Making a difference...together

FULFORD WATER SERVICE COMMITTEE
2009 OPERATIONS REPORT
23 MAY 2009

The following is provided for information to residents and users of the Fulford water service.

Capital Project

The Fulford water service received a grant under the Canada/British Columbia Infrastructure Program in 2005 for the purpose of constructing a new water treatment plant to meet current drinking water standards, metering all water service connections, and modifying and upgrading distribution infrastructure as required to connect the new treatment plant. The original project budget was $1,544,900. The grant funded up to two-thirds of eligible project costs, to a maximum grant amount of $972,146. The balance of $572,754 was provided through borrowing under the Municipal Finance Authority (MFA) over a 15-year term, with the annual debt servicing cost of $52,510 recovered through parcel taxes levied in the Fulford water service area.

The combination of higher than planned construction cost inflation rates and slower than planned construction progress has caused actual costs to exceed the original budget, including contingency. In 2008 the committee approved two budget increases funded from reserves and operating surpluses, resulting in a revised project budget of $1,797,339. It was anticipated that these increases would enable the treatment plant to be brought into operation. A shortfall in funding of $42,000 for distribution interconnections and $50,000 for completion of service connection metering was anticipated.

Project Status at 23 May 2009

Construction of the water treatment plant is complete, and commissioning of the plant is nearly complete. The plant is expected to begin full-time operation in June.

Supply and distribution works are substantially complete, with the exception of the following tasks:

1. Metered connections to new distribution mains for properties currently served by mains that will become raw water pipeline.
2. Metered connection to Fulford School.
3. Waste connection from water treatment plant to school wastewater plant.
4. Resolve "grandfather agreement" connections to supply pipeline outside the Fulford water service area.
5. Complete metering of all remaining service connections.

Task 1 must be completed in order for the new treatment plant to supply the entire Fulford service area. In order to decommission the existing chlorine injection system at the Weston Lake intake, Task 4 must also be completed. Tasks 2 and 3 are required in order to fulfill the agreement with School District 64, and Task 5 is required in order to recover operating costs based on usage. It is proposed to add radio reading components to meters, increasing the cost of Task 5 by $10,000. This brings the metering portion of the work up to current CRD standards and greatly reduces the cost of meter reading and billing.

Costs to Complete Project

The costs to complete the remaining work included in the original project scope are estimated as follows:

Task	Estimated Cost
Complete water treatment plant commissioning	$30,000
Complete 2" metered connection to school	$10,000
Complete water treatment waste connection to school wastewater plant	$5,000
Connect properties in service area served by raw water line	$30,000
Resolve "grandfather agreement" connections	$40,000
Complete metering of remaining connections	$60,000
Total estimated cost to complete project	**$175,000**

The cost of commissioning the Fulford system is expected to be significantly greater than that of other Dissolved Air Flotation (DAF) based treatment systems planned for CRD water service areas since it is the first to be commissioned. Commissioning work on the Fulford system that will directly benefit other projects includes the majority of process control programming and debugging, identifying and correcting minor design flaws, and training and orientation of staff and contract operators. The estimated total cost of this work of $25,000 will be shared among five service areas for which DAF based systems are planned or under construction (including Fulford), reducing the commissioning cost to the Fulford project by $20,000. With this adjustment, the estimated overall cost of commissioning of the Fulford system will be similar to that of other DAF systems of similar size and complexity such as the Beddis system.

The estimated cost to resolve "grandfather agreement" connections represents the cost to connect three dwellings near the Fulford service area, which are all located on a single parcel. These dwellings are not currently in the Fulford service area and are not subject to the parcel tax; however, an agreement established in 1984 between the property owner and the former waterworks district committed the district to provide water at no charge in exchange for a covenant on the property for the water main from Weston Lake to the water service area. Based on the terms of the agreement, it is anticipated that the cost of this work will be borne by the owner of the property, should the owner opt to connect to the treated water distribution system. A single dwelling near the Weston Lake intake to the treated water distribution system is subject to a somewhat different agreement executed in 1986 to provide untreated water service in exchange for a covenant for water main over the property. It is impracticable to provide treated water service to this property given its remote distance from the treated water distribution system.

On the basis that plant commissioning costs of $20,000 will be recovered from other service areas, and that connection costs of $40,000 (if incurred) may be recovered directly from a individual property owners outside the service area, the estimated unfunded cost to the Fulford service area to complete the project is $103,546.

Deferral of Remaining Project Tasks

Given that the remaining unfunded cost to bring the water treatment plant into service for the majority of the Fulford area is only $10,000, this work is an immediate priority and will be completed in 2009. The 2009 operating budget is approximately $40,000 greater than the 2008 actual cost on the basis that the treatment plant was expected to be operating through the full year. However, since the plant will not begin operation until May, operating cost savings of approximately $13,000 are anticipated. By reallocating $10,000 from Contract for Services to the capital project, it is anticipated that the treatment plant will be brought into service without requiring a revenue increase in 2009.

The committee has resolved to defer remaining project work according to a schedule that minimizes the required revenue increase while completing the work within a reasonable timeframe. By maintaining the

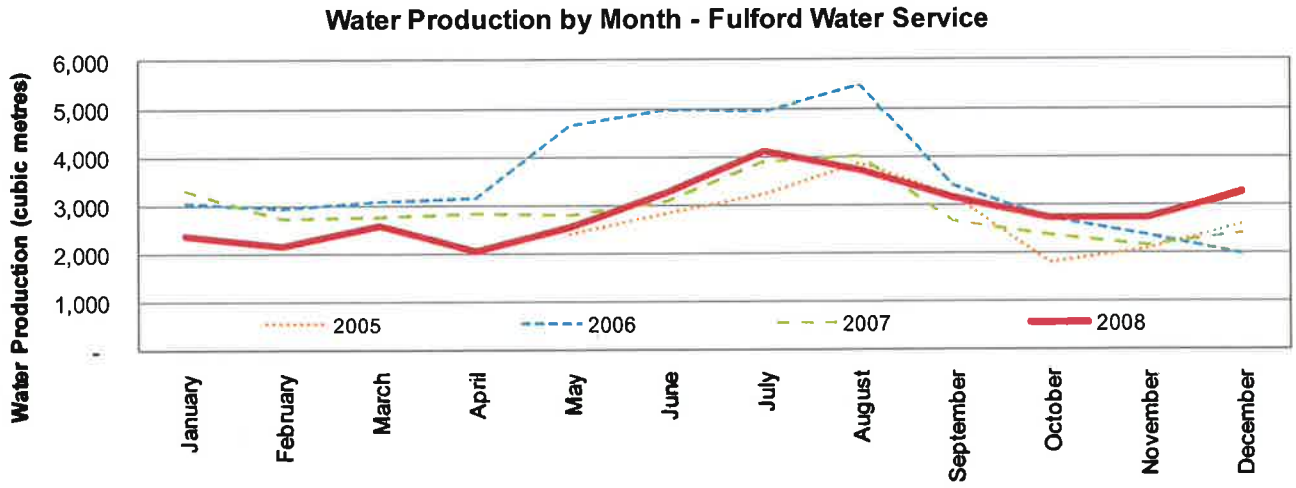
existing chlorinator at Weston Lake for one year after the new treatment plant enters service, connection of services currently served from the raw water line to the treated water system may reasonably be deferred until 2010, at a cost of $30,000 for which new funding would be required. Given the small additional operating cost to maintain the chlorinator at Weston Lake and the discrepancy in the level of service that would be provided to users in the service area before the connections are completed, it is recommended that this work not be deferred longer than one year. In order to fulfill the agreement with School District 64 and to reduce waste disposal costs for the water treatment plant it is proposed to complete the water and wastewater connections to the school in 2010, at an estimated cost of $15,000. Metering of all residential service connections was a required component of the grant agreement that funded the majority of the project, and materials for the metering work have been purchased. Fully metering the service area also enables operating cost recovery based on water usage, and greatly improves the ability to manage water losses. It is proposed to complete metering over three years between 2011 and 2013, at an estimated cost of $60,000. To raise the required funding of $30,000 annually between 2010 and 2013 without further borrowing, funding this work from the Fulford area would require an increase in the parcel tax of $312, or an increase in the annual residential user fee of $255 with corresponding increases in commercial fees.

Deferring work that does not require completion in 2009 also provides time to make further progress on prospects for inclusion into the Fulford service area, including BC Ferries, Cedars of Tuam, "grandfather agreement" properties and additional properties near the Fulford area that have expressed interest in inclusion. A decision by the committee on how to fund deferred work will be required as part of the budget approval process later this year.

Water Supply and Demand

A total of 34,471 cubic metres (m^3) of water was abstracted from Weston Lake in 2008, nearly identical to 2007 usage. Monthly water production is shown in Figure 1. Winter use was significantly lower in 2007-2008 than in previous years, but increased in 2008-2009. Such an increase may be associated with undetected water loss either in the distribution system or on a residential property. Residential meters, once installed, will enable improved management of water losses.

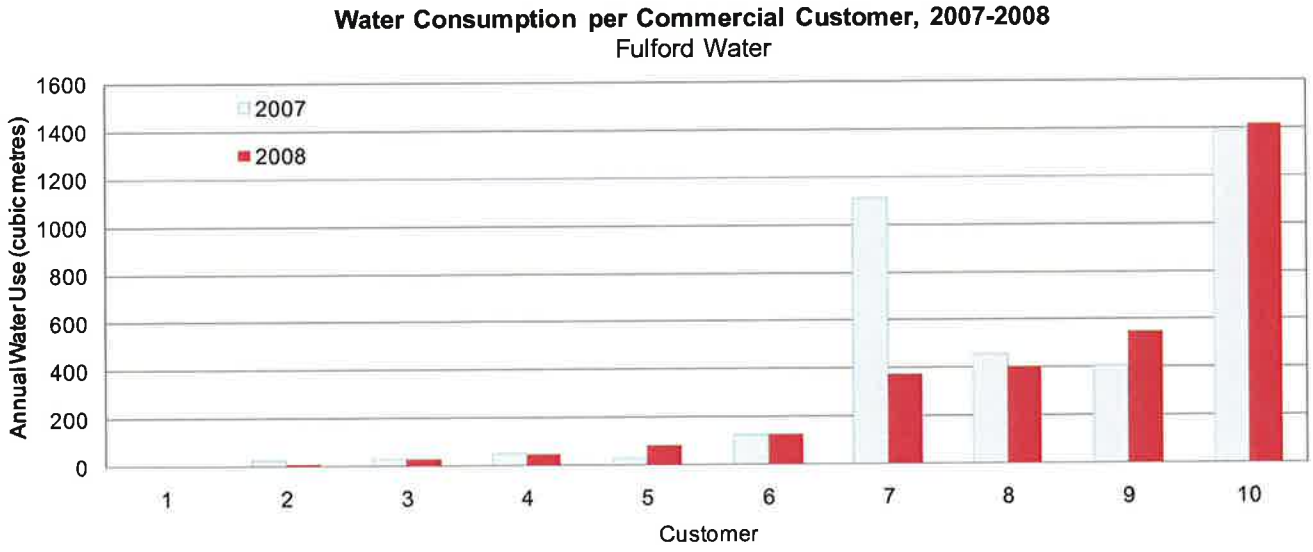
Figure 1. Water Production by Month, 2005-2008



Although residential connections are unmetered in the Fulford system, commercial customers are metered and billed based on usage in excess of 115.4 m^3 (25,390 imperial gallons) per three months at a rate of $1.43/ m^3 ($6.50/1,000 imperial gallons). If less than 115.4 m^3 is used, a fixed charge of $165 is billed, equivalent to a single-family residence. Commercial usage is shown in Figure 2.

Assuming a typical distribution water loss rate of 30% for a distribution system of the age and condition of the Fulford system, a typical single-family residence in the Fulford area uses roughly 220 m^3/year, which is similar to other CRD water service areas on Salt Spring Island with surface water sources, and is comparable to Greater Victoria usage. This suggests that although Fulford usage is relatively low for an unmetered system, significant conservation potential exists. Considering that landscape irrigation is a relatively small proportion of usage in the Fulford area (based on the nature of landscape areas in the service area and the relatively small seasonal variation in water supply into the system), reducing leakage in the distribution system and in customer plumbing (e.g. running toilets) are water conservation opportunity areas.

Figure 2. Commercial Water Consumption by Customer, 2007-2008



Water Quality

The CRD carries out regular testing of the water supply to ensure water quality testing 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). Water delivered to the Fulford area typically meets the CDWG and VIHA standards. However, turbidity in summer associated with algae growth in Weston Lake typically exceeds 1.0 NTU.

The Fulford water treatment plant was designed in anticipation of more stringent standards similar to those in other jurisdictions. In 2008, VIHA introduced a new treatment standard for surface water sources (i.e. lakes, rivers or streams). The new standard, called the 4.3.2.1 Policy, requires that a drinking water treatment process for a surface water source must:

- Achieve a four-log (99.99%) reduction in viruses from source water.
- Achieve a three-log (99.9%) reduction in Giardia cysts and Cryptosporidium oocysts.
- Include a minimum of two stages of treatment, typically filtration and disinfection.
- Achieve a maximum turbidity of 1.0 NTU in treated water (turbidity is a measure of suspended particles in the water, measured by transmission of light through a sample of water).

The new Fulford water treatment plant will meet the 4.3.2.1 Policy using a treatment process based on dissolved air flotation (DAF), which is very well suited to the high algae content typical of the lakes in the Gulf Islands. The DAF process is followed by filtration and two-stage UV and chlorine disinfection, with a provision to add potassium permanganate as needed to neutralize toxins that can be produced by some algae blooms.

2007-2008 Annual Operating Budget

Attached is a copy of the *Statement of Financial Activities* as prepared by the CRD Finance and Corporate Services Department for the year 2008. The statement provides an overview of the revenues and expenditures for last year. The revenue of $134,184 includes $60,617 parcel tax, $71,592 user fees, 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 total expenditures for 2008 were $115,306, of which $52,770 is the annual cost of the 15-year borrowing required for the capital project and the remainder is the cost of operation and administration of the service. Operating expenses were much lower than budgeted, since the budget included an unused allocation for operating the new treatment plant that did not enter service in 2008.

The difference between revenue and expenditures in 2008 amounted to a net revenue of $18,878 at year-end. This amount added to the surplus of $21,546 carried forward from 2007. A transfer of $28,544 to the reserve fund left a surplus of $11,880 carried forward to 2009. The reserve fund was in turn allocated to the capital project, leaving a current balance in the reserve fund of zero.

The parcel tax and user fee levels for the Fulford water service have not been amended since the service was established in 2005. It is likely that a user fee increase in the range of $250 per residential unit, with equivalent increases for commercial customers, will be needed in 2010 in order to complete outstanding capital work in the next three or four years.

CS:ls
Attachments: 1

CAPITAL REGIONAL DISTRICT

WATER REVENUE FUND
STATEMENT OF FINANCIAL ACTIVITIES (UNAUDITED)
For the year ended December 31, 2008

		Fulford Water Supply
REVENUES		
Transfers from government	$	60,617
Sale of services		71,592
Other revenue from own sources:		
Interest earnings		1,045
Other revenue		893
Grants in lieu of taxes		37
		134,184
EXPENDITURES		
General government services		4,010
Grants in aid		-
Other		111,030
Salaries and wages		-
Other fiscal services		266
Recovery		-
		115,306
NET REVENUES (EXPENDITURES)		18,878
Transfers to own funds:		
Water Capital Fund		-
Reserve Funds		28,544
Equipment Replacement Fund		-
Transfers from own funds:		
Reserve Funds		-
CHANGE IN FUND BALANCE		(9,666)
Opening balance		21,546
CLOSING BALANCE	$	11,880