



CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Report Date: September 16, 2008
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Meeting Date: October 2, 2008

TO: Standing Committee on City Services and Budgets
FROM: General Manager of Engineering Services
SUBJECT: Automated Meter Reading & Water Billing Improvements

RECOMMENDATION

- A. That Council approves in principle the amendments to the Water Works By-Law No. 4848, generally as set out in Appendix A, to support the staffing and billing efficiencies described in this report.
- B. That Council authorizes the Director of Legal Services to work with Engineering Services to bring forward a by-law generally in accordance with Appendix A.
- C. That \$51,000 is allocated for additional temporary clerical support in Revenue Services for a one year period, with funding from the existing meter reading budget in the Water Utility.
- D. That five CUPE 15 Regular Full Time Water Rates Inspectors Positions be eliminated (four Water Rates Inspector I's and one Water Rates Inspector III) and the remaining meter reading function be incorporated into the work currently performed by Operations Workers under the jurisdiction of CUPE 1004 at a classification level approved by Human Resources.
- E. That Council approves the addition of one (1) CUPE 15 Engineering Assistant II regular full time position to the Waterworks Operations staff at an estimated annual cost of \$ 56,000 including benefits, to provide GIS and IMS support to the Water Utility. Funding will be available from the net savings realized by the elimination of the Water Rates Inspector positions.

GENERAL MANAGER'S COMMENTS

The General Manager recommends approval of the recommendations in this report.

CITY MANAGER'S COMMENTS

The City Manager recommends approval of the recommendations in this report.

COUNCIL POLICY

Creation and deletion of regular full time CUPE 15 positions requires Council authorization.

SUMMARY

Over the past four years, the Engineering Department has upgraded the City's water meter reading equipment by installing an Automated Meter Reading (AMR) system. This system will deliver significant benefits and efficiencies to both the meter reading and the utility billing processes. With the system's radio read technology, one employee driving through the City can now capture 5,000 meter readings (one-third of the total number of metered customers) in two days and electronically download the data directly into the billing system. Previously, this took five full time meter readers 11 working days each to manually read the meters and note the readings in route books. Many more days of clerical time would follow to manually enter the readings into the old mainframe billing system.

To take full advantage of the new AMR system, the old meter reading routes and billing procedures need to be reconfigured. It is recommended that the current billing cycles be changed from a mix of two and four months to a standard quarterly billing period, which will improve efficiency and customer service. Approval is also sought to eliminate the minimum consumption billing, which will encourage water conservation and simplify billing procedures.

To implement these improvements (effective January 1, 2009), the current Water Works By-law No: 4848 requires several amendments. In addition, the Revenue Services group will require temporary clerical support to assist with customer service and process changes during the transition to the new billing frequency.

As a consequence of these system and process improvements, there is no longer a need for five dedicated meter reading positions. These changes have been discussed with CUPE 15, as this will result in both a reduction in the number of staff required and a reallocation of the work to the Meter Shop (CUPE 1004) personnel for the new meter reading function.

PURPOSE

This report requests Council approval to amend the Water Works By-law No: 4848 in order to support water meter reading and billing efficiencies which will facilitate improved customer service and operational efficiency, and promote water conservation.

To fully realize the efficiencies of the Automated Meter Reading (AMR) system and revised (quarterly) billing cycles, staffing changes are recommended which will reassign the remaining meter reading functions from CUPE 15 personnel to CUPE 1004 staff within Waterworks Operations.

Approval is also sought to convert a long-standing temporary Engineering Assistant II position into a Regular Full Time position, to be funded from a portion of the savings resulting from the meter reading system improvements.

BACKGROUND

The Waterworks Operations Branch is responsible for the overall operation and maintenance of the City's revenue water meters. This responsibility includes capturing the meter reading data from 14,000 accounts and the electronic transfer of this data to Revenue Services staff for processing of the metered accounts for water consumption billing.

In 2004, the City initiated upgrades to both the data capturing process, through the installation of an Automated Meter Reading System (AMR), and the billing process with the implementation of the Tempest system. Until now the meter reading component has been performed by Water Rates Inspectors (CUPE 15) and the installation and maintenance of the meters and the meter reading system by employees under the jurisdiction of CUPE 1004. Prior to the recent installation of the Automated Meter Reading equipment, water meters were read manually, noted in routing books by meter readers and then the information was manually entered into the old mainframe billing system by clerical staff.

Now that the AMR equipment is in place and the Tempest Billing implementation has been completed, the City is ready to move forward with routing and billing frequency changes to fully benefit from the system upgrades. This will involve moving the new meter reading duties to existing CUPE 1004 classifications, which creates an opportunity to provide needed flexibility in the staff duties.

DISCUSSION

The City has already realized improved reading efficiencies utilizing the existing meter reading routes with the new AMR equipment, and using the current billing cycles. However, two issues restrict our ability to obtain the full benefits from both the AMR equipment and the City's Tempest billing software. One issue is the need to revise several Water Works By-law provisions regarding how we bill our customers; the second is the lack of flexibility to schedule and assign work given that employees in the Branch are currently members of two different unions.

Presently, high volume water customers (3,800 accounts) are billed every two months, whereas customers with low consumption (10,200 accounts) are billed every four months. To ensure efficient meter reading and billing, all existing metered customers (commercial, industrial and multi-family/higher zoned residential) should be brought onto the same reading and billing frequency: a quarterly billing cycle. With this change to the Water Works By-law several benefits will be realized. The majority of metered customers will receive more frequent information about their water consumption and will be able to take earlier corrective action if their bill sharply increases due to a possible leak. This will help reduce overall water loss and reduce administrative efforts in adjusting both water and sewer charges. A quarterly billing is also the standard in the water industry and is appropriate if the City decides to implement a single-family residential water metering program. Changing to a

quarterly billing cycle for all accounts will represent a 5% increase or 2,600 additional bills per year.

It is also proposed that the minimum charge for water consumption be eliminated to encourage water conservation. Customers will be charged for the actual amount of water they use, whereas customers currently receive a minimum charge of eight units per month when consumption is below this level. This change will help streamline the billing process.

Minor revisions to the Tempest software are required to implement the new billing cycle and the Tempest Development Group Inc. will be requested to make the programming changes. To address the anticipated increase in customer enquiries and implement changes in the billing process, Revenue Services will also need to temporarily increase staff by one position for up to one year.

Implementation of the new routes for meter reading, and the introduction of the quarterly billing cycle, will be phased in starting January 1, 2009. Metered water customers will be given advance notification of the billing changes this year.

With the implementation of the new AMR system and the proposed routing changes, our water meters can be read and electronically inputted into the new billing system by approximately six to eight meter readers over a one week period each month (1.6 FTE's). The previous manual process took the whole month with four FTE dedicated meter readers. Following the best practices of many other jurisdictions who have implemented new AMR and billing systems, the meter reading function can now be assumed by CUPE 1004 employees in the maintenance section of the Waterworks Operations meter shop. These staff can read the meters for billing purposes, and perform meter and AMR installations and maintenance during the remainder of the month.

Upgrading the meter reading equipment is continuing and we will eventually be able to read 75 percent of our meters with a mobile radio unit, by one person in a one week period. However, the downtown peninsula will continue to be read by touch pad technology for the next five-six years as conversion to radio technology in this area is a lower priority, due to the relative density of the meter inventory. In keeping with our efforts to address sustainability, we hope to utilize the Canada Line system for meter readers from the Manitoba Works Yard to access their walking routes in the downtown core. Substantial conversion to radio read technology throughout the rest of the City should be completed by the end of the 2009-2011 Capital Plan. As this implementation progresses, the resources required for meter reading will decrease, thus we require greater flexibility to assign duties in accordance with operational needs.

Changes to the staffing in the meter shop are scheduled for January 1, 2009. All of the proposed staffing changes have been discussed with CUPE 15. Those discussions are reflected in the Personnel Implications section of this report.

FINANCIAL IMPLICATIONS Eliminating the minimum water consumption charge in the Waterworks By-Law will mean a reduction in revenue of \$181,000 (based on 2008 rates) to the Water Utility and a further \$97,000 to the Sewer Utility (which bills customers based on 85% of the water consumption times the Sewer Rate of \$1.103). Moving all the billing cycles to a quarterly period will not affect the amount of interest earned annually. However, to compensate for the reduced consumption revenue, it is proposed that the "Meter Service Charge" in Schedule "E" in the Waterworks By-law 4848 be increased on a revenue neutral basis. This adjustment will be incorporated in the 2009 Water and Sewer Utility Rate reports.

The current budget in the Water Utility for the meter reading program is \$352,800. Eliminating the five existing meter reading positions (CUPE 15) and reassigning the remaining meter reading duties to 1.6 FTE Ops Worker positions in CUPE 1004 will reduce the annual meter reading cost to approximately \$170,000.

Converting a temporary Engineering Assistant II position in the Waterworks Operations Branch to regular full time will cost \$56,000 annually and it is proposed that this position be funded from the existing meter reading budget. Once the meter reading positions from CUPE 15 are eliminated, and funding has been re-allocated for the full time EA II position and for the 1.6 FTE Ops Worker positions, by 2010 the net ongoing savings in the meter reading budget will be approximately \$137,800 annually.

The change to the billing cycles will initially generate more processing work for the Revenue Services Branch, but it is anticipated that in the longer term some savings in billing support staff time could result from the efficiencies gained. A one-time revision is required to the Tempest Billing software which will cost \$20,000 for consulting services, and a temporary clerical support position at a cost of \$51,000 will be required for up to one year. Revenue Services will also require an on-going increase of \$5,000 in their expenses budget for the printing, postage, and envelopes, which will result from converting all existing metered customers to the quarterly billing cycle.

Savings from Improvements	2009	2010
Original Water Reading Budget	\$ 352,800	\$ 352,800
New Water Reading Budget Required	(170,000)	(170,000)
Cost of Engineering Assistant II (includes FB)	(56,000)	(56,000)
Cost of Temporary Revenue Services Clerk III (includes FB)	(51,000)	
Cost of Additional Billing	(5,000)	(5,000)
Tempest System Enhancement	(20,000)	
Savings from Meter Reading Vehicle Usage		16,000
Total Anticipated Savings	\$ 50,800	\$ 137,800

Funding for the additional expenses in Revenue Services, the Tempest software revisions and temporary help to implement the billing changes is available from the savings in the Water Utility operating budget for the meter reading program.

PERSONNEL IMPLICATIONS

With the AMR implementation, the remaining meter reading functions are a best fit operationally if the work is assigned to an existing Operations Worker classification in CUPE 1004, in the Meter Shop. Human Resource Services conducted a review and determined that the work should be allocated to the Operations Worker III classification.

Currently there are five CUPE 15 water meter reading positions, four of which are classified as Water Rates Inspector Is and a supervisor classified as a Water Rates Inspector III. Only three of the four Water Rates Inspector I positions are currently filled due to previous efficiencies gained from the implementation of the meter reading system. With the approval of the recommendations in this report the five existing positions (including the supervisor) will be eliminated and an equivalent of 1.6 FTEs will be increased in the Meter Shop CUPE 1004 employee group to take on the part time role for the remaining meter reading function. The employees currently in the Water Rates Inspector positions will have access to Layoff and Recall under the terms and conditions of the CUPE 15 collective agreement. Should these employees decide not to take advantage of their rights under the CUPE 15 collective agreement, the Waterworks Operations Branch has indicated to CUPE 15 that any of the existing Water Rates Inspectors who have not found a new position will be offered a position starting in the Meter Shop Section as Ops Worker IIs.

Engineering staff met with CUPE 15 and the existing meter readers on June 9th, 2008 and draft copies of this Council Report were provided to the union. Notice was given to CUPE 15 that Engineering intended to proceed with this Council Report recommending the elimination of the CUPE 15 Water Rates Inspector positions effective January 1st 2009, and that the meter reading function would be incorporated into the work of Ops Worker II and III's in the Meter Shop Section of Waterworks Operations. The existing meter readers are being supported in taking developmental and skills training courses to prepare them for transitioning to new positions within the City.

Engineering has also advised CUPE 1004 of the changes proposed in the meter reading function and will be following up with a meeting (pending approval of this report) to discuss porting of seniority if any of the existing meter readers wish to transfer into Ops Worker II positions in CUPE 1004.

Approval is also being sought for a full time Engineering Assistant II which has been funded in the Geographical Information System (GIS) and provides support to the operating maintenance databases, including the Infrastructure Management System (IMS). It has become apparent over the past decade that this is a critical position within the Branch and full time status is appropriate.

ENVIRONMENTAL IMPLICATIONS

The recommendations in this report support Strategic Plan objectives related to the Environment by reducing overall green house gas emissions and utilizing existing transit options.

The current Meter Reading program utilizes four cars to collect meter data and to address customer complaints. With the implementation of the radio read AMR equipment and the proposed revisions to the billing process we will significantly reduce vehicle trips and use.

Our current daily vehicle trips equate to approximately 900 trips per year at a cost of approximately \$40,000. Upon installation of additional radio read units under the next capital plan, the vehicle use for meter reading will be in the order of 100 trips per year at a cost of \$5,000 together with approximately 150 trips on the Canada Line to and from the Downtown core. It is anticipated that this reduction in vehicle trips will mean an eventual reduction of Green House Gases of about 75 tonnes per year. Over time the vehicle fleet for meter reading will drop from four existing cars down to just one vehicle.

CONCLUSION

Staff recommends the above changes in order to better utilize the technological advancements available through the Automated Meter Reading equipment and the Tempest billing software. These operational improvements are consistent with the City's commitment to sustainability as well as Engineering Services Strategic Plan goals of continuous improvement in service delivery and sustainable public works.

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Engineering will be working with The Director of Legal Services and Finance to submit the Water Utility Rates Report for Council this fall which will include specific changes to the Water Works By-Law 4848 (generally in accordance with those listed below) in order to change the billing cycle and eliminate the minimum consumption charge.

- Part 1 - Interpretation - review and revise the various clauses contained in the bylaw where reference to "Collector", "Engineer" and "Inspector" to better reflect best management practices.
- Frequency of Bills - the bill for metered water shall be computed at the rates and charges as prescribed in Schedule "D" and "E" for a three monthly (quarterly) period for all industrial, commercial and higher zoned residential properties.
- Schedule "D" - Charges for Metered Water Service - delete reference to Four and Two Monthly Periods and eliminate the minimum charge of 8 units per month for low or no consumption accounts
- Schedule "E" - Meter Service Charges - Per Two Month Period - delete reference to ½" or 17 mm size meters and amend the rate for meter charges to read - The following schedule shows the meter charge based on the size and type of meter, payable on each service, in addition to water consumption charges which will be calculated on the three month rate or portion thereof calculated as a daily rate and - delete all reference to Per Four or Two Month Period.
- Schedule "E" - Increase the Meter Service Charges for all sizes to compensate for the income loss from the elimination of the minimum charge.