Making a difference...together

LYALL HARBOUR / BOOT COVE WATER SERVICE COMMITTEE
2008-2009 OPERATIONS REPORT
8 AUGUST, 2009

The following is provided for information to residents and users of the Lyall Harbour / Boot Cove water service.

Operations

The Lyall Harbour / Boot Cove water system has generally operated reliably in the past year. The water treatment plant continues to produce an adequate quantity of safe drinking water, although the high quantity of algae in Money Lake in summer requires filters to be cleaned as often as every two hours in peak flow conditions. As a result, the available water supply capacity of the system is most severely limited concurrently with the highest seasonal demand. The Capital Regional District (CRD) has instituted Stage 1 water use restrictions effective this week in order to ensure a sufficient quantity of water is available for essential household needs and firefighting capacity.

The chlorinator in the treatment plant was improved this year to enable chlorine to be added in proportion to the flow of water through the plant. This modification was needed as a result of a reduction in the minimum overnight flow rate through the system following the installation of water meters earlier this year.

Seepage through the Money Lake dam has been carefully monitored over the past year as a result of an increase in the seepage rate in the summer of 2008. The recirculation of seepage flow into Money Lake was reinstated late in 2008, resulting in considerably higher storage levels in 2009 than in previous years. The quality of the seepage flow has been consistently clear.

Water Supply and Demand

Total annual water production since 2003 is shown in Figure 1, and water production by month is shown in Figure 2. A total of 22,522 cubic metres (m^3) of water was abstracted from Money Lake in 2008, which is 18% less than in 2007 and 63% less than in 2004. Although customer service connections were unmetered before this year, the reduction over the past five years in winter water production indicates that water losses to leakage either in the distribution system or on customer property likely account for the majority of the reduction in water production. The seasonal increase in water production in summer has also significantly decreased, possibly due to reduced irrigation usage or reduced seasonal use of residences in the service area.

Figure 1. Water Production 2003-2008

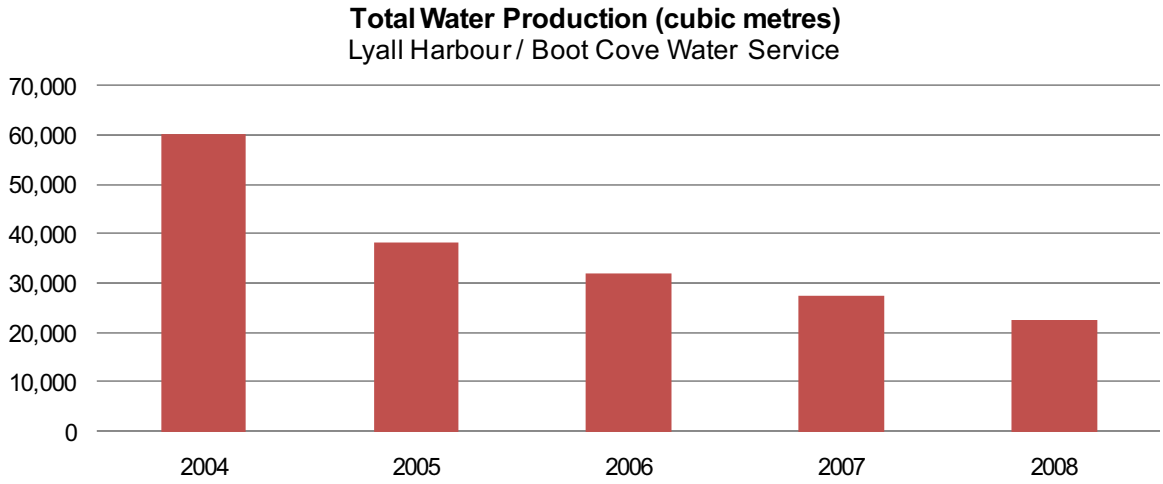
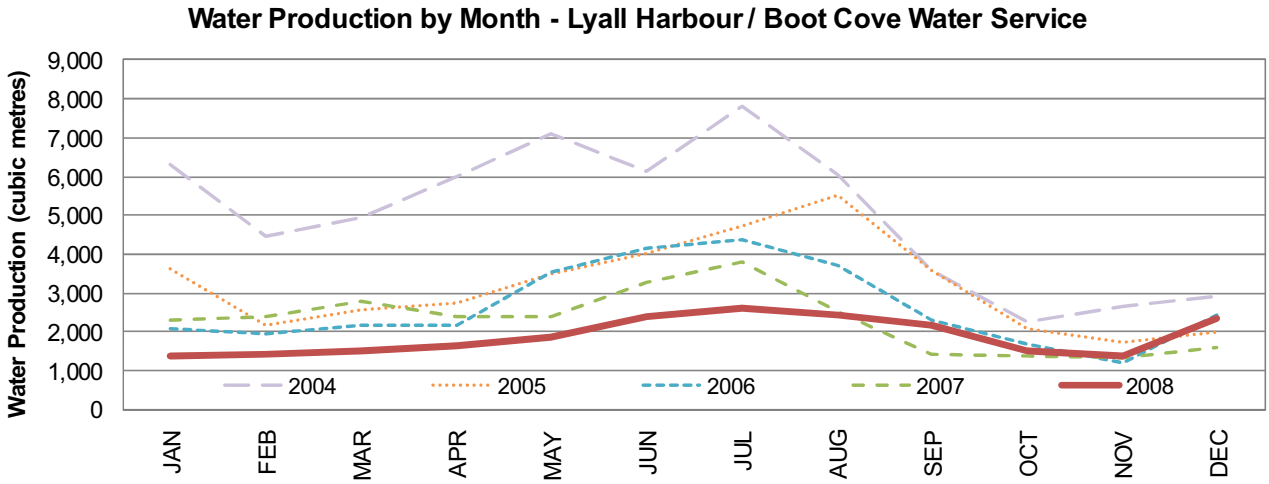

Total Water Production (cubic metres)
Lyall Harbour / Boot Cove Water Service
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2004
2005
2006
2007
2008

Figure 2. Water Production by Month, 2003-2008



Water Quality

The CRD operator carries out an annual sampling program including programmed testing of bacterial indicators, an annual sample for metals and an annual sample for disinfection by-products. Water quality in Money Lake varies greatly from season to season. Bacteria are continuously detected in the source water, with populations much higher in summer than in winter. The treatment system removes or inactivates bacteria, viruses and parasites by filtering and chlorinating the water to ensure it is safe to drink. The performance of treatment in removing turbidity (an optical measure of the amount of suspended solids in the water) is important in order to ensure that disinfection is effective and that the amount of chlorine needed to achieve disinfection is relatively small. If a large amount of chlorine is needed to disinfect turbid water, the taste and odour of the drinking water becomes undesirable and an unacceptable quantity of potentially carcinogenic disinfection by-products are produced by the reaction of chlorine with organic matter in the water. The new treatment plant will improve the quality of drinking water by removing much more turbidity in the dissolved air flotation (DAF) and filtration processes, and by using ultraviolet (UV) light as a primary disinfectant to reduce the required chlorine dose.

Non-coliform or background bacteria are also present within the water main system. While these bacteria are not harmful to human health, when present in large numbers they have the potential to obscure other, more harmful bacteria in samples and cause errors in detection at the lab. For this reason, a maximum non coliform bacteria count of 200 colony forming units (CFU) per 100 ml is a guideline the CRD strives to maintain. A residual concentration of chlorine is maintained in the system for this purpose. A periodic count may turn up in a section of main, especially one with very little usage. The operator flushes that portion of the main to re-establish the disinfection residual and a re-test is done to confirm results.

Water delivered to the Lyall Harbour / Boot Cove service area typically meets the guidelines set out in the *Canadian Drinking Water Guidelines (CDWG)*, and the requirements of the British Columbia *Drinking Water Protection Act* and *Regulation* as administered by the Vancouver Island Health Authority (VIHA).

Upgrade Project

Following a successful petition of the residents last fall to proceed with a water system upgrade project, the CRD began work on the project this spring. The work includes a new water treatment plant, a new storage reservoir, and remotely readable water meters for all service connections. The existing water treatment plant will be removed or converted to other use as part of the project, but the existing storage reservoir will be retained in the system to increase firefighting capacity. The total cost of this work is estimated at $1,279,200, of which $852,800 is funded by a federal/provincial grant and the remainder will be provided through a loan repaid by the water service over 15 years. The cost of repaying the loan to complete the project is not expected to require an increase in taxes or fees

for water service. However, rates may need to increase in the future to recover the cost of operating the new treatment plant, which will treat water to a much higher standard than the existing plant.

Water meter installation is substantially complete. Through a competitive tender process, a contract was awarded to Money Family Projects to work with CRD operations staff to install water meters. Meters have been installed at 141 service connections. An additional 14 existing services to undeveloped lots have been retrofitted with meter boxes and components to facilitate quick and cost-effective meter installation in the future, when the owner elects to connect to the water system. There are an additional 35 undeveloped lots in the service area that do not have a water service extending from the watermain. Services to these properties will be provided at such time as they are needed by the owner, at the owner's cost. The total cost of the meter installation work to date is $118,000, or 87% of the $135,000 budget for the meter installation portion of the project. Several minor leaks at service connections were found and repaired during meter installation, totaling an estimated 20 litres per minute (5 gallons per minute).

Two buildings connected to the system remain unmetered. These are currently both served by a single connection, which provides water through one building to the second building on a separate lot. The connection to the watermain is under a paved road surface near the ferry terminal, so the work to separate the connections and install the two meters will be scheduled at a time when pavement can be reinstated cost-effectively. This may be timed to coincide with connection of the new fire hall, which will also require pavement reinstatement.

The CRD has completed a call for credentials for design and project management of the treatment plant and reservoir construction. Of the four firms that responded to the call, three have been invited to submit fee proposals. It is anticipated that the committee will meet to recommend award of a consulting contract in September, and that design will be completed this fall in time to break ground early in 2010.

Annual Operating Budget

Attached is a copy of the *Statement of Financial Activities* as prepared by CRD Finance and Corporate Services for the year 2008. The statement provides an overview of the revenues and expenditures for the year. Revenues are generated primarily through parcel taxes and user fees (fixed and variable based on water use), and small amounts for interest on savings and miscellaneous revenue such as late payment charges.

Expenditures include all costs to administer the service. *General government services* are charges levied by CRD Corporate Services for the financial processing of the budget and collection of fees and charges. *Other* includes all expenses needed for the operation of the service including all CRD labour costs for day to day operations, CRD service personnel hours performing maintenance and repairs, chemicals, electricity, water testing costs, maintenance parts allowances for electrical and mechanical equipment, rental or equipment as necessary and allowances for technical and staff support to the committee, and for the payment of debt.

The difference between revenue and expense is added to any surplus or deficit carried forward from the prior year. If there is a significant surplus, funds may be transferred to a reserve or capital project account. The surplus or deficit balance, after any transfers is carried to the following year. Regional District services are not permitted to plan to carry forward a deficit, so a deficit in a given year usually requires a tax or fee increase in the following year to recover costs and prevent a subsequent deficit.

The Lyall Harbour / Boot Cove 2008 revenue of $142,455 includes $90,450 parcel tax and $47,938 user fees. The *other* revenue includes connection charges and late payment penalties. The total expenditures for 2008 were $111,703 for operation and administration of the service.

The difference between revenue and expenditures in 2008 amounted to a net revenue of $30,452 at year- end. This amount added to the surplus of $1,982 carried forward from 2007. The entire balance of $32,434 was transferred to the reserve fund, leaving balance of zero carried forward to 2009. The current balance in the reserve fund is $41,776. There was no increase in taxes or user fees for 2009.

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Attachments: 1