



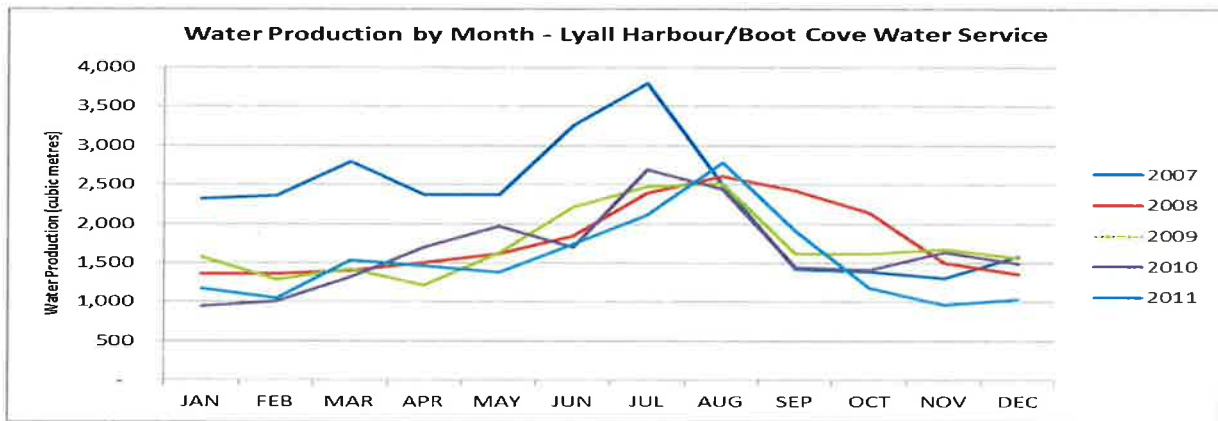
Making a difference...together

**LYALL HARBOUR - BOOT COVE WATER LOCAL SERVICE
ANNUAL REPORT
AUGUST 11, 2012**

Water Production and Consumption

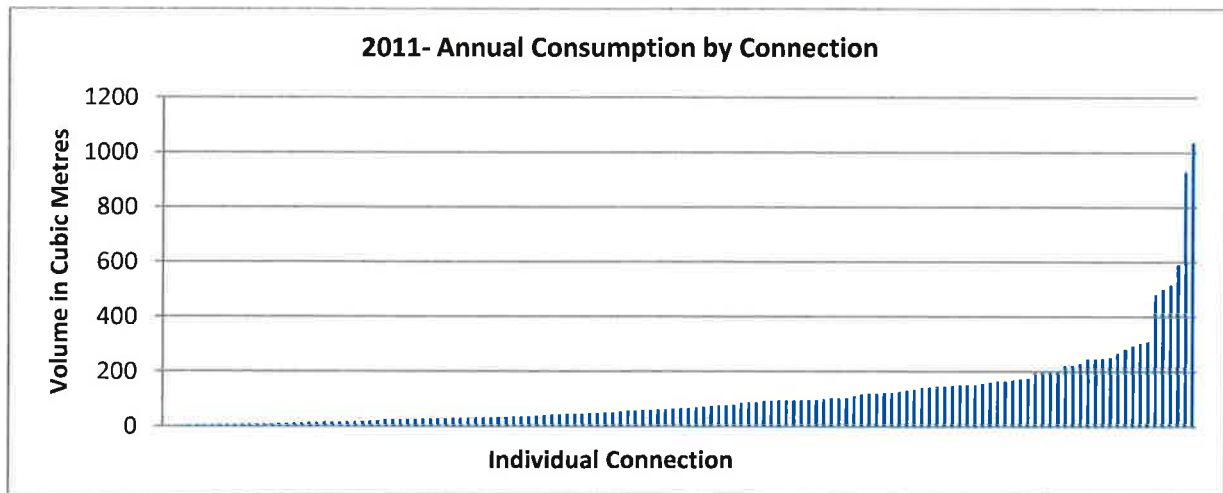
A total of 18,334 m³ of raw source water was extracted from Money Lake in 2011. This is approximately 7.2% less than in 2010. Monthly water production for each year is shown in **Figure 1**. Since 2004, water production has decreased by roughly two thirds, reflecting improved management of distribution system losses and increased customer awareness of water conservation.

Figure 1 Water Production 2007 – present.



Recently installed customer water meters have enabled staff to determine the 2011 metered water consumption to be 15,388 m³. As meter readings did not begin until mid-2010, a total annual volume is not available to compare with that of 2011. 2011 annual use by connection is shown in **Figure 2**.

Figure 2 Annual Consumption by Connection in 2011



Non-Revenue Water

The difference between production and consumption values, called non-revenue water, was 2,946 m³ in 2011 or 16% of the total amount of treated water produced. Twenty percent is considered an average acceptable level of water loss in a typical Canadian municipal water system (*Environment Canada Report 2004 "Threats to Water Availability in Canada"*). Therefore, Lyll Harbour – Boot Cove's 16% non-revenue water is below average.

Non-revenue water is attributed primarily to system leaks, firefighting, back-washing of treatment plant filters and distribution system flushing. Leaks on private side plumbing would be recorded in metered readings.

Planning for a Water Usage Charge

Based on previous public input and subsequent discussions with the Committee, staff are developing alternatives for a water usage charge for the Committee to consider in the 2013 budget process. For residential customers, these alternatives will generally be as follows:

1. A structure typically used by other CRD small water systems that holds costs approximately constant for most users, may result in a modest decrease in cost for very low water users and sharply increases the cost for very high water users (typically the top 3-5% of users). This alternative provides a strong water conservation incentive but also poses a moderate risk of a revenue shortfall.
2. A structure that retains existing taxes and fees to cover operating and debt costs and adds a new usage charge for high consumption only that is used to build capital reserves. Customers with average or lower usage per quarterly billing cycle would not be subject to the new usage charges, and customers that use the most water would pay the highest costs. This alternative provides a moderate conservation incentive to customers who use more water than average, and poses no risk of a revenue shortfall.
3. A hybrid structure that may yield modest savings for very low users, holds the cost approximately neutral for most users and increases the cost to very high users less severely than Alternative 1. This structure poses a small risk of a revenue shortfall but provides a conservation incentive to all users.

A new rate category may need to be established for non-residential customers (e.g. a uniform consumption charge) in order to avoid unduly charging premiums for higher overall usage. Consumption charges could be phased in over several years to enable customers to adapt to the changes and to minimize unanticipated changes in revenue.

Water Quality

Beginning in the fall of 2011, Water Quality Division staff have been posting water quality data for the Lyll Harbour – Boot Cove Water System on the CRD website listed below:

<http://www.crd.bc.ca/southerngulf/water/lyll-bootcove/index.htm>

Typical Lyll Harbour – Boot Cove water quality characteristics in 2011 included:

- Money Lake is subject to algal blooms which can affect taste and odour and clog home filtration devices. (**Note:** In 2012, with the new water treatment configuration, seepage water from Money Lake is being used to supply the system and this should eliminate this problem.)
- Money Lake metals are typically below limits.
- The treated water is bacteriologically safe to drink.

- Treated water turbidity (cloudiness) is typically just under the limit of 1 nephelometric turbidity unit.
- Treated water total organic carbon was moderate to high – ranging from 4 to 19 milligrams per litre.
- Trihalomethanes, a disinfection by-product of chlorine reacting with organic carbon, were tested in May and September. One of the September samples exceeded the limit of 100 micrograms per litre. (**Note:** With the removal of additional organic carbon in the new water treatment configuration, this exceedence should also be eliminated.)

Operations

The Lyll Harbour/Boot Cove water system has operated reliably over the past year, although peak summer water demands continued to stress the old treatment plant in 2011. The recent capital upgrades which include enhanced filtration and the addition of a new balancing water storage tank have eliminated the need to treat water to meet peak instantaneous demands. In summer, when water demand is highest and algae blooms are common in Money Lake, the old filters had to operate at high flow rates and remove large amounts of organic matter, requiring frequent backwashing (cleaning). The new system upgrades allow a steady flow of water to be treated and fluctuations in water demand are now dealt with by using stored water to balance the customer's consumption needs.

In 2009, the recirculation of seepage water to Money Lake was reinstated, greatly increasing the retention of water through the summer months. The patterns of seepage in the vicinity of the dam have changed significantly over the past three years and with advice from a consulting engineer, staff continue to routinely monitor the seepage locations for changes in quantities and appearance. As required by provincial legislation, the 2011 Lyll Harbour/Boot Cove Capital Plan included a Dam Safety Review (DSR) by a qualified consultant which has now been completed. The dam continues to operate safely and a recommended list of works has been prioritized by the consultant to ensure the dam remains safe to operate in the medium to long term. These items will be recommended for inclusion in future capital budgets.

Significant operations activities in the past year include:

- Leaks located and repaired at 103 Waveney and Trevor Island service lines, most likely due to snow storm and cold weather combination
- Chlorine pump replaced in upper treatment building
- Timer/controller for carbon filters replaced
- 1" mechanical pressure regulating valve (PRV) replaced at Narvaez station
- Maintenance performed on Boot Cove 2" PRV
- 1" PRV replaced at Boot Cove
- New 1" mechanical PRV installed at East Point station
- Installed 2nd PRV on CI2 analyzer line to drop operating pressure
- Installed five marker pins along Gilliland Stream for seepage checks
- Located leak at vacant house at 102 E Point Road. Service has been turned off.
- Installed stainless steel 4" spool piece on inlet line at plant and re-installed 2" bypass line
- Replaced tip on chlorine probe
- Repaired leak on 2" bypass line in filter building;
- Repaired leak on recirculation system at upper building
- Replaced all valve fittings and pipe on both chlorine storage tanks at filter building

System Upgrade Project

In 2008, a \$1,279,200 Canada – British Columbia Municipal Rural Infrastructure Fund grant was awarded to the CRD to complete water treatment and distribution system upgrades and to install customer water meters for the Lyll Harbour/Boot Cove water service.

The water meters have been installed and the treatment upgrades are nearing completion. New filters are removing suspended solids and organics from the raw water and are operating at line pressure. A new elevated tank is now on-line and located in an existing statutory right of way southwest of the Saturna Rec Centre. The tank attenuates peak hourly flow variations and provides emergency storage of treated water for the system.

Financial Report - 2011

Attached is a copy of the *Statement of Operations (Unaudited)* prepared by CRD Finance and Corporate Services for 2011. The statement provides an overview of the revenues and expenses for the year.

Revenue includes parcel taxes (*Transfers from Government*), user fees (*Sale of Services*), small amounts for interest on savings (*Interest Earnings*) and miscellaneous revenue such as late payment charges (*Other Revenue*).

Expenses includes all costs of providing the service. *General Government Services* includes budget preparation, financial management, utility billing and risk management services. *Other Expenses* includes all other costs to administer and operate the water system and the principal and interest payments on borrowing to finance capital projects. *Other Fiscal Services* includes administration costs for loans.

The difference between *Revenue* and *Expenses* is reported as *Net Revenue (expenses)*. Any transfers to or from capital or reserve accounts for the service (*Transfers to Own Funds*) are deducted from this amount and it is then added to any surplus or deficit carry forward from the prior year, yielding an *Accumulated Surplus* (or deficit) that is carried forward to the following year.

The Lyall Harbour/Boot Cove 2011 revenue of \$143,386 and expenses of \$156,395 yielded a net expense of \$13,009. There were no transfers to or from capital or reserve accounts, so the deficit of \$13,009 was applied to the surplus opening balance of \$33,120 yielding a net surplus of \$20,111 carried forward to 2012.



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Concurrence

GP/TT:ls
Attachment: 1

CAPITAL REGIONAL DISTRICT

WATER REVENUE FUND

Statement of Operations (Unaudited)

For the Year Ended December 31, 2011

	Lyll Harbour/ Boot Cove Water Service Area
Revenue	
Transfers from government	\$ 90,454
Sale of services	51,675
Other revenue from own sources:	
Licenses and permits	-
Interest earnings	354
Other revenue	372
Grants in lieu of taxes	531
Total revenue	143,386
Expenses	
General government services	6,580
Other expenses	149,570
Other fiscal services	245
Total expenses	156,395
Net revenue (expenses)	(13,009)
Transfers to own funds:	
Capital Funds	-
Reserve Funds	-
Equipment Replacement Fund	-
Annual surplus	(13,009)
Accumulated surplus, beginning of year	33,120
Accumulated surplus, end of year	\$ 20,111