

**APPENDIX A**  
**STORMWATER PROTECTION ACTIVITIES BY THE**  
**CORE JURISDICTIONS**

## APPENDIX A

### STORMWATER PROTECTION ACTIVITIES BY THE CORE AREA JURISDICTIONS

1.0	CORE AREA LIQUID WASTE MANAGEMENT PLAN .....	2
1.1	Goal.....	2
1.2	Commitments .....	2
2.0	ACTIVITIES BY CORE JURISDICTION .....	3
2.1	City of Colwood .....	3
2.1.1	Stormwater Protection – Activities .....	3
2.1.2	Stormwater Protection - Regulatory Tools.....	4
2.1.3	Addressing High-rated Discharges.....	4
2.2	City of Langford.....	5
2.2.1	Stormwater Protection - Activities.....	5
2.2.2	Stormwater Protection - Regulatory Tools.....	5
2.2.3	Addressing High-rated Discharges.....	7
2.3	City of Victoria .....	7
2.3.1	Stormwater Protection - Activities.....	7
2.3.2	Stormwater Protection - Regulatory Tools.....	9
2.3.3	Addressing High-rated Discharges.....	10
2.4	District of Oak Bay .....	12
2.4.1	Stormwater Protection - Activities.....	12
2.4.2	Stormwater Protection - Regulatory Tools.....	12
2.4.3	Addressing High-rated Discharges.....	12
2.5	District of Saanich .....	13
2.5.1	Stormwater Protection - Activities.....	13
2.5.2	Stormwater Protection - Regulatory Tools.....	14
2.5.3	Addressing High-rated Discharges.....	15
2.6	Department of National Defence.....	15
2.6.1	Stormwater Protection - Activities.....	15
2.6.2	Stormwater Protection - Regulatory Tools.....	16
2.6.3	Addressing High-rated Discharges.....	16
2.7	Parks Canada.....	17
2.8	Township of Esquimalt .....	17
2.8.1	Stormwater Protection - Activities.....	17
2.8.2	Stormwater Protection - Regulatory Tools.....	18
2.8.3	Addressing High-rated Discharges.....	18
2.9	Town of View Royal .....	19
2.9.1	Stormwater Protection - Activities.....	19
2.9.2	Stormwater Protection - Regulatory Tools.....	19
2.9.3	Addressing High-rated Discharges.....	20
2.10	Songhees First Nation.....	21
2.11	Esquimalt First Nation.....	21

## APPENDIX A

### STORMWATER PROTECTION ACTIVITIES BY THE CORE JURISDICTIONS

#### 1.0 CORE AREA LIQUID WASTE MANAGEMENT PLAN

A Liquid Waste Management Plan (LWMP) was created for the CRD and the core area municipalities, outlining a 25-year program to manage liquid wastes. Within this plan are specific commitments designed to protect human health and the environment from the impacts of liquid wastes. One of the commitments of the LWMP is to manage stormwater quality. The following is taken from the *Capital Regional District, Core Area Liquid Waste Management Plan, Stormwater Quality Management*.

##### 1.1 Goal

The goal of the stormwater quality program is to manage stormwater quality in partnership with the municipalities so that detrimental effects to the environment and public health and well-being are minimized.

##### 1.2 Commitments

The CRD and the participating municipalities, in partnership, commit:

- to the ongoing program of stormwater quality management in pursuit of the goal
- to undertake a major review of the content, direction and overall achievements of the program at five-year intervals to determine whether the program is achieving the goals, meets the needs of the community and is cost-effective
- through the CRD, commencing five years after the date of acceptance of this plan by the Ministry of Water, Land and Air Protection, and at five year intervals thereafter, to submit a report to the ministry that discusses the achievements of the program and documents changes in content and direction that have been adopted or are planned to help the partners achieve the goal

In addition, the CRD commits:

- to work in partnership with the participating municipalities and the community to achieve the program goals
- to act as a planning and coordinating body for stormwater quality issues
- to collect and provide stormwater quality data and information
- to provide input and information on stormwater quality to the harbours environmental enhancement and marine assessment programs
- to provide information and assist the municipalities with the creation, updating and enforcement of stormwater quality bylaws
- to coordinate and provide assistance with stormwater related environmental protection initiatives
- to provide the municipalities annually with a priority listing for stormwater discharges for public health and environmental concerns

- to carry out watershed assessments and coordinate the development of watershed management plans
- to promote the reporting of spills in stormwater and the marine environment
- to provide public education and promote public involvement
- to conduct a stormwater source control program in cooperation with the municipal partners, to carry out additional sampling and investigations to assist municipalities to identify and eliminate sources of contamination and to enhance and accelerate the residential and business educational program

In addition, in cooperation with the CRD, the municipal partners commit:

- to act on priorities to reduce levels of contaminants in stormwater discharges to the harbour and other shoreline areas to acceptable levels
- to research sources of contaminants in municipal storm drains and watercourses
- to adopt the model stormwater quality bylaw prepared by the CRD, or to use it to create a municipal bylaw that incorporates applicable components of the model stormwater bylaw, and to enforce the bylaw and update as required
- to act on stormwater related environmental protection initiatives as appropriate
- to consider, adopt and enforce, where applicable and practicable, BMPs for existing and new development
- to support and assist in the development of watershed assessments and watershed management plans and their implementation
- to recommend to future councils that they commit to appropriate expenditures on stormwater quality management to enable their obligations to be met

The municipalities, DND and First Nations have many tools available to protect and/or improve stormwater quality. These tools include land use planning, stormwater quality and zoning bylaws, stormwater quality plans and BMPs, to name a few. The following information, collected through annual interviews with the jurisdictions involved, outlines activities and tools which the municipalities are using to protect/improve stormwater quality in their areas.

## **2.0 ACTIVITIES BY CORE JURISDICTION**

### **2.1 City of Colwood**

Existing storm drainage within the City of Colwood consists of pipes, open ditches and natural watercourses. Failing septic tanks and fields continue to be one of the major sources of bacterial contamination in stormwater flows.

#### **2.1.1 Stormwater Protection – Activities**

**VIHA Study** - A study by VIHA found that the areas of Triangle Mountain and Esquimalt Lagoon have severe site and soil constraints for the use of onsite sewage systems (Dyck, et al, 1999). Sources of high fecal coliform concentrations in Colwood stormwater discharges have been tracked back to malfunctioning septic tanks and fields. CRD and Colwood staff work together to find the fecal coliform source(s). When a source is found, VIHA is contacted and VIHA staff gives notice to the property owner to make the necessary repairs.

**Sewage Collection System Expansion** - The City of Colwood constructed a trunk sanitary sewer line to service residential homes at Esquimalt Lagoon and local area.

**Esquimalt Lagoon Stewardship Initiative** - Esquimalt Lagoon lies within the City of Colwood and is an area of concern due to its unique ecology, its designation as a federal Migratory Bird Sanctuary and its importance to First Nations. The quality of stormwater entering the Esquimalt Lagoon is of particular concern due to urbanization of the watershed and the low flushing capability of the waterbody. The SHWP is coordinating the Esquimalt Lagoon Stewardship Initiative (ELSI), a multi-stakeholder group working to protect and restore the health of Esquimalt Lagoon. ELSI works with local residents, the government (Federal, First Nations, Provincial and Municipal), the business community and academic institutions to develop and implement a community monitoring program to obtain long-term data on the nutrient inputs to the lagoon. Community volunteers conduct monthly sampling at five sites in the lagoon and seven freshwater sites in the creeks and discharges entering the lagoon. Although fecal coliform concentrations declined in 2006, following sewerage of the area, in the summer and fall of 2007, red and milky turquoise colouration was observed, indicating an unhealthy environment. ELSI plans to continue the water quality monitoring program and conduct further investigation.

**Watercourse Protection** - The City of Colwood is protecting watercourses by requiring 15 metre development setbacks for each of the park buffers and 30 metre building setbacks along Millstream, Latoria and Colwood creeks and other fish-bearing streams.

### **2.1.2 Stormwater Protection - Regulatory Tools**

**Official Community Plan** - The City of Colwood Official Community Plan (OCP) was put into place in 1997 and lists objectives and policies that are related to stormwater quality. Colwood is currently updating the OCP. The following bullets provide some of the relevant objectives and policies from the current OCP.

- Environmental impact assessments (EIA) may be required to address the potential effects of proposed development on the environment when there is reason to believe it may be contrary to the OCP. This includes possible impacts to quality and quantity of surface water and the marine environment.
- Protect Millstream, Colwood and Latoria creeks and other watercourses through:
  - riparian setback requirements for development and septic tank and fields,
  - prohibiting the deposition and removal of material in the creeks and along the banks, unless deemed beneficial
  - restricting pollution entry from properties draining into all watercourses and
  - encouraging the protection of vegetation cover on stream banks.
- Prepare a management plan for the regulation of stormwater drainage for the City of Colwood.
- Require development to provide onsite storm drainage controls and filtration provisions to ensure that the water quality and carrying capacity of waterways is not adversely affected.
- Require treatment of stormwater runoff from significant developments that have the potential to contribute pollution to lakes, streams and Esquimalt Lagoon

### **2.1.3 Addressing High-rated Discharges**

#### *Public Health*

There were no stormwater discharges rated high for public health concern along the City of Colwood coastline in 2007.

## *Environment*

One discharge along the City of Colwood coastline was recommended for action based on environmental concerns in 2007. Discharge 926 (north of Bee Creek; Esquimalt Lagoon) was rated high for environment concern due to HPAH in 2006 and 2007. SHWP staff will conduct upstream sampling in 2008 to determine the source of the hydrocarbons; two parking lots just upstream of the discharge are a likely source of hydrocarbons and will be investigated.

## **2.2 City of Langford**

Storm drainage within the City of Langford consists of piped systems in new development areas and in-ground disposal, open ditches, culverts and natural drainage courses in others. In September 2004, the City of Langford signed a 20-year partnership agreement with Westshore Environmental Services to sewer the entire city. At Langford's discretion, 10% of this work per year can be directed to specific areas to deal with sewage disposal issues. Where in-ground disposal is not practical the developments are required to achieve no net increase in stormwater runoff for events of various sizes and treatment of the stormwater must be provided.

### **2.2.1 Stormwater Protection - Activities**

**Wetland Construction** - Langford has created a wetland in the Jacklin Road area to treat stormwater flows from the business core of Langford before the flows enter Colwood Creek. Also, improvements to the Trans Canada Highway and Veterans Memorial Parkway included the construction of wetlands for treating highway stormwater runoff.

**Stormwater Management Plan** - EarthTech (Canada) Ltd. (Focus Corp) has developed a Stormwater Management Plan for Langford. The plan provides topographical mapping, drainage and watershed mapping and a drainage structure inventory and database, hydrology, hydraulic analysis, floodplain mapping of major creeks and preliminary information for storm drain trunks and identified areas in need of stormwater control and treatment. Standard designs for treatment structures to be used on developments of various sizes were provided and are now included in municipal bylaws.

**Sewer Construction** - Langford sewered properties around Glen Lake, Florence Lake and Langford Lake in 2007. Other areas recently sewered (2006) include all of Happy Valley Road, parts of Atkins Road, Duncan Road and Toth Place.

**Sewer Pipe Rehabilitation** - In conjunction with Langford's proposed inflow and infiltration program, the City has completed the rehabilitation of the aging asbestos cement (AC) sewer pipes within the Phelps area. This work was undertaken to reduce infiltration, cross connections and exfiltration of raw sewage into the environment and was completed in 2006. Smoke testing was undertaken in 2006 to confirm the effectiveness of the work.

### **2.2.2 Stormwater Protection - Regulatory Tools**

**Official Community Plan** - The existing Langford OCP (1996) includes policies related to stormwater quality. The following are some of the most relevant policies:

- Watercourses shall not be altered from their normal stream channel. Removal of gravel and sands or modification to channels is discouraged.
- Development in certain riparian corridors may require an EIA to assess whether the majority of riparian values on the subject land will be preserved if development occurs. A buffer (up to 43m) from the natural boundary of all waterbodies may be required and shall be determined by the EIA.

- Construction of new, habitable buildings within 30m of the high watermark of lakeshore is strongly discouraged. Variances to the 30m setback only granted if supported by a riparian areas assessment prepared by a qualified environmental professional.
- Septic tank facilities shall not be located within a floodplain or within a horizontal distance of 30m from the high watermark of a watercourse or lake.
- Where any new developments are proposed in the watershed of any lake, council, as a condition of developmental approval, may require a stormwater and vegetation study. The study considers the potential runoff resulting from new development, and its impact on the quality of lake water.
- Careful attention will be required in maintaining proper stormwater runoff on steep hillsides. Exposed soils shall be re-vegetated to minimize runoff erosion.
- The use of fertilizer and intensive livestock operations in areas draining into any of the lakes in the municipality is strongly discouraged without pollution control methods.
- For sensitive ecosystems, pollutants shall be prevented from entering lakes and watercourses through control of surrounding drainage.

**Zoning Bylaw** - The Langford zoning bylaw states that no building may be constructed, reconstructed, moved or extended within 30 m of the natural boundary of any watercourses or 15 m of a natural depression or stream that contains water less than six months a year. The following are the most pertinent items taken from Langford's subdivision and development servicing bylaw:

- drainage structures and features will improve the quality of site drainage water, minimize erosion and retain sediments.
- the primary stormwater discharge will be by infiltration.
- except where stormwater infiltration is required and achievable, a municipal storm drain is required to serve each existing and newly created lot.
- the designer of subdivisions and developments greater than one hectares is encouraged to use combinations of engineered wetlands and ponds to conform to the water quality and runoff rate requirements.
- developments less than one hectare specific may use pre-engineered structures for stormwater treatment, infiltration or detention as an alternative to ensure no downstream impacts occur.
- all minor systems designed and installed as part of the works and services of a development shall be designed for a 10 year peak flow rate.
- all minor systems with a commercial, industrial, multi-family or institutional development shall be designed for a 1 in 25 year storm.

**Stormwater Management Guidelines** - Langford's stormwater management guidelines state that stormwater runoff from roofs or paved areas shall be passed through a water purification device or pond which, in the opinion of the city engineer, removes impurities in the water to the same degree as a StormCeptors™. Langford also requires all industrial developments to incorporate StormCeptors™ or equivalent equipment, to remove oil wastes and sediments from stormwater. The installation of these devices are done as part of the development permit process and they must be maintained on a regular basis through a covenant registered against the title of the property. Currently, there are a number of StormCeptors™ installed in large commercial areas.

**Watercourse Protection Bylaw** - The City of Langford adopted a bylaw to prohibit the pollution and obstruction of watercourses (Watercourse Protection Bylaw 550) in February 2001. This bylaw regulates the discharge of contaminants into stormwater collection systems and watercourses and requires that stormwater treatment technology on properties not covered under Langford's stormwater management guidelines be maintained on a regular basis.

**Plumbing Permit** - All connections to the sanitary collection system are done under a plumbing permit and are visually inspected by staff.

### 2.2.3 Addressing High-rated Discharges

#### *Public Health*

No discharges along the Langford coastline were recommended for action based on public health concerns in 2007.

#### *Environmental*

One discharge (6006) along the Langford coastline was recommended for remedial action due to environmental concerns in 2007. The discharge has received a high contaminant rating in 2001, 2005 and 2007 due to a high concentration of hydrocarbons called polycyclic aromatic hydrocarbons (PAH). In 2007, the high molecular weight PAH (HPAH) concentrations were 31 times greater than the guideline and low weight molecular weight PAH (LPAH) concentrations were 14 times greater than the guideline. Upstream investigations suggested that a creosote log pile stored near the marine environment may be the source of contamination.

## 2.3 City of Victoria

The stormwater collection systems for the City of Victoria consist almost entirely of piped systems. All of Victoria is serviced by sewage collection systems.

### 2.3.1 Stormwater Protection - Activities

**Stormwater and Sanitary System Positions** – The City of Victoria has

- a full-time position to address stormwater quality and environmental issues,
- restructured their Water and Environment Engineering section (W&E) to accommodate a full time position to address inflow and infiltration in the sanitary system (2003), and
- hired auxiliary staff since 1996 to carry out upstream investigations into the catchment areas of stormwater systems identified as having fecal coliform contamination. This work will be continued in 2008.

**Inventoried Infrastructure** - In 2007, City staff completed work to inventory all combined manholes and sewer and storm drain interconnections.

**Stormwater Quality Management Plan** - In order to manage these commitments the City continues to follow its Stormwater Quality Management Plan. The plan was completed in October 2002 and included the following components:

- to locate sources of environmental pollution and coordinate remedial or abatement strategies
- to develop guidelines to address water and sediment quality issues

- to develop partnerships with community associations and government agencies
- to provide public education
- to provide customer service
- to adopt the CRD Enhanced Model Storm Sewer and Watercourse Bylaw

**Cross Connection Identifications** - In 1989, the City initiated a South Coast Storm Drain Program to identify and correct cross connections between sanitary sewer and storm drains. Prior to 1993, swimming in many of the south coast beaches in Victoria was considered a health hazard by the regional health officer. Since 1993, the south coast beaches have maintained levels below the stormwater quality program guideline (200 FC/100 mL) and have been open for swimming. The City has expanded this program to include a labour intensive annual program for identifying and promptly repairing cross connections identified by dye testing and solids trapping. As cross connections are on private property, the property owner is required to rectify it within 30 days under the plumbing code. Problems found on public property (e.g. broken pipes, cross filtration) and remedial work is undertaken by the City. Contracted consultant works will be used in 2008 to identify and recommend remedial action for removal of fecal contaminant sources in the Barnard Park (Outfall 777A) catchment area.

**Cecelia Creek Investigations** - The City of Victoria's portion of Cecelia Creek catchment area continues to be investigated by City staff for fecal coliform sources. Investigations to find the sources were conducted in 2007 and will continue in 2008. In 2005, City staff concentrated effort to identify and address cross filtration issues through closed circuit television viewing and associated remedial work.

**Rock Bay Investigations** - The Haultain and Pembroke catchment areas (626 and 627) that discharge into Rock Bay continue to be investigated as a result of Transport Canada and BC Hydro initiatives to remediate the area. In 2002, catchment area 626 was the first municipal owned system in Canada, discharging into the marine environment, to have a storm water rehabilitation unit installed to address high contaminant loading. The unit was cleaned in 2007 and approximately 22 tonnes of sediments removed and disposed of as commercial/industrial waste. A concentrated plan to upgrade all roadside catchbasins and achieve Code of Practice compliance within catchment areas 629, 630, 633 and 634 is planned for 2008. The Code of Practice compliance program is expected to see 100% compliance of all parking lots, automotive, recycling and storage businesses in 2008 under contracted services.

**Bowker Creek Watershed Management Plan** - The City of Victoria is currently involved with the Bowker Creek Watershed Management Plan and participated in the master drainage planning process for Bowker Creek.

**Source Control** - The City's goal is to address source pollutants in the entire city. Integral parts of this program are:

- Public Education - to inform the public of the consequences of disposing hazardous wastes to the storm drainage system.
- Catchment Area Management - to minimize the discharge of oils, floatables and sediment by more frequent street sweeping, catchbasin pump out and modifying existing catchbasins to retain these contaminants. The adoption of model codes of practice in 2005 enhanced the City's Storm Water Bylaw 01-154 in addressing point source pollution at industry specific sites.
- Eliminate Sanitary Sewage Entry - to locate points of entry of sanitary sewage into the storm drainage system and eliminate misdirected connections and cross connections where possible.

**Disposal of Low Flows** - three of the catchment areas between Ogden Point and Gonzales Bay are pumped into the sanitary system during low flow, dry weather conditions. Larger flows are discharged out extended stormwater outfalls as required.

**Extending Points of Discharge** - In 1998, the City of Victoria filled part of the northeast coastline of Ross Bay with riprap to protect the seawall from waves. This work included extending stormwater discharges 216, 217, 218 and 222 to below the low water line. Discharges 216 and 222 have stormwater pumping stations located upstream to divert contaminated low summer flows to the sanitary system. Moving the discharges offshore reduced public health risk.

**Improving Stormwater Infrastructure** - The City received infrastructure grant money to upgrade the aging stormwater infrastructure in the Victoria Harbour/Gorge Waterway area. The following describes how the City is applying this money to protect their coastline:

- Catchbasin Replacement Program was implemented which replaced existing catchbasin pots in the road right-of-way with deeper and wider pots which are capable of accommodating a trapping hood. These pots are more effective in preventing suspended solids and other debris from washing off the road and into the storm drain system. The priority of replacement focused on existing pots that have deteriorated and require repair and pots located in industrial and commercial zones that discharge to inland waters.
- The City has now successfully installed stormwater rehabilitation units (end of pipe treatment to remove solids, heavy metals and oils from stormwater) in the catchment area of three stormwater discharges 636, 626 and 607

**Victoria Harbour Plan** - In 2001, the planning department completed its Victoria Harbour Plan. As part of this plan the City will do the following:

- work with neighboring municipalities, government and the community to improve the water quality in the harbour
- development of a Stormwater Quality Management Plan, including source control measures and Development Permit Area amendments within five years
- support the installation of pump out facilities at short-term moorage facilities, possibly through bonus density
- approve rezoning applications for float homes and live-aboards where adequate connections can be made with the sanitary sewer system

**GIS Mapping** - In 1999, the City digitally mapped its storm sewer drainage basins and is now pursuing GIS mapping and identification of all underground infrastructure. This information will provide better estimates of flow in priority catchment areas. Detailed mapping in combination with the CRD Regional Source Control program (RSCP) information on business types, discharges and locations could also provide information on stormwater contaminant sources.

**Improved Street Material Handling Facility** - Material that is removed from the roads or the storm drain and sanitary sewer pipe system is stored and handled at the improved facility at the City's Garbally Street Operations Yard. The treated liquids are disposed into the sanitary sewer (under permit from the RSCP). Solids and oils are contained within the facility and disposed off in the appropriate matter.

### 2.3.2 Stormwater Protection - Regulatory Tools

**Official Community Plan** - The City of Victoria's existing OCP (1996) states the following objectives:

- "to improve water quality in offshore and inland waters including the outer, inner and working harbour reaches".
- The City of Victoria, CRD and the federal government should cooperate to improve the water quality in Juan de Fuca Strait and Victoria Harbour.
- City council has recommended a proposed amendment to the BC Local Governments Act that environmental policies be given the same stature as social planning to address local environmental issues.

**CRD Model Storm Sewer and Watercourse Bylaw** - In 2001, the City was the first municipality to adopt the CRD Model Storm Sewer and Watercourse Bylaw. In 2005, the City amended its bylaw to include an enhanced Schedule A: prohibited wastes section and five Codes of Practice. The main aspects of these bylaws are to:

- prohibit the discharge of contaminants to storm drains and watercourses
- requires that prior approval to be obtained prior to work in a municipal drainage system
- designate streamside protection areas and require prior approval for work within these areas
- allow ticketing for offences
- prevent the obstruction of storm sewers and watercourses
- establish authority to administer the bylaw
- allow codes of practices to be appended to the bylaw
- require businesses to operate in compliance with the codes of practice

**Plumbing Bylaw** - All connections to the City's sewer and storm drain collection systems are required to be completed under a valid plumbing permit and inspected by staff. The City is planning to rewrite its plumbing bylaw in the near future.

### 2.3.3 Addressing High-rated Discharges

In discussion with Victoria staff, the discharges recommended for action in this annual report were prioritized for attention by the municipality in the following order:

#### *Public Health*

There were 15 discharges rated high for public health concern in 2007. Two discharges (769 and 217) are no longer rated high due to lower fecal coliform counts in 2007. The City continues to work towards identifying the sources of contamination for the high-rated discharges. Five more high-rated discharges are within the City but drain from private property to the marine environment. The City of Victoria has no authority to remediate these discharges but City staff in cooperation with SHWP work with the property owners to resolve the problem. Generally, those discharges on the south coast that are rated high will be given a higher priority due to higher levels of public use. The following table lists the discharges rated high for public health concern in 2007 and their priority (highest to lowest) for mitigative measures by City staff.

## Prioritized Order of Discharges with High Public Health Concerns

Priority No.	Discharge	General Area	Figure No. (Appendix B)
1	613	Government Street – Inner Harbour	44
2	777A	Barnard Avenue – Outer Harbour	27
3	758A	Banfield Park – Selkirk Water	30
4	611	Inner Harbour	44
5	227	Wildwood Avenue – Ross Bay	41
6	641	Cecelia Creek – Selkirk Water	41
7	218	Memorial Street – Ross Bay	49
8	614	Government Street – Inner Harbour	35
9	607	Fisherman's Wharf – Inner Harbour	45
10	619	Johnson Street Bridge – Inner Harbour	44
11	645	Gorge Road – Selkirk Water	41
12	216	Eberts Street – Ross Bay	49
13	610	Inner Harbour	44
14	230	Gonzales Bay	41
15	222	Ross Bay	40

Upstream investigations to determine the sources of high fecal coliform counts for discharges 214, 217, 218, 227, 607, 610, 611, 619, 758A and 769 were undertaken in 2007. Section 4.2 discusses the results of these investigations.

### *Environmental*

In 2007, nine discharges were recommended for action based on chemical contaminant concentrations 614, 613A, 619A, 619B, 620, 627, 629, 634, and 767. All discharges were assigned a moderate priority for mitigative action with the exception of 613A which is lower priority than the others based on the flow of the discharge and the sensitivity and flushing abilities of the marine habitat into which it discharges. Therefore, in prioritizing the discharges with moderate priority, the magnitude of the TEU was considered. An upstream sample taken in discharge 629 had a very elevated TEU (31) based on a variety of contaminants and should be given priority over other discharges. In 2008, Victoria will establish a schedule for addressing these discharges.

Discharge 767 was monitored in 2005 and elevated zinc and slightly elevated lead were found. A large development project is underway in the catchment area and soil remediation is taking place. This discharge will be monitored for change once development activities have concluded.

The City of Victoria has undertaken mitigative measures in two discharges previously recommended for action. Stormwater rehabilitation units have been installed in discharges 607 and 626 immediately above tidal influence. These units are designed to remove contaminants prior to discharge to the marine receiving environment. City of Victoria and SHWP staff undertook a monitoring project to determine contaminant removal efficiency levels for the SRU installed in the catchment area of discharge 626. Results from this monitoring project have indicated that the unit *...removes fine particles in addition to larger particles and ...is relatively effective at removing particles greater than 50 microns, in the range of 91% – 98%* (Kerr Wood Leidal, 2005).

Upstream investigations to determine sources of high contaminant levels were undertaken for discharges 613, 613A, 627, 629, 633 and 636 in 2007. The results of these investigations are provided in Section 4.2.

## 2.4 District of Oak Bay

The stormwater collection systems for the District of Oak Bay consist almost entirely of piped systems. All of Oak Bay is serviced by sewage collection systems.

### 2.4.1 Stormwater Protection - Activities

**Interjurisdictional Stream Sampling** - Oak Bay staff raised the issue of large flow discharges that cross municipal boundaries. For example, Bowker Creek has its headwaters in Saanich, runs through Victoria and then discharges along the Oak Bay coast. Interjurisdictional sampling for fecal coliform concentrations has been carried out for major flows since 1994.

**Video Inspection of Infrastructure** - In 1999, Oak Bay purchased their own video camera equipment for inspecting sanitary sewer lines and storm drains to rectify major problems identified by this program.

**Storm Drain Rehabilitation Program** - Oak Bay funds a storm drain rehabilitation program with a primary goal of addressing increasing storm drain capacity. However, many problems such as inflow and infiltration from the sanitary system to the storm drain system are being rectified as well.

**Storm Drain Evaluation Program** - Oak Bay has instituted a storm drain evaluation program that addresses stormwater discharges with high levels of fecal coliform concentrations. Staff intends to focus initially on discharges identified as high priority in the CRD Stormwater Quality Annual Reports. Summer students have been hired to assist Oak Bay with engineering activities, including cross connection issues.

**Bowker Creek Watershed Management Plan** - The District of Oak Bay is currently involved with the Bowker Creek Watershed Management plan and participated in the master drainage plan for Bowker Creek.

**Cross Connection Repairs** - Oak Bay requires that all sanitary sewer cross connections to the storm sewer system on public or private property be corrected.

### 2.4.2 Stormwater Protection - Regulatory Tools

**Official Community Plan** - The most recent OCP was updated in September 2000 but does not include stormwater quality issues.

**Sewer Connection Permits** - All connections to the sanitary collection system are done under a valid service permit. All connections are visually inspected and recorded by Oak Bay staff.

**Bylaws** - In 1996, Oak Bay council adopted a bylaw to address stormwater quality issues and another to govern and regulate discharges to sanitary sewers. These bylaws set out guidelines and prohibit a wide variety of restricted wastes from discharge to the sanitary sewer, combined sewer and storm drain systems.

### 2.4.3 Addressing High-rated Discharges

#### *Public Health*

Ten stormwater discharges along the Oak Bay coastline were rated with a high level of public health concern in 2007 (231, 245, 249, 250, 308A, 310A, 312, 318, 320 and 322). Most of the catchment areas for these nine discharges have been investigated by Oak Bay and/or CRD staff within the last few years. The results of these investigations are discussed in Section 3.2.

## *Environmental*

In 2007, there were no new discharges recommended for corrective action in Oak Bay based on chemical contaminant concentrations. However, two discharges (250 and 310) remain as recommended for action based on previous sampling. Upstream investigations by SHWP staff continue to narrow down the sources of the contaminants. The results of these investigations are provided in Section 3.2.

### **2.5 District of Saanich**

Stormwater collection systems in Saanich consist of pipes, open ditches and natural watercourses. The heavily-developed areas of Saanich (sewer containment boundary) are serviced by sewage collection systems. The sparsely developed areas are serviced by onsite systems.

#### **2.5.1 Stormwater Protection - Activities**

**Sanitary Sewer Line Extension** – Saanich completed the extension of the existing sanitary sewer line in the following areas:

- from the Blenkinsop/Royal Oak intersection to incorporate Pearce Crescent in 2003. This work involved the installation of sewer mains, construction of a pump lift station and connection of approximately 50 residential homes.
- south of Pipeline Road across Colquitz Creek to Cheeseman Road in 2004. Saanich worked cooperatively with Fisheries and Oceans Canada to ensure that work occurred within construction windows for fish-bearing streams. This work involved the connection of approximately 30 residential homes.
- from Blenkinsop to Mt. Doug Park along Cordova Bay Road in 2003. A sanitary lift station was constructed in this area in 2004.

**Watershed Management Planning** - Saanich participated in the preparation of watershed management plans for the following creeks:

- Craigflower Creek - prepared in cooperation with other municipalities, the CRD, provincial and federal governments, landowners and community organizations. Saanich council endorsed the plan on April 6, 1999. One of the primary objectives of watershed management is to improve stormwater quality.
- Durrell Creek - for a tributary of Colquitz Creek, as a pilot for the rest of the Colquitz Creek system. The final plan went to council in July 2000.
- Bowker Creek - completed in early 2003. Saanich is currently participating in the master drainage planning process for Bowker Creek.

**Watercourse Stewardship** - Saanich has partnered with the Habitat Acquisition Trust to foster stewardship of Colquitz and Durrell creeks via a landowner contact program. Information packages and site visits support reducing use of chemicals in the landscape, proper disposal of household toxic products, restoring riparian areas, reducing irrigation and keeping pet feces out of watercourses.

**Street Material Handling Facility** - Saanich developed a new street material handling facility at the Borden Street public works yard. Once solids and oil are removed, liquids are disposed to sanitary sewer and no longer enter stormwater drains and watercourses. Solids are contained

within the facility. This proper handling and disposal of street material has also eliminated the potential for soil contamination.

**Cooperation with VIHA** - Municipal staff works with the VIHA to resolve problems with onsite sewage disposal systems.

**Cross Connection Investigations** - Investigations to locate cross connections between sanitary sewers and storm drains is ongoing. This program will continue in 2008.

**Pump Station Overflow Removal** - A pump station overflow will be eliminated at the foot of Dysart Road during upcoming pump station upgrades. Removal of this overflow will prevent the potential for sewage to spill into the Gorge Waterway during a pump station failure.

## 2.5.2 Stormwater Protection - Regulatory Tools

**Official Community Plan** – The Saanich OCP contains a "General Plan" entrenched by bylaw. The environment chapter of the plan sets out the following policies:

- mitigate adverse environmental consequences of development where storm drains are tributary and adjacent to the ocean, wetlands, floodplains and streams
- protect streams, floodplains, wetlands and other natural areas by enforcement of the Deposit of Fill Bylaw and the Soil Removal Bylaw
- reduce and eliminate sources of pollution to storm sewers and watercourses
- initiate a study to determine a course of action to restore, maintain and manage watercourses, floodplains and wetlands
- adopt a standard review process to evaluate the environmental and social implications of development initiatives and public works projects

The Public Works chapter of the General Plan sets out policies including:

- continue implementing appropriate drainage system improvements for the 12 drainage watersheds
- require onsite storm drainage controls or filtration provisions for developments adjacent to natural waterways where necessary to ensure that stormwater quality and quantity are not adversely affected by development
- retain the stormwater holding capacity of natural storage areas
- develop a monitoring system for stormwater filtration systems within private multi-family, commercial and industrial developments

On August 17, 1992, Saanich council endorsed the following resolution:

*"Council endorse in principal inclusion of stormwater management within the Liquid Waste Management plan on the basis of the CRD monitoring drains and notifying local jurisdictions to correct problems as well as undertaking pollution control enforcement programs, with the municipalities required to commit to resolving any problems identified by the CRD."*

**Plumbing Permits** - Saanich requires all connections to both the sewage and stormwater collection systems be carried out with a valid plumbing permit and be inspected and approved by Saanich staff. This process may require special consideration be given to improve quality of discharge by methods such as grease interceptors and stilling basins.

**Oil/Water Separators** - Saanich has adopted a requirement for in-line oil/water separators to treat stormwater flows from drainage systems in all new multi-family, commercial and industrial development areas.

**Stormwater Bylaw** - Saanich has adopted a comprehensive stormwater management and discharge bylaw that addresses stormwater quality issues. This bylaw is currently under review.

**Development Permits** - Most of Saanich's development permit guidelines require that onsite stormwater management replicating natural runoff regimes is considered in the design.

### 2.5.3 Addressing High-rated Discharges

#### *Public Health*

There were two discharges (574; 4915 Cordova Bay Rd and 659; foot of Gorge View Dr.) rated high for public health concern along the District of Saanich coastline in 2007. Monitoring of these discharges will continue in 2008 and investigations will be undertaken when flows allow.

#### *Environmental*

There is one discharge (654) located along the District of Saanich coastline that was recommended for action based on high chemical contaminant levels. Discharge 654 was rated high in 2002 due to a high copper, lead and zinc concentrations and in 2005 due to an elevated HPAH concentration. Upstream investigations were undertaken in 2005 to narrow down the area of contamination, however, concentrations were lower. This discharge will be revisited in 2008 to further narrow down the area of contamination.

## 2.6 Department of National Defence

Canadian Forces Base (CFB) Esquimalt owns a number of properties along the Esquimalt and Victoria harbours, which are included within the core survey area. These are identified as Dockyard (includes the Yarrows Shipyard property), Naden, Work Point, Colwood and Munroe Head. The existing stormwater drainage for DND properties consist of piped systems, open ditches and natural watercourses.

Many DND monitored stormwater outfalls carry contaminants originating from the Township of Esquimalt. Past discussions with CRD and Esquimalt staff have revealed that Esquimalt has given a lower priority to removing contaminants from stormwater draining to this part of the coastline due to the low level of public use.

### 2.6.1 Stormwater Protection - Activities

**Cooperation with CRD Staff** - Over the last 10 years CFB Esquimalt has been working with CRD staff to ensure a consistent approach to stormwater management in the region. DND has prioritized the problems reported in the CRD stormwater reports and has investigated and corrected nearly all of the problems identified.

**Stormwater Monitoring Program** - CFB Esquimalt has established a stormwater monitoring program to evaluate the potential for elevated concentrations of stormwater contaminants to be discharged to the aquatic environment. Monitoring is done on 97 active outfalls on a rotation of every 5 years. The monitoring program ensures that a full suite of analysis occurs to allow for remedial action and future comparison. Analytical data is compared to stormwater monitoring standards based on federal, provincial and municipal guidelines and regulations.

**Cross Connection Repairs** - CFB Esquimalt has identified many cross connections between the storm and sanitary sewers on DND property and has fixed many of these connections. Cross connections found will be repaired as budgets allow. CFB Esquimalt personnel are also working to replace or repair sanitary sewer and stormwater piping deemed to be in poor condition, or inadequate for increased demands on the infrastructure.

**Source Control Program** - CFB Esquimalt has a source control program aimed at reducing contaminant release into the environment by controlling inputs into the sanitary sewer and increasing awareness of the impacts of spilling contaminants into the stormwater system. The DND's Sustainable Development Strategy targets responsible liquid effluent management. Training and direction is provided in the Formation and Ship Class Safety and Environmental Management Systems Manuals, Unit Environment Officer Courses, and at the biannual Formation Environment Management committee meetings.

**Groundwater Sampling** - CFB Esquimalt maintains a number of groundwater wells as a means of identifying contaminants in subsurface flows and monitoring remediated contaminated sites.

**Sensitive Hydrant Identification Plan** - CFB Esquimalt completed a study to determine environmental risk associated with the release of chlorinated water during hydrant flushing and fire suppression equipment testing. A Sensitive Hydrant Identification Plan (SHIP) was established to warn fire personnel of hydrants located in sensitive areas. The SHIP includes: painting of a fish image on fire hydrants and GIS mapping of the hydrants. Also, staff is researching alternatives to sodium thiosulphate as a neutralizing agent during the dechlorination of released water. Ascorbic acid is being considered as an alternative.

**Vegetated Retention Ponds** - To treat contaminated stormwater runoff, attenuate flows and prevent erosion and sediment transport, CFB Esquimalt has created vegetated retention ponds at remediated contaminated sites on DND's Colwood property. These ponds contain native vegetation, including aquatic species and drought tolerant edge species.

## **2.6.2 Stormwater Protection - Regulatory Tools**

DND is committed to meeting or exceeding the requirements of all federal environmental laws and where appropriate, municipal, provincial, territorial and international standards.

## **2.6.3 Addressing High-rated Discharges**

Although environmental considerations are to be integrated with all DND activities it is recognized that limited resources dictate that not all activities can be implemented immediately. The following criteria have been established by DND in order to assist in determining the relative priority of undertaking environmental activities. In order of precedence, the criteria are:

- risk to human health and safety
- non-compliance with legal requirements
- non-conformance to policy
- risk to the environment

### *Public Health Concern*

There were no discharges located along the DND coastline rated high for public health concern in 2006. CFB Esquimalt personnel continue to sample discharges on DND property to monitor for compliance to federal criteria.

### *Environmental Concern*

There are three discharges (847, 849 and 854) recommended for action along the DND coastline.

Discharge 847 was sampled at the point of discharge in 2007 and was rated high due to zinc and HPAH. This discharge has been rated high due to various contaminants over the since 2004. Investigations to determine the source of the contaminants have been initiated.

Discharge 849 was sampled at the point of discharge in 2007 and was rated high due to copper. High ratings have occurred in the past (2004, 2005 and 2006) due to zinc and copper. This discharge is part of a stormwater collection system that has recently undergone upgrades and is on a list for further upgrades. It is anticipated that these upgrades will be effective in reducing contaminant levels in this discharge. DND has installed filter fabric in catchbasins in the catchment area to reduce contaminants entering the system. A likely source of contamination is an eroding galvanized pipe at the point of discharge. This discharge will be resampled after further action is taken.

Discharge 854 was rated high for environmental concern in 2004 and 2005 due to zinc. This discharge will be resampled after further investigation or corrective action is undertaken.

## **2.7 Parks Canada**

In previous surveys, discharges along the Parks Canada coastline (Fort Rodd Hill) have been reported under City of Colwood discussions. However, this practice changed in 2005 and the lone discharge (912) will be reported more appropriately as a Parks Canada discharge.

Discharge 912 was recommended for action based on high zinc concentrations in 2001, 2004 and 2006, however low zinc concentrations were found in 2007. Upstream sampling investigations to identify the source of the high zinc were carried out by SHWP and DND staff. A study in 1999 identified increasing levels of zinc immediately downstream of corrugated metal pipes on the property and concluded that the pipes were a possible zinc source. Monitoring of this discharge will continue in 2008 to confirm zinc concentrations.

## **2.8 Township of Esquimalt**

Stormwater drainage in the Township of Esquimalt consists almost entirely of piped systems. All properties within Esquimalt are serviced by sewage collection systems.

Esquimalt continues to be involved with stormwater quality issues. The main reasons for the high percentage of stormwater discharges with high fecal coliform concentrations are combined manholes with storm drains and sanitary sewer pipes, direct cross connections of sewage pipes to the stormwater system and exfiltration from an aging sewage system infiltrating into the stormwater system.

### **2.8.1 Stormwater Protection - Activities**

**Prompt Spill Response** - Esquimalt will react to oil or chemical spills when they are brought to their attention or they will notify the Provincial Emergency Program (PEP).

**Correction of Stormwater Infrastructure Problems** - When operations and maintenance activities uncover cross connections and exfiltration and infiltration problems, they are rectified, subject to budget.

**Sewer Upgrade Program** - The Sewer Upgrade Program began in 2004 with a system wide evaluation of the sewer system, manholes and lift stations. In 2005, a contract for sewer main relining, grouting and point repairs of the worst line was completed. A similar program is scheduled for 2006 to 2008. It is anticipated that stormwater quality will be improved by repairing sewer pipes in poor structural condition.

**Kinsmen Gorge Park Creek Restoration Project** - The Kinsmen Gorge Park Creek Restoration Project, funded through the Canada - British Columbia Infrastructure Program, was completed in 2005. Restoration of the creek included returning the creek to its original alignment and the use of phyto-remediation in the channel to treat stormwater flows from over 400 acres prior to discharging to the Gorge Waterway.

**Street Material Handling Facility** - The Esquimalt public works yard, completed in 1997, includes BMPs for preventing contaminants from entering stormwater systems. A street material handling facility disposes of liquids to the sanitary sewer after removing solids and oil. Solids are contained within the facility. The new street material facility is also covered to prevent stormwater from reaching the contaminated solids and eventually the sanitary sewer.

## 2.8.2 Stormwater Protection - Regulatory Tools

**Bylaws** – In 1998, Esquimalt adopted a stormwater quality bylaw that is a modification of the CRD draft model bylaw. In addition, Esquimalt has a 1981 bylaw that requires property owners to connect their buildings and structures to the appropriate sewer or drain connections. The principal intent of the bylaw was to minimize flooding; however, this bylaw also limits the possibility of cross connections between the two collection systems and minimizes the likelihood of stormwater flows containing unacceptable substances from gaining entry to storm drains.

**Official Community Plan** - The Esquimalt OCP, dated December 1996, was updated in early 2007. It includes policies on stormwater quality and other environmental issues. The following is a list of some of these policies:

- Sanitary Sewer Systems and Source Pollution details policies regarding on-going upgrading, and correction of sewage pollution at its source and preventing it from entering a storm drain system or watercourse.
- Installation of oil traps and the preservation or rehabilitation of native shoreline habitat are recommended when considering proposals to redevelop private or public lands adjacent to any waterbody.
- The Gorge Waterway and adjacent lands are designated as a development permit area and the use of landfill, pesticides or herbicides is strongly discouraged.
- The OCP also states that "Regional regulations to control and regulate storm drains will be enacted by Township bylaw to reduce the potential for accidental or negligent pollution into the storm drain systems".

**Plumbing Permits** - The Township requires that all connections to the sewage collection system or the storm drain system be made under a valid plumbing permit and that all connections be visually inspected by staff before backfilling.

## 2.8.3 Addressing High-rated Discharges

### *Public Health*

There were eight stormwater discharges (737, 749, 751, 781, 782, 805, 806, and 813) along the Esquimalt coastline (not including DND property) rated high for public health concern in 2007. Esquimalt will consider these discharges when planning other public works such as the sewage

collection system upgrade. In 2007, upstream investigations were undertaken within the catchment areas of 751, 781, 805, 806 and 813 and the area of contamination continues to be narrowed down for discharges. Esquimalt has initiated dye testing in the catchment areas of concern. The results of these investigations are discussed in Section 3.2. Further investigations will be undertaken in 2008.

Esquimalt staff started relining their sewer lines in 2007 to reduce cross contamination between sanitary sewer and stormwater systems. It is anticipated that sources of contamination will be eliminated for several of the discharges rated high in 2007 as this work is completed. Esquimalt has placed the highest priority on remediating discharges draining to the Gorge Waterway. The West Bay area and outer coast area were given lower priority. However, relining planned in the catchment areas of discharges rated high for public health concerns will be a priority for 2008.

### *Environment*

Two stormwater discharges (737 and 812) along the Esquimalt coastline are recommended for action. Discharge 737 was rated high in 2007 due to PAH. In 2006, PAH, arsenic and zinc concentrations were high. Upstream investigations for discharge 737 were undertaken by SHWP staff in 2002 to 2006. During this time, PAH concentrations have been high (up to 244 times higher than the guideline). This discharge will be resampled after mitigative action to any sources found or in 2009 to monitor for change. Discharge 812 was rated high for environmental concern from 1995 to 2003 due to zinc. The discharge will be resampled in 2008.

## **2.9 Town of View Royal**

Stormwater drainage within the Town of View Royal consists mostly of open ditches and watercourses. View Royal is almost entirely serviced by sewage collection systems, with the exception of the Atkins Road area. A small number of sparsely developed areas use onsite sewage systems.

### **2.9.1 Stormwater Protection - Activities**

**Master Drainage Plan** - The Town is completing a new five-year master drainage plan which addresses drainage and flooding concerns, calculates drainage catchments and required pipe sizes, and determines the pipe locations, materials and sizes. In addition, gaps in the existing rights of way are being documented for acquisition. This work will improve stormwater quality by finding cross connections.

**Sanitary Sewer System Investigation** - View Royal is continuing an ongoing program to investigate the condition of their sanitary sewer system. This work includes flushing mains, camera inspection, and cross-connection identification. Exfiltration from sanitary sewers infiltrating stormwater systems is being addressed as issues arise.

### **2.9.2 Stormwater Protection - Regulatory Tools**

**Official Community Plan** - The Town of View Royal began updating their OCP in 2007. The plan will include the following policies related to protecting stormwater quality:

- guidelines are being developed for protection of aquatic habitat and riparian ecosystems
- proposals for development must consider incorporating measures to minimize impermeable surface area
- a setback of 30 m will be required from the natural boundary of the ocean or a natural watercourse

- the Town will work cooperatively with the CRD and other municipalities and organizations in implementing watershed plans for all watersheds in the Town
- stormwater management practices will emphasize infiltration and detention, new roadway plans will incorporate pollutant traps and biotreatment facilities such as swales, raingardens and wetlands.
- there will be specific requirements for development near environmentally sensitive areas

**Plumbing Permits** - View Royal requires that all connections to the sewage collection system be inspected by staff and installed under a valid plumbing permit. Property owners may not connect stormwater flows to the sanitary system.

**Development Requirements** - Approvals for multi-unit developments are reviewed by Town staff to ensure that best management practices are followed and that deleterious substances are not contained within the proposed runoff flows to ensure a high level of stormwater quality from all new multi-unit developments.

**Watershed Management Plan** - View Royal participated in the preparation of a watershed management plan for the Craigflower and Millstream watersheds. The plans were prepared in cooperation with the other municipalities, the CRD, provincial and federal governments, landowners and community organizations. One of the primary objectives of watershed management is to improve stormwater quality.

**Master Drainage Plan** - View Royal began updating their master drainage plan in 2007.

**Infrastructure Upgrades** - View Royal has received grants for the upgrade of Island Highway, and are based on improvements to air and water quality. The proposed works include a network of swales and raingardens discharging through two new wetlands into Esquimalt Harbour and Portage Inlet. The design work will be completed by January of 2008 and works will be completed by February of 2010.

### 2.9.3 Addressing High-rated Discharges

#### *Public Health*

There was one discharge (712) rated high for public health concern along the View Royal coastline in 2007. Upstream investigations for discharge 712 were carried out in 2006 and 2007 are discussed in Section 3.2.

#### *Environment*

Three discharges (866, 873A and 874) along the View Royal coastline were recommended for action based on elevated chemical contaminant levels. Discharge 866 had high zinc concentrations from 1997 to 2002 and 2006, as well as high lead and mercury in 1999. In 2002, contaminant levels at the point of discharge to the marine receiving environment (866) were high due to zinc while levels at upstream station 866-1 were low. In 2004, samples were collected from the point of discharge (866) and upstream from a potential contaminant source (866-2). Both samples had high zinc concentrations. View Royal staff has sent a letter to the property owner requesting mitigative action in the form of catchbasin maintenance. This discharge will be monitored for change until corrective action has been undertaken.

Discharge 873A was rated high in 2005, 2006 and 2007 due to zinc. Investigations suggest that the source of zinc contamination for 873A is due to highly-corroded pipes at the point of discharge.

Discharge 874 was rated high for environmental concern for a number of years. In 2007, the high rating was due to high concentrations of PAH (7 to 20 times above the MSQG). The other high ratings were due to zinc. Upstream samples collected in 2007 were rated high and moderate due to zinc. The hydrocarbon source appears to be below the upstream sample locations, while the zinc source is above. Discharge 874 had a very high TEU (28.2) due to HPAH concentrations that were 19.7 times greater than the guideline and LPAH concentrations that were 7.4 times greater than the guideline.

## **2.10 Songhees First Nation**

Most of the Songhees First Nation lands are serviced by a sewage collection system except for a small number of properties with septic tanks and fields. The Songhees First Nation is initiating a process to establish land use and environmental protection tools for the betterment of the community.

There are no high-rated discharges on Songhees land.

## **2.11 Esquimalt First Nation**

All of the properties on Esquimalt First Nation lands are serviced by a sewage collection system. There are three stormwater discharges along the coastline of Esquimalt First Nation lands and one (865E) was visited in 2007 and received a low rating for public health concern.