

District of Sooke

Liquid Waste Management Plan (Stormwater), Stage 1

Prepared by:

Rob Miller, Team Leader - Downstream Environmental Consulting Ltd.

Rick Lloyd, P.Eng. - RCL Consulting Ltd.

Lehna Malmkvist, M.Sc., R.P.Bio. - Swell Environmental Consulting

November 28, 2006

District of Sooke Liquid Waste Management Plan (Stormwater), Stage 1

Background and Plan Development

Background

Using the provincially mandated Liquid Waste Management Planning (LWMP) process, the District of Sooke has recently completed the construction of sewage collection and treatment systems. Rather than including a stormwater component in that LWMP, the District of Sooke has chosen to commence work on a separate three stage LWMP for stormwater.

The purpose of a LWMP (Stormwater), Stage 1 is to introduce stormwater management issues to the community and provide a realistic set of stormwater management actions considered appropriate for detailed investigation and discussion in the District of Sooke LWMP (Stormwater) Stage 2. Once the final LWMP (Stormwater) has been approved by the provincial government it will become a written record of the District's decisions and plans for the management of stormwater and will likely be adopted into the District of Sooke Official Community Plan.

Plan Development

The District of Sooke developed Terms of Reference for the Stage 1 work that identified twenty-two tasks. Each one of these tasks has been investigated by the consultants and are included in a lengthy Technical Support document. This much shorter District of Sooke, Liquid Waste Management Plan (Stormwater), Stage 1 has been synthesized from the "Conclusions and Recommendations" section of each task and provides a summary of the findings.

The District of Sooke created three advisory committees to provide input to the process; the Steering committee and the Local and Technical Liquid Waste Advisory committees.

A series of meetings were held with the consultants and the committees at critical stages of plan development. As well, three open houses have been held to allow for input from the community. Changes were made to both documents based on comments received from the committees and the community.

Section A - Stormwater Flow - Rate and Quantity

The District of Sooke should:

1. Ensure that wherever possible, runoff water is detained on-site both during and after development, re-development and land alteration to ensure that stormwater leaving the site has flow and quantity characteristics as close to predevelopment conditions as possible. The District should modify its existing subdivision and development standards bylaw or create, adopt and enforce a new bylaw with provisions to minimize the detrimental effects to stormwater flows associated with land disturbance.

2. Include design parameters for roads within its subdivision and development standards bylaw to reduce both the rate and quantity of stormwater runoff. These design parameters should include the use of swales, infiltration systems, ponds, broad ditches and permeable concrete and asphalt. Standards for narrower paved surfaces with permeable shoulders should also be investigated. The use of curbs and gutters should be minimized or eliminated except where required within the more heavily developed parts of the core area.
3. Encourage the application of urban and rural development concepts to reduce impervious areas. This could include using conservation design principles such as cluster development and preservation of green space.
4. Ensure that wherever possible, existing underground stormwater collection and transmission systems will be day lighted during repairs or replacement.
5. Allow surface drainage wherever possible and convert ditches to swales by reshaping and re-vegetating.
6. Consider retrofitting developed areas with stormwater management facilities as opportunities arise and replacing lost infiltration capacity in future development and re-development.
7. Consider the application of the Water Balance Model and other modeling during the development approval process to demonstrate whether a proposal meets the municipality's stormwater management objectives identified in the Official Community Plan. The decision to require modeling will likely be site-specific and based on cost benefit analyses.
8. Use the process of updating the Official Community Plan (OCP) to ensure development occurs in a manner that will support the OCP. An investigation is required to determine what tools District staff require to adequately protect stormwater.

Section B - Stormwater Quality

The District of Sooke should:

1. Work with CRD staff toward the adoption of a comprehensive stormwater protection bylaw for the District of Sooke. Consideration should also be given to the need for regulatory codes of practice for the protection of stormwater from business sectors that have the potential to pollute.
2. Ensure that the District's subdivision and development bylaw includes provisions for the filtration and biological treatment of runoff from roads and other impervious surfaces. Wherever possible, road water should be kept on the surface and treated in roadside swales, ditches and ponds. Where roads are fully paved with curb and gutter, every effort should be made to intercept and treat the rainwater runoff before it is discharged to a natural waterway.
3. Develop and implement a cross-connection prevention program to minimize the possibility of facilities connecting sewage flows to the stormwater system.

4. Develop and implement municipal sewage pump station overflow control and response plans.
5. Provide where appropriate a facility for the discharge of sewage from holding tanks on recreational vehicles to the sewage collection system (sani-dump).
6. Provide where appropriate a facility for the discharge of sewage from holding tanks on boats to the sewage collection system (dockside vacuum system).
7. Require erosion and sediment control plans during land alteration and development.
8. Work with the provincial government to ensure the agricultural and forestry sectors are operating in compliance with the various provincial acts that regulate their activities.
9. Work with the provincial government as required to ensure that logging on private property, upstream from the District of Sooke is done in compliance with the *Private Forest Land Act and Regulation*.
10. Promote appropriate handling and disposal methods for chemical contaminants within businesses and the community.
11. Ensure appropriate handling and disposal of street wastes from sidewalks, roads and catch basins.
12. Support educational outreach initiatives to businesses and the community for the protection of stormwater quality.
13. Continue with the CRD's annual monitoring of stormwater flows to identify and eliminate threats posed by contaminated stormwater flows to public health and the environment.

Section C - Watershed Approach to Stormwater Management

The District of Sooke should:

1. Work toward the development of watershed management plans. Initial discussions should be held with staff from the CRD Stormwater, Harbours and Watersheds program as they have direct experience with watershed level planning.
2. Consider a high level of stormwater management planning for the following watersheds where existing and proposed development is extensive: Vietch Creek, De Mamiel Creek, Baker Creek, Lannon Creek, Alderbrook Stream, Ella Stream, Nott Brook, Wright Road Creek, Throup Creek, Ayum Creek, Kemp Stream, and Broom Hill Stream.
3. Hold discussions with representatives from the Juan de Fuca electoral area, Metchosin and the T'Sou-Ke Nation to explore planning processes for watersheds of interest to these jurisdictions.
4. Follow the development of the Sooke River Watershed Management Plan by the CRD Water Department, as this process could assist with future watershed management planning in the District.

5. Undertake a more detailed assessment of each watershed in the District with input from the community, planners, biologists and engineers to identify at-risk watersheds and drainage catchments. These areas can then be prioritized for greater attention to stormwater management.
6. Begin the process of collecting baseline ecological and geophysical information on a watershed-by-watershed basis.

Section D - Groundwater Recharge

The District of Sooke should:

1. Identify areas with high groundwater recharge capacity and ensure that land use planning requirements will maximize the retention of permeable ground and protect large or significant recharge areas.
2. Require development practices that will mimic the natural hydrology of the site, including on-site infiltration and detention.

Section E - Management Options for Properties Serviced by On-Site Sewage Treatment Systems

The District of Sooke should:

1. Consider for adoption, the LWMP, (Sewage) Stage 2 Conclusions prepared by Associated Engineering in their final report (November 2005).
2. Determine a method to evaluate minimum lot sizes for lots requiring larger stormwater management facilities.
3. Ensure that the proximity of constructed stormwater facilities to on-site sewage treatment systems and potable wells are considered during the approval stage for new development.

Section F - Monitoring Stormwater Discharges, Watercourses and the Marine Receiving Environment

The District of Sooke should:

1. Continue with the existing stormwater monitoring program.
2. Expand the existing monitoring program to include investigations of the effectiveness of various best management practices.
3. Integrate precipitation information into the monitoring programs data analysis.

4. Use monitoring data to determine where best management practices may be required.
5. Enhance the existing monitoring program to include an educational component (see Section J).

Section G - Protect and Enhance the Marine Coastline, Waters and Marine Life

The District of Sooke should protect and enhance the marine coastline, waters and marine life from the detrimental impacts of urban stormwater by:

1. Adopting bylaws to protect stormwater quantity and quality.
2. Minimizing impervious surfaces along the entire marine coastline and all inter-tidal areas.
3. Continuing the annual monitoring of stormwater flows and the marine environment to assess the effectiveness of the sewage collection system and monitor for change.
4. Ensuring the goals and objectives discussed in the Sooke Official Community Plan 2001 for the protection and enhancement of Sooke Harbour, Basin, Inlet and Bay are met.
5. Working with the T'Sou-Ke First Nation and federal agencies on strategies to open shellfish beds presently closed to the recreational harvesting of shellfish.
6. Ensuring that all land development, alteration or redevelopment is done in compliance with the federal *Fisheries Act*.
7. Promoting the creation of a Shorekeepers group(s) for Sooke Harbour, Inlet, Basin and Bay.

Section H - Stormwater Management and Low Impact Development

The District of Sooke should:

1. Include low impact development principles for the management of stormwater in its Official Community Plan.
2. Include low impact development requirements for the management of stormwater in its engineering standards and development specifications bylaw.
3. Take advantage of recent developments in the Greater Victoria area and beyond to prepare a low impact development brochure that can be provided to developers, house builders and homeowners in the municipality.
4. Undertake a pilot project using low impact development techniques.

Section I - Promote the Prevention, Response and Reporting of Spills to Stormwater and the Marine Environment

The District of Sooke should:

1. Ensure that District staff are trained in spill prevention, response and reporting procedures and that these procedures comply with the provincial Spill Reporting Regulation.
2. Provide information (brochures) at the municipal counter and website regarding the importance of spill prevention, response and reporting for a variety of target audiences (commercial, industrial, institutional and residential).
3. Install markers at storm drain outlets with the CRD storm drain number, the PEP phone number (1-800-663-3456) and instructions to call if a spill or solid waste is observed.
4. Post the marine oil spill reporting phone number (1-800-OILS-911) for the west coast at boat launches marinas and other marine industrial sites.
5. Work with the CRD to host training sessions for spill prevention, response and reporting for groups that have a greater possibility of generating spills (e.g. construction, gas stations/garages, marine industries, boaters).
6. Provide information to residential landowners regarding potential spills from homes (e.g. paint, heating oil tanks, engine oil).
7. Ensure spill prevention, response and reporting information is required under municipal permit applications.
8. Develop a reporting procedure that will inform staff from the CRD's Stormwater, Harbours and Watersheds program of a spill. This procedure should include spills from T'Sou-Ke Nation lands.

Section J - Stormwater Management Education and Training Opportunities

The District of Sooke should:

1. Work with the CRD's Stormwater, Harbours and Watersheds Program to develop and deliver an education and training program to council, staff, developers, businesses, stewardship groups and the public.

Section K - Support Local Community Groups Involved With Stormwater Protection

The District of Sooke should support community groups by:

1. Assisting with access to government reports.

2. Providing information on funding opportunities.
3. Providing assistance with restoration projects (expertise, approvals, landowner information).
4. Providing mapping where available.
5. Providing an annual opportunity for funding (newsletters and/or pamphlets).
6. Providing equipment for restoration activities and clean ups (shovels, rakes, trucks for hauling etc).
7. Organizing workshops (e.g. case studies from other areas in the CRD).
8. Providing streamkeeper and shorekeeper training.
9. Providing political recognition (environmental awards).

Section L - Methods to Fund Stormwater Activities

The District of Sooke should:

1. Explore funding partnerships with provincial and federal government agencies.
2. Partner with the CRD, stewardship groups, T'Sou-Ke First Nation and businesses to obtain grants for stormwater management facilities and the restoration of aquatic ecosystems.
3. Ensure the District has the proper authorities in place to require developers to carry the costs of stormwater management associated with land development.
4. Explore methods available to the District to accumulate funds for the installation, operation and maintenance of storm water management facilities. These could include development cost charges or the establishment of a stormwater utility.

Section M – Regulatory Mechanisms

The District of Sooke should:

1. Ensure that the District is acting in compliance with all provincial and federal regulations relating to stormwater.