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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER LOCAL SERVICES COMMITTEE
MEETING OF FRIDAY 28 OCTOBER 2011**

SUBJECT METER READING PROCESS

ISSUE

Customer water meters in the Magic Lake Estates Water Service Area are currently read by Capital Regional District (CRD) staff based in Greater Victoria, while a meter reading system purchased in 2008 using Southern Gulf Islands Gas Tax funding remains unused.

BACKGROUND

In May 2008, the CRD Board assigned Community Works Fund (Gas Tax) funding of \$265,700 toward a system for efficiently reading water meters in the five CRD water service areas in the Southern Gulf Islands Electoral Area (SGI). The funding provided for the purchase of radio transceivers for each customer water meter in the five water service areas, and the purchase and programming of meter reading equipment designed to be mounted in a vehicle. It was intended that the meter reading equipment be maintained in a central location by CRD operations staff, and deployed to each system as required to read meters.

For Magic Lake Estates, Gas Tax funding of \$180,500 was allocated for the purchase of 1,100 meter transceivers at \$123 each, 75 water meters at \$500 each, and a 20% (\$7,700) share in the meter reading equipment package. Meters were installed, including radio reading transceivers, between 2008 and 2010.

In 2010, the management of all water and sewer services in the CRD was consolidated under the new Integrated Water Services department. As a result, meter reading staff and equipment used in Greater Victoria became readily available to the local services, which had previously been managed under a separate department. In order to begin reading the SGI meters by radio, the existing meter reading vehicle and technician were dispatched to each island to read the meters. The reading cycles in 2010 and 2011 to date have established a baseline cost of reading the meters, enabling alternatives to be considered including the deployment of the equipment purchased using the Gas Tax funds.

A business case analysis of three alternatives for reading the meters is provided in Attachment 1.

ALTERNATIVES

1. That meter reading services continue to be provided by staff and vehicle from the Greater Victoria area; and that the Magic Lake Estates Water and Sewer Local Services Committee receive this report.
2. That the Magic Lake Estates Water and Sewer Local Services Committee direct staff to include in the 2012 budget a Single Supplementary of \$11,669 for the Magic Lake Estates share of the cost to establish a Southern Gulf Islands Electoral Area radio reading vehicle to be based on Pender Island and train local operations staff on its use, and a Continuous Supplementary of \$130 for an increase in the annual cost of meter reading.
3. That the Magic Lake Estates Water and Sewer Local Services Committee direct staff to include in the 2012 budget a Single Supplementary of \$15,000 to establish a Magic Lake Estates radio reading vehicle and train local operations staff on its use, and a Continuous Supplementary of \$685 for an increase in the annual cost of meter reading.

IMPLICATIONS

Alternative 1

Water meters are currently read in the Magic Lake Estates Water Service Area every three months using a vehicle and staff based in Greater Victoria, at an estimated annual cost of \$2,568. The meter reading equipment purchased using Gas Tax funding allocated to five SGI water services remains unused, but has value to every water service area with radio read meters as replacement equipment in the event of a problem with the equipment currently in use. The SGI water service areas benefit from sharing the costs of meter reading equipment and specialized skills with the Juan de Fuca Water Distribution Local Service, which has about 20,000 connections. The benefit of this economy of scale outweighs the cost of providing the service from Victoria to each island.

Under Alternative 1, the cost to set up and complete an extra reading cycle for Magic Lake Estates (e.g. for leak detection, or to obtain more information about seasonal variations in customer water usage) is estimated to be \$900.

Alternative 2

For this alternative, it is assumed that a meter reading vehicle and staff based on Pender Island would travel to Galiano, Mayne and Saturna Islands quarterly to read meters in the other SGI water service areas as well as Magic Lake Estates. Due to the limitations of ferry schedules, the annual costs for each of the other service areas would be greater than the status quo. There would also be an estimated \$2,500 annual cost for a software license for the second meter reading system and for Corporate Services staff support for the system. This new annual cost would be shared on the basis of metered connections between the five SGI water services. As a result, the annual cost to Magic Lake Estates would also exceed the status quo. An initial cost estimated to be \$15,000 to set up an existing Magic Lake Estates vehicle for meter reading and to train staff would also be shared among the five services based on the number of service connections. The overall cost of Alternative 2 over five years would be about double that of Alternative 1 for Magic Lake Estates and for the SGI water services as a whole. Alternative 2 can be implemented only if all five SGI water service committees recommend budget increases to cover the additional costs.

Under Alternative 2, the cost to set up and complete an extra reading cycle for Magic Lake Estates is estimated to be about \$450.

Alternative 3


The annual cost to read Magic Lake Estates water meters using local staff and equipment would be about 50% greater than the status quo, and the total cost over five years (including initial costs) would be nearly triple the status quo. As in Alternative 2, the cost to set up and complete an extra reading cycle for Magic Lake Estates is estimated to be about \$450. Implementing Alternative 3 would not be contingent on budget increases in the other SGI service areas.

CONCLUSION


The current practice of using centralized staff and equipment based in Greater Victoria to read the Magic Lake Estates water meters is the most efficient and effective means of providing the service.

RECOMMENDATION

That the Magic Lake Estates Water and Sewer Local Services Committee receive the report for information.



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Concurrence

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BUSINESS CASE ANALYSIS

READING WATER METERS IN THE SOUTHERN GULF ISLANDS ELECTORAL AREA

ALTERNATIVES**1. Status Quo: Centralized meter reading staff and equipment based in Greater Victoria****Costs:**

There is no initial cost under the status quo alternative, as existing equipment and staff are utilized to provide the service. The annual costs are 2012 budget values, based on 2011 actuals. The estimated total annual cost to CRD Southern Gulf Islands water services is \$5,692, or \$28,460 over a five years.

STATUS QUO: VICTORIA BASED METER READING	Lyall Harbour	Skana	Surfside	Magic Lake Estates	Sticks Allison*	Total
Initial cost (vehicle setup and training)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual software license and support cost	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual labour cost (2012 budget)	\$ 1,184	\$ 332	\$ 852	\$ 2,368	\$ 500	\$ 5,236
Annual travel cost (2012 budget)	\$ 132	\$ 37	\$ 87	\$ 200	\$ -	\$ 456
Total Annual Cost	\$ 1,316	\$ 369	\$ 939	\$ 2,568	\$ 500	\$ 5,692
Connections	146	42	64	1002	34	1288
Annual cost share based on connections	\$ 645	\$ 186	\$ 283	\$ 4,428	\$ 150	\$ 5,692
Five-year total cost (including initial cost)	\$ 6,580	\$ 1,845	\$ 4,695	\$ 12,840	\$ 2,500	\$ 28,460

* Meters are read manually by the local operator. The meter reading and data entry cost is estimated to be approximately \$125 per cycle, or about \$500 annually.

Pros:

- The staff meter reader is well trained, experienced and proficient in reading meters using the system installed in the Southern Gulf Islands (SGI), and is able to troubleshoot and repair the system if a meter does not read correctly.
- Staff training, overhead and equipment are shared with the much larger Juan de Fuca Water Distribution Local Service (JdF), rendering these costs negligible for the SGI services.
- If this approach is adopted permanently, the meter reading equipment purchased for SGI would be retained as a backup system, representing the SGI contribution to the startup and overhead costs of the meter reading service over a 20-year life cycle.

Cons:

- Reading the meters outside the planned quarterly cycles (e.g. for leak detection, or to obtain more information about seasonal variations in customer water usage) is relatively expensive. The cost to complete an extra reading cycle (the meter reader's labour, travel cost, and an estimated four hours of administrative labour to configure the read and process the data) is estimated to be \$900 for Magic Lake Estates.

2. SGI meter reading staff and equipment based on Pender

Costs:

In order to provide meter reading service from Pender, the reading equipment would need to be mounted in a vehicle and configured for use, at an estimated cost of \$5,000. At least one local operator would require training estimated at one week initially with follow-up support throughout the first year, at an estimated cost of \$10,000. The estimated initial cost of \$15,000 would be shared among the service areas based on the number of metered connections. The Magic Lake Estates share of this cost would be \$11,669.

The annual cost would include a software license fee of \$1,500 and an estimated \$1,000 for staff support from Finance, both of which would be shared based on metered connections. Ferry service from Pender to the other islands is somewhat less efficient than from Swartz Bay. As a result, the travel and labour costs for Mayne, Galiano and Saturna would increase under this scenario. The estimated total cost to CRD Southern Gulf Islands water services would be \$9,506 annually, and \$62,532 over five years with initial costs included.

PENDER BASED METER READING	Lyll Harbour	Skana	Surfside	Magic Lake Estates	Sticks Allison	Total
Initial cost (vehicle setup and training)	\$ 1,700	\$ 489	\$ 745	\$ 11,669	\$ 396	\$ 15,000
Annual software license and support cost	\$ 283	\$ 82	\$ 124	\$ 1,945	\$ 66	\$ 2,500
Annual labour cost	\$ 2,887	\$ 497	\$ 758	\$ 753	\$ 1,381	\$ 6,276
Annual travel cost	\$ 365	\$ 72	\$ 110	\$ -	\$ 183	\$ 730
Total annual cost (excluding initial cost)	\$ 3,536	\$ 651	\$ 992	\$ 2,698	\$ 1,629	\$ 9,506
Connections	146	42	64	1002	34	1288
Annual cost share based on connections	\$ 1,078	\$ 310	\$ 472	\$ 7,396	\$ 251	\$ 9,506
Five-year total cost (including initial cost)	\$19,378	\$ 3,745	\$ 5,707	\$ 25,159	\$ 8,543	\$ 62,532

Pros:

- The cost to complete an extra meter reading cycle at Magic Lake Estates between planned quarterly reads (e.g. for leak detection, or to obtain more information about seasonal variations in customer water usage) would be reduced from the status quo to an estimated \$450. The cost for other service areas would not be reduced from the status quo.
- Eight vehicle trips from View Royal to the SGI annually, and resulting greenhouse gas emissions, would be eliminated.

Cons:

- Due to the complexity of the reading system, there is a significant risk of unplanned costs to support or back up local operators in the use of the system, or to troubleshoot problems.
- The full cost of a meter reading system and trained staff would be borne by the 1,288 customers of the SGI water services.
- Operator skills may require upgrading. The required qualifications for the Greater Victoria meter reader include a one-year business administration certificate. The operator would need to be able to work directly with the meter reading equipment and software vendor to troubleshoot problems.
- There is a significant risk of damage to the meter reading equipment, and repair or replacement costs can easily exceed \$20,000.

3. Dedicated meter reading staff and equipment for Pender, and status quo for others

Costs:

Under this scenario, Magic Lake Estates would bear the full cost of configuring a vehicle and training local operators to read meters on Pender. Meter reading service, and costs, for the other services would continue as described under Alternative 1. The estimated total cost to CRD Southern Gulf Islands water services would be \$6,377 annually, and \$46,886 over five years with initial costs included.

DEDICATED METER READING VEHICLE ON PENDER, VICTORIA BASED READING FOR OTHERS	Lyll Harbour	Skana	Surfside	Magic Lake Estates	Sticks Allison*	Total
Initial cost (vehicle setup and training)	\$ -	\$ -	\$ -	\$ 15,000	\$ -	\$ 15,000
Annual software license and support cost	\$ -	\$ -	\$ -	\$ 2,500	\$ -	\$ 2,500
Annual labour cost	\$ 1,184	\$ 332	\$ 852	\$ 753	\$ 500	\$ 3,621
Annual travel cost	\$ 132	\$ 37	\$ 87	\$ -	\$ -	\$ 256
Total annual cost (excluding initial cost)	\$ 1,316	\$ 369	\$ 939	\$ 3,253	\$ 500	\$ 6,377
Connections	146	42	64	1002	34	1288
Annual cost share based on connections	\$ 723	\$ 208	\$ 317	\$ 4,961	\$ 168	\$ 6,377
Five-year total cost (including initial cost)	\$ 6,580	\$ 1,845	\$ 4,695	\$ 31,266	\$ 2,500	\$ 46,886

* Meters are read manually by the local operator. The meter reading and data entry cost is estimated to be approximately \$125 per cycle, or about \$500 annually.

Pros:

- The cost to complete an extra meter reading cycle at Magic Lake Estates between planned quarterly reads would be reduced from the status quo to an estimated \$450. The cost for other service areas would not be reduced from the status quo.
- Four vehicle trips to Pender annually, and resulting greenhouse gas emissions, would be eliminated.

Cons:

- Due to the complexity of the reading system, there is a significant risk of unplanned costs to support or back up local operators in the use of the system, or to troubleshoot problems.
- The full cost of a meter reading system and trained staff would be borne by the 1,002 customers of the Magic Lake Estates Water Service.
- Operator skills may require upgrading. The required qualifications for the Greater Victoria meter reader include a one-year business administration certificate. The operator would need to be able to work directly with the meter reading equipment and software vendor to troubleshoot problems.
- There is a significant risk of damage to the meter reading equipment, and repair or replacement costs can easily exceed \$20,000.