: <<https://www.firerescue1.com/firefighter-safety/articles/135612018-How-safe-is-firefighting-foam/>>.

<sup>118</sup> *Ibid.*

<sup>119</sup> Interview of Jas Paul, Assistant Director of Engineering, City of Victoria, by Calvin Sandborn (2019 March 13). [*Jas Paul*]

<sup>120</sup> 2010 ELC Report, *supra* note 1 at p. 69.

<sup>121</sup> 2010 ELC Report, *supra* note 1 at p. 69.

The Rainwater Utility charge is consistent with the “polluter pays principle,” a principle that is entrenched in Canadian environmental law.<sup>122</sup> This principle “assigns polluters the responsibility for remedying contamination for which they are responsible and imposes on them the direct and immediate costs of pollution.”<sup>123</sup> It ensures clean actors benefit and polluters pay. This results in a certain level of accountability for property owners.

As mentioned, Victoria is the only municipality in the Capital Region that has implemented a Rainwater Utility charge. It initiated the program in 2016 and the charge is determined using four factors: (1) the property's impervious area; (2) the street type and length of the property's street frontage (to account for street cleaning costs); (3) an intensity code (this denotes the impact of the property on rainwater management system and is determined by BC Assessment based on property type); and (4) whether a property must have a code of practice (or a program that cleans stormwater prior to leaving their property).<sup>124</sup>

As part of its Rainwater Utility charge program, Victoria also has a Rainwater Rewards Program, which awards rebates and credits for sustainable rainwater management practices on one's property.<sup>125</sup> Credits of 10-50% can be applied to your Rainwater Utility bill.<sup>126</sup> Other rebates are available for the installation LID techniques, which, as mentioned above, include rain gardens, permeable sidewalks, and planting along sidewalks.<sup>127</sup>

The current City of Victoria budget for stormwater management is \$2-3 million per year, with an increase of 2% annually.<sup>128</sup> As of the date of this report, Victoria's program had obtained enough funds to fund both stormwater capital improvements and maintenance.<sup>129</sup> Under its program, the costs for capital improvements of obsolete infrastructure and stormwater maintenance are calculated, a capital improvement plan is created, and the cost for the improvement plan is built right into the Rainwater Utility charge that is charged to property owners.<sup>130</sup>

The Rainwater Utility charge is greatly beneficial to fund stormwater management and to encourage behaviour to reduce the toll on stormwater systems. Overall, it is a more fair system. We recommend that all 12 of the remaining municipalities adopt a Rainwater Utility charge.

<sup>122</sup> *Imperial Oil Ltd. v. Quebec (Minister of the Environment)*, 2003 SCC 58 at para 23.

<sup>123</sup> *Ibid* at para 24.

<sup>124</sup> *City of Victoria, Stormwater Utility*, *supra* note 11.

<sup>125</sup> *Ibid*.

<sup>126</sup> *Ibid*.

<sup>127</sup> *Ibid*.

<sup>128</sup> *Ibid*.

<sup>129</sup> *Jas Paul*, *supra* note 1199.

<sup>130</sup> *Ibid*.



#### **RECOMMENDATION #4: FIX AND UPGRADE OBSOLETE STORMWATER INFRASTRUCTURE**

As mentioned above, one of the major problems in rainwater management is the cross contamination of sanitary sewage with stormwater. This cross contamination is a result of outdated and broken drainage systems, which allow sewage to overflow from the sanitary system into the stormwater system. This results in fecal coliform being deposited into our water bodies.<sup>131</sup>

These water bodies are wildlife habitat and also serve as recreational spaces for humans. The contamination from sanitary sewers can result in severe health problems for both the humans and wildlife that spend time in these water bodies.<sup>132</sup>

The CRD has linked these public health concerns to aging infrastructure; mainly in Esquimalt, Oak Bay and Victoria.<sup>133</sup> Though Oak Bay has taken initial steps to address its combined sewer system, it has yet to be fully fixed<sup>134</sup> and the other two municipalities have yet to update their outdated sewage system that fail to fully separate stormwater from sanitary sewage.<sup>135</sup>

This recommendation ties in with the recommendation to implement a Rainwater Utility charge; part of the funds incurred from that program can be budgeted for infrastructure updates, which are essential to prevent cross contamination between sanitary and stormwater systems.

Another way to fund these updates is through the provincial Infrastructure Planning Grant Program, which supports local governments in creating sustainable community infrastructure.<sup>136</sup> These grants can cover up to \$10,000 of developments and improvements for sustainable infrastructure.<sup>137</sup>

All 13 of the Capital Region municipalities must ensure their stormwater and sanitary infrastructure is sound and upgrade where necessary.

<sup>131</sup> 2010 ELC Report, *supra* note 1 at p. 21.

<sup>132</sup> *Ibid.*

<sup>133</sup> *Ibid* at p. 20.

<sup>134</sup> Bill Cleverley, "Oak Bay Oks \$21.5-million sewer upgrade for Uplands" *Times Colonist* (2016 October 13) online: <<https://www.timescolonist.com/news/local/oak-bay-oks-21-5-million-sewer-upgrade-for-uplands-1.2364110>>.

<sup>135</sup> Dale Green, *supra* note 13.

<sup>136</sup> *Government of British Columbia*, "Infrastructure Planning Grant Program", online: <<https://www2.gov.bc.ca/gov/content/governments/local-governments/grants-transfers/grants/infrastructure-planning-grant-program>>.

<sup>137</sup> *Ibid.*

## **RECOMMENDATION #5: ENFORCE THE DEPOSIT OF DELETERIOUS SUBSTANCES INTO WATERWAYS AS A VIOLATION OF THE FEDERAL *FISHERIES ACT***

Although the federal government has yet to enforce sections 35(1) and 36(3) of the *Fisheries Act*<sup>138</sup> in relation to a CRD municipality's mismanagement of stormwater, the Capital Region municipalities may technically be in breach of the provisions.

As of the date of publication of this report,<sup>139</sup> section 35(1) of the *Fisheries Act* provides:

35(1) No person shall carry on any work or undertaking that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.

The first element of the offence is the presence of “a work or undertaking.” The federal Crown can argue that stormwater infrastructure is a work or undertaking as storm sewer pipes are “public works” under *Local Government Act*,<sup>140</sup> section 639. In addition, the *Community Charter* defines “service” as: “in relation to a municipality, an activity, work or facility undertaken or provided by or on behalf of the municipality.”<sup>141</sup> A service by a municipality involves the provision and maintenance of sewage system. This supports an argument that owning a sewage system constitutes a “work or undertaking” under section 35(1) of the *Fisheries Act*.<sup>142</sup>

“Serious harm” is defined as “the death of fish or any permanent alteration to, or destruction of, fish habitat.”<sup>143</sup> As described in Part I, stormwater can destroy fish habitat by carrying toxic contaminants, as well as by its velocity eroding salmon streams.<sup>144</sup> Since improper stormwater management can result in serious harm to fish, the s. 35(1) prohibition should be enforced against those who improperly own and operate stormwater or sewage systems.

Section 36(3) of the *Fisheries Act* provides:

36(3) Subject to subsection (4), no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any

<sup>138</sup> *Fisheries Act*, RSC 1985, c. F-14, online: <<https://laws-lois.justice.gc.ca/eng/acts/f-14/>>.

<sup>139</sup> Note that as of March 25, 2019 Bill C-68, *An Act to amend the Fisheries Act and other Acts in consequence* has been passed by the House of Commons and has been referred to the Standing Senate Committee on Fisheries and Oceans. Bill C-68 would provide full habitat protection by reintroducing a prohibition on works, undertakings, or activities that result in the “harmful alteration, disruption or destruction of fish habitat” (HADD). Bill C-68, *An Act to amend the Fisheries Act and other Acts in consequence*, 1<sup>st</sup> Sess, 42<sup>nd</sup> Parl (as passed by the House of Commons as of 20 June 2018) at s. 22(1).

<sup>140</sup> *Local Government Act*, RSBC 2015, c 1 [*Local Government Act*].

<sup>141</sup> *Community Charter*, SBC 2003, c. 26, at s. 1.

<sup>142</sup> Katrina Andres & Calvin Sandborn, “Submission to Saanich Environmental Advisory Committee” UVic *Environmental Law Centre* (December 2011) [*Submission to Saanich Environmental Advisory Committee*].

<sup>143</sup> Note that fish habitat includes adjacent land and vegetation. *R v. Larsen* (2013), 2013 Carswell BC 1067 (B.C. Prov. Ct.); affirmed (2014), 2014 Carswell BC 3277 (BCSC).

<sup>144</sup> 2010 ELC Report, *supra note 1* at p. 18.

conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water.

There are three elements to this offence: (1) depositing or permitting the deposit of, (2) a deleterious substance;<sup>145</sup> (3) in water frequented by fish or where the substance may enter such water.

As discussed above, the aging and obsolete infrastructure (in particular in Esquimalt, Oak Bay and Victoria) is allowing contaminated water to enter water bodies. In addition, seven municipalities have not adopted the Model Bylaw, which works to prevent contaminants in our stormwater system. These are ways in which many of the municipalities are satisfying the first and second elements of section 36(3).

It is well known that many of the waterways that are affected negatively by stormwater contain marine wildlife, including fish. These waterways include: Bowker Creek, Douglas Creek, Swan Lake, Hagan Creek, Colquitz Creek, Reay Creek, the Gorge, Victoria Harbour, Sook Inlet, and Saanich Inlet. Therefore, the third element of section 36(3) is also satisfied.

Section 36(3) is a strict liability offence; once the three elements of the offence are proven, the burden of proof then turns to the municipalities to raise a defence.<sup>146</sup> The municipalities would need to show that they have employed due diligence in preventing the deposit of deleterious substances in these waterways.<sup>147</sup> As most of the municipalities have not adopted basic rainwater management practices, this would be a difficult task. For example, Esquimalt, Oak Bay and Victoria still lack adequate infrastructure and there are seven municipalities that have not adopted the Model Bylaw. This is in spite of being made aware of the ELC's 2010 Report and its full suite of recommendations.

In summary, despite calls for actions, most of the Capital Region municipalities have routinely failed to comprehensively address stormwater management. If prosecuted under sections 35(1) or 36(3) of the *Fisheries Act*, these municipalities may not be able to prove a defence of due diligence. Prosecution for violations of the *Fisheries Act* can result in up to \$500,000 in fines as well as imprisonment.<sup>148, 149</sup>

<sup>145</sup> "Deleterious substance" is defined broadly. *St. Brieux (Town) v. Canada (Minister of Fisheries & Oceans)* (2010), 2010 CarswellNat 2953 (F. C.); *R. v. Zellstoff Celgar Ltd. Partnership* (2012), 2012 CarswellBC 435 (B.C. Prov. Ct). Also see: *R. v. Williams Operating Corp* (2008), 2008 CarswellOnt 5646 (Ont S.C.J.). However, note that there are limits; as log debris was found not to be a deleterious substance. *R. v. MacMillan Bloedel Ltd* (1982), 3 F.P.R. 332 (B.C. Prov. Ct).

<sup>146</sup> *R. v. Downie Street Sawmills Ltd.* (1979) 3 F.P.R. 315 (depositing deleterious substance being strict liability offence; defence of due care and diligence available).

<sup>147</sup> *Submission to Saanich Environmental Advisory Committee, supra* note 142.

<sup>148</sup> *Fisheries Act, supra* note 138.

<sup>149</sup> *R v. Rio Tinto Alcan Inc.*, 2017 BCCA 440 at para 3.

## RECOMMENDATION #6: CREATE AN OVERARCHING RESIDENTIAL OIL TANK REGULATION

Many homes in the Capital Region are still heated with oil tanks. Residential oil tanks are prone to leaking, which results in oil entering the stormwater system and ending up in water bodies.<sup>150</sup> Leaks can occur due to the oil tank having corroded from condensation, from the tank getting pierced or corroded during plumbing maintenance, or even from delivery companies attempting to fill oil tanks that are not actually present.<sup>151</sup>

Home heating oil is very toxic and has the ability to kill fish and other marine life once it enters water bodies.<sup>152</sup> Importantly, small quantities of oil can pollute large areas; for example, one cup of oil could pollute a volume as large as an Olympic pool.<sup>153</sup>

While there is some legislation that addresses this problem, it tends to be more punitive than preventative. Measures must be taken to *prevent* oil spills, not punish those responsible for oil spills after the fact.

As the ELC recommended in a 2012 report on the problem of oil tanks, the Province and local governments should legislate the following:

- Mandatory physical requirements for home heating oil tanks and equipment, including requiring tanks to be double-walled or made of fiberglass, requiring reinforced plumbing and making containment apparatuses mandatory, etc. CCME Code standards should be considered.
- Requirements for tank system replacement and upgrades, including maximum time limits on the length of time a tank can stay installed on a property;
- A requirement that tank systems be registered – and establishment of government-issued identification tag systems that confirm tanks and systems are in good shape and not obsolete. Delivery of fuel to tanks without a valid tag should be prohibited;
- Mandatory regular inspection systems, including authorization of inspectors to enter private property for that purpose;
- Require every installer of home heating systems to ensure that the old oil tank has been properly decommissioned before installing a new system.
- Require proper decommissioning of any tanks that no longer meet certification or if unused for a prescribed period. This will require setting up mechanisms to identify where all tanks are (including access to oil delivery company records and offering of public insurance to homeowners who self-identify old tanks).

<sup>150</sup> Trevor Johnson & Naomi Kovak, “Preventing Home Heating Oil Spills in British Columbia” (November 2012) at p. 4, online: <[http://www.elc.uvic.ca/wordpress/wp-content/uploads/2014/08/2012-02-01-PreventingHomeHeatingOilSpillsinBC\\_Nov2012.pdf](http://www.elc.uvic.ca/wordpress/wp-content/uploads/2014/08/2012-02-01-PreventingHomeHeatingOilSpillsinBC_Nov2012.pdf)>.

<sup>151</sup> *Ibid* at p. 6.

<sup>152</sup> *Ibid*.

<sup>153</sup> *Ibid*.



- Governments should consider legislating absolute liability for oil companies for any subsequent spills from a tank they fill – and a requirement that the company carry liability insurance for that liability;
- Subsidies to homeowners to change to cleaner home heating options;
- A public insurance fund paid for by surcharge on fuel to pay for spills from the property of those homeowners who have self-identified as having a tank.

## **RECOMMENDATION #7: CREATE AN INTEGRATED WATERSHED MANAGEMENT PLAN AND CRD RAINWATER COMMISSION**

Currently the Capital Region does not have an integrated watershed management plan. As many streams and creeks extend past the boundaries of one or more municipality, an integrated watershed management plan would address the fragmented jurisdiction in the CRD—as well as seek to rehabilitate water bodies and improve the functioning of stormwater systems.

The municipalities have the jurisdiction to put such a plan in place. The *Local Government Act* section 311 and part 13, and the *Environmental Management Act* section 24, provides local governments with the authority to create regional growth strategies and agreements on interjurisdictional watercourses and liquid waste management plans. In addition, the goals of the regional growth strategy, per section 428 of the *Local Government Act*, include the reduction of pollution, the protection of quality and quantity of ground and surface water, and the protection of environmentally sensitive areas.

An integrated watershed management plan regulates both human activities and natural processes on a watershed by watershed basis. It also considers economic and social issues.<sup>154</sup>

The 2010 ELC Report recommends creating a 25-year integrated watershed management plan that would define regional and watershed-specific targets.<sup>155</sup> The plan would base its goals on provincial goals for rainwater management, including:

- Volume reduction (putting water back into the ground);
- Water Quality (preserving and improving the water); and
- Rate Control/Detention (holding back the water).<sup>156</sup>

In order to achieve these goals, an integrated watershed management plan must include best management practices, LID practices and green infrastructure developments. Each municipality would need to commit to implementing the plan through its regional context statement and bylaw amendments.

<sup>154</sup> Conservation Ontario, “Integrated Watershed Management Fact Sheet” (2012), online: <[conservationontario.ca](http://conservationontario.ca)>.

<sup>155</sup> 2010 ELC Report, *supra* note 1 at p. 82.

<sup>156</sup> *Ibid* at p. 10.

In addition, the implementation of this plan would require reforms to allow water governance authorities to manage along watershed boundaries rather than within political boundaries.<sup>157</sup> This is important as many watersheds span two or more municipalities.<sup>158</sup>

Implementing an integrated watershed management plan would also require establishing a CRD Rainwater Commission (Commission) to advance the goals of the integrated watershed management plan. The Commission would ensure the creation of stringent-performance based regulations and that these were implemented across all water body jurisdictions. The Commission would be a source of support to local municipalities in their implementation of the integrated watershed management plan.<sup>159</sup>

In order to further ensure and enforce the integrated watershed management plan, we recommend a provincial Watershed Authority to oversee the work of the Commission. Such an authority should be established by legislation, have a clear mandate, have an accountable governance structure, and have transparent roles and responsibilities.<sup>160</sup>

### *Bowker Creek Urban Watershed Renewal Initiative*

One local example of integrated watershed management is the Bowker Creek Urban Watershed Renewal Initiative (BCI). The BCI is a collaboration among governmental agencies, landowners, the CRD, residents and community organizations.<sup>161</sup>

The BCI used two main documents to guide their strategy: 1) the Bowker Creek Watershed Management Plan and 2) The Bowker Creek Blueprint: A 100-year plan.<sup>162</sup> The Bowker Creek Watershed Management Plan outlines specific goals and objectives as well as actions to achieve these goals. The Bowker Creek Blueprint is an updated document that further reinforces the Management Plan and establishes a long-term strategy.

The CRD and the municipalities of Saanich, Oak Bay and Victoria approved the Bowker Creek Watershed Management Plan. A steering committee was established to spearhead the initiative in 2004. The BCI coordinates the responsibilities of the municipalities, agencies and interested parties in this plan, which includes educating the public, monitoring progress towards its goals, and applying for grants.<sup>163</sup>

<sup>157</sup> Deborah Curran & Maya Stano "Submission for the Water Act Modernization Process" UVic *Environmental Law Centre* (March 2011) at p. 19 [*Water Act Modernization Process Report*].

<sup>158</sup> *Ibid.*

<sup>159</sup> 2010 ELC Report, *supra* note 1 at p. 79.

<sup>160</sup> *Water Act Modernization Process Report*, *supra* note 157 at p. 3-11.

<sup>161</sup> *Capital Regional District*, "Bowker Creek Initiative" online: <<https://www.crd.bc.ca/bowker-creek-initiative>>.

<sup>162</sup> *Ibid.*

<sup>163</sup> *Ibid.*

It is essential to have an integrated management plan that incorporates all stakeholders – this is the only way in which an interjurisdictional waterbody can fundamentally be rehabilitated.<sup>164</sup>

Other BC municipalities have also adopted integrated management plans. One example is the City of Port Coquitlam, which has adopted an integrated watershed management plan for Hyde Creek and is in the process of adopting another integrated watershed management plan for Maple Creek.<sup>165</sup>

In addition, the City of Coquitlam requires integrated stormwater management plans for all new neighbourhoods.<sup>166</sup>

In order to have a cohesive functioning and healthy rainwater management system, a long-term regional watershed management plan must be implemented into the regional growth strategy and it is essential that each municipality implements it through their regional context statement per Part 13 and section 446 of the *Local Government Act*, and through amendments to municipal bylaws.

#### **RECOMMENDATION #8: ENGAGE IN EDUCATIONAL INITIATIVES**

In order to successfully redesign rainwater management, education is imperative: many of the activities that result in stormwater pollution occur because of a lack of education.

As mentioned above, the Commission may be a source of education on rainwater management for the community. The Commission could work with a variety of groups in educating the public on rainwater management. It may consider collaborating with educational institutions, the BC Water & Waste Association, governmental agencies and others.<sup>167</sup> It could create educational resources for local governments, who are in the best position to incorporate the latest rainwater management techniques as they are responsible for approving zoning and issuing development permits.

An example of stormwater educational material is the CRD's recent *Green Stormwater Infrastructure Common Design Guidelines*,<sup>168</sup> which offers a wide range of design guidelines to build LID facilities. The target audience is local governments, developers and contractors, as they are most involved with infrastructure design.<sup>169</sup>

<sup>164</sup> *Ibid.*

<sup>165</sup> *City of Port Coquitlam*, "Watershed Planning" (2017) online: <<https://www.portcoquitlam.ca/city-services/environmental-services/watershed-planning>>.

<sup>166</sup> Interview of Deborah Curran - Executive Director, UVic Environmental Law Clinic (2019 March 3).

<sup>167</sup> 2010 ELC Report, *supra* note 1.

<sup>168</sup> *Dale Green*, *supra* note 13.

<sup>169</sup> *Ibid.*

An educational initiative that is needed across all municipalities is in relation to residential oil tanks. As outlined above, residential oil tanks are the cause of severe environmental damage. Some municipalities have spread educational messaging surrounding the removal and abandonment of oil tanks, but little else has been done to date.

Education is an essential component of rainwater management; it allows land owners and land users to improve their own practices, and also bolsters public buy in for governmental action on rainwater management.

**RECOMMENDATION #9: ENFORCE EXISTING BYLAWS AND COMMIT TO ENFORCING NEW BYLAWS**

As mentioned, Victoria, Saanich, the Saanich Peninsula and View Royal have implemented a version of the Model Bylaw. As discussed in recommendation 1, above, the remaining Capital Region municipalities should enact similar bylaws.

In order for these bylaws to be effective at reducing toxins entering the stormwater systems, they must be properly enforced. Each municipality must commit to allocating resources toward enforcing these bylaws.

Under the Model Bylaw, pursuant to section 5, “[t]he Manager, an employee of the municipality authorized by the Manager, or a bylaw enforcement officer” are responsible for bylaw enforcement and as such the municipalities must ensure that these roles are filled and that a sufficient portion of their work hours are allocated to enforcement of the stormwater bylaws.<sup>170</sup>

**RECOMMENDATION #10: INTENSIFY MONITORING**

Extensive monitoring of every major water body across the Capital Region is essential to ensure the actions taken are achieving their stated goals. As noted above, without proper monitoring it is impossible to ascertain: the source of the pollution; if any practices are improving pollution levels; and whether the water bodies are safe for wildlife and for human use.

The Commission, once established, would have the role of creating a monitoring program so this program could extend to all the water bodies within the Capital Region.

<sup>170</sup> *Model Bylaw, supra* note 12.



## **RECOMMENDATION #11: AMEND SUBDIVISION BYLAWS TO REQUIRE NO NET INCREASE IN RUNOFF FOLLOWING DEVELOPMENT**

Saanich has included in its subdivision bylaw a requirement that there be no net increase in runoff after development.<sup>171</sup> The bylaw requires that new developments produce drainage systems that: “reduce the rate of post development site runoff to predevelopment levels; improve the quality of site drainage water; and minimize erosion and retain sediments.”<sup>172</sup> Metchosin also prohibits developments that “will result in... an increase in runoff rates or volumes of rain water leaving the lot, site, or area of land based on pre-development levels.”<sup>173</sup>

Local governments have the jurisdiction, pursuant to section 506 of the *Local Government Act*,<sup>174</sup> to regulate the design standards for works and services upon subdivision. Therefore, all of the Capital Region municipalities should amend their subdivision bylaws to regulate stormwater-related issues such as drainage collection, drainage disposal, sewage collection or sewage disposal systems.<sup>175</sup>

We urge the remaining 11 municipalities to implement bylaws that require no net increase in runoff after development.

## **RECOMMENDATION #12: IMPOSE AND STRATEGICALLY WAIVE OR REDUCE DEVELOPMENT COST CHARGES**

The 13 Capital Region municipalities should carefully consider ways in which the imposition and strategic waiver of Development Cost Charges (DCCs) could be used to improve rainwater management. Such Charges are levied by local governments on new developments to account for the increased need for transportation, utilities, park infrastructure and other services related to the new development.<sup>176</sup>

The Capital Region municipalities should consider ways in which imposition of DCCs on new developments could be used to fund necessary stormwater infrastructure – and ways in which strategic waiver of DCCs could encourage green Low Impact Development.

<sup>171</sup> District of Saanich, “Schedule H to Bylaw 7452 *Subdivision Bylaw*” (February 2004), at s. 3.5.1, online: <<https://www.saanich.ca/assets/Community/Documents/essewerdrain.pdf>>.

<sup>172</sup> 2010 ELC Report, *supra* note 1 at p. 87.

<sup>173</sup> District of Metchosin, Bylaw No. 467, *A bylaw for the Protection and management of rainwater* (2004 October 4) at s. 2.2.2(7), online: <<https://metchosin.civicweb.net/document/276>>.

<sup>174</sup> *Local Government Act*, *supra* note 140.

<sup>175</sup> 2010 ELC Report, *supra* note 1 at p. 87.

<sup>176</sup> City of Coquitlam “Development Cost Charge 2018 Update,” (2018) online: <<https://www.coquitlam.ca/planning-and-development/resources/fees/development-cost-charges-update>>.

## V. CONCLUSION

In conclusion, it is essential that the following recommendations be implemented by all 13 Capital Region municipalities in order to create a cohesive and impactful management plan throughout the Capital Region.

- 1. ENSURE THE IMPLEMENTATION AND ENFORCEMENT OF THE CRD MODEL STORM SEWER AND WATERCOURSE PROTECTION BYLAW ACROSS THE ENTIRE CAPITAL REGION**
- 2. UPDATE THE CRD MODEL STORM SEWER AND WATERCOURSE PROTECTION BYLAW TO ADDRESS CURRENTLY EXEMPTED PRACTICES**
- 3. IMPLEMENT RAINWATER UTILITY CHARGE; USE TO FINANCE DRAINAGE SYSTEM, UPDATED INFRASTRUCTURE AND A COMMISSION**
- 4. FIX AND UPGRADE OBSOLETE STORMWATER INFRASTRUCTURE**
- 5. STRESS THAT THE DEPOSIT OF DELETERIOUS SUBSTANCES INTO WATERWAYS IS A VIOLATION OF THE FEDERAL *FISHERIES ACT***
- 6. CREATE AN OVERARCHING RESIDENTIAL OIL TANK REGULATION**
- 7. CREATE AN INTEGRATED WATERSHED MANAGEMENT PLAN AND CRD RAINWATER COMMISSION**
- 8. ENGAGE IN EDUCATIONAL INITIATIVES**
- 9. ENFORCE EXISTING BYLAWS AND COMMIT TO ENFORCING NEW BYLAWS**
- 10. INTENSIFY MONITORING**
- 11. AMEND SUBDIVISION BYLAWS TO ALLOW FOR NO NET INCREASE IN RUNOFF AFTER DEVELOPMENT**
- 12. IMPOSE AND STRATEGICALLY WAIVE OR REDUCE DEVELOPMENT COST CHARGES**