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**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE  
MEETING OF WEDNESDAY, OCTOBER 23, 2013**

**SUBJECT      SERVICE PLANS REVIEW PROCESS**

**ISSUE**

The Capital Regional District (CRD) embarked on a three year budget and business planning cycle last year. 2013-2015 represents the first three year term of this new approach. This report highlights the 2013 service plan results and key changes for 2014 and 2015.

**BACKGROUND**

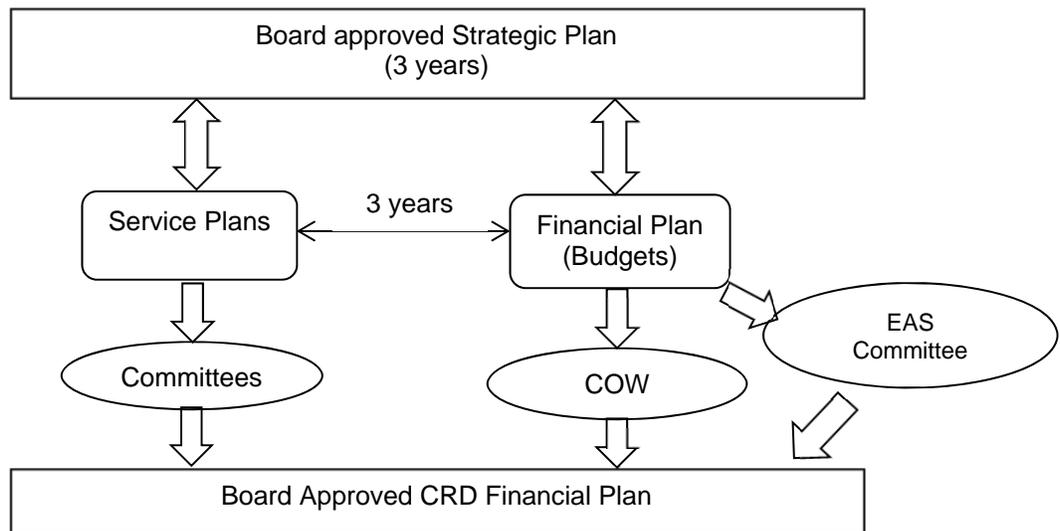
Service plans are primarily developed to describe core service information including key service drivers such as trends, service levels and performance measures. These plans also highlight divisional initiatives and implications for the overall work program for a specific area.

Three year service plans (2013-2015) were specifically developed to provide for continuity of service delivery priorities through the election cycle and to ensure alignment with Board strategic priorities. These plans also provide the CRD with a tool to communicate with stakeholders on service delivery priorities and related outcomes.

The 2013-2015 plans were developed last year for Committee consideration. The plans have now been updated to reflect the 2013 work program results and highlight key changes for 2014 and 2015. To assist the Committee review process, a one page service plan summary has also been developed to summarize the key points.

The presentation of service plans to the appropriate committee permits the more detailed assessment and knowledge of service delivery and programs. The service plans are intended to provide the committees with information on each division. This update is intended to provide committees the opportunity to review the work program and make service amendments as necessary. This iterative process is intended to provide staff with a roadmap to better plan and deliver their work effectively.

The following figure identifies the structure for service plan and budget approvals.



### **FINANCIAL IMPLICATIONS**

2014 Financial Plan estimates are being worked on and will be presented for review and approval at the Committee of the Whole on November 20, 2013. The Financial Plan will reflect the results of the Committee review of service plans. Regional and sub-regional budgets will be presented to the Committee of the Whole, while Electoral Area Services (EAS) budgets will be presented to the EAS Committee directly sometime in November.

### **CONCLUSION**

Departments have prepared service plans for presentation to the appropriate standing committee to provide a more detailed assessment and knowledge of service delivery and programs. These service summaries highlight the 2013 results and focus on key changes for 2014 and 2015.

### **RECOMMENDATION**

That the Environmental Services Committee approve the attached service plan.

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Rajat Sharma, MBA, CMA  
Senior Manager, Financial Services

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Diana E. Lokken, Dip Bus Admin, CMA  
General Manager, Corporate Services  
Concurrence

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Larisa Hutcheson, P.Eng.  
General Manager, Parks & Environmental Services

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Robert Lapham, MCIP, RPP  
Chief Administrative Officer  
Concurrence

Attachments: Service Plan

**SERVICE NAME:** Environmental Resource Management

**Changes in assumptions, trends, and other issues since 2013:** (linked to section 1.4, 2.6 of the detailed service plan)

In 2014, Environmental Resource Management continues to work toward the waste diversion goal of 70% diversion by 2015. 2013 diversion levels are estimated to be at 52%. Increased diversion will continue to result in:

- less solid waste being disposed at the Hartland Landfill resulting in increased landfill life and reduced environmental risk (gas/leachate)
- decreased revenue from solid waste tipping fees at Hartland
- increase in Hartland operating costs resulting from increasing diversion programs to manage more materials

Revisions to the Integrated Solid Waste and Resource Management Plan, to be completed in 2014/2015, and will result in increased clarity regarding community solid waste management expectations for the Capital Regional District.

2013 tipping fee revenues are expected to continue to trend downward as diversion continues to grow. Revenues from the sale of recyclable materials have been less than anticipated in 2013 due to weak global commodity markets and this trend is expected to continue in to early 2014. 2013 expenditures are at or below budget.

No changes to service delivery are anticipated for 2014.

**Overall 2013 budget performance:**

- 2013 revenues and expenditures on track to budget expectations, trends emerging are reflected in changes made to 2014 budget

**New division initiatives:** (service plans have been updated accordingly; linked to section 3 of the detailed service plan)

- Hartland Power Plant acquisition and related revenue and operating costs
- Slightly higher than expected offer received from Multi Materials BC to provide collection services for packaging and printed paper
- Kitchen scraps processing (pending ESC direction)
- Bylaw enforcement, primarily due to Composting Facilities Bylaw

**Proposed changes to staffing levels:** (linked to section 2.3 of the detailed service plan)

- No Change

**KEY PERFORMANCE INDICATORS** (linked to section 4 of the detailed service plan)

Indicator Name	2013 Planned	2013 Actual	2014	2015
Financial	\$58.11 tonne/diversion (\$58.71) tonne/landfilled	\$58.11 tonne/diversion (\$58.71) tonne/landfilled	\$49.07 tonne/diversion (\$54.51) tonne/landfilled	\$27.53 tonne/diversion (\$51.13) tonne/landfilled
Customers	50,000	55,000	45,000	40,000
Business Processes	320 kgs/capita landfilled	320 kgs/capita landfilled	298 kgs/capita landfilled	277 kgs/capita landfilled
	52% diversion	52% diversion	56% diversion	60% diversion
	50% landfill gas capture	50% landfill gas capture	50% landfill gas capture	60% landfill gas capture

# 2013-2015 Division Plan for Environmental Resource Management Division, Parks & Environmental Services Department

## 2014 Update

### 1 OVERVIEW

#### 1.1 Scope

Environmental Resource Management staff administer and manage all municipal solid waste disposal for the Capital Region at Hartland landfill, as well as waste reduction and recycling programs. In 2012, the division administered curbside residential recycling collection (blue box) contract services for all single-family dwellings (118,000 homes) and provided annual funding to apartment owners to assist them with recycling programs (40,000 apartment units). The majority of funding is drawn from Hartland tipping fees with additional revenues from the sale of recyclables and other sources.

Close to 50% of the solid waste generated in the region has been diverted from disposal, with the remaining 50% primarily landfilled at Hartland landfill. In 2011, 136,414 tonnes of garbage was landfilled in an environmentally responsible manner. Groundwater and surface water are protected through the collection and removal of leachate, and greenhouse gases are substantially reduced through the collection of landfill gas, which contains methane produced by decaying garbage. The methane is converted into electrical energy to service about 1,600 homes in the region.

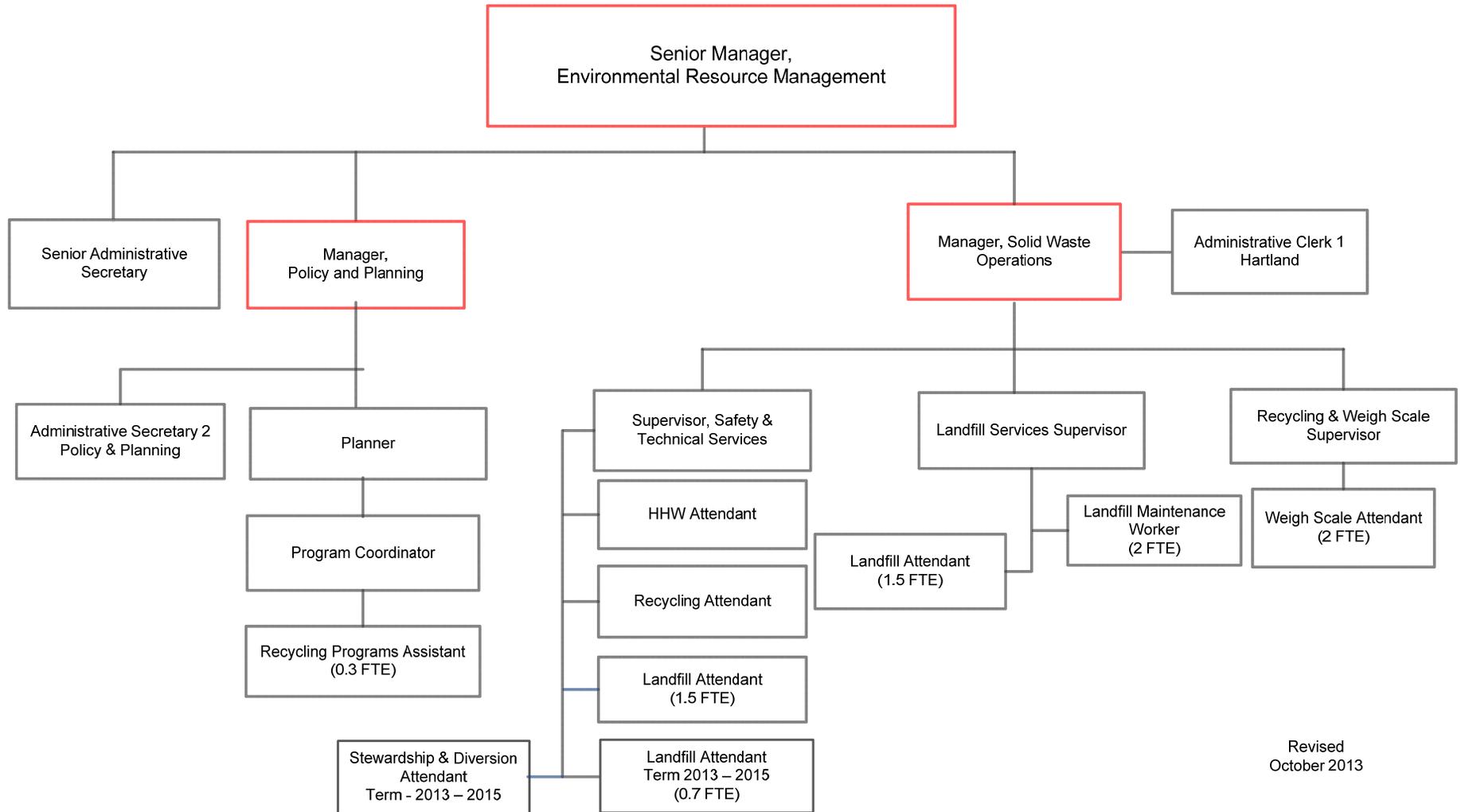
#### 1.2 Primary Contact

Name: Russ Smith

Title: Senior Manager

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1.3 Organization Chart - updated



Revised  
October 2013

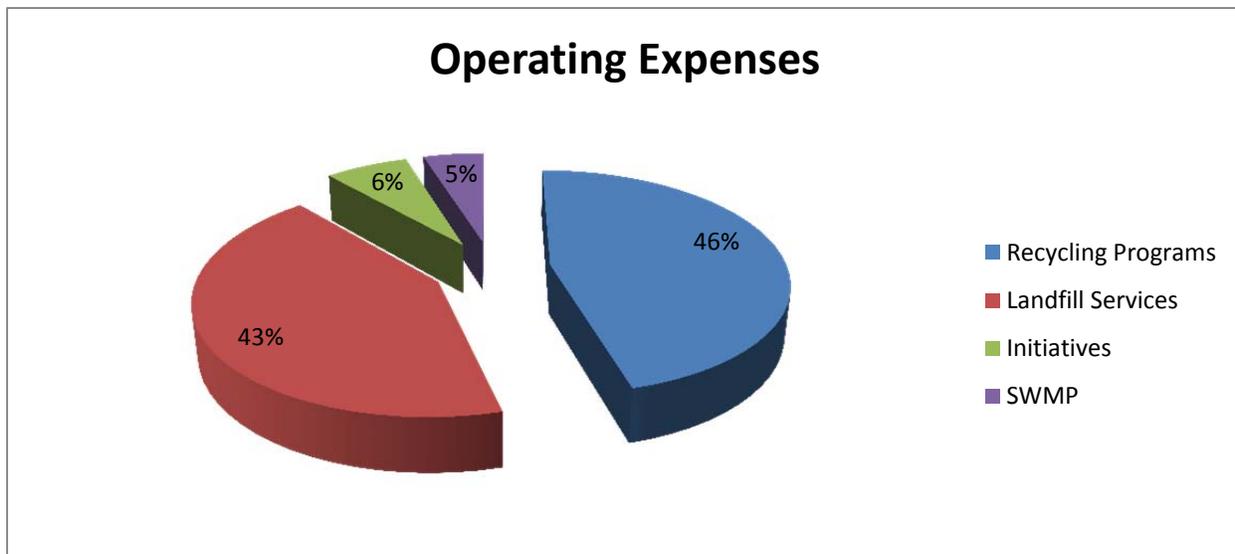
### 1.4 Key Trends & Issues

Environmental Resource Management has a waste diversion goal of 70% diversion by 2015. 2012 diversion levels are estimated to be around 50%. Increased diversion results in:

- less solid waste being disposed at the Hartland Landfill resulting in increased landfill life and reduced environmental risk (gas/leachate)
- decreased revenue from solid waste tipping fees at Hartland
- increase in Hartland operating costs resulting from increasing diversion programs to manage more materials

Revisions to the Integrated Solid Waste and Resource Management Plan, to be completed in 2014/2015, will result in increased clarity regarding community solid waste management expectations for the Capital Regional District.

### 1.5 Summary of Expenditures and Capital - 2013



Environmental Resource Management	2013 Budget
Total Operating Expenses	<b>\$14,841,104</b>
Total Capital Expenditures	<b>\$3,445,000</b>

## 2 SERVICES

### 2.1 Core Services

Service	Scope
<b>Diversion Programs</b>	All municipalities and electoral areas <ul style="list-style-type: none"> <li>• Curbside collection, processing and funding depot programs</li> <li>• Hartland recycling drop off, including household hazardous waste</li> <li>• Contract management</li> </ul>
<b>Landfill Services</b>	All municipalities and electoral areas <ul style="list-style-type: none"> <li>• Disposal of municipal solid waste and controlled wastes</li> <li>• Landfill gas capture and utilization</li> <li>• Leachate management</li> </ul>
<b>ERM Initiatives</b>	All member municipalities and electoral areas <ul style="list-style-type: none"> <li>• New diversion initiatives, including organics management, material restrictions</li> <li>• Product stewardship programs – oversight and implementation</li> </ul>
<b>Solid Waste Management Planning</b>	All member municipalities and electoral areas Solid Waste Management Plan <ul style="list-style-type: none"> <li>• Solid Waste Management Plan revision and monitoring</li> <li>• Long-term planning and financial management</li> <li>• Regulatory requirements and compliance monitoring</li> </ul>

### 2.2 Service Levels

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
<b>Diversion Programs</b>	<ul style="list-style-type: none"> <li>- Bi-weekly curbside blue box for 117,000 residents (urban)</li> <li>- Depots (rural)</li> <li>- Hartland Depot (accepts 16 categories of items)</li> </ul>	Kitchen Scraps diversion strategy (phase 1) – incentive	Kitchen Scraps diversion strategy (phase 2) – charge  EPR/Blue Box funding model is changing	Kitchen Scraps diversion strategy (phase 3) - ban
<b>Landfill Services</b>	Accepting non banned items 6 days a week (open 57 hrs/wk commercial 47 hrs/wk residential)	No change	No change	Kitchen Scraps ban
<b>ERM Initiatives</b>	Current pilots: <ul style="list-style-type: none"> <li>- Styrofoam</li> <li>- Wood waste</li> <li>- Mattresses</li> <li>- Shingles</li> </ul>	New Extended Producer Responsibility (EPR) initiatives	New Extended Producer Responsibility (EPR) initiatives	New Extended Producer Responsibility (EPR) initiatives
<b>Solid Waste Management Planning</b>	Solid Waste Management Plan – Revision 2 (Nov 1995) + 7 amendments	Develop new Integrated Solid Waste and Resource Management Plan (ISWRMP)	Develop new Integrated Solid Waste and Resource Management Plan (ISWRMP)	Implementation of ISWRMP

## 2.3 Workforce Considerations

Workforce (FTEs)				
Service	Current year	Year 1	Year 2	Year 3
<b>Diversion Programs</b>	5.45	5.45	5.45	5.45
<b>Landfill Services</b>	11.75	11.75	11.75	11.75
<b>ERM Initiatives</b>	1.75	1.75	1.75	1.75
<b>Solid Waste Management Plan</b>	1.75	1.75	1.75	1.75
	<b>20.70</b>	<b>20.70</b>	<b>20.70</b>	<b>20.70</b>

An increase of 1.7 term employees (3-year term positions) in landfill services is required in 2013-2015 to meet the increased workload:

The full time (1.0) term position is required to address the increased volume of diversion materials being handled at the Hartland drop off area. During off peak times, this position would perform maintenance tasks, freeing up senior maintenance staff to increase their attention to the management of the landfill gas system.

The part-time (0.7) term position is required to provide ongoing break and holiday relief for Hartland operations staff.

The need for these positions will be re-evaluated in 2015 to determine if there is an ongoing workload requirement in light of any substantial changes to waste diversion and landfilling activities within the CRD.

## 2.4 Customers and Governance

Service	External Customers	Internal Customers	Reviewing Commissions & Committees
<b>Diversion Programs</b>	Local residents and businesses	n/a	Environmental Services Committee Solid Waste Advisory Committee
<b>Landfill Services</b>	Local residents, businesses and municipalities	n/a	Environmental Services Committee Solid Waste Advisory Committee
<b>ERM Initiatives</b>	Local residents and businesses	n/a	Environmental Services Committee Solid Waste Advisory Committee
<b>Solid Waste Management Planning</b>	Local residents, businesses and municipalities	n/a	Environmental Services Committee Public and Technical Advisory Committee

The Solid Waste Advisory Committee provides advice and guidance to the Environmental Services Committee, as requested.

The Environmental Services Committee makes recommendations to the CRD Board on matters relating to the development, operation and administration of solid waste functions, and liquid waste disposal functions for areas outside of the Core Area Liquid Waste Management Plan; and oversees matters related to water supply on the Saanich Peninsula, Port Renfrew and some communities on the Gulf Islands.

The Public and Technical Advisory Committee (PTAC) acts as advisory committee to the Steering Committee (ESC) on the development of the Integrated Solid Waste and Resource Management Plan. PTAC's mandate is to review current and existing programs and identify issues and options. PTAC participates in public consultation, reviews public consultation results and provides input on the final Plan. PTAC ensures that proposed programs and policies are in the best interest of all residents of the CRD, balancing both community and industry needs and technical requirements.

## 2.5 Delivery Strategy

Service	Delivery Strategy	Funding	Legislative Authority
Diversion Programs	CRD resources, contracts and partnerships	Funded through tipping fees received at the landfill and sale of selected recyclable materials	<ul style="list-style-type: none"> <li>• Local Government Act</li> <li>• Solid Waste Management Plan</li> <li>• Various CRD bylaws</li> </ul>
Landfill Services	CRD resources and contracts	Funded through tipping fees received at the landfill	<ul style="list-style-type: none"> <li>• BC Environmental Management Act</li> <li>• BC Hazardous Waste Regulation</li> <li>• Local Government Act</li> <li>• Solid Waste Management Plan</li> <li>• Bylaw 3117</li> <li>• MOE Operating Certificate</li> </ul>
ERM Initiatives	CRD resources, contracts and partnerships	Funded through tipping fees received at the landfill	<ul style="list-style-type: none"> <li>• Local Government Act</li> <li>• Solid Waste Management Plan</li> <li>• Various CRD bylaws</li> </ul>
Solid Waste Management Planning	CRD resources and contracts and partnerships	Funded through tipping fees received at the landfill	<ul style="list-style-type: none"> <li>• BC Environmental Management Act</li> <li>• Local Government Act</li> <li>• Solid Waste Management Plan</li> <li>• Various CRD bylaws</li> </ul>

## 2.6 Assumptions and Risks

Service	Key Assumptions	Risks
Diversion Programs	<ul style="list-style-type: none"> <li>• Diversion target of 70% by 2015</li> <li>• Recycling programs are cost-effective and have high participation</li> <li>• Contractors are established and stable</li> <li>• Revenue from recyclable materials varies and does not fully cover program expenses</li> </ul>	<ul style="list-style-type: none"> <li>• The impact of the new packaging and printed paper Extended Producer Responsibility (EPR) program on the CRD's curbside/Hartland recycling depot programs</li> <li>• New EPR programs have the potential to shift program delivery and funding</li> <li>• Market fluctuations for recyclable materials can significantly affect revenues</li> <li>• Public confusion due to proliferation of EPR services</li> </ul>
Landfill Services	<ul style="list-style-type: none"> <li>• Given current disposal rates, the Hartland Landfill has approximately 25 years of disposal capacity remaining</li> <li>• Landfill earnings currently fully fund ERM programs/initiatives</li> <li>• Landfill expenses do not decrease with decreased disposal volumes due to significant fixed costs</li> <li>• Hartland requires ongoing investment in critical environmental management infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Landfill volumes (and earnings) will decrease as regional diversion targets are achieved</li> <li>• Reduced landfill earnings will result in the need for new revenue sources/program reductions</li> <li>• Waste may be redirected by industry out of region if tipping fees increase significantly (loss of revenue)</li> </ul>
ERM Initiatives	<ul style="list-style-type: none"> <li>• The community supports new or expanded diversion programs</li> <li>• Material restrictions are cost-effective and achieve diversion</li> <li>• Stewardship programs shift costs from the CRD to the producer/consumer</li> <li>• Solid waste education programs are effective</li> </ul>	<ul style="list-style-type: none"> <li>• Some markets for non-conventional recyclables are limited</li> <li>• Material restrictions may increase illegal dumping and/or waste exports out of region</li> <li>• New initiatives increase diversion but decrease landfill revenues</li> <li>• Diversion initiatives are typically more expensive than incremental landfilling costs</li> </ul>
Solid Waste Management Planning	<ul style="list-style-type: none"> <li>• The division has an established landfill closure and post closure reserve fund</li> <li>• The existing Solid Waste Management Plan is 14 years old and has been updated through seven amendments</li> <li>• The new ISWRMP will provide solid waste management direction for the next 5-10 years</li> </ul>	<ul style="list-style-type: none"> <li>• Uncertainty of impact of liquid waste management plan on ERM</li> <li>• Community input into the new ISWRMP may result in the changes to solid waste functions/activities</li> <li>• A new ISWRMP must address the need for any additional funding by identifying potential revenue sources and/or program reductions</li> </ul>

### 3 ***DIVISIONAL INITIATIVES***

#### 3.1 **Core Initiatives**

Core Initiatives	Description	Budget Implications
Waste Management	Implement new EPR programs developed by industry stewards.	None - 100% per cent of residential recycling program costs recovered by EPR funding
	Work with industry to transition the CRD curbside recycling program under the EPR printed paper and packaging mandate	Subject to completing an agreement with MMBC, blue box service costs will be 100% recovered.
	Update the CRD's Solid Waste Management Plan in an effort to integrate regional waste management and ensure environmentally and economically sustainable management of the region's waste streams	Plan development costs in core budget Implementation costs to be determined once plan is complete.
	Implement kitchen scraps diversion strategy	Reduced tipping fees (\$800,000 in 2013) plus incentive costs (\$300,000 in 2013) Supplementary budget of \$100,000 required for enforcement of (composting) Bylaw 2736.
Climate Action	Optimize landfill gas production. Target of 75% landfill gas recovery	Increased capital investment (\$1,750,000 in 2013)
Energy Recovery/Enterprise Opportunities	Implement at least one energy recovery/enterprise initiative in 2013 that positively impacts the CRD's triple bottom line.	Maxim Power assets at Hartland acquired in 2013.

#### 3.2 **Strategic Initiatives**

Strategic Priority	Strategic Initiatives	Description	Budget Implications
Regional Infrastructure	Increase Integrated Resource Recovery	70% solid waste diversion by 2015	Decrease landfill revenue, increase program delivery costs
Climate Action	Energy Recovery/Enterprise Opportunities	Innovative energy opportunities	Optimization of landfill gas utilization in 2014.

## 4 PERFORMANCE MONITORING

Financial	2013 Planned	2013 Actual	2014	2015
<b>\$/tonne diversion</b>				
exp	\$65.16	\$65.16	\$71.35	\$60.99
rev	(\$7.05)	(\$7.05)	(\$22.28)	(\$33.46)
<b>Net</b>	<b>\$58.11</b>	<b>\$58.11</b>	<b>\$49.07</b>	<b>\$27.53</b>
<b>\$/tonne landfilled</b>				
exp	\$48.29	\$48.29	\$52.49	\$55.87
rev	(\$107.00)	(\$107.00)	(\$107.00)	(\$107.00)
<b>Net</b>	<b>(\$58.71)</b>	<b>(\$58.71)</b>	<b>(\$54.51)</b>	<b>(\$51.13)</b>
<b>Customers</b>	<b>2013</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Hotline inquiries (solid waste) per year</b>	50,000	50,000	45,000	40,000
<b>Business Processes</b>	<b>2013</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Kgs landfilled/capita</b>	320	320	298	277
<b>% diversion</b>	52%	52%	56%	60%
<b>% landfill gas capture</b>	50%	50%	50%	60%



**SERVICE NAME:** Environmental Partnerships

**Changes in assumptions, trends, and other issues since 2013:** (linked to section 1.4, 2.6 of the detailed service plan)

- One of the key trends for the Environmental Partnerships division was the development of departmental-wide outreach and education initiatives. In 2013, a one year pilot outreach campaign called, "Green 365" was launched which integrated environmental messaging across programs. This pilot will be completed in Spring, 2014. An evaluation will be completed on the campaign to inform the development and approaches of future departmental campaigns in subsequent years.
- Regional Source Control Program will continue with the implementation of its five year action plan and focusing on trends in certain emerging contaminants.
- There are no changes to the assumptions and trends for demand management and cross connection programs.
- It is anticipated that there will be no impacts to service delivery in 2014.

**Overall 2013 budget performance:**

- For the Regional Source Control Program, a small surplus is estimated for 2013. A small surplus will be carried forward and surplus funds will also be directed to an operating reserve to support the 5-year action plan.

**New division initiatives:** (service plans have been updated accordingly; linked to section 3 of the detailed service plan)

- New divisional initiatives including the "Green 365" outreach campaign will be delivered within core budgets. There is no supplementary funding required.

**Proposed changes to staffing levels:** (linked to section 2.3 of the detailed service plan)

- No change

**KEY PERFORMANCE INDICATORS** (linked to section 4 of the detailed service plan)

Indicator Name	2013 Planned	2013 Actual	2014	2015
ICI water audits	10	7	10	10
Cor. Inspection	500	500	550	600
CCC Audits	300	300	400	500

# 2013-2015 Division Plan for Environmental Partnerships Division, Parks & Environmental Services Department

## 2014 Update

### 1 OVERVIEW

#### 1.1 Scope

Environmental Partnerships Division is responsible for identifying partnerships and outreach opportunities to deliver services that foster sustainable environmental behaviour. The division uses a comprehensive tool box approach, including social marketing, education and environmental compliance to provide services and resources that inform, motivate and engage citizens, businesses and local government partners. The division delivers services in five main areas:

- Demand Management
- Regional Source Control
- Cross Connection Control
- Onsite Systems Management
- Outreach and Education

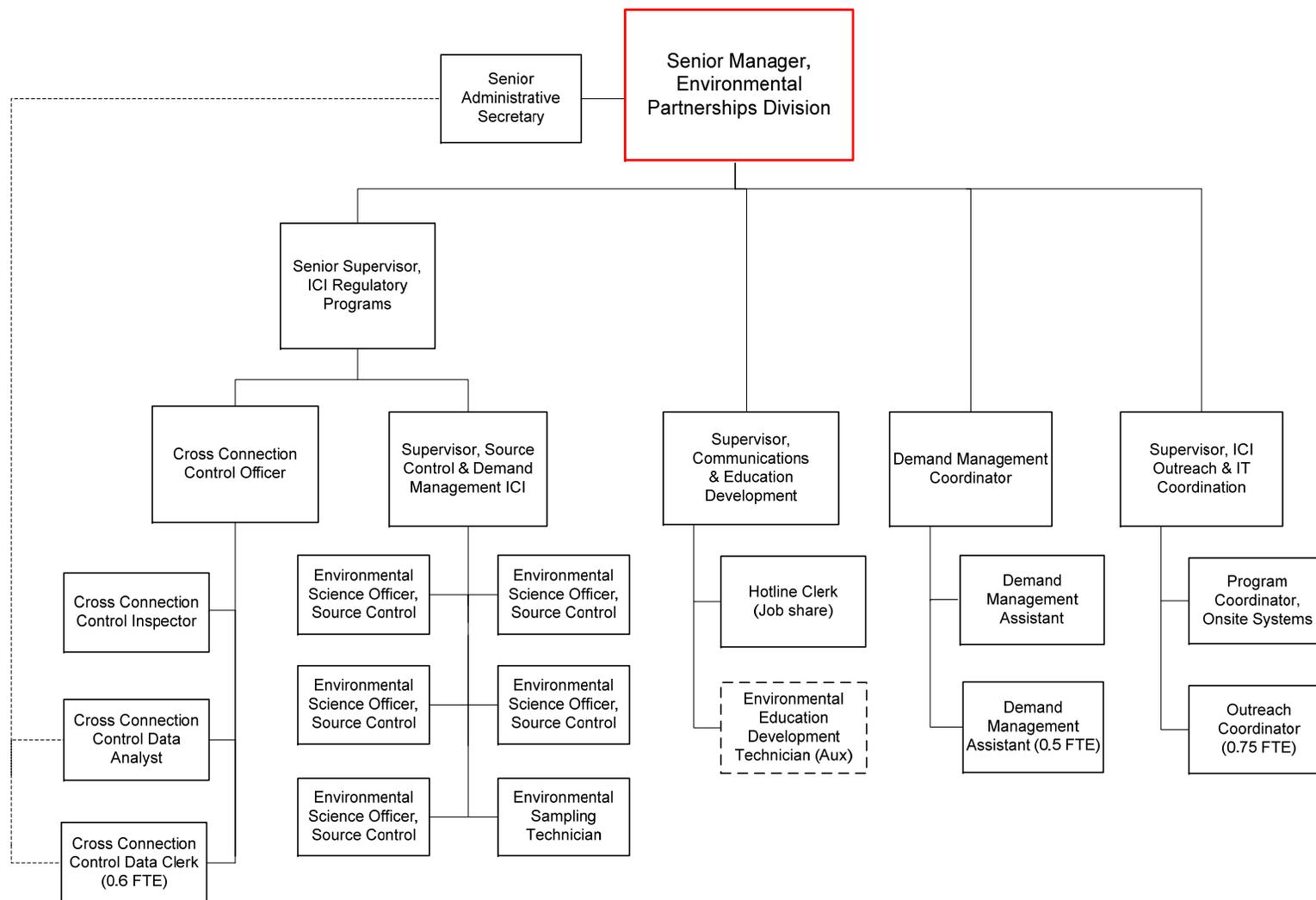
#### 1.2 Primary Contact

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Title: Senior Manager

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### 1.3 Organization Chart



## 1.4 Key Trends & Issues

The Environmental Partnerships Division is continuing with implementation of a “one-window” approach of integrating regulatory compliance with outreach to encourage sustainable environmental behavior in the region. A key trend in coordinated and integrated outreach will be an ongoing shift into promoting waste reduction for residential and industrial, commercial, and institutional (ICI) sectors. Regional source control inspectors will assist in reaching the business sector to promote the kitchen scraps program. Other key divisional trends include development of department-wide outreach and education initiatives and evaluating internal business processes to identify and implement efficiencies.

Program specific trends include:

**Cross Connection Control** - The Cross Connection Control (CCC) Program follows a five-year facility inspection cycle that includes tracking and monitoring of backflow prevention devices. The program supports the critical role of preventing potential backflow of contaminants into the potable water supply. A substantial number of new installations and the continued monitoring of existing devices have contributed to a data entry backlog. Attention will now be focused on the technology and resources required to reduce the backlog and thereafter support the program for future years.

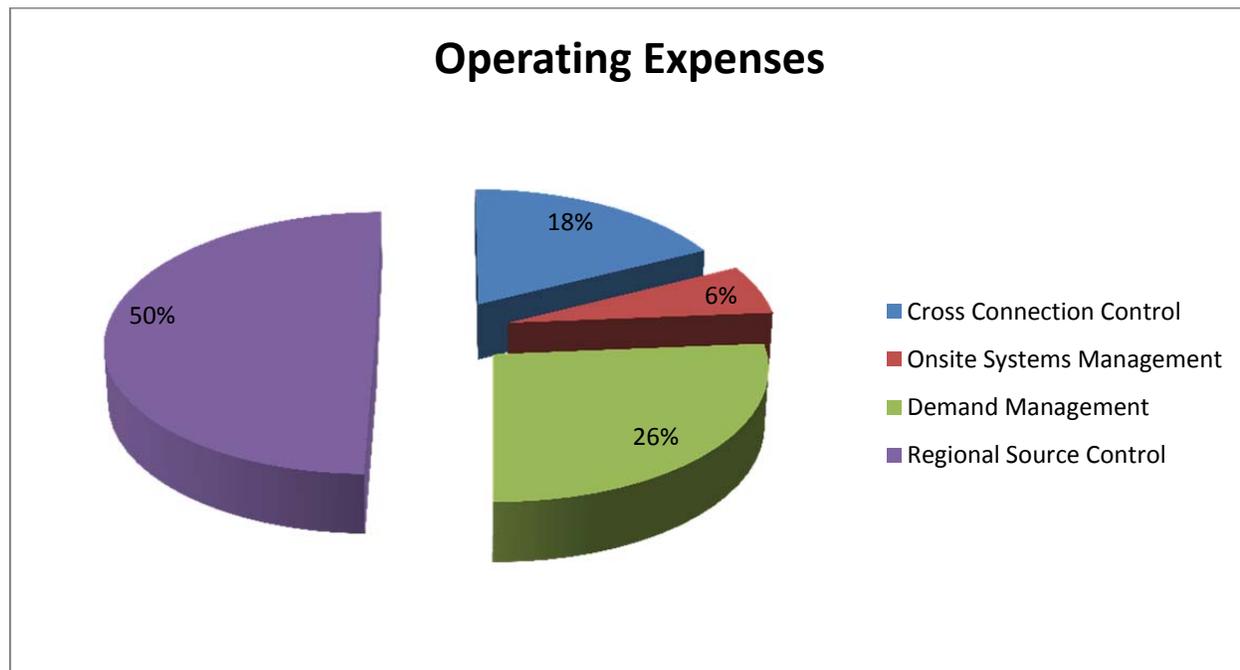
**Regional Source Control** - The Regional Source Control Program (RSCP) continues to drive pollution prevention initiatives for residential, businesses, institutions and industry through integrated approaches of education and outreach, inspection and enforcement. High levels of business compliance with regulations have resulted in significant contaminant reductions. However, increasing trends in certain emerging contaminants that are more difficult to control will present challenges for the program in future years.

**Demand Management** - The Demand Management (DM) Program is responsible for developing water conservation strategies for the region. Overall water use trends in the region are continuing to decline in part due to the success of the program in both the residential and ICI sectors. As a result in declining water consumption, the Demand Management Program funding is reduced by 25% to reflect this trend.

**Onsite Systems Management** - The Onsite Management Program (OMP) administers the Onsite Sewage System Maintenance Bylaw 3479. It is in the second year of regulating maintenance of onsite systems in the four participating municipalities. OMP encourages voluntary bylaw compliance coupled with a bylaw support plan in order to sustain high compliance rates.

**Outreach and Education** - The Outreach and Education program areas engage and educate students, residents and businesses in the region to foster environmental behavior change and promote departmental campaigns, initiatives and services. Ongoing engagement and education is critical for promoting sustainable behavior and improving the capacity for citizens to understand and address regional environmental issues.

## 1.5 Summary of Expenditures and Capital – 2013



Environmental Partnerships	2013 Budget
Total Operating Expenses	<b>\$2,725,559</b>

## 2 SERVICES

### 2.1 Core Services

Service	Scope
Demand Management	The primary target is to defer the expansion of the drinking water supply system for at least 50 years. Activities include promoting the wise and efficient use of water to both the residential and ICI sectors through education (school learning resources) and public awareness programs, community outreach, administration of CRD Water Conservation Bylaw 3061, ICI water audits and grants, research and data analysis.
Regional Source Control	Service to 10 municipalities, three electoral areas, four First Nations and two federal institutions - all with connections to CRD sewage facilities. This service controls the amount of contaminants discharged to sanitary sewers to protect sewage collection and treatment facilities, public health and safety, and the marine receiving environment. Activities include business inspection, monitoring, bylaw enforcement and outreach to businesses and the public.
Cross Connection Control	Service protects the Greater Victoria drinking water supply system against the possibility of contamination by removing or isolating sources that may backflow in the system – protecting public health throughout the region. Activities include facility audits, device tracking, annual testing notification and database management.

Service	Scope
Onsite Systems Management	Sub-regional service to four municipalities participating in a regulatory bylaw and 10 municipalities and 1 electoral area participating in an outreach program. The onsite management program protects human and environmental health from failing onsite systems by working with industry and systems owners to ensure systems are regularly pumped out. Activities include tracking pump outs and direct mail communication. The outreach program reduces systems failures by educating owners on how their system works and what can impact it.
Outreach and Education	Responsible for coordinating and implementing comprehensive and integrated outreach and education services to internal and external stakeholders, on behalf of the department.

## 2.2 Service Levels

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
Demand Management	<ul style="list-style-type: none"> <li>• Administers water conservation bylaw</li> <li>• Coordinates 30 community outreach events/year</li> <li>• Education through delivery of 31 workshops, 15 public speaking engagements per year</li> <li>• Conducts 10 ICI water audits per year</li> </ul>	25% budget reduction which will result in .3 FTE cut to DM staff, 3 summer students, printing, advertising, and education curriculum. Resources will be reallocated to support departmental-wide outreach initiatives.	No change	Elimination of “once –through cooling water” rebates to businesses will result in a further 2% budget reduction from current year. Elimination of rebates is delayed until Year 3 to allow time to notify local businesses of pending program reduction.
Regional Source Control	<ul style="list-style-type: none"> <li>• Outreach, inspections, monitoring and enforcement for 2,000 businesses on sanitary sewers</li> <li>• Over 500 coordinated site inspections/year</li> <li>• Over 150 sampling events/year</li> </ul>	1 student (shifted from the Demand Management Program)	No change	No change

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
Cross Connection Control	<ul style="list-style-type: none"> <li>• Complete approximately 250 audits per/year</li> <li>• Record keeping and data entry of results for annual testing of 14,000 currently installed backflow prevention devices</li> </ul>	No change	No change	No change
Onsite Systems	<ul style="list-style-type: none"> <li>• Outreach to approximately 27,000 households with onsite sewage systems</li> <li>• Monitoring the compliance of approximately 10,000 systems regulated by bylaw</li> </ul>	No change	No change	No change
Outreach and Education	<ul style="list-style-type: none"> <li>• Delivers outreach and education through participation in 19 community presentations, 12 community tours, responding to 55,000 hotline telephone enquiries, 40 facility tours, workshops, and 59 school presentations in 13 municipalities and 3 electoral areas</li> </ul>	1 student (shifted from the Demand Management Program)	No change	No change

### 2.3 Workforce Considerations

Service	Workforce (FTEs)			
	Current year	Year 1	Year 2	Year 3
Senior Manager	1	1	1	1
Administration	1	1	1	1
Regional Source Control	8	8	8	8
Cross Connection Control	3.6	3.6	3.6	3.6
Education and Communication	2	2	2	2
Onsite System and ICI Outreach	2.75	2.75	2.75	2.75
Demand Management	2.5	2.5	2.5	2.5

## 2.4 Customers & Governance

Service	External Customers	Internal Customers	Reviewing Commissions & Committees
Demand Management	13 municipalities Residential and ICI customers that are connected to the CRD drinking water supply provided by Sooke Lake Reservoir	Integrated Water Services (IWS), Parks & Environmental Services, Environmental Resource Management (ERM), Planning and Protective Services	Regional Water Supply Commission (standing) Water Advisory Committee (standing)
Regional Source Control	10 municipalities 3 electoral areas 4 First Nations 2 federal facilities Industrial, commercial and institutional facilities throughout the region	Hartland Landfill, CRD recreation centres and other CRD facilities	Environmental Services Committee (standing) Saanich Peninsula Wastewater Commission (standing) Ganges Sewer Local Service Commission (standing) Highland Water and Sewer Local Services Commission (standing) Magic Lake Estates Water and Sewer Local Services Committee (standing)
Cross Connection Control	13 municipalities 1 electoral area federal and provincial facilities Certified backflow prevention testers	CRD Facilities, Planning, Engineering and Integrated Water Services	Regional Water Supply Commission Water Advisory Committee
Onsite Systems Management	4 municipalities	CRD Facilities serviced by onsite systems	Environmental Services Committee
Onsite Outreach	8 municipalities 1 electoral area	Not applicable	Environmental Services Committee
Outreach and Education	4 school districts 13 municipalities 3 electoral areas senior government institutions	Environmental Protection, ERM, Environmental Engineering, Core Area Sewage Treatment, IWS and Corporate Communications	Environmental Services Committee

## 2.5 Delivery Strategy

Service	Delivery Strategy	Funding	Legislative Authority
Demand Management	CRD resources	Funded through the bulk drinking water sales revenue	BC Reg. 284/97, Sec. 5 under Capital Region Water Supply and Sooke Hills Protection Act. CRD Water Management Strategic Plan Bylaw 2739 CRD Water Conservation Bylaw 3061 Regional Water Supply Commission Bylaw 2539
Cross Connection Control	CRD resources	Bulk drinking water sales revenue	CRD Cross Connection Control Bylaw 3516
Regional Source Control	CRD resources, consultants & laboratory services	Municipal tax requisition, grants, fees and fines	Source Control Local Service Establishing Bylaw 3351 CRD Sewer Use Bylaw 2922
Onsite Systems Management	CRD resources	Municipal tax requisition, grants	Management of Onsite Sewage Systems Establishment Bylaw 3478 Onsite Sewage System Maintenance Bylaw 3479
Onsite Outreach	CRD resources	Permits and fees for disposal of septage at regional facility.	CRD Septage Disposal Bylaw 2827
Outreach and Education	CRD resources	Cost	Not applicable

## 2.6 Assumptions and Risks

Service	Key Assumptions	Risks
Demand Management	The refocused program adapts resources to the downward trend in water consumption and shifts departmental resources towards new mandates such as coordinated and integrated environmental community outreach. Climate change predictions are for hotter and drier than average springs and summers.	With hotter and drier summers, water quality and quantity are potentially affected particularly during the summer months due to higher per capita of water consumption and increase in population growth.
Source Control	Source control has been effective in reducing the number of significant incidents in collection systems and at CRD treatment plants. This protective role will become increasingly important with the move to enhanced sewage collection and treatment in the core area.	Introduction of new sewage treatment may counteract importance of source control program from a public/business perspective/decreased public support and buy-in to source control initiatives

### 3 DIVISIONAL INITIATIVES

#### 3.1 Core Initiatives

Core Initiatives	Description	Budget Implications
Cross Connection Control Digital Form (2013) <i>(on target for Dec 2013)</i>	Cross Connection and ICI Outreach are currently working with IT to develop an electronic up loadable test report to reduce current backlog and find program efficiencies.  Expected savings will be created through speed of data entry. As well, the form will be able to confirm the tester and test equipment's current status with regard to certification.	Core budget
Best Practices guidebook ICI – web tool (2013 – 2014)	Online tool that combines messaging for all Parks & Environmental Services programs with targets for specific sectors.	Core budget
Regional Source Control Program – 5-Year Plan (2013 – 2015)	Assist in delivery of Environmental Partnerships' mandate through coordinated program strategies including outreach and education, inspections and monitoring, program review and metrics, and research of emerging treatment technologies	Core budget
CRD Residential Water Survey <i>(completed in 2013)</i>	Conduct survey of residential water users to ascertain attitudes and practices surrounding water use and to identify levels of awareness with regards to CRD water services.	Core budget
Multi-Residential Audit Manual <i>(on target for Nov 2013)</i>	To update manual to assist multi-residential property owners in undertaking water audits.	Core budget

#### 3.2 Strategic Initiatives

Strategic Priority	Corporate Goal (per Strategic Plan)	Strategic Initiatives	Description	Budget Implications
Regional Environmental Stewardship (2 year term position hired)	Links to outcome statement	Coordinated environmental education program	Coordinate existing learning resources and develop new education programming for the middle, secondary and post-secondary levels	Core budget
Regional Environmental Stewardship	Links to outcome statement	“Green 365” Outreach Campaign	Departmental outreach campaign that integrates environmental messaging across programs to encourage environmentally sustainable behavior in the region	Core budget

## 4 PERFORMANCE MONITORING

Financial	2013 Planned	2013 Actual	2014	2015
Implement demand management program funding reductions as per program review	100%	100%	100%	100%

Customers	2013 Planned	2013 Actual	2014	2015
External – Industrial, Commercial, Institutions and Nonprofits, First Nations Maintain and enhance partnerships with parties in these sectors	>2% increase in partnerships	>2% increase in partnerships	>2% increase	>2% increase
External – Customer service improvement through coordinated inspections	500 coordinated inspections	500	550	600
External – Undertake cross connection control facility audits	300 cross connection control audits	300 audits	400 audits	500 audits
External – Coordinate the CRD information booth at community events	30 community events	30 community events	30 community events	30 community events
External – Utilized the water cart at community events	15 community events	15 community events	15 community events	15 community events
External – Deliver irrigation workshops to promote water conservation	10 workshops	10 workshops	10 workshops	10 workshops
External – Deliver native plant workshops to promote water conservation	12 workshops	12 workshops	12 workshops	12 workshops
External – Conduct water audits for ICI organizations	10 water audits	10 audits	10 audits	10 audits

Business Processes	2013 Planned	2013 Actual	2014	2015
RSCP Core Area priority contaminant reductions (based on trend assessment every three years)	95% of priority contaminant loads are decreasing or stable	Not applicable	Not applicable	>90%
RSCP Progress on installation of Proper Waste Treatment	90% of regulated businesses have proper waste treatment installed	>90%	>90%	>90%

Business Processes	2013 Planned	2013 Actual	2014	2015
RSCP Inspection Targets	100% of annual code of practice sector inspection targets completed	100%	100%	100%
Assess business process review for OMIS database and implement improvements that will reduce current requirements of administrative support	25%	50%	100%	100%

**SERVICE NAME:** Environmental Protection

**Changes in assumptions, trends, and other issues since 2013:** *(linked to section 1.4, 2.6 of the detailed service plan)*

- **Marine Core Area** - Changes in service levels (increased sampling of outfalls and marine receiving environment) from 2013 to 2014 were anticipated within the 5-year provincial regulatory plan (2011-2015). New monitoring requirements associated with recently-introduced federal regulations will require additional resources for 2014.
- **Stormwater Saanich Peninsula** – Increased stormwater contaminant source investigations may lead to alteration of monitoring program; program will be adjusted to reflect any new priority areas.
- **Stormwater Salt Spring Island** – at Director’s request, this service is transitioning from stormwater monitoring/reporting to broader watershed protection activities for drinking water lakes.
- **Stormwater Source Control Saanich Peninsula** – The new regulatory bylaw and service will be in place in 2014. Province granted CRD the required authority in 2013. There is no change in service delivery from the program which had been delivered under direct agreement with the municipalities.
- **Millstream** (Capital Project) – The 5-year capital plan continues to move toward site remediation and a final Certificate of Compliance with groundwater investigations and risk assessment planned in 2014.

**Overall 2013 budget performance:**

- **Climate Action Program** – The surplus associated with external funding will be carried forward for on-going, multi-year projects.
- **Marine Core Area**– An increase in the program’s allocation from IWS is included in the parent budget for the new wastewater sampling required under recently-enacted federal regulations.
- **Stormwater (all services)** – All surpluses will be shifted to manage multi-year projects and in anticipation of special investigations and/or emergency sampling for municipalities and Electoral Areas.
- **Stormwater SC Saanich Peninsula** – Surplus will allow for unexpected legal expenses and extra sampling costs.

**New division initiatives:** *(service plans have been updated accordingly; linked to section 3 of the detailed service plan)*

- There are no new, unfunded division initiatives for 2014

**Proposed changes to staffing levels if any.** *(linked to section 2.3 of the detailed service plan)*

- **All Services** - no change.

**KEY PERFORMANCE INDICATORS** *(linked to section 4 of the detailed service plan)*

Indicator Name	2013 Planned	2013 Actual	2014	2015
Meet Carbon Neutral Requirements	100%	100%	100%	100%
Investigate high-rated stormwater discharges in Core Area Municipalities	80%	95%	80%	80%
Meet Marine Environment Monitoring Requirements	90%	95%	90%	90%

# 2013-2015 Division Plan for Environmental Protection Division Parks & Environmental Services Department

## 2014 Update

### 1 Overview

#### 1.1 Scope

The division provides scientific, technical and regulatory support to the corporation, municipalities, electoral areas and general public to meet goals and objectives for the restoration, protection and enhancement of the regional environment. The division provides support for service delivery and environmental management in the following areas:

- Wastewater and marine monitoring and assessment;
- Integrated Watershed Management, including: stormwater, harbours and watershed protection;
- Geo-environmental programs (e.g. landfill monitoring, contaminated sites remediation, odour, controlled waste, trucked liquid waste and regional septage, ); and
- Climate action

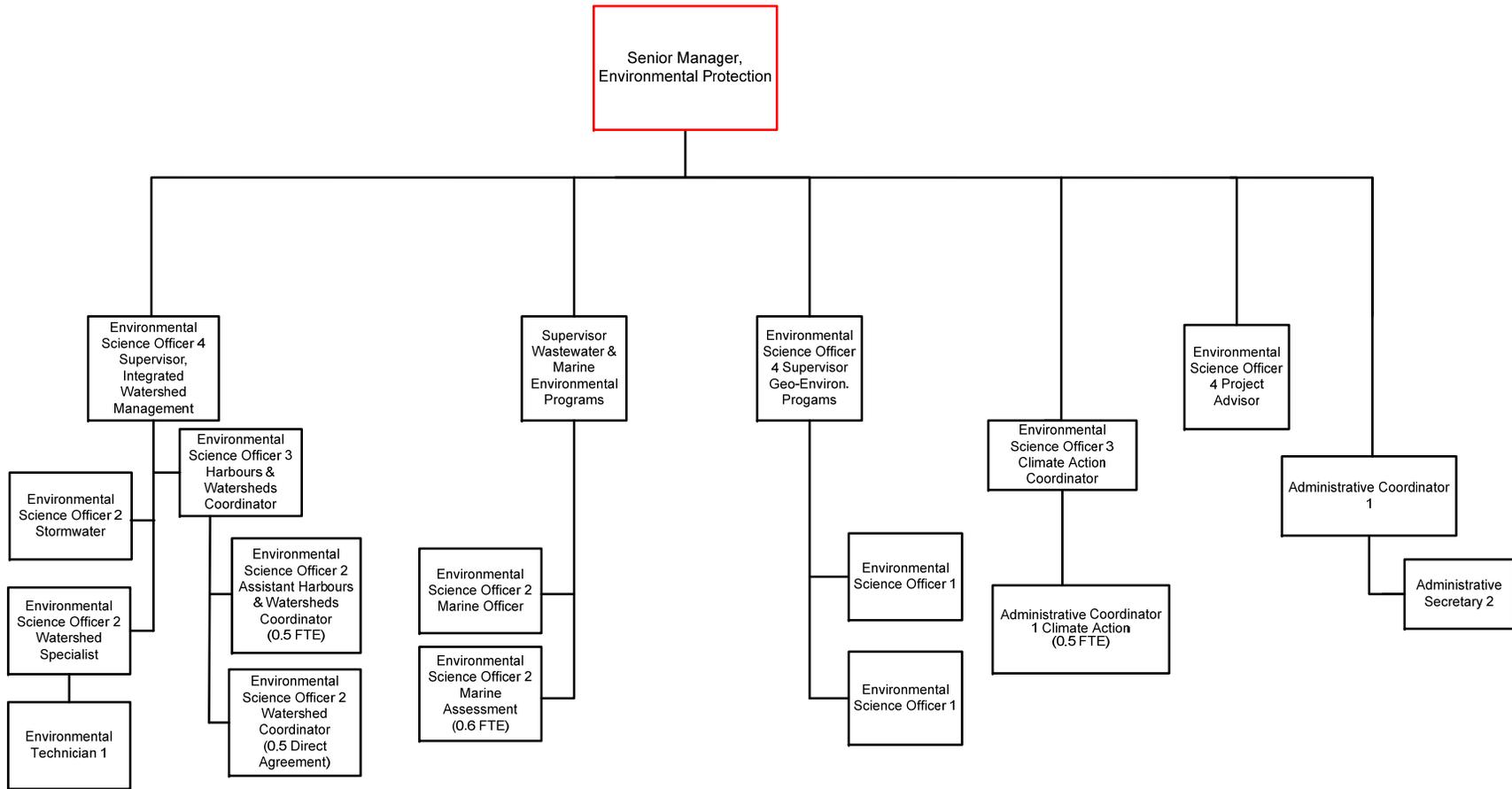
#### 1.2 Primary Contact

Name: Glenn Harris

Title: Senior Manager, Environmental Protection Division

Contact Information: Tel: 250-360-3090 Email: [gharris@crd.bc.ca](mailto:gharris@crd.bc.ca)

### 1.3 Organization Chart



## 1.4 Key Trends and Issues

The Division provides support and leadership for environmental management in regional services and functions. There are several major trends and issues that will impact Division work over the next three years. Research and information around climate change will emphasize the need for increased attention on mitigation (i.e., reduction of energy use) and adaptation (e.g., to rising sea levels and increased weather variability) over the short term.

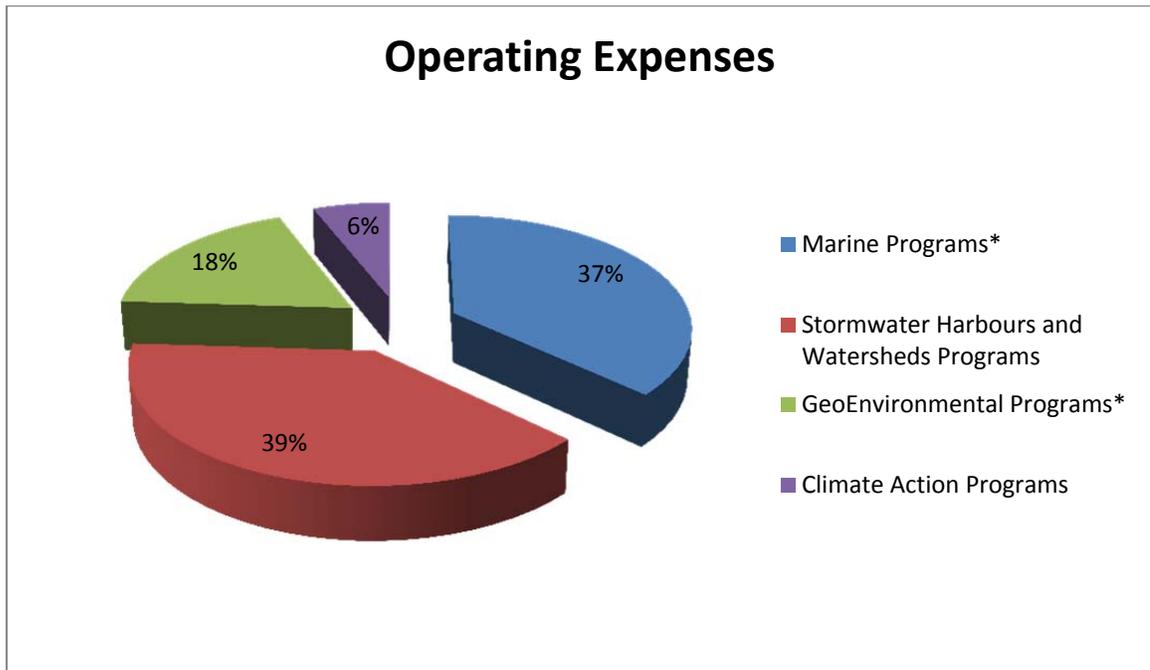
At the corporate level, the 2013-2015 Strategic Plan includes regional environmental stewardship as one of the six core priorities. A focus on climate change, conservation of habitat, and protection of watersheds, receiving environments and overall environmental quality are key threads in this priority. The Regional Sustainability Strategy (RSS) includes climate action through the entire document and the Division will play a key role in developing the climate action sub-strategy and the overall document, as well as working with municipalities and electoral areas on implementation.

The core area wastewater treatment project will result in changes to the marine monitoring and assessment programs, as well as support for wastewater characterization and baseline monitoring and assessment. The Integrated Solid Waste and Resource Management Plan will likely result in new support from our Division on policy and planning, as well as project development work in addition to the continued environmental monitoring programs. The Division will support Environmental Engineering development of resource recovery projects and opportunities for potential carbon and energy reduction.

At the program level,

- 1) The Wastewater and Marine Environmental program has developed a five-year Core Area monitoring program in collaboration with the BC Ministry of Environment. This program will further evolve as the core area sewage treatment project finalizes outfall locations and addresses regulatory monitoring and assessment requirements. Similar monitoring cycles have been put in place for the Saanich Peninsula (4-year cycle) and Electoral Area (3-year cycle) treatment plants.
- 2) The Climate Action program will continue its role to educate and enable internal departments, municipalities and electoral areas and the community to mitigate greenhouse gas emissions and adapt to climate change. Demand for climate action support will likely continue to increase as the economic case builds to complement the environmental need for action. The development of corporate greenhouse gas balancing projects will be a focus of short-term work as well.
- 3) The Integrated Watershed Management program will continue to implement an integrated watershed management approach to protecting multi-use regional watersheds. The program will perform annual monitoring, evaluation and reporting for stormwater discharges, watercourses and receiving water bodies as well as facilitate and promote collaboration among local governments, senior governments, stewardship groups and other stakeholders. The program also supports other CRD programs as required.
- 4) The Geo-Environmental programs will focus on support to the Environmental Resource Management division, including Hartland Environmental programs, as well as miscellaneous waste programs and contaminated sites, such as Millstream Meadows and Thetis Lake Rifle Range.

### 1.5 Summary of Expenditures and Capital – 2013



\* The Operating expenditures are included in other department/divisional budgets

Environmental Protection	2013 Budget
Total Operating Expenditures	<b>\$3,687,351</b>

## 2 SERVICES

### 2.1 Core Services

Division services come at the request of other departments or divisions to meet regulatory obligations (e.g., marine monitoring, stormwater monitoring and landfill monitoring) or at the request of the Board to provide strategic support (e.g., climate action). The division also provides general environmental expertise on an “as needed” basis. This includes support for environmental assessments of capital projects, oversight of contaminated sites remediation or enhancement of capital assets and targeted educational initiatives.

Service	Scope
1. Marine Monitoring and Assessment – Core Area	<ul style="list-style-type: none"> <li>• Provide regulatory compliance monitoring and scientific assessment services on behalf of Integrated Water Services</li> <li>• Assess the potential effects of the outfalls on the marine environment and human health</li> <li>• Share results internally to guide Regional Source Control Program efforts and Integrated Water Services to inform plant operators about efficiency of treatment processes</li> <li>• Prepare comprehensive annual reports and data interpretation</li> </ul>
2. Marine Monitoring and Assessment - Saanich Peninsula and Electoral Areas (SGI, SSI, JdeF)	<ul style="list-style-type: none"> <li>• Provide regulatory compliance monitoring and scientific assessment services on behalf of Integrated Water Services</li> <li>• Assess the potential effects of the outfalls on the marine environment and human health</li> <li>• Share results internally to guide Regional Source Control Program efforts and Integrated Water Services to inform plant operators about efficiency of treatment processes</li> <li>• Prepare comprehensive annual reports and data interpretation</li> </ul>
3. Stormwater – Core Area	<ul style="list-style-type: none"> <li>• Monitor stormwater discharges to the environment</li> <li>• Perform upstream investigations to narrow down sources of contamination</li> <li>• Monitor conditions in watercourses</li> <li>• Support municipal staff with resources and information</li> <li>• Development and/or coordination of watershed plans</li> <li>• Deliver public education programs related to controlling contamination and environmental stewardship</li> </ul>
4. Stormwater - Saanich Peninsula	<ul style="list-style-type: none"> <li>• Monitor stormwater discharges to the environment</li> <li>• Perform upstream investigations to narrow down sources of contamination</li> <li>• Monitor conditions in watercourses</li> <li>• Support municipal staff with resources and information</li> <li>• Deliver public education programs related to controlling contamination and environmental stewardship</li> </ul>
5. Stormwater Source Control - Saanich Peninsula	<ul style="list-style-type: none"> <li>• Evaluate stormwater-carried contamination leaving properties</li> <li>• Provide guidance and education in order to assist the business to resolve potential and/or active contamination issues</li> <li>• Monitor properties for potential contamination issues</li> <li>• Enforce a stormwater protection bylaw</li> </ul>
6. Stormwater - Salt Spring Island	<ul style="list-style-type: none"> <li>• Monitor stormwater discharges to the environment</li> </ul>

Service	Scope
7. Stormwater - Southern Gulf Islands	<ul style="list-style-type: none"> <li>• Perform upstream investigations to narrow down sources of contamination</li> <li>• Monitor conditions in watercourses</li> </ul>
8. Stormwater - Juan de Fuca	<ul style="list-style-type: none"> <li>• Undertake activities related to the protection of multi-use watersheds (Salt Spring Island)</li> <li>• Support Electoral Area directors with resources and information</li> <li>• Deliver public education programs related to controlling contamination and environmental stewardship</li> </ul>
9. Stormwater - Sooke	<ul style="list-style-type: none"> <li>• Monitor stormwater discharges to the environment</li> <li>• Perform upstream investigations to narrow down sources of contamination</li> <li>• Monitor conditions in watercourses</li> <li>• Support municipal staff with resources and information</li> <li>• Deliver public education programs related to controlling contamination and environmental stewardship</li> </ul>
10. Harbours	<ul style="list-style-type: none"> <li>• Coordination and implementation of harbours environmental protection and improvement initiatives, and related activities within Portage Inlet, Gorge Waterway, Victoria Harbour, Esquimalt Harbour and Esquimalt Lagoon</li> <li>• Monitoring, mapping, reporting and public education on issues relating to the marine and shore area environments</li> <li>• Coordination and collaboration with public authorities and other persons on issues relating to the marine and shore area environments</li> <li>• Implementing programs related to rehabilitation and improvement of the marine and shore area environments</li> </ul>
11. Hartland Environmental	<ul style="list-style-type: none"> <li>• Conduct regulatory compliance monitoring of groundwater and surface water in operational areas and at property compliance locations to assess effectiveness of leachate containment and control systems</li> <li>• Conduct monthly monitoring of leachate quality to assess permit compliance for discharge to sanitary sewer</li> <li>• Conduct regular monitoring of ambient air, property boundary and building foundations to assess potential for subsurface migration of landfill gas and protection of worker health and safety</li> <li>• Monitoring assesses effectiveness of collection and control systems for landfill gas and leachate</li> <li>• Issue controlled waste permits and respond to public inquires</li> <li>• Prepare comprehensive annual report to comply with MOE Operational Certificate requirements</li> <li>• Coordinate and provide technical expertise on major projects and operational issues</li> </ul>
12. Environmental Contaminants	<ul style="list-style-type: none"> <li>• Work collaboratively with trucked liquid waste service providers to ensure appropriate disposal practices</li> <li>• Provide support to municipalities regarding options for high-strength liquid waste disposal</li> <li>• Monitor and assess sewer odour complaints and liaise with Integrated Water Services and Environmental Engineering to implement sewer odour control strategies</li> <li>• Monitor the quality of sludge from CRD wastewater treatment facilities</li> <li>• Manage the contract for the regional septage facility</li> </ul>

Service	Scope
13. Millstream Meadows Remediation	<ul style="list-style-type: none"> <li>• Conduct quarterly monitoring of groundwater quality to assess the effectiveness of remedial actions on groundwater conditions at the site</li> <li>• Conduct drilling and well installation to assess potential pathways for contaminant movement in the groundwater on the site and within the regional aquifer</li> <li>• Conduct hydrogeological testing and evaluation to assess potential flow pathways for groundwater movement</li> <li>• Planning and implementing activities to identify risks and mitigation strategies, support risk management of the site and advance site remediation</li> <li>• Complete quarterly monitoring of domestic wells within 1 km of the site and reporting of results to residents</li> </ul>
14. Climate Action	<ul style="list-style-type: none"> <li>• Provide support to local governments in developing and implementing climate action plans, policies, programs and bylaws</li> <li>• Increase public awareness of climate change impacts and strategies for emissions reductions through engaging the public and private sectors, non-profit organizations and community organizations</li> <li>• Liaise with senior levels of government on climate-related programs, policies and legislation</li> <li>• Support the CRD in achieving corporate climate action objectives including carbon neutral operations and adaptation preparedness</li> <li>• Distribute local and regional data on energy, greenhouse gas emissions and other climate-related indicators</li> </ul>

## 2.2 Service Levels

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
1. Marine Monitoring and Assessment – Core Area	Monitoring of 2 outfalls and 34 marine stations (surface) to meet regulatory requirements under 5-year plan (2011-2015)	New federal regulations require increased wastewater monitoring as of January 1, 2013	Increased allocation from IWS budgets for the new wastewater sampling.	No change relative to Year 2.
	Monitoring of 2 outfalls and 17 marine stations (seafloor) to meet regulatory requirements under 5-year plan (2011-2015)	No marine monitoring under 5-year plan (2011-2015)	Monitoring of 2 outfalls and 17 marine stations to meet regulatory requirements under 5-year plan (2011-2015)	Monitoring of 2 outfalls and 3 marine stations to meet regulatory requirements under 5-year plan (2011-2015)
2. Marine Monitoring and Assessment – Saanich Peninsula and Electoral Areas	Saanich Peninsula: Monitoring and assessment of 1 outfall and 37 marine stations to meet regulatory requirements	Updated monitoring (within existing budget) after review with MOE	No change relative to Year 1	No change relative to Year 2

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
2. Marine Monitoring and Assessment – Saanich Peninsula and Electoral Areas (continued)	Electoral Areas: Monitoring and assessment of 5 outfalls and 30 marine stations to meet regulatory requirements	Potential changes (within existing budgets) after review with MOE	No change	No change
3. Stormwater – Core Area	Monitor 650 discharges	No change	No change	No change
	Investigate 43 high-rated discharges	Investigate high-rated discharges from 2012	Investigate high-rated discharges from 2013	Investigate high-rated discharges from 2014
	Hold 6 IWM inter-municipal meetings	No change	No change	No change
4. Stormwater - Saanich Peninsula	Monitor 290 discharges	No change	No change	No change
	Investigate 12 high-rated discharges	Investigate high-rated discharges from 2012	Investigate high-rated discharges from 2013	Investigate high-rated discharges from 2014
5. Stormwater Source Control – Saanich Peninsula	Program Development	No change (Implementation phase)	Meet regulatory requirements	Meet regulatory requirements
6. Stormwater – Salt Spring Island	Provide support related to multi-use watershed protection	No change	No change	No change
7. Stormwater – Southern Gulf Islands	Monitor 80 discharges	No change	No change	No change
8. Stormwater – Juan de Fuca	Monitor 97 discharges	No change	No change	No change
9. Stormwater - Sooke	Monitor 147 discharges	No change	No change	No change
10. Harbours	Meet regulatory requirements	No change	No change	No change
11. Hartland Environmental	Complete quarterly groundwater quality monitoring on 49 boundary compliance wells	No change	No change	No change
	Complete semi-annual groundwater quality monitoring on 59 assessment wells	No change	No change	No change
	Complete groundwater flow monitoring and analysis on 120 wells a minimum of 6 times per year	No change	No change	No change

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
11. Hartland Environmental (continued)	Complete monthly leachate quality sampling at 5 stations to assess compliance	No change	No change	No change
	Complete surface water quality monitoring at 5 boundary compliance stations and 25 assessment stations a minimum of 6 times per year	No change	No change	No change
	Conduct ambient grid monitoring for landfill gas at 140 locations	No change	No change	No change
	Conduct subsurface gas probe monitoring at 17 locations	No change	No change	No change
	Report gas collection efficiency quarterly	No change	No change	No change
	Complete 12 controlled waste audits per year	No change	No change	No change
	Process controlled waste permits as required (approx. 180 annually)	No change	No change	No change
12. Environmental Contaminants	Track volume of trucked liquid waste received at the septage facility (2,718,406 gallons of trucked liquid waste in 2011)	No change	No change	No change
13. Millstream Meadows Remediation	Complete quarterly monitoring for 20 wells, including property boundary wells	Complete Stage 1 work to install 5 proposed exploratory drill holes and complete hydrogeologic testing (see 5 year Capital Plan)	Complete Stage 2 work to install perimeter groundwater system (see 5-year Capital Plan)	Conduct soil vapour assessment, risk assessment and remediation planning (see 5-year Capital Plan)
	Complete quarterly monitoring of 20 privately-owned domestic drinking water wells within 1 km of the site	No change	No change	No change
14. Climate Action	Complete 13 local and 1 regional Community Energy and Emissions Inventory Reports (2012)	No change	No change	No change

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
	Support 15 community climate events, projects or campaigns annually	No change	No change	No change
	Host 4 inter-municipal climate action working group meetings annually	No change	No change	No change
	Complete 1 corporate Green House Gas (GHG) inventory report annually	No change	No change	No change

### 2.3 Workforce Considerations

Workforce FTEs				
Service	Current Year	Year 1	Year 2	Year 3
Senior Manager	1	1	1	1
Administration	2	2	2	2
Wastewater and Marine Environmental Programs	3	3	3	3
Integrated Watershed Management Program	6	6	6	6
Climate Action Program	1.5	1.5	1.5	1.5
GeoEnvironmental Program	3.6	3.6	3.6	3.6

The Division has 17.1 FTEs and utilizes auxiliary staff to compliment the core services. There are no retirements anticipated for the upcoming 3-year budget cycle. Increased wastewater sampling requirements to meet new (as of January 1, 2013) federal regulations for the Core Area outfalls may require additional staff time equivalent to 0.4 FTE. Any vacancies due to staff turnover will be filled through competition.

### 2.4 Customers & Governance

Service	Internal Customers	External Customers	Oversight Committees
Marine Monitoring and Assessment –Core Area	IWS	Core municipalities MOE (regulatory), MMAG (advisory), IOS/UVic/SFU (research)	ESC
Marine Monitoring and Assessment– Saanich Peninsula	IWS	Sidney, North Saanich, Central Saanich, MoE (regulatory), MMAG (advisory), IOS/UVic/SFU (research)	SPWWC

Service	Internal Customers	External Customers	Oversight Committees
Marine Monitoring and Assessment – Electoral Areas	IWS	SSI, SGI, Port Renfrew, MoE (regulatory), MMAG (advisory)	Ganges Sewer Local Services Committee (LSC), Highland Water and Sewer LSC, Magic Lake Estates Water and Sewer LSC, Port Renfrew Utility Services Committee
Stormwater – Core Area	ES	Core municipalities, Esquimalt and Songhees FN	ESC
Stormwater – Saanich Peninsula	ES	Sidney, North Saanich, Central Saanich, Peninsula FNs	SPWWC
Stormwater Source Control – Saanich Peninsula	ES	Sidney, North Saanich, Central Saanich	SPWWC
Stormwater – Salt Spring Island	ES	Internal	SSI Director, EASC
Stormwater – Southern Gulf Islands	ES	Internal	SGI Director, EASC
Stormwater – Juan de Fuca	PPS (EA planning)	Internal	JdeF Director, EASC
Stormwater - Sooke	ES	Sooke	Sooke Council
Harbours	ES	MOE	ESC
Hartland Environmental	ERM	MOE (regulatory)	ESC
Environmental Contaminants	IWS, ES	MOE (regulatory)	ESC
Millstream Meadows Remediation	ES	Ministry of Forests, Lands and Natural Resources Operations, MOE	ESC
Climate Action	All CRD departments	Municipalities, electoral areas, MCSCD (regulatory via LGA)	ESC

## 2.5 Delivery Strategy

Generally, Environmental Protection works with municipal partners to provide monitoring and reporting services. Information regarding stormwater quality and any forensic investigations are provided directly to municipal engineering departments, as well as to the provincial regulator, as required. The Harbours program was developed in consultation with municipal partners and coordinates many community groups around harbour stewardship issues. Part of the service now lies outside of the LWMP commitments. Wastewater and marine monitoring is negotiated with the regulator (now on a 5-year plan) and reported out to the ESC/Board and the regulator annually. The Climate Action program provides support and information to municipalities, the corporation, as well as the general public. The GeoEnvironmental program provides technical and regulatory support to other departments and divisions for the Hartland Environmental and Environmental Contaminants components of the program. The Millstream Meadows remediation provides services to municipal partners and the province.

Service	Delivery Strategy	Funding	Legislative Authority
Marine Monitoring and Assessment – Core Area	CRD Resources, contract, partnership	Allocation from IWS	<i>Environmental Management Act (EMA)</i> , Municipal Sewage Regulation (MSR), Wastewater Systems Effluent Regulations (WSER)
Marine Monitoring – Saanich Peninsula and Electoral Areas	CRD Resources	Allocation from IWS	EMA, MSR, WSER
Stormwater – Core Area	CRD Resources, contract	Requisition	EMA, MSR
Stormwater – Saanich Peninsula	CRD Resources	Requisition	EMA, MSR
Stormwater Source Control – Saanich Peninsula	CRD Resources	Requisition	EMA, MSR
Stormwater – Salt Spring Island	CRD Resources	Requisition	EMA, MSR
Stormwater – Southern Gulf Islands	CRD Resources	Requisition	EMA, MSR
Stormwater – Juan de Fuca	CRD Resources	Requisition	EMA, MSR
Stormwater - Sooke	CRD Resources	Requisition	EMA, MSR
Harbours	CRD Resources	Requisition	EMA, MSR
Hartland Environmental	CRD Resources, contract	Allocation from ERM	EMA, Landfill Gas Regulation
Environmental Contaminants	CRD Resources	Allocation from IWS, ES	EMA
Millstream Meadows Remediation	CRD Resources, contract, partnership	Capital project requisition	EMA, CSR
Climate Action	CRD Resources, external funding partners	Requisition and Grants	LGA, BC Climate Act Charter, Greenhouse Gas Reduction Target Act

In the case of most services, the strategy is to utilize CRD resources (staff, equipment and operating funds) to deliver the service. Marine, stormwater and geoenvironmental programs utilize some contract services for analytical laboratory work and some data analyses. The climate action program has several partnerships (e.g., federal and provincial governments, BC Hydro) to deliver integrated messages and programs. The Millstream Meadows contaminated site remediation is a partnership with the BC government and utilizes contracted services for much of the on-site work. The Thetis Lake Rifle Range Remediation project utilizes consultant, contracting and internal resources (Environmental Protection and Parks divisions).

## 2.6 Assumptions and Risks

Service	Key Assumptions	Risks
Marine Monitoring and Assessment – Core Area	LWMP and MSR mandated service	<p>Changes in legislated requirements may impact programs.</p> <p>Negative environmental effects from contamination may require increased program effort.</p>
Marine Monitoring – Saanich Peninsula and Electoral Areas	LWMP and MSR mandated service	
Stormwater – Core Area	LWMP mandated service	
Stormwater – Saanich Peninsula	LWMP mandated service	
Stormwater Source Control – Saanich Peninsula	Requested service by municipalities, LWMP Mandated (by amendment)	
Stormwater – Salt Spring Island	Required service by EAs	
Stormwater – Southern Gulf Islands	Required service by EAs	
Stormwater – Juan de Fuca	Required service by EAs	
Stormwater - Sooke	Required service by EAs	
Harbours	LWMP mandated service	
Hartland Environmental	SWMP mandated service	
Environmental Contaminants	LWMP mandated service (Trucked Liquid Waste)	
Millstream Meadows Remediation	Liability - mandated service (EMA); property held until remediation completed	
Thetis Lake Rifle Range Remediation	Secured funding through existing Parks allocations and awarded provincial grant.	
Climate Action	Requested regional service	

### 3 DIVISIONAL INITIATIVES

#### 3.1 Core Initiatives

Core Initiatives	Description	Budget Implications
Marine Monitoring and Assessment – Core Area	New federal wastewater regulations came in effect January 1, 2013. Additional monitoring is necessary to meet the regulations.	\$44K (\$22K continuous supplementary for each northeast trunk (Clover) and northwest trunk (Macaulay) sewer systems.)
Marine Monitoring and Assessment – Saanich Peninsula and Electoral Areas	Finalize monitoring program design for Electoral Area treatment plant monitoring programs	none
Core Area Stormwater - IWM	Continue with integrated watershed management in core area stormwater program	\$25K continuous supplementary approved for 2013
Core Area Stormwater – monitoring	Develop and implement watershed monitoring and assessment program	none
Harbours Water Quality Objectives	Develop water quality objectives for harbours in partnership with MOE	none
Watershed Education Initiative	A multi-media campaign to inform and engage residents, youth and businesses about watershed issues and to inspire action. This is core program work that is substantially enhanced with a RBC Blue Water grant.	\$50,000 (2013/2014 already allocated IWMP budget item) plus \$75,000 grant from Royal Bank.
Regional Sustainability Strategy and Climate Action Sub-Strategy Development	Support the development of the Regional Sustainability Strategy and associated Climate Action Sub-Strategy & Climate Action Blueprint through consultation and regional integration.	none
Coastal Sea Level Rise Risk Assessment & Model Bylaw Project	Complete sea level rise risk assessment for capital region. Create a model bylaw for management of coastal flood hazard areas in response to rising sea-levels.	\$50,000 secured from NRCan and \$15,000 secured from Tides Canada
Carbon Neutral Operations Reporting	Complete annual corporate greenhouse gas inventory and associated reporting on behalf of CRD	Climate Action Revenue Incentive Program funds
Hartland Environmental	Provide assistance to initiate hydrogeological review to assess leachate management requirements for future landfilling. Provide assistance to implement enhanced landfill gas management plan	ERM funding
Thetis Lake Rifle Range Remediation	Undertake site remediation through Independent Remediation process.	Dedicated Parks allocation of \$683,854 and provincial grant of up to \$177,500
Millstream Meadows Remediation	Exploratory drilling and hydrogeological testing for contaminant pathways assessment Planning and implementing remedial activities to support risk management of the site	none

### 3.2 Strategic Initiatives

Strategic Priority	Corporate Goal	Strategic Initiatives	Description	Budget Implications
Regional Cooperation	Develop stronger relationships with First Nations in the CRD	Integrated Watershed Management	Discuss IWM with First Nations and see if traditional ecological knowledge can be incorporated into IWM	Included in 2013-2015 budget
		Marine Assessment	Discuss outfall monitoring results with First Nations and see if potential impacts on First Nations fisheries interests can be better incorporated into the overall outfall impact assessments.	Included in 2013-2015 budget
Regional Transportation and Planning	Increase integration of regional transportation and land use planning	Electric Vehicle Infrastructure and Strategy	Complete electric vehicle network planning, educate consumers, and help to accelerate installation of electric vehicle charging stations across region.	
Regional Infrastructure	Increase infrastructure resilient and emergency preparedness for natural disasters and the impacts associated with climate change	Improve capacity and quality of infrastructure to handle climate change impacts	Complete sea level rise risk assessment for capital region. Create a model bylaw for management of coastal flood hazard areas in response to rising sea-levels.	\$50,000 secured from NRCan and \$15,000 secured from Tides Canada
Regional Environmental Stewardship	Increase efforts to mitigate further climate change	Maintain support to municipalities, electoral areas, businesses and individuals for reducing regional energy use and greenhouse gas emissions	Service activities and programming	\$30,000 continuous supplemental request (contingent on external matching funds)
		Achieve corporate carbon neutral operations	Annual program to measure energy and fuel use, reduce consumption, offset or balance carbon impacts and report to stakeholders.	Departmental costs to purchase carbon offsets, if required.
	Increase response to the effects of climate change	Increase regional capacity and action to adapt to the effects of climate change	Implement programs to educate and support businesses, households and institutions	\$30,000 continuous supplemental request (contingent on external matching funds)

Strategic Priority	Corporate Goal	Strategic Initiatives	Description	Budget Implications
Regional Environmental Stewardship (continued)		Increase integration of climate adaptation throughout service delivery process	Implement changes to projects, programs policies that take into account future climate impacts	
	Increase protection of marine and freshwater habitat	Reduce contaminant loadings to marine and fresh water	Through monitoring, assessment and reporting, work with municipalities and EAs to reduce contaminants moving from land to water.	Included in 2013-2015 budget
		Improve knowledge and protection of watershed health	A core component of the Integrated Watershed Management work.	Included in 2013-2015 budget
	An enhanced 12-month strategy to inform and engage residents, youth and businesses about watershed issues and to inspire action.		\$50,000 included in 2013-2014 budget plus \$75,000 grant	

## 4 PERFORMANCE MONITORING

Level	Performance Measure	2013 Planned	2013 Actual	2014	2015
Wastewater and Marine Environmental Programs (WMEP) - Core Area (Macaulay/Clover)	Meet all regulatory compliance monitoring requirements	100% of necessary samples collected and reported	No change	No change	No change
WMEP - Saanich Peninsula Wastewater Treatment Plant (WTP)	Meet all regulatory compliance monitoring requirements	100% of necessary samples collected and reported	No change	No change	No change
WMEP - Ganges Harbour WTP	Meet all regulatory compliance monitoring requirements	100% of necessary samples collected and reported	No change	No change	No change
WMEP - Maliview Estates WTP	Meet all regulatory compliance monitoring requirements	100% of necessary samples collected and reported	No change	No change	No change
WMEP - Schooner Way WTP	Meet all regulatory compliance monitoring requirements	100% of necessary samples collected and reported	No change	No change	No change
WMEP - Cannon Crescent WTP	Meet all regulatory compliance monitoring requirements	100% of necessary samples collected and reported	No change	No change	No change
WMEP - Port Renfrew WTP	Meet all regulatory compliance monitoring requirements	100% of necessary samples collected and reported	No change	No change	No change

Level	Performance Measure	2013 Planned	2013 Actual	2014	2015
WMEP - Core Area (Macaulay/Clover) Receiving Environment Effects Monitoring	Meet all receiving environment effects monitoring requirements	90% of samples, proposed in Ministry of Environment approved monitoring program, collected and reported	No change	No change	No change
WMEP - Saanich Peninsula WTP Receiving Environment Effects Monitoring	Meet all receiving environment effects monitoring requirements	90% of samples, proposed in Ministry of Environment approved monitoring program, collected and reported	No change	No change	No change
Integrated Watershed Management Program (IWMP/IWMP) – Stormwater Quality (Core Area, SaaPen, Sooke, SGI, JdF)	Amount of catalogued stormwater discharges sampled	20% of all stormwater discharges sampled each year	No change	No change	No change
IWMP – Stormwater Quality (Core Area, SaaPen, Sooke, SGI, JdF)	Amount of discharges sampled that had received high-ratings in the previous year	80% of all high-rated discharges sampled each year	No change	No change	No change
IWMP – Stormwater Quality (Core, SaaPen, Sooke, SGI, JdF)	Amount of discharges that received high-ratings in the previous year that receive upstream investigative efforts	80% of all high-rated discharges investigated each year	No change	No change	No change
IWMP – Harbours Program and Stormwater Quality	Number of streams with continuous flow monitoring	4 streams	No change	No change	No change
IWMP – Harbours Program and Stormwater Quality	Number of streams with continuous water quality monitoring	2 streams	No change	No change	No change
IWMP – Stormwater Source Control SaaPen	Number of businesses inspected	15% of businesses regulated under the bylaw inspected annually	No change	No change	No change
IWMP – Integrated Watershed Management (IWM)	Number of public events participated in with a high level of IWMP content	2 major public events annually	No change	No change	No change
IWMP - IWM	Number of regular meetings with municipalities to provide feedback on IWM work plans, create opportunities to work together to achieve IWM goals and ensure sharing of watershed-related information among participants	6 meetings annually	No change	No change	No change
IWMP – Stormwater Quality (Core, SaaPen, Sooke, SGI, JdF)	Number of sampling reports produced.	5 or 3 (varies due to reporting cycle) reports annually	5	3	5

Level	Performance Measure	2013 Planned	2013 Actual	2014	2015
IWMP – IWM	Number of workshops/ forums to provide educational and professional growth opportunities for CRD and municipal staff on topics related to watershed management	1 workshop held each year	No change	No change	No change
IWMP – Harbours Program	Amount of volunteer hours leveraged to efficiently deliver program	300 volunteer hours on projects each year	No change	No change	No change
IWMP – Harbours Program	Number of multi-stakeholder committees and community groups engaged and/or coordinated	1) 3 multi-stakeholder committees supported annually 2) 15 community groups engaged or supported through program activities annually	No change	No change	No change
IWMP – Harbours Program	Number of active inventory or habitat restoration projects in-progress	2 projects in-progress at a time during each year	No change	No change	No change
GeoEnvironmental Programs (GEP) - Hartland Environmental Programs	Groundwater, surface water and leachate monitoring	100% of compliance stations monitored each year	No change	No change	No change
GEP - Hartland Environmental Programs	Groundwater, surface water and leachate monitoring	90% of assessment stations monitored each year	No change	No change	No change
GEP – Hartland Environmental Program – Controlled Waste	Monitor waste received for acceptability and ensure all permit conditions are met	Minimum 12 audits/inspections per year	No change	No change	No change
GEP – Hartland Environmental Program – Landfill Gas	Ambient monitoring of landfill surface to evaluate the integrity of cover systems and identify locations of gas release	Minimum of 2 monitoring events per year	No change	No change	No change
GEP – Hartland Environmental Program – Landfill Gas	Monitoring of building foundation and perimeter wells to ensure compliance with BC Landfill criteria	Minimum of 4 (quarterly) monitoring events per year	No change	No change	No change
GEP – Environmental Contaminants – Sewer Odour Monitoring	Monitoring of sewer headspace to identify locations not in compliance with regional target of 10 ppm H <sub>2</sub> S average	90% of assessment stations monitored and reported each year	No change	No change	No change

Level	Performance Measure	2013 Planned	2013 Actual	2014	2015
GEP – Environmental Contaminants – Trucked Liquid Waste	Conduct public education with advertising campaign	Minimum of 6 advertisements per year	No change	No change	No change
GEP – Environmental Contaminants – Trucked Liquid Waste	Engage service providers/ stakeholders and provide opportunity for communication and education	Minimum of 1 service provider/ stakeholder meeting per year	No change	No change	No change
GEP – Environmental Contaminants – Trucked Liquid Waste	Volume of trucked liquid waste received at the Septage facility	100% of 2011 level	No change	No change	No change
GEP – Environmental Contaminants – Regional Septage Disposal	Continuity of service and compliance with terms of contract	Minimum of 1 contractor meeting per year	No change	No change	No change
GEP – Contaminated Sites – Millstream Meadows	Millstream Meadows site remediation	100% of compliance wells monitored each quarter	No change	No change	No change
GEP – Contaminated Sites – Millstream Meadows	Millstream Meadows site remediation	100% of domestic wells in program sampled quarterly and results reported to all residents within 1km of site, within 6 weeks of sampling.	No change	No change	No change
Climate Action Program	Complete annual carbon neutral operation commitments	100% of all requirements for the preceding year, completed by March 31	No change	No change	No change
Climate Action Program	Ensure municipalities and electoral areas have access to timely information and/or opportunities related to climate action	a) 4 inter-municipal climate action working group meetings annually b) 2 inter-municipal climate action steering committee meetings annually c) 12 e-newsletters annually d) annual 1:1 municipal staff visits	No change	No change	No change
Climate Action Program	Engage in projects, presentations and initiatives with community stakeholders on topics of energy conservation, GHG mitigation and/or climate adaptation	15 events/sessions annually	No change	No change	No change

**SERVICE NAME:** Environmental Engineering

**Changes in assumptions, trends, and other issues since 2013:** (linked to section 1.4, 2.6 of the detailed service plan)

- All assumptions, trends and other issues identified in the 2013-2015 service delivery plan remain current and relevant. The total value capital projects actively managed remains relatively constant with projected numbers.
- No changes to service delivery are anticipated for 2014.

**Overall 2013 budget performance:**

- 2013 revenues are on track to meet budget expectations.
- Any surplus that may occur by yearend will result in Engineering's hourly chargeout rates being reduced and corresponding credits being transferred back into the appropriate project budgets.
- No significant changes are anticipated for 2014

**New division initiatives:** (service plans have been updated accordingly; linked to section 3 of the detailed service plan)

- Increased activity around Hartland landfill projects and heat recovery district energy system development is expected 2014.
- No supplementary funding is required.

**Proposed changes to staffing levels:** (linked to section 2.3 of the detailed service plan)

- No change

**KEY PERFORMANCE INDICATORS** (linked to section 4 of the detailed service plan)

Indicator Name	2013 Planned	2013 Actual	2014	2015
<b>Financial:</b> Chargeout rates to remain comparable with private consultants	On target	On target	On target	On target
<b>Customers:</b> Project sponsor satisfaction	Very satisfied	Very satisfied	Very satisfied	Very satisfied
<b>Business Process:</b> Project completion on budget	100%	100%	100%	100%

# **2013-2015 Division Plan for Environmental Engineering Division, Parks & Environmental Services Department**

## **2014 Update**

### **1 OVERVIEW**

#### **1.1 Scope**

The Environmental Engineering Division is responsible for providing professional engineering services to the department as well as ensuring that engineering within the entire CRD organization meets CRD engineering standards.

Environmental Engineering provides leadership, engineering and construction management support to corporate projects, integrated waste management and resource recovery plans, landfill projects and emerging green environmentally valuable projects/opportunities.

Environmental Engineering administrative and contract management staff provide administrative, financial and clerical support to all division functions.

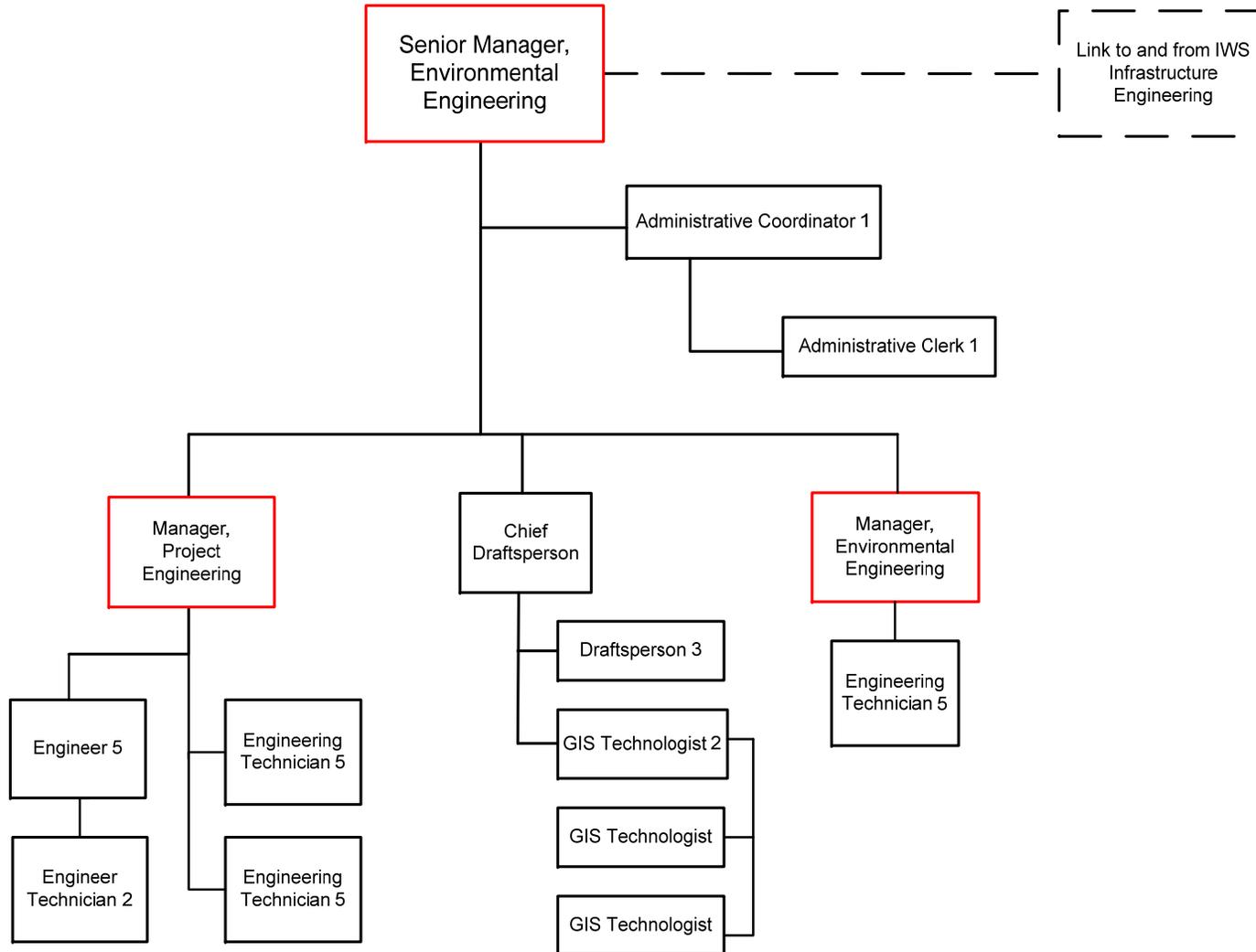
#### **1.2 Primary Contact**

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### 1.3 Organization Chart



## 1.4 Key Trends and Issues

### Implementation of a Regional Thermal Energy Recovery System

This new energy recovery system will be based on the development of a series of district energy systems (DES) along major regional water and wastewater trunk mains that recover available thermal energy to displace natural gas usage for heating public facilities across the region. The systems may also be used to provide cooling to the facilities served. DES pilot projects are being planned for potential implementation over the next three years to establish long-term sustainability for continuing expansion of the system. Emergence of municipal and private developer systems will need to be managed to not adversely impact on the operation of the potable water and wastewater core infrastructure systems.

### Integration of Resource Recovery with Liquid and Solid Waste Management at Hartland Landfill

The location of the CAWTP Biosolids Energy Centre at Hartland presents opportunities for utilizing surplus landfill gas and the sludge pipeline system for thermal energy conveyance to district energy systems.

### Core Area Wastewater Treatment Program (CAWTP)

It is anticipated that Environmental Engineering staff will be involved in this project providing design input and support from an environmental engineering and operational perspective in the early phases and to the eventual commissioning and operation of the new facilities in the completion phases.

### Regional Parks Projects

It is anticipated that Environmental Engineering will provide engineering support to a number of Parks projects over the long term.

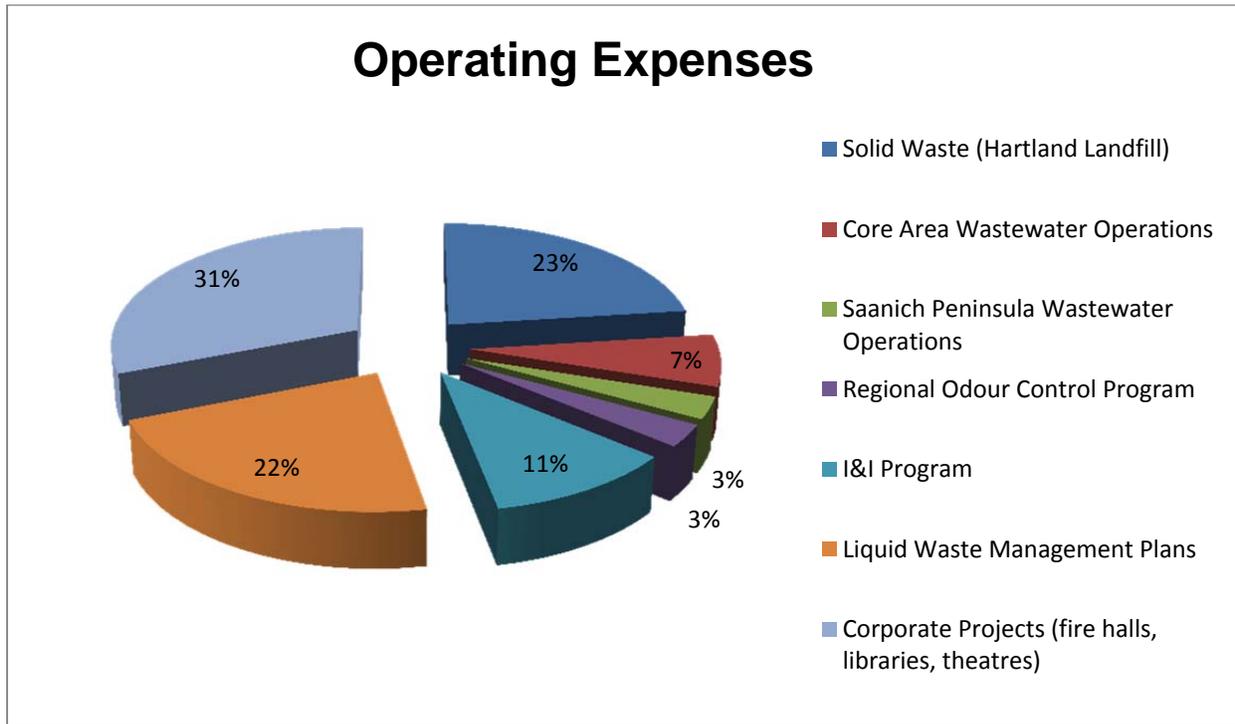
### Project Stewardship Pilot

It is anticipated that Environmental Engineering will be performing a key role in the implementation of the Project Stewardship Initiative.

### Corporate Facility Projects

It is anticipated that Environmental Engineering will provide engineering support to an increasing number of Corporate projects over the long term.

### 1.5 Summary of Expenditures and Capital - 2013



Environmental Engineering	2013 Budget
Total Operating Expenses	<b>\$2,164,239</b>

## 2 SERVICES

### 2.1 Core Services

Service	Scope
Environmental Engineering Service	Regional service: Provides engineering support services to all CRD departments. Helps develop new initiatives related to CRD Core functions.

EE Service/Function	Description of Service/Function
Engineering Design and Construction Management Services	Provide engineering feasibility studies, detailed design, tendering, construction management and commissioning services for Parks & Environmental Services Department projects, including solid waste projects.
Regional Parks	Assist with implementation of capital plan projects.
Regional Odour Management Program	Develop and implement odour control strategies to eliminate odours originating from sewer trunk system and treatment plants throughout the region.
Inflow & Infiltration Program	Develop and implement strategies to reduce I&I into sewers to minimize conveyance, treatment and disposal costs to provide reliable sewer service for the community in compliance with regulations related to sewer overflows.
Core Area Liquid Waste Management Plan	Ensure implementation of the commitments set out in the Core Area Liquid Waste Management Plan.
Saanich Peninsula Liquid Waste Management Plan	Ensure implementation of the commitments as set out in the Saanich Peninsula Liquid Waste Management Plan.
Project Management Services for Corporate Projects	Provide engineering feasibility studies, detailed design, tendering, construction management and commissioning services for other CRD departments' capital projects.
Thermal Energy Recovery Initiatives and District Energy Systems	Develop and implement a new thermal energy recovery utility based on DES systems utilizing waste heat recovered from regional treated wastewater effluent, raw sewage and potable water systems.
CRD Project Stewardship Program	Develop and implement CRD-wide project stewardship program to standardize how all CRD departments manage their projects.
Core Area Wastewater Treatment Program	Provide engineering support to this project on an as required basis.
Transportation	Provide engineering and project management support for Salt Spring Island and regional transportation projects development.

### 2.2 Service Levels

Service Level Adjustments				
Service	Current Year	Year 1	Year 2	Year 3
Manage Capital Projects	\$33 million	\$36 million The additional workload will be supported by a 3-year term employee.	\$37 million	\$38 million

## 2.3 Workforce Considerations

Workforce (FTEs)				
Service	Current year	Year 1	Year 2	Year 3
Environmental Engineering Division	13	13	13	13

An increase of one term employee (3-year term position) in project management is required in 2013-2015 to meet the increased workload associated with the implementation of the regional thermal energy recovery system, Regional Parks Projects, Project Stewardship Initiative, addition of operating contract management at the Hartland landfill and an overall growth in the number of corporate capital projects.

## 2.4 Customers and Governance

Service	External Customers	Internal Customers	Reviewing Commissions & Committees
Environmental Engineering Services	Ministry of Transportation and Infrastructure School Districts Vancouver Island Health Authority Salt Spring Island Public Library Association Galiano Library Society Municipal Partners, i.e., Oak Bay Rec	All CRD Departments and CAWTP	Environmental Services Committee Core Area Liquid Waste Management Committee (Standing) Saanich Peninsula Wastewater Commission (Standing) Regional Water Supply Commission (Standing)

## 2.5 Delivery Strategy

Service	Delivery Strategy	Funding	Legislative Authority
Engineering Design and Construction Management for Various CRD Departments	CRD resources Consultants	Tax requisition Fees for services Senior government grants	Bylaw 2312 Bylaw 2388
Odour Management; Inflow & Infiltration Programs	CRD resources Consultants	Budget allocation from Sewer function	Bylaw 2312 Bylaw 2388
Liquid Waste Management Plans	CRD resources Consultants	Budget allocation from Sewer function	Bylaw 2312 Bylaw 2388
New Initiatives	CRD resources Consultants	Fee for Services Project partners funding transfer Senior government grants	New bylaws Community Charter, i.e., Climate Action Charter

## 2.6 Assumptions and Risks

Service	Key Assumptions	Risks
Engineering Design and Construction Management for Various CRD Departments	Services requisitions are steady as projected.  Referendum is approved on some projects.	No risks anticipated.
Odour Management; Inflow & Infiltration Programs	Services requisitions are steady as projected.	No risks anticipated.
Liquid Waste Management Plans	Services requisitions are steady as projected.	No risks anticipated.
New Initiatives	Services requisitions increased as projected.	Staff time available is not able to handle the additional services required.

There are four main initiatives that Environmental Engineering is currently fostering, namely Thermal Energy Recovery Initiatives and District Energy Systems; CRD Project Stewardship, Transportation; and supporting the Core Area Wastewater Treatment Program. The current staff level is not able to handle this additional workload and these initiatives may not receive sufficient support.

## 3 DIVISIONAL INITIATIVES

### 3.1 Core Initiatives

Core Initiatives	Description	Budget Implications
Regional Thermal Energy Recovery Utility	Develop and implement new regional thermal energy recovery system based on a series of district energy systems along major regional water and sewer trunks that recover thermal heat and displace natural gas usage in public facilities across the region.	TBD
Corporate	Environmental Engineering will be an active participant in the design, construction and commissioning of new corporate projects.	TBD
Regional Parks	Environmental Engineering will be an active participant in the design, construction and commissioning of Parks capital projects.	TBD

### 3.2 Strategic Initiatives

Strategic Priority	Strategic Initiatives	Description	Budget Implications
Regional Transportation & Housing	SSI Transportation and Regional Transportation	Environmental Engineering will be an active participant in these initiatives.	TBD
Regional Infrastructure	Core Area Wastewater Treatment Program	Environmental Engineering will be a participant in the design, construction and commissioning of the new facilities, on an as required basis.	TBD

## 4 PERFORMANCE MONITORING

<b>Financial</b>	<b>2013 Planned</b>	<b>2013 Actual</b>	<b>2014</b>	<b>2015</b>
Hourly chargeout rates for professional staff to be comparable with private consulting firm fees	On target	On target	On target	On target
<b>Customers</b>	<b>2013 Planned</b>	<b>2013 Actual</b>	<b>2014</b>	<b>2015</b>
Wastewater system odour complaints <5/system	4 (Core Area) 1 (Saanich Pen)	<5/system	<5/system	<5/system
Project Sponsor: Satisfaction with deliverables		Very satisfied	Very satisfied	Very satisfied
<b>Business Processes</b>	<b>2013 Planned</b>	<b>2013 Actual</b>	<b>2014</b>	<b>2015</b>
Complete 98% of planned workload annually	90%	98%	98%	99%
Complete projects on budget	100%	100%	100%	100%

**SERVICE NAME:** Water Quality

**Changes in assumptions, trends, and other issues since 2013:** (linked to section 1.4, 2.6 of the detailed service plan)

- In 2014, the Water Quality Division will continue to be responsible for all aspects of drinking water quality within the Greater Victoria Water System. The Division will continue to provide water quality oversight for 13 small drinking water systems operated by the Capital Regional District.
- Division staff will continue service delivery standards by providing planning, sampling, analytical and reporting services covering all aspects of drinking water system operation, including providing advice on water system design, source and distribution system water monitoring and auditing of treatment plant and watershed operations.
- The External Water Systems Water Quality Analysis Program may add additional external systems in 2014, and the Local Service Area (LSA) Drinking Water Quality Analysis Program will expand to include more analyses coming to the Water Quality Lab rather than to the MB Labs. Analytical services to test new water mains is dependent on the economy.

**Overall 2013 budget performance:**

- A small surplus is anticipated for 2013 that will be transferred back to the Regional Water Supply budget.
- No additional expenses are anticipated in 2014.

**New division initiatives:** (service plans have been updated accordingly; linked to section 3 of the detailed service plan)

- The LSA Drinking Water Quality Analysis Program will expand to include more analyses coming to the Water Quality Lab, rather than to the MB Labs.
- There will be no budget impact or supplementary funding required.

**Proposed changes to staffing levels:** (linked to section 2.3 of the detailed service plan)

- No change

**KEY PERFORMANCE INDICATORS** (linked to section 4 of the detailed service plan)

Indicator Name	2013 Planned	2013 Actual	2014	2015
Meet provincial water quality limits	100%	100%	100%	100%
Federal Limits	100%	100%	100%	100%
Certification	Yes	Yes	Yes	Yes

# 2013-2015 Division Plan for Water Quality Division, Parks & Environmental Services Department

## 2014 Update

### 1 OVERVIEW

#### 1.1 Scope

**Drinking Water Quality** The Water Quality Division is responsible for all aspects of drinking water quality within the Greater Victoria Water System, analytical services for the Wilderness Mountain Water System and Port Renfrew Water System along with providing water quality oversight for eleven small, CRD-operated, local service area (LSA) drinking water systems. The Division includes a drinking water sampling section and two drinking water laboratories: Water Quality and Aquatic Ecology. Nine technical staff provide planning, sampling, analytical and reporting services covering all aspects of drinking water system operation including providing advice on drinking water system design, source water quality and distribution system monitoring along with auditing of water treatment plants and watershed operations.

**Waste Water Quality** The Water Quality Division also provides analytical services via the Saanich Peninsula Waste Water Treatment Plant (SPWWTP) Laboratory for the SPWWTP, Clover Point and Macaulay Point plants along with five small, CRD-operated sewage treatment facilities. The single technical staff member who runs this laboratory also analyses a number of outfall samples.

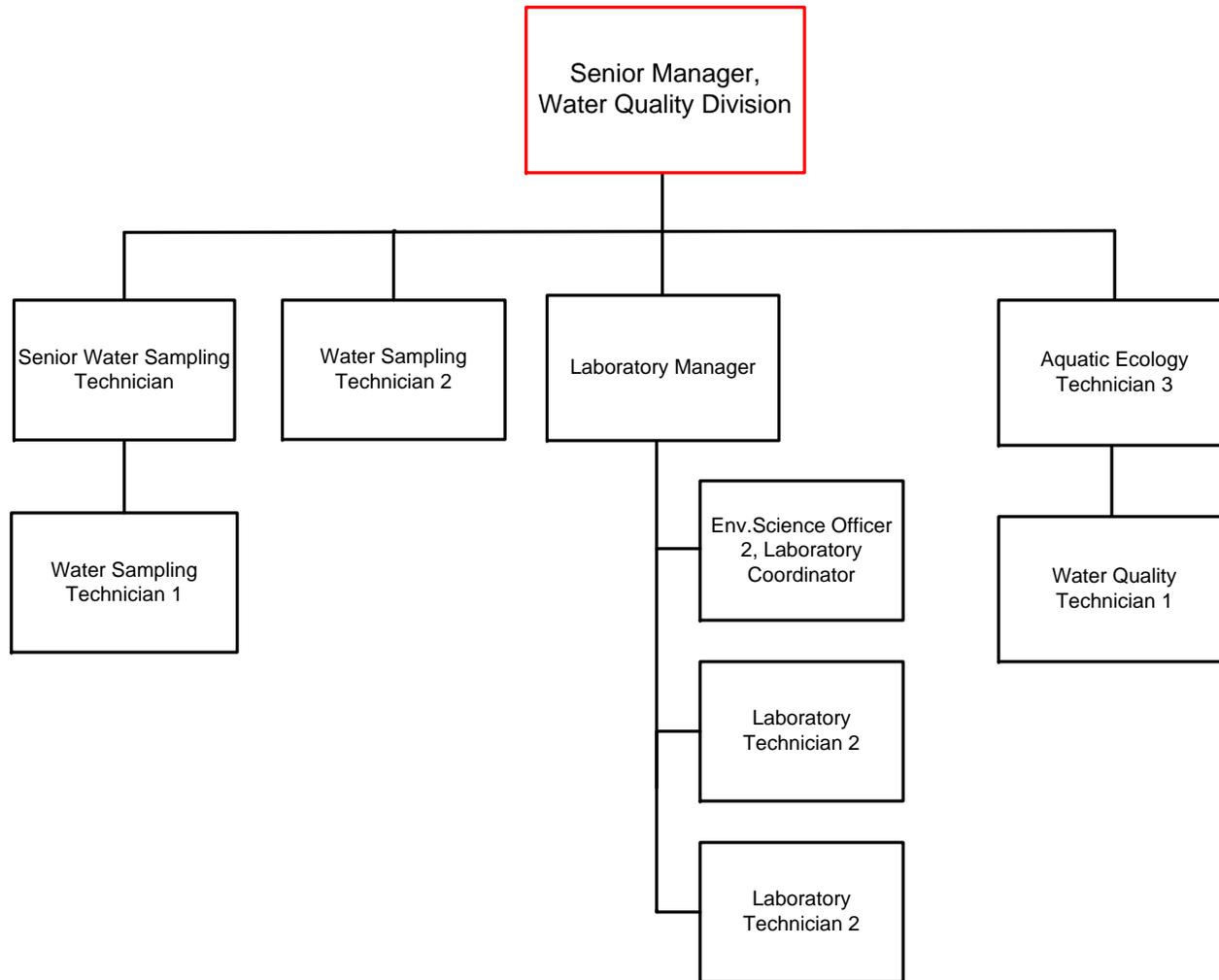
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### 1.3 Organization Chart



## **1.4 Key Trends & Issues**

### **Increasing Consumer Expectations**

Over the years, consumers in Greater Victoria continue to raise their expectations of the quality of drinking water delivered to their homes. In past years, many consumers readily tolerated intermittent episodes of discoloured water. They are less tolerant now and request explanations of water quality lapses. Consumers also expect that water quality data is freely available to them.

### **Increasingly Stringent Water Quality Guidelines and Standards**

Over the years, regulatory authorities have implemented increasingly stringent water quality guidelines and standards. The new limits require increased attention to water supply and delivery operations and to water quality monitoring and reporting. New drinking water quality guideline limits have just been published by Health Canada.

### **Improved Fire Protection Standards Adversely Affect Water Quality**

New fire protection standards require large-diameter water mains and increased storage within distribution reservoirs. These additional volumes adversely influence water quality by increasing the age of water within the distribution system contributing to the loss of chlorine residuals and the increased potential for bacterial regrowth in the distribution system.

### **New Treatment Plants Installed in Local Service Area Water Systems**

With the installation of new water treatment plants, the quality of the drinking water in the local service area distribution systems will improve.

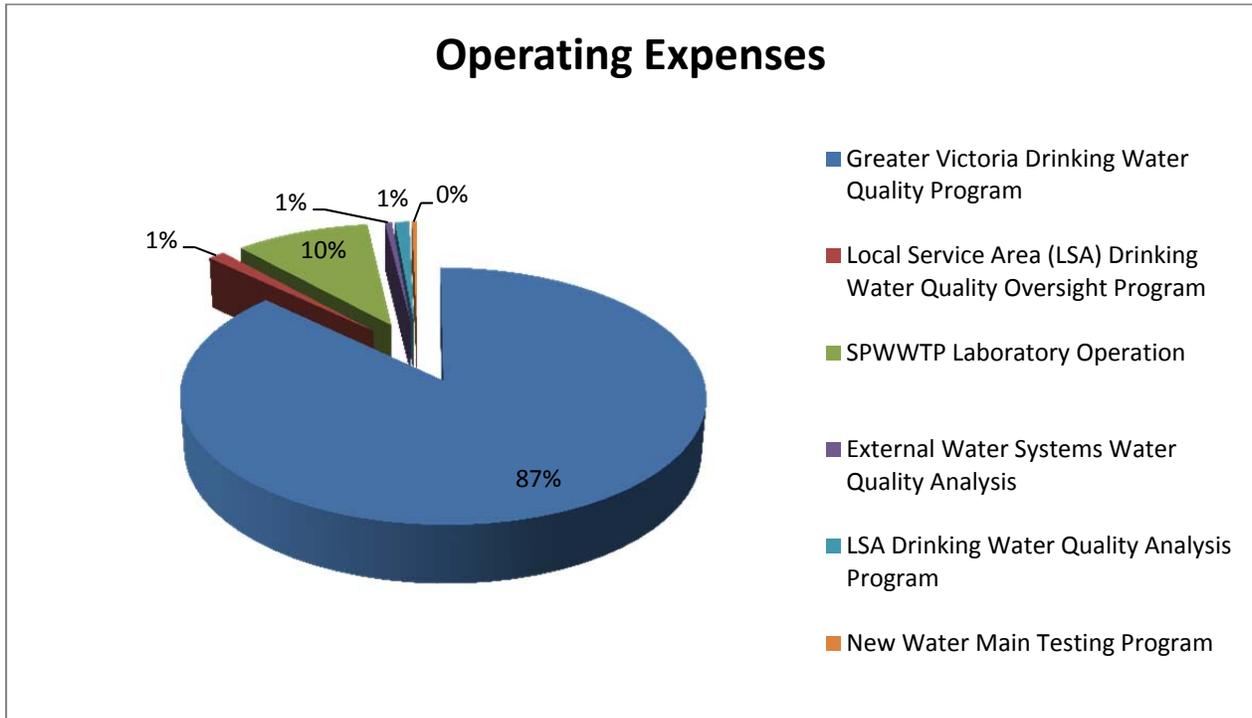
### **Implementation of New Water Quality Information System Database**

The new water quality database now provides for the automatic upload of water quality data to the internet and is resulting in substantive time saving for laboratory staff along with providing the public and other agencies with up-to-date water quality information.

### **Assumptions**

The Greater Victoria Drinking Water Quality Program is mature and relatively stable from year to year. In contrast, the water quality monitoring programs in the Local Service Area water systems are in a state of flux as the overall monitoring program must still be reviewed and redesigned.

### 1.5 Summary of Expenditures and Capital – 2013



Water Quality	2013 Budget
Total Operating Expenses	<b>\$1,252,834</b>
Total Capital Expenditures	<b>\$27,000</b>

## 2 SERVICES

### 2.1 Core Services

The following is a description of the Core internal services/functions provided by the Water Quality Division:

Service	Scope
Greater Victoria Drinking Water Quality Program (sub-regional service)	The Water Quality Division is responsible for all aspects of drinking water quality within the Greater Victoria Water System. Division staff provide planning, sampling, analytical and reporting services covering all aspects of drinking water system operation, including providing advice on water system design, source and distribution system water monitoring and auditing of treatment plant and watershed operations.
LSA Drinking Water Quality Oversight Program (local service)	The Water Quality Division provides water quality oversight for thirteen small drinking water systems operated by the Capital Regional District. Division staff also provide sampling, analytical and reporting services for some of the water systems and provide advice on water system design, source and distribution system water monitoring and auditing of treatment plant operations.
SPWWTP Laboratory Analytical Services (local service)	The SPWWTP Laboratory provides analytical and reporting services for a number of CRD-operated waste water treatment facilities and outfalls.
External Water Systems WQ Analysis (local service)	The Water Quality Laboratory provides analytical and reporting services for external water systems such as Parks Canada, DND, etc., that are connected to the Greater Victoria Drinking Water System.
LSA Drinking Water Quality Analysis (local service)	The Water Quality Laboratory provides analytical and reporting services for select Local Service Area water systems such as Wilderness Mountain and Port Renfrew.
New Water Main Testing Program (local service)	The Water Quality Laboratory provides analytical and reporting services for new water main developers.

### 2.2 Service Levels

Service	Service Level Adjustments			
	Current Year	Year 1	Year 2	Year 3
Greater Victoria Drinking Water Quality Program	<ul style="list-style-type: none"> <li>Approx. 6,000 samples and 26,000 tests analyzed at CRD WQ lab</li> <li>Approx. 100 analytical reports published on the CRD website annually</li> </ul>	No Change	No Change	No Change
LSA Drinking Water Quality Oversight Program	<ul style="list-style-type: none"> <li>13 drinking water systems monitored</li> <li>Samples analyzed internally and externally</li> <li>Approx. 90 analytical reports published on the CRD website annually</li> </ul>	No Change	No Change	No Change
SPWWTP Laboratory Analytical Services	<ul style="list-style-type: none"> <li>Approx. 10,000 tests performed</li> </ul>	No Change	No Change	No Change
External Water Systems WQ Analysis	<ul style="list-style-type: none"> <li>Approx. 1650 tests performed for Saanich Operations</li> <li>12 tests performed for Parks Canada</li> </ul>	No Change	No Change	No Change

Service	Service Level Adjustments			
	Current Year	Year 1	Year 2	Year 3
LSA Drinking Water Quality Analysis	<ul style="list-style-type: none"> <li>Approx. 550 samples and approx. 2,000 tests for 3 local service systems</li> </ul>	No Change	No Change	No Change
New Water Main Testing Program	<ul style="list-style-type: none"> <li>Approx. 500 tests performed</li> </ul>	No Change	No Change	No Change

## 2.3 Workforce Considerations

Service	Workforce (FTEs)			
	Current year	Year 1	Year 2	Year 3
Greater Victoria Drinking Water Quality Program	8.8	8.8	8.8	8.8
Water Quality Oversight for Local Service Area Water Systems	0.2	0.2	0.2	0.2
SPWWTP Lab	1	1	1	1

## 2.4 Customers and Governance

Service	External Customers	Internal Customers	Reviewing Commissions & Committees
Greater Victoria Drinking Water Quality Program	6 Water Suppliers, Public	IWS	Regional Water Supply Commission (Standing) Regional Water Advisory Committee
LSA Drinking Water Quality Oversight Program	LSA customers	IWS	Various Local Service Area Commissions (Advisory Commissions)
SPWWTP Lab Analytical Services	None	IWS	None directly
External Water Systems WQ Analysis	Parks Canada, District of Saanich	None	None
LSA Drinking Water Quality Analysis	Public	IWS Divisions	Various Local Service Area Commissions
New Water Main Testing Program	Developers	IWS Divisions	None

### Regional Water Supply Commission

The Regional Water Supply Commission receives water quality information reports, approves funding levels, approves bylaw changes and broad water quality program policy.

### Local Service Area Commissions (Various)

The Local Service Area Commissions (various) receive water quality information reports and advise on approval for water quality program funding.

## 2.5 Delivery Strategy

Service	Delivery Strategy	Funding	Legislative Authority
Greater Victoria Drinking Water Quality Program	CRD Resources	Regional Water Supply System Operations Budget	BC Drinking Water Protection Act and Regulation
LSA Drinking Water Quality Oversight Program	CRD Resources	Allocation from Local Service Area Operations Budgets (various)	BC Drinking Water Protection Act and Regulation
SPWWTP Lab Analytical Services	CRD Resources	Allocation from SPWWTP Operations Budget	
External Water Systems WQ Analysis	CRD Resources	External water suppliers	BC Drinking Water Protection Act and Regulation
LSA Drinking Water Quality Analysis	CRD Resources	Specific LSA Operations Budgets	BC Drinking Water Protection Act and Regulation
New Water Main Testing Program	CRD Resources	Developers	BC Drinking Water Protection Act and Regulation

In all cases, CRD resources are used to provide these services since it is more cost effective to provide these services on a 24/7/365 basis.

## 2.6 Assumptions

Service	Key Assumptions
Greater Victoria Drinking Water Quality Program	Program will continue unchanged
LSA Drinking Water Quality Oversight Program	Program will continue unchanged
SPWWTP Lab Analytical Services	Program will continue unchanged
External Water Systems WQ Analysis	Program may add additional external systems
LSA Drinking Water Quality Analysis	Program will expand to include more analyses coming to the WQ Lab rather than MB Labs
New Water Main Testing Program	Analytical services are dependent on the economy

### 3 ***DIVISIONAL INITIATIVES***

<b>Core Initiatives</b>	<b>Description</b>	<b>Budget Implications</b>
Water Quality Database Redevelopment <i>2013 COMPLETE</i>	Currently, the WQIS database holds 2.2 million records covering some two decades of water quality monitoring. Provide additional enhancements including GIS location mapping and QC/QA aspects.	\$15,000 in 2014 IWS Capital Budget
LSA Drinking Water Quality Monitoring Standardization <i>ongoing</i>	Review and standardize water quality monitoring and reporting requirements for 13 LSA drinking water systems.	\$15,552 in 2015 LSA budgets (various)
Expand LSA Drinking Water Analyses <i>(this is new for 2014)</i>	Explore the feasibility for samples being collected from the LSA drinking water systems to be analyzed at the WQ Laboratory rather than MB Laboratories. If feasible, implement.	No budget implications

### 4 ***PERFORMANCE MONITORING***

<b>Financial</b>	<b>2013 Planned</b>	<b>2013 Actual</b>	<b>2014</b>	<b>2015</b>
Meet annual WQ operations budget target	Within 5%	Same	Same	Same
<b>Customers</b>	<b>Current year</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Meet provincial water quality limits	Meet all health-related limits	Same	Same	Same
Meet federal drinking water quality guideline limits	Meet all health-related guideline limits (cannot meet some aesthetic limits)	Same	Same	Same
Meet USEPA drinking water quality rules and regulation	Where appropriate, meet USEPA rules and regulations	Same	Same	Same
<b>Business Processes</b>	<b>Current year</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Provincial Lab Certification	Pass certification requirements	Same	Same	Same
CALA Proficiency Testing	Within limits of proficiency tests	Same	Same	Same