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MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
Notice of Meeting on **Tuesday, September 8, 2015 at 9:30 am**
Goldstream Conference Room, 479 Island Highway, Victoria, BC

J. Petrie (Chair)
Director D. Howe

M. Steel
P. Watson (Vice Chair)

K. Heslop
A. Wilson

J. Gill

AGENDA

1. Approval of Agenda
2. Adoption of Minutes of July 14, 2015
3. Review of Action List
4. Chart Drive Septic System Upgrade Cost Estimates and Magic Lake Estates Sewer Servicing (information report)
5. Chart Drive Preliminary Alternative Assessment (verbal report)
6. Wastewater Infrastructure Replacement Project Update – Grant Application Response and Next Steps (staff report)
7. Draft 2016 Operating and Capital Budgets (staff report)
8. Water Quality Update – Magic Lake Estates (information report)
9. Water and Wastewater Operations Report – July and August 2015 (information report)
10. Water System Capital Improvement Project Update (information report)
11. Motion to Close the Meeting
That the Magic Lake Estates Water and Sewer Committee close the meeting in accordance with the Community Charter, Part 4, Division 3, 90(1)(g) *litigation or potential litigation affecting the municipality.*
12. Correspondence
13. New Business
14. Adjournment

To ensure quorum, advise Lorrie Siemens 250.360.3087 or lsiemens@crd.bc.ca if you cannot attend.



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**Minutes of a Meeting of the Magic Lake Estates Water and Sewer Committee
Held Tuesday, July 14, 2015 in the Main Conference Room, 479 Island Highway,
Victoria, BC**

PRESENT: **Committee Members Representing Sewer:** J. Petrie (C), A. Wilson, J. Gill
Committee Members Representing Water: K. Heslop, P. Watson. M. Steel
Representing Water and Sewer: Director D. Howe
Staff: P. Sparanese, Senior Manager, Infrastructure Engineering and Operations, S. Mason, Manager, Water Engineering and Planning, C. Gottfred, Manager, Wastewater Engineering and Planning, C. Moch, Manager, Water Quality Operations, D. Robson, Manager, Saanich Peninsula and Gulf Islands Operations, J. Marr, Project Engineer, D. Puskas, Project Engineer, L. Siemens (recorder)
Also present: Wally Foster, Magic Lake Property Owners Society

The meeting was called to order at 9:30 am

1. Approval of Agenda

The following item was added under New Business:

- Property Taxes

MOVED by M. Steel, **SECONDED** by P. Watson,
That the agenda be approved as amended.

CARRIED

2. Adoption of Minutes of June 9, 2015

MOVED by M. Steel, **SECONDED** by P. Watson,
That the minutes of the June 9, 2015 meeting be adopted as previously circulated.

CARRIED

3. Presentations/Delegations

Wally Foster verbally presented a proposal for the committee to investigate the use of composting toilets and Ecocyclet grey water re-use for the Magic Lake sewer area. Mr. Foster suggested that the CRD could run a pilot project.

A discussion and question and answer period followed.

MOVED by J. Gill, **SECONDED** by A. Wilson,

1. That CRD staff investigate the costs of a centralized and individual disposal system using Ecocyclet system with and without grey water re-use and bring a report to the committee at the meeting in September; and

2. That the Magic Lake Estates Water and Sewer Committee authorize up to \$15,000 to prepare the report.

CARRIED
Steel opposed

4. Review of Action List

The action list was reviewed and updated.

5. Overview of Referendum – Lessons Learned

A discussion was held regarding the recent referendum for the wastewater infrastructure replacement project. Several suggestions to improve communication and to educate the public to raise the number of voters for future referendums were discussed.

6. Wastewater Infrastructure Replacement Project Update – Referendum Results and Next Steps

C. Gottfred presented a written report.

MOVED by A. Wilson, **SECONDED** by K. Heslop,
That the Magic Lake Estates Water and Sewer Committee:

1. Receive the results of the Referendum; and
2. Wait for the New Building Canada Fund – Small Communities Fund (SCF) grant announcements, anticipated in the fall of 2015, and the staff report on composting toilets before proceeding with any of the wastewater infrastructure replacement project improvements.

CARRIED
Steel opposed

7. Water and Wastewater Operations Report

D. Robson presented a written report.

MOVED by M. Steel, **SECONDED** by K. Heslop,
That the Magic Lake Estates Water and Sewer Committee receive the report for information.

CARRIED

8. Water Conservation Bylaw

Currently water conservation is voluntary in the Magic Lake Estates water service area using CRD Bylaw 3061 which is a bylaw governing the regional water service area. A suggestion to create a water conservation bylaw for Magic Lake Estates was proposed by the Chair.

MOVED by J. Gill, **SECONDED** by P. Watson,
That the Magic Lake Estates Water and Sewer Committee direct staff to prepare a staff report on implications and costs to administer and enforce a water conservation bylaw for Magic Lake Estates.

CARRIED

9. Water System Capital Improvement Project Update

S. Mason presented a written report. An updated financial summary was distributed and reviewed.

MOVED by P. Watson, **SECONDED** by A. Wilson,
That the Magic Lake Estates Water and Sewer Committee receive the report for information.

CARRIED

10. Motion to Close the Meeting

MOVED by M. Steel, **SECONDED** by A. Wilson,
That the Magic Lake Estates Water and Sewer Committee close the meeting in accordance with the Community Charter, Part 4, Division 3, 90(1)(g) litigation or potential litigation affecting the municipality.

CARRIED

The Magic Lake Estates Water and Sewer Committee closed the meeting at 12:50 pm and resumed in open session at 1 pm.

11. Correspondence

There was no correspondence.

12. New Business

Property Taxes

Staff were requested to clarify the use of property taxes (Water 1). D. Robson will contact CRD financial services and provide the information to the committee.

13. Adjournment

MOVED by M. Steel, **SECONDED** by A. Wilson,
That the meeting be adjourned at 1:10 pm.

CARRIED



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**MAGIC LAKE ESTATES WATER AND SEWER LOCAL SERVICE COMMITTEE
ACTION LIST**

	TASK	ACTION	STATUS
July 9, 2013			
1.	Negotiate for R/W over dam with property owners.	J. Petrie	ongoing
June 9, 2015			
2.	Send out Sewer Savvy brochure with the water bills.	D. Robson	will be issued with 3 rd Qtr bills



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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, SEPTEMBER 8, 2015**

SUBJECT CHART DRIVE SEPTIC SYSTEM UPGRADE COST ESTIMATES AND MAGIC LAKE ESTATES SEWER SERVICING

ISSUE

To address two questions from the 2014 Annual General Meeting (AGM) regarding the Chart Drive septic system upgrade cost estimates and Magic Lake Estates sewer servicing requirements and boundaries.

BACKGROUND

2014 AGM Questions

On Saturday, August 15, 2015, the CRD held an AGM to inform the residents and property owners in the Magic Lake Estates Sewer Local Service area on the operation of the water and sewer system and report the results of the referendum for the purpose of administering, planning, designing, acquiring and constructing the capital replacement and upgrade of the Magic Lake Estates Wastewater System. The AGM was well attended with approximately 76 attendees. At the AGM, the following questions/comments were raised. The following responses have been prepared:

1. Why did the cost estimates for the Chart Drive options vary so much over time?

Initial cost estimates to for the new septic field option and pump station & forcemain option were developed on a conceptual basis and were not consistently itemized to include all direct and indirect costs. Subsequently, the cost estimates were revised upon further site investigations and normalized to ensure that both options included the same indirect costs (ie. administration, engineering, contingency, etc.). The history of the Chart Drive septic system replacement costing is illustrated in Table 1 – Chart Drive Replacement Scope & Cost Estimate History.

In the September 15th, 2014 staff report, Magic Lakes Estates Wastewater System Infrastructure Replacement – Update, three options (attached) for the Magic Lake Estates Wastewater System Infrastructure Replacement were presented. The options were:

Option 1 - \$6,050,000 – Addressing key infrastructure deficits, including the \$760,000 for the Chart Drive replacement.

Option 2 - \$11,690,000 – Address all issues indicated in the 2012 Stantec report, including the \$760,000 for the Chart Drive replacement.

Option 3 - \$1,630,000 – Address only immediate risks, including the \$760,000 for the Chart Drive replacement.

Since September, 2014, staff have been consistently using the budget figure of \$760,000 for the pump station and forcemain solution for Chart Drive.

2. Some community members inquired about the Magic Lake Estates Sewer Local Services Area boundaries, and whether a resident had to connect to the wastewater system if it crossed their property frontage.

The initial boundaries were set by the establishment bylaw, CRD Bylaw No. 1873 and subsequently amended based on inclusions and exclusions. The current boundary for the Magic Lake Estates Sewer Local Services Area is attached as Figure 1 for reference.

If a property is not within the Magic Lake Estates Sewer Local Service Area, and a wastewater collection main runs along the frontage, the property is not obligated to connect to the wastewater collection main under CRD bylaws pertaining to the local service area. However, other authorities having jurisdiction (i.e. Islands Trust, Island Health, etc) may have different policies and regulations requiring connection. However, as per CRD Bylaw No. 1508, properties within the Magic Lake Estates Sewer Local Service Area require connection to the sewerage system if it is possible.

Properties that are not currently in the Magic Lake Estates Sewer Local Service Area but would like to connect to the sewer service have to make an application to the CRD and Magic Lake Estates Water and Sewer Committee to include their property in the service area. It is up to the property owner to initiate the application process and it is solely up to the MLEWSC to decide whether to approve the application or not. Costs associated with additional infrastructure or downstream upgrades to facilitate the applicant are borne by the applicant.

ALTERNATIVES

Alternative 1

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

Alternative 2

That the Magic Lake Estates Water and Sewer Committee:

- (a) Receive the staff report for information; and
- (b) Request additional information from staff.

IMPLICATIONS

Alternative 1 – No implications

Alternative 2 – Staff will reply to the Committee's request for additional information with a staff report at the next Committee meeting.

CONCLUSION

The Chart Drive septic system upgrade cost estimate has been an evolution from the conceptual stage to the current budget estimate of \$760,000. The \$760,000 budget for the Chart Drive replacement has been included in all three options presented to the Committee and public when seeking guidance on which option to choose for the referendum.

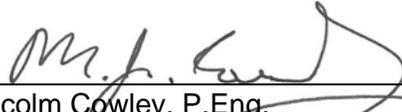
Magic Lake Estates Sewer Local Service Area servicing is based on inclusion within the service area. Properties seeking wastewater servicing have to initiate an application for connection if within the service area, or application for inclusion if outside the service area. Other authorities may dictate connection requirements.

RECOMMENDATION

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



Dale Puskas, P.Eng.
Acting Manager, Wastewater Engineering
and Planning



Malcolm Cowley, P.Eng.
Senior Manager, Infrastructure Engineering

Concurrence



Ted Robbins, B.Sc., C.Tech.
General Manager, Integrated Water Services
Concurrence

DP:mm

- Attachments: 1: Chart Drive Replacement Scope & Cost Estimate History
 September 15, 2014 Staff Report - Option 1 Budget
 September 15, 2014 Staff Report - Option 2 Budget
 September 15, 2014 Staff Report - Option 3 Budget
 Magic Lake Estates Sewer Local Service Area Boundaries – Figure 1



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TABLE 1 - CHART DRIVE REPLACEMENT SCOPE & COST ESTIMATE HISTORY

	April 25, 2014 Class 'E' (Construction Cost Only)	June 17, 2014 Class 'D' (Conceptual Project Cost)	August 12, 2014 Class 'C' (Preliminary Project Cost)	September 15, 2014 Revised Class 'C' (Preliminary Project Cost)
Replace Septic Field	\$400,000 (This was based on a simple replacement and did not include design, administration and contingencies). Recommended additional study to verify assumptions.	\$700,000 (\$300,000 was added due to results of hydrogeologic study and included costs for design, administration and contingencies)	\$721,500 (\$21,500 was added due to recommended site drainage improvements)	\$721,500
Pump Station & Forcemain	\$800,000 (This was based on a simple construction cost estimate and did not include costs for design, administration and contingencies)	\$1,100,000 (\$300,000 was added due to assumption/costs of removing 50% of trench rock; and included costs for design, administration and contingencies)	\$742,000 (\$358,000 was removed due to revised trench rock estimate based upon air-track drilling along forcemain alignment)	\$760,000 (\$18,000 was added for recommended site drainage improvements)



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Date: August 28, 2014
 Prepared by: Craig Gottfred, P.Eng.
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**MAGIC LAKE ESTATES WASTEWATER UTILITY
 CAPITAL REPLACEMENT REQUIREMENTS**



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ALTERNATIVE 1

Description	Details	2011		2015		Estimated Construction	Contingency (%)	Contingency (\$K)	Subtotal	Engineering (%)	Engineering (\$K)	Admin (%)	Admin (\$K)	Operations (%)	Operations (\$K)	TOTAL
		2011	2015	2011	2015											
New Chart Drive Pump Station & FM	Existing Chart Drive Septic Field has failed and a Health Order has issued to cease discharge to the field. Recommend replacement with a pump station and 860m forcemain from Chart Dr along Gallison Way to Gunwhale Rd to Spigglass Rd and connect to gravity system.	360,000	459,000	30	134,000	593,000	18	106,740	5	29,650	5	29,650	5	29,650	760,000	
I & I Program Phase 1	Inflow / Infiltration program includes CCTV, flow monitoring and hydraulic analysis, smoke testing and field inspection of manholes.	140,000	164,032	10	16,403	180,436	10	18,044	5	9,022	5	9,022	5	9,022	220,000	
Schooner WWTP Aeration/Clarifier Tank	The existing WWTP does not have capacity to handle peak flows. The plant is also at end of life. Recommend a new larger aeration/clarifier as an interim measure to mitigate the peak flow issue.	1,000,000	1,171,659	30	351,498	1,523,157	25	380,789	5	76,158	5	76,158	5	76,158	2,060,000	
Replace Schooner Pump Station	Replace Schooner Pump Station	271,000	317,520	30	95,256	412,776	25	103,194	5	20,639	5	20,639	5	20,639	560,000	
Buck Lake Replacement	Using pipe bursting to upgrade the existing pipe	250,000	292,915	30	87,874	380,789	20	76,158	5	19,039	5	19,039	5	19,039	500,000	
Privateers Rd	Replace existing 112m of 150mm AC pipe with 200mm PVC pipe.	70,000	82,016	30	24,605	106,621	20	21,324	5	5,331	5	5,331	5	5,331	140,000	
New Cannon Pump Station & Forcemain	Peak flows at the existing Cannon WWTP often exceed the permitted discharge limit. As well, the plant is at end of life. Recommend replacement with a new pump station and 600m forcemain.	870,000	1,020,000	30	306,000	1,326,000	25	331,500	5	66,300	5	66,300	5	66,300	1,800,000	
TOTAL BUDGET															6,040,000	



Date: August 28, 2014
 Prepared by: Craig Gottfred, P.Eng.
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**MAGIC LAKE ESTATES WASTEWATER UTILITY
 CAPITAL REPLACEMENT REQUIREMENTS**

ALTERNATIVE 2

Description	Details	Cost - State		Contingency (10%)	Contingency (30%)	Subtotal	Engineering (%)	Engineering (\$)	Admin (5%)	Admin (\$)	Operations (%)	Operations (\$)	TOTAL
		2011	2015 \$										
New Chart Drive Pump Station & FM	Existing Chart Drive Septic Field has failed and a Health Order has issued to cease discharge to the field. Recommend replacement with a pump station and 860m forcemain from Chart Dr along Galleon Way to Gunwhale Rd to Spyglass Rd and connect to gravity system.	360,000	459,000	30	134,000	593,000	18	106,740	5	29,650	5	29,650	760,000
I & I Program Phase 1	Inflow / Infiltration program includes CCTV, flow monitoring and hydraulic analysis, smoke testing and field inspection of manholes.	140,000	164,032	10	16,403	181,000	10	18,000	5	9,000	5	9,000	220,000
Buck Lake Replacement	Using pipe bursting to upgrade the existing pipe	250,000	292,915	30	87,874	381,000	20	76,200	5	19,050	5	19,050	500,000
Privateers Rd	Replace existing 112m of 150mm AC pipe with 200mm PVC pipe.	70,000	82,016	30	24,605	106,621	20	21,324	5	5,331	5	5,331	140,000
Replace Schooner Pump Station	Replace Schooner Pump Station	271,000	317,520	30	95,256	415,000	25	105,000	5	18,500	5	18,500	560,000
New Cannon Pump Station & Forcemain	Peak flows at the existing Cannon WWTP often exceed the permitted discharge limit. As well, the plant is at end of life. Recommend replacement with a new pump station and 600m forcemain.	870,000	1,020,000	30	306,000	1,326,000	25	340,000	5	67,000	5	67,000	1,800,000
Annual Pipe Replacement Program (3 years)	Replace 3.5 km of AC pipe over the next 19 years at 200m per year with an estimated total cost of \$3.4M with average annual cost of \$170,000		315,000	30	94,500	409,500	25	102,375	5	20,475	5	20,475	560,000
New Schooner WWTP	A New sequencing batch reactor (SBR) plant adjacent to the existing plant with a capacity of 536 m ³ /day maximum monthly flow, peak flows of over 1,200 m ³ /day	2,150,000	3,526,000	30	1,057,800	4,583,800	25	1,145,950	5	229,190	5	229,190	6,190,000
Upgrade 5 Lift Stations	Replace or upgrade Caspan, Cullass, Buchaneer, Masthead, Galleon Lift Station.		551,770	30	165,531	717,301	25	179,325	5	35,865	5	35,865	970,000
TOTAL BUDGET												11,700,000	





**MAGIC LAKE ESTATES WASTEWATER UTILITY
 CAPITAL REPLACEMENT REQUIREMENTS**

Date: Sep 3, 2014
 Prepared by: Craig Gottfred, P.Eng.
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ALTERNATIVE 3

Description	Details	Comments on Condition	Funding Source	Year Required	Cost - \$/meter		Estimated Construction Contingency (%)	Subtotal	Engineering (%)	Admin (%)	Operation Staff (%)	TOTAL		
					2011	2015								
New Chart Drive Pump Station & PM	Existing Chart Drive Septic Field has failed and a Health Order has issued to cease discharge to the field. Recommend replacement with a pump station and 860m forcemain from Chart Dr along Gallison Way to Gunwhale Rd to Spynglass Rd and connect to gravity system.	Existing Septic Field has failed and a Health Order issued.	Capital	2015	360,000	459,000	30	593,000	18	106,740	5	29,650	29,650	760,000
I & I Program Phase 1	Inflow / Infiltration program includes CCTV, flow monitoring and hydraulic analysis, smoke testing and field inspection of manholes.	Existing information is out of date.	Capital	2013-2018	140,000	164,032	10	180,436	10	18,044	5	9,022	9,022	220,000
Schooner WWTP Aeration Tank Eval	Engineering study to evaluate usable life of aeration tanks		Capital	2012	14,000	16,403	10	18,044	5	902	5	902	902	21,000
Buck Lake Replacement	Using pipe bursting to upgrade the existing pipe		Capital	2013-2018	250,000	292,915	30	380,789	20	76,158	5	19,039	19,039	500,000
Priveteers Rd	Replace existing 112m of 150mm AC pipe with 200mm PVC pipe.	Pipe is undersized. Confirm new pipe size prior to design.	Capital	2013-2018	70,000	82,016	30	106,621	20	21,324	5	5,331	5,331	140,000
FUTURE REPLACEMENTS & EXPANSION												TOTAL COST	TOTAL BUDGET	1,641,000

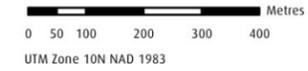


Magic Lake Estates Wastewater Service Area

Figure 1



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DISCLAIMER

Important This map is for general information purposes only. The Capital Regional District (CRD) makes no representations or warranties regarding the accuracy or completeness of this map or the suitability of the map for any purpose. **This map is not for navigation.** The CRD will not be liable for any damage, loss or injury resulting from the use of the map or information on the map and the map may be changed by the CRD at any time.

August 2015 | Magic Lake Estates Wastewater Service Area.mxd | gis@crd.bc.ca



**PROPOSED
FORCEMAIN
ALIGNMENT**

Magic Lake Estates Wastewater Service Area



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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, SEPTEMBER 8, 2015**

**SUBJECT WASTEWATER INFRASTRUCTURE REPLACEMENT PROJECT UPDATE –
GRANT APPLICATION RESPONSE AND NEXT STEPS**

ISSUE

To present the response received on the New Building Canada Fund – Small Communities Fund (NBCF-SCF) grant application and identify next steps to advance the Wastewater Infrastructure Replacement Project.

BACKGROUND

New Building Canada Fund – Small Communities Fund Grant Update

On Thursday, August 20, 2015, the Capital Regional District (CRD) received a letter (attached) from the Oversight Committee, Small Communities Fund informing the CRD that the Magic Lake Estates Infrastructure Replacement Project was not selected for funding. The letter confirmed that the funding program had been oversubscribed, receiving far more applications than could be accommodated. The letter did indicate that there would be second intake for receiving grant applications again, but the date for the second intake was not announced.

Infrastructure Replacement Project Next Steps

Based on the results for both the referendum and the grant, staff have reviewed all of the wastewater infrastructure renewal projects that have been presented in past reports and re-prioritized them in order of priority along with potential funding source options as shown in the following table.

Priority Ranking	Project Description	Estimated Cost (in 2015)	Schedule (target completion)	Funding Source Option
Phase 1 Highest Priority	Chart Drive Septic System Replacement	\$760,000	2016	Capital Requisition (Bylaw 1873)
Phase 2 High Priority	Upgrade 325m of pipe along Buck Lake	\$387,000	2017	Capital Requisition or Alternative Approval Process or Referendum
	Upgrade 112m of pipe on Privateers Road	\$133,000		
	Ultra sonic Testing of Schooner Clarifier & Aeration Tanks	\$20,000		
	Phase 1 – Inflow & Infiltration (I&I) Reduction Program	\$217,000		
Subtotal Phase 1 & 2		\$1,626,000		

Priority Ranking	Project Description	Estimated Cost (in 2015)	Schedule (target completion)	Funding Source Option
Phase 3 High Priority (2 nd Tier)	Annual Pipe Replacement Program (3 year duration)	\$512,000	2018-2020	Alternative Approval Process or Referendum
	Upgrade 5 Lift Stations	\$1,000,000		
Subtotal Phase 3		\$1,512,000		
Phase 4	Upgrade Schooner Lift Station	\$557,000	2020- 2025	Alternative Approval Process or Referendum
	Replace Cannon WWTP with Pump Station/Forcemain	\$1,826,000		
	Replace Clarifier & Aeration Tank at Schooner WWTP OR New Schooner WWTP	\$2,056,000 OR \$6,189,000		
Subtotal Phase 4		\$8,572,000*		

*New Schooner WWTP was used to determine Subtotal of Phase 4

All of the above projects were identified in the *Magic Lake Estates Sewerage System – Asset Condition Evaluation and Engineering Study* in 2012.

Phase 1 - Chart Drive Septic System Replacement

The Chart Drive septic system has failed and needs to be replaced. Since April 14, 2014, CRD operations staff have been pumping and hauling sewage from the septic tank to one of the pump stations on the Schooner Cove WWTP system at a cost of about \$700 to \$1,000 per week. This is financially unsustainable. At the August 12, 2014 Committee meeting, the recommended solution for Chart Drive was to replace it with a permanent pump station and forcemain to convey wastewater to the Schooner Cove WWTP.

This project was then included as part of the comprehensive \$6.05 million dollar wastewater program that went to a referendum and was voted down on June 27, 2015. Therefore, at the July 14, 2015 Committee meeting staff recommended to proceed with the Chart Drive pump and forcemain solution using \$190,000 from the Capital Reserve Fund and \$570,000 from a one-time parcel tax lift, but the recommendation was tabled. Instead, staff were requested to investigate other alternative solutions and were provided with \$15,000 from the Community Works Fund to retain a consultant to undertake the assessment. The scope of work included assessing the pros and cons of other sewage treatment/disposal technologies and to compare the capital, O&M, lifecycle and net present value costs. The draft findings of this study will be verbally presented by the consultant at the September 8, 2015 Committee meeting and a subsequent report will be made public once it is finalized.

Phase 2 Projects

The projects listed in Phase 2 are a high priority based the following reasons.

The undersized pipes along Privateers Road and Buck Lake can surcharge and have overflowed under peak flow conditions which create environmental impacts and public health concerns, especially since overflows into Buck Lake can contaminate the drinking water source. In addition, if I&I can be reduced, then capacity can be freed up to prevent overflows not only in the collection system but also at the WWTP. Also, it is critical to know what the structural condition is of the existing clarifier and aeration tanks at Schooner Cover WWTP so that appropriate plans can be put in place to prevent a catastrophic structural failure.

Phase 3 Projects

The projects listed in Phase 3 include 3 years of annual pipe replacement and various upgrades to five lift stations. These are very important projects and they need to commence by 2018 or sooner in order to prevent potential pipe collapses and lift station failures.

Phase 4 Projects

The timing and scope of the Schooner and Cannon WWTP's could possibly change as a result of new and innovative treatment technologies. Therefore, it may be prudent to investigate alternative solutions and approaches for treating wastewater, including a cost-benefit analysis on re-using treated water, prior to initiating the replacement of Schooner and Cannon WWTP's.

Funding Source Options

The following funding options are available for consideration to continue advancement of the various project phases:

- 1) Reserve funds (partial funding only);
- 2) Capital requisition (parcel tax increase over one year); or
- 3) Alternative approval process (AAP); or
- 4) New referendum.

There are two reserve funds with the following balances:

	Estimated Actual Balance at end of 2015
Capital Reserve Fund	\$ 248,282
Equipment Reserve Fund	\$ 76,003

At the July 14, 2015 committee meeting it was recommended to transfer all of the Equipment Reserve Funds into the Capital Reserve Fund so that \$190,000 from the Capital Reserve Fund could be used to help fund the Chart Drive Septic System Replacement Project in order to minimize the parcel tax increase. A portion of the \$190,000 amount would be used to set-up the project, complete detailed design, prepare tender documents, etc. to get the project shovel-ready. A balance of \$58,282 would remain in the Capital Reserve Fund.

A majority of the remaining \$570,000 required to construct the Chart Drive Septic System Replacement project would come from Capital Requisition when the project is ready for tender (in 2016). CRD Bylaw No. 1873 enables for a maximum requisition of \$1,419,070. The parcel tax implications of this are noted in the alternative section below.

Based upon the above considerations, two alternatives were developed for the Committee's consideration as follows.

ALTERNATIVES

Alternative 1

That the Magic Lake Estates Water and Sewer Local Services Committee:

- A. Receive the letter from the New Building Canada Fund – Small Communities Fund regarding the grant application;
- B. Direct staff to present the Chart Drive Alternatives and cost implications to the community and request feedback on the alternatives;
- C. Approve funding for Chart Drive Alternatives public engagement in the amount of \$5,000 from capital reserves;
- D. Direct staff to report back to the Committee on the results of the public engagement and make a final recommendation to proceed and expedite the Chart Drive Septic System replacement and amend the 2016 budget accordingly to reflect funding requirements for the preferred solution;
- E. Direct staff to explore funding source options for projects listed in Phase 2, 3, and 4 including a review of the second intake into the NBCF-SCF grant; and
- F. Direct staff to continue to explore alternative technologies, approaches and solutions for the Phase 4 work (ie. replacement of Cannon WWTP, replacement of Schooner pump station, upgrades/replacement of Schooner WWTP).

Alternative 2

That the Magic Lake Estates Water and Sewer Local Services Committee:

- A. Receive the letter from the New Building Canada Fund – Small Communities Fund regarding the grant application;
- B. Direct staff to proceed with the preferred Chart Drive Solution based on the draft findings of the alternatives study that will be verbally presented by the consultant at the September 8, 2015 Committee meeting. Approve funding the Chart Drive solution at a total project budget of \$760,000, from a combination of existing reserve funds and parcel tax as noted below:
 - a. Transfer \$76,003 from the Equipment Reserve Fund to the Capital Reserve Fund;
 - b. Approve the use of Capital Reserve funds in the amount of \$190,000 for project management, administration, staff allocation, design, tender and contract services during construction (design to begin immediately);
 - c. Proceed with an increase in Parcel Tax in 2016 to fund the remainder of the project cost in the amount of \$530,000 over one year at an estimated Parcel Tax increase of about \$781 (from \$415 to \$1,196) per parcel;
 - d. Defer transfers to the Capital Reserve Fund for the next two years (2015 and 2016) and review on an annual basis.

- C. Direct staff to explore funding source options for projects listed in Phase 2, 3, and 4 including a review of the second intake into the NBCF-SCF grant; and
- D. Direct staff to continue to explore alternative technologies, approaches and solutions for the Phase 4 work (ie. replacement of Cannon WWTP, replacement of Schooner pump station, upgrades/replacement of Schooner WWTP).

IMPLICATIONS

Alternative 1 – A draft assessment of Chart Drive Septic System alternative options has been completed and will be verbally presented to the Committee on September 8, 2015.

Alternative 1 has a cost \$5,000 (to be taken from the Capital Reserve Fund), for presenting the findings of the alternative assessment to the community and it will prolong the implementation of a solution by 2-3 months.

Synonymous to both Alternatives is exploring funding source options for Phase 2 and Phase 3 (ie. grants, AAP, referendum) as well as investigating alternative technologies, approaches and solutions for Phase 4 of the Project (ie. replacement of Cannon WWTP, replacement of Schooner pump station, upgrades/replacement of Schooner WWTP).

Alternative 2 – Should the Committee approve this Alternative, they will have determined that there is a clear best-value solution for the Chart Drive Septic System and direct staff to immediate implementation to avoid further delay. This Alternative does not require an additional \$5,000 from the Capital Reserves Fund to engage the public on alternative solutions.

Past studies and work completed by CRD staff to date has resulted in the completion of some preliminary design work that will allow a consultant to proceed straight to Detailed Design in an efficient and expeditious manner.

The use of the reserve funds will significantly reduce the financial impact on the property owner. Additionally, to lessen the financial impact on the community, CRD will provide interim financing to the project an interest rate of Prime minus 0.75%, which is currently 2.10%.

This Alternative would result in the earliest construction completion date estimated to be Q3, 2016. This would avoid the cost of pumping and hauling (about \$1,000 per week) by about 12-16 weeks.

CONCLUSION

The New Building Canada Fund – Small Communities Fund grant application was unsuccessful. A solution to replace the Chart Drive septic field must proceed to minimize the duration and cost of pumping and hauling which is financially unsustainable. At the request of the Committee, a consultant was retained to assess alternative treatment/disposal solutions for Chart Drive. The draft findings of the assessment will be verbally presented by the consultant on September 8, 2015. Whichever solution is ultimately decided upon, funding for the Chart Drive Septic System Replacement project should be obtained by a combination of using existing reserve funds and capital requisition (one-year parcel tax increase). The remaining identified wastewater infrastructure still must be replaced, and has been re-prioritized into multiple phases to allow for easing in of tax increases as well as to provide time to explore alternative solutions and approaches.

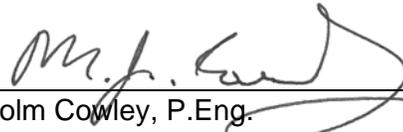
RECOMMENDATION

That the Magic Lake Estates Water and Sewer Committee:

- A. Receive the letter from the New Building Canada Fund – Small Communities Fund regarding the grant application;
- B. Direct staff to present the Chart Drive Alternatives and cost implications to the community and request feedback on the alternatives;
- C. Approve funding for Chart Drive Alternatives public engagement in the amount of \$5,000 from capital reserves;
- D. Direct staff to report back to the Committee on the results of the public engagement and make a final recommendation to proceed and expedite the Chart Drive Septic System replacement and amend the 2016 budget accordingly to reflect funding requirements for the preferred solution;
- E. Direct staff to explore funding source options for projects listed in Phase 2, 3, and 4 including a review of the second intake into the NBCF-SCF grant; and
- F. Direct staff to continue to explore alternative technologies, approaches and solutions for the Phase 4 work (ie. replacement of Cannon WWTP, replacement of Schooner pump station, upgrades/replacement of Schooner WWTP).



Dale Puskas, P.Eng.
Acting Manager, Wastewater Engineering
and Planning



Malcolm Cowley, P.Eng.
Senior Manager, Infrastructure Engineering

Concurrence



Peggy Dayton, BCom, CPA, CA
Senior Financial Analyst, Financial Services



Ted Robbins, B.Sc., C.Tech.
General Manager, Integrated Water
Services

Concurrence

DP:mm

Attachments: 1: New Building Canada Fund – Small Communities Fund Letter

New Building Canada Fund - Small Communities Fund

*MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
5C - 940 Blanshard Street, Victoria, BC V8W 3E6*

August 19, 2015

Cliff# 236982

Bob Lapham
Chief Administrative Officer
Capital Regional District
PO Box 1000
Victoria, BC V8W 2S6

Dear Bob Lapham:

Re: New Building Canada Fund - Small Communities Fund (NBCF-SCF)
N20108 - Magic Lake Estates Infrastructure Replacement

Thank you for your application for funding under the New Building Canada Fund - Small Communities Fund (NBCF-SCF). After careful consideration, the above noted project was not selected for funding.

The program received significantly more applications than could be funded. This decision does not reflect on the importance of this project, but rather the degree by which the program has been oversubscribed. All applications were equitably reviewed and given consideration for funding.

The NBCF-SCF program will have a second application intake. The date of this intake has not been determined. Additional program information can be found at the NBCF-SCF website at: www.gov.bc.ca/smallcommunitiesfund.

If you have any questions, please do not hesitate to contact Liam Edwards, Executive Director, Local Government Infrastructure and Finance Branch, Ministry of Community, Sport and Cultural Development, at 250-387-4060.

Thank you for your interest in the NBCF-SCF. I wish you every success with your community project.

Yours truly,



Patrick C. Livolsi, P. Eng.
Provincial Co-Chair, Oversight Committee, Small Communities Fund
Assistant Deputy Minister
Infrastructure and Major Projects Division

.../2



-2-

cc: Sean Nacey, Senior Manager
Infrastructure Development Branch
Ministry of Transportation and Infrastructure

Liam Edwards, Executive Director
Local Government Infrastructure and Finance Branch
Ministry of Community, Sport and Cultural Development

Peter Sparanese
Senior Manager, Infrastructure Engineering & Operations
Capital Regional District



Making a difference...together

**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, SEPTEMBER 8, 2015**

SUBJECT DRAFT 2016 OPERATING AND CAPITAL BUDGETS

ISSUE

This report provides a synopsis of the 2016 operating and capital budget, highlighting significant proposed changes related to operational expenditures, debt charges, capital expenditures and revenue for the Magic Lake Estates Water and Sewer local service.

In accordance with Bylaw No. 2339, "Magic Lake Estates Water and Sewer Committee Bylaw, 1995", *"Upon its establishment, and in November of each year, the Committee shall approve an annual budget for the services provided in the local service areas which shall include estimates for the administrative, development, maintenance, operational and other expenses, including debt charges, and shall submit such expenditure estimates, together with estimates for expected revenue, in a form approved by the Treasurer of the Regional Board for the approval of the Regional Board and for inclusion in the Regional Board's provisional and annual budgets."*

BACKGROUND

Water Local Service

2015 Estimated Actual Revenue and Expense

The estimated actual operating cost is projected to be **\$16,620** under budget as a result of:

- Lower than budgeted expenditures for:
 - repairs and maintenance
 - water testing
 - supplies
 - other operating expenses
- Higher than budgeted expenditures for:
 - allocations
 - electricity
 - labour charges
- Unspent contingency in the amount of \$18,710.

The estimated actual operating revenue is projected to be **\$250** greater than budget as a result of higher than budgeted interest revenue (other revenue) however, this is offset slightly by lower than expected water sale revenue:

This results in a projected year-end surplus of **\$16,870**.

It is proposed to transfer the year-end surplus to the capital reserves in addition to the planned transfer of \$152,820, resulting in a total 2015 transfer of \$169,690.

2016 Operating Expense

An increase in the 2016 operating expenses of \$4,740 (0.9%) is proposed.

This is primarily a result of:

- Decrease of \$2,000 in repairs and maintenance expenditures
- Decrease of \$250 in allocations
- Increase of \$12,000 in electricity expenditures
- Decrease of \$900 in operating supply expenditures
- Increase of \$6,350 in labour charges
- Decrease of \$3,710 in contingency
- Decrease of \$6,750 in other operating expenses

It is proposed that a \$15,000 contingency be provided in the budget. The contingency is to be used in the event that the operating budget is exceeded, likely due to a major unplanned emergency repair event.

2016 Debt/Reserves

2016 Maintenance Reserves:

Maintenance reserves are to be used for the purchase of equipment and supplies that are typically not replaced annually such as filter media, ultraviolet lamps and sensors and significant maintenance activities, such as raw water intake inspections and unforeseen significant repairs. It is proposed that transfers to the maintenance reserves of \$15,000 remain at 2015 level. The maintenance reserve balance at the end of 2015 is projected to be \$30,000.

2016 Capital Reserve Fund 1024:

The Capital Reserve Fund (CRF) is established in order to prepare for and fund anticipated future capital projects. It is proposed that the transfer to the CRF be reduced from \$152,820 to \$100,000. The reduced 2016 capital reserve contribution is the result of not carrying forward the projected year-end surplus as revenue in 2016 in order to maintain the current parcel tax and minimize the increase to the 2016 user fee. The capital reserve fund balance at the end of 2015 is projected to be \$681,895 which includes earned interest.

MFA Debt

Between 2010 and 2013, \$2,560,000 was borrowed in order to fund capital projects. The interest rates on this debt are between 3.15% and 4.50%. The total cost of interest and principal repayments in 2016 will be unchanged from 2015 at \$219,650.

2016 Revenue (User Charge and Parcel Tax)

It is proposed that:

- Volumetric water rates remain at 2015 levels as follows:
 - \$0.00/m³ for 0 m³ - 50.0 m³
 - \$0.50/m³ for >50.0 m³ – 80 m³
 - \$1.00/m³ for >80 m³

- User charge increase from \$253,000 to \$285,920. This is a result of two contributing factors, (i) the addition of three single family equivalent (SFE) payments and (ii) the need to generate additional revenue to make up for the loss of the year-end surplus from 2015 forward as revenue in 2016; based on 1,015 SFE's this equates to \$281.69 per SFE, an increase of \$31.69 from 2015.
- Parcel tax of \$568,990 be maintained at 2015 level, based on 1,206 taxable folios and including the 5.25% surveyors tax fee, equates to \$496.57.

Capital Plan

The following capital work is planned for 2016:

Public Engagement for Future Projects (\$10,000)

Proposed planning and public engagement session for future projects to communicate the need, rationale and costs of water system improvements to the customers.

Safety Equipment (\$8,000)

The CRD's safety advisor has undertaken a review of the treatment facility in consultation with the WorkSafe BC Officer and determined that additional eyewash safety equipment and tempered water connection is required at the water treatment plant.

Buck Lake East Dam Detailed Design (\$120,000)

The 2013 geotechnical report identifies a sand layer in the dam that may liquefy during an earthquake, leading to possible dam failure. This item is to complete detailed design and obtain regulatory approvals for the remediation option selected in the preliminary design stage. Also included in this item is engineering contract administration, which will take place during the project.

Schooner PRV Upgrade - 2016 (\$100,000)

Confined space PRV stations on the system (Signal Hill, Schooner, and Capstan Way) are badly corroded and operating with pressures as high as 135psi. Failure could be very serious, with significant loss of water. This is to replace the second station at Schooner.

Electrical Power for Storage Building (\$8,000)

The existing storage building at the front of the water treatment plant site requires electrical power service for lighting, heat, etc.

Buck Lake Intake Line Assessment (\$5,000)

The existing Buck Lake raw water intake line has been experiencing air intrusion, which requires manual priming of the line every one to two days. It is proposed to undertake an assessment using a camera and vacuum test to determine what upgrades or repairs are required.

Capital Project Forecast 2017-2020

A five-year capital and operating budget forecast is provided for information. Future capital expenditures will have to be funded by electoral area ascent with a referendum proposed in 2017.

The following capital expenditures are proposed:

Referendum – Funding for Future Projects (\$10,000)

A referendum will be required to fund the future major capital projects for the period between 2017 and 2020 as there are insufficient capital reserves to fund future projects.

Capstan Way PRV Upgrade - 2017 (\$100,000)

Confined space PRV stations on the system (Signal Hill, Schooner, and Capstan Way) are badly corroded and operating with pressures as high as 135psi. Failure could be very serious, with significant loss of water. This is to replace the third station at Capstan Way.

Buck Lake East Dam Remediation – 2017 (\$1,000,000)

The 2013 geotechnical report identifies a sand layer in the dam that may liquefy during an earthquake, leading to possible dam failure. This item is to complete remediation of the dam.

Replace Distribution Infrastructure, Phases 2, 3, 4 and 5 – 2017 (\$425,000), 2018 (\$450,000), 2019 (\$400,000) and 2020 (\$400,000)

The 2011 Water Distribution Review prepared by AECOM (Strategic Asset Management Plan) recommended a prioritized list of water main replacements; Phase 1 was completed as part of the recent water treatment plant project. The next proposed phases include the following:

- Phase 2 - 534 metres of water main replacement on Schooner Way - Privateers Road for \$425,000 in 2017.
- Phase 3 - 559 metres of water main replacement on Chart Drive - Galleon Way for \$450,000 in 2018.
- Phase 4 - 477 metres of water main replacement on Galleon Way for \$400,000 in 2019.
- Phase 5 - 487 metres of water main replacement on Jolly Roger Crescent - Cutty Sark Crescent for \$400,000 in 2020.

Water (2) Local Service

This service exists for the sole purpose of recovering debt costs for a water main replacement project completed in 2003.

2015 Estimated Actual Revenue and Expense

The estimated actual operating cost is projected to be **\$12,834** under budget as a result of:

- Higher than budgeted expenditures for:
 - other operating expense (interest expense \$150)
- Unspent contingency in the amount of \$12,984.

The estimated actual operating revenue is projected as budgeted.

This results in a projected year-end surplus of **\$12,834**. It is proposed to carry forward the year-end surplus as revenue in 2016.

2016 Operating Expense

A decrease in the 2016 operating expense of \$12,984 (-8.3%) is proposed.

This is primarily a result of:

- Elimination of \$12,984 in contingency and its removal from the operating costs.

2016 Debt/Reserves

MFA Debt

Debt servicing costs of \$170,970 on \$2,224,900 of debt will remain at the 2015 level. The Magic Lake Estates Water (2) Local Service will be extinguished when the repayment of 2002 borrowing is complete in 2017.

2016 Revenue (Parcel Tax)

It is proposed that:

- Parcel tax of \$169,320 be decreased to \$160,560 (the decrease is a result of lower operating costs due to eliminating the contingency); based on 894 taxable folios and including the 5.25% surveyor's fee, the parcel tax per parcel equates to \$189.03.

Sewer Local Service

2015 Estimated Actual Revenue and Expense

The estimated actual operating cost is projected to be **\$20,280** under budget as a result of:

- Lower than budgeted expenditures for:
 - repairs and maintenance
 - operating supplies
 - labour charges
- Higher than budgeted expenditures for:
 - sludge hauling
 - sludge disposal
 - other operating expenses
- Unspent contingency in the amount of \$11,000.

The estimated actual operating revenue is projected to be **\$500** less than budget and is primarily a result of receiving less service penalty revenue.

This results in a projected year-end surplus of **\$19,780**. However, when adjusted by the lower than budgeted amount for the MFA interest payment of \$3,170, and debt reserve fund payment of \$7,600, the total projected year-end surplus is **\$30,550**.

It is proposed to carry forward the year-end surplus as revenue in 2016.

2016 Operating Expense

An increase in the 2016 operating expense of \$13,900 (3.4%) is proposed.

This is primarily a result of:

- Increase of \$3,000 in sludge hauling
- Increase of \$10,000 in sludge disposal
- Increase of \$50 in repairs and maintenance
- Increase of \$690 in allocations
- Increase of \$1,170 in electricity
- Decrease of \$800 in supplies
- Increase of \$4,590 in labour charges
- Decrease of \$3,220 in contingency
- Decrease of \$1,580 in other operating expenses

2016 Debt/Reserves

2016 Maintenance Reserves:

Maintenance Reserves are to be used for the purchase of equipment and supplies that are typically not replaced annually, such as filter media, ultraviolet lamps and sensors and other various items, and for certain operation and maintenance activities that are not typically performed annually, such as outfall inspections and unforeseen significant repairs.

It is proposed that transfers to the maintenance reserves of \$5,000 remain at 2015 level. The maintenance reserve balance at the end of 2015 is projected to be \$5,000.

2016 Capital Reserve Fund:

In a June 2015 referendum, the Magic Lake Estates sewer taxpayers voted against borrowing \$6,050,000 to complete capital works, including replacement of the Chart Drive septic system. The Chart Drive replacement must be carried out in 2016. Therefore, it is proposed that the transfer to the Capital Reserve Fund increase and include a \$530,000 single supplementary contribution (one-time increase in 2016) in order to provide sufficient funds to undertake the Chart Drive capital project at an estimated cost of \$760,000.

The capital reserve fund balance at the end of 2015 is projected to be \$248,282, which includes earned interest.

Equipment Reserve Fund

The equipment reserve fund balance at the end of 2015 is projected to be \$76,003. This fund has not been used for the last several years and, therefore, it is proposed that the full amount be transferred into the Capital Reserve Fund in 2016. This will help fund the Chart Drive Septic System Replacement project in order to minimize the parcel tax increase.

MFA Debt

There will be no debt servicing costs in 2016.

2016 Revenue (User Charge and Parcel Tax)

It is proposed that:

- User charge revenue remain unchanged at \$168,912, based on 623 SFE's, equating to \$271.12 per SFE, down \$0.88 from 2015.
- Parcel tax revenue be increased by \$530,000 to \$811,370 to allow for the increased transfer to the Capital Reserve Fund; based on 714 taxable folios, and including the 5.25% surveyors tax fee, equating to \$1,196.03 per folio.

2016 Sewer Capital Plan

The following capital work is planned for 2016:

Chart Drive Interim Hauling: (\$45,000)

The Chart drive septic system is still under the Island Health order for stop use until a replacement system is selected, designed and constructed. The budget for this item is to continue pumping and hauling sewage from the Chart Drive septic system to the Schooner wastewater system until the end of the 2016 fiscal year, or the capital project for replacement Chart Drive system is operational.

Public Engagement for Chart Drive: (\$10,000)

As evident at the August 15, 2015 Annual General Meeting, there is some confusion on how the Magic Lake Estates Sewer Local Service Area operates, the service boundaries and its mandate. Alternative solutions to address Chart Drive have been proposed and are evaluated by a consultant at a high level. To engage the residents of Magic Lake Estates, an open house will be held with options for the Chart Drive replacement. The budget for this item is for staff time, presentation materials, notifications and advertisements, to hold and address an open house for the Chart Drive replacement.

Chart Drive Pump Station and Forcemain: (\$760,000)

The Chart Drive septic system, which provides sewer service to 18 properties, has reached the end of its useful life and requires replacement. The budget for this item is for replacement of the septic system with a new system/process.

Forecast 2017-2020

A five-year capital and operating budget forecast is provided for information.

The following capital projects are proposed:

Public Engagement for Infrastructure Replacement – 2017 (\$15,000)

Public engagement is required to determine the direction that the residents will approve for an Infrastructure Replacement program. The budget for this item is for staff time, materials, notification and advertisement, to hold and address an open house and town hall to seek the residents' input on an infrastructure replacement program for the Magic Lake Estates Sewer Local Service Area.

Referendum for Infrastructure Replacement – 2017 (\$10,000)

The budget item is for staff time, notification and advertisements to hold a referendum for an Infrastructure Replacement program based upon the results of the 2017 capital budget item, Public Engagement for Infrastructure Replacement.

Inflow/Infiltration Reduction Program Phase 1 - 2018 (\$100,000)

Both Schooner and Cannon wastewater treatment plants are subject to overloading during heavy rainfall events, which has resulted in numerous marine discharges that have exceeded our Ministry of Environment discharge permit requirements. The budget for this item is to retain a consultant to carry out CCTV, smoke testing and hydraulic modeling.

Schooner Lift Station Upgrades – 2018 (\$557,000)

The Schooner Lift Station is past its serviceable life – the pumps, process piping and valves, pump lifting rails and electrical all have to be replaced. Additionally, confined space entry is required to isolate the pump station. The budget for this item is for design and the upgrades required for the Schooner Lift Station.

Cannon Pump Station and Forcemain – 2018 (\$900,000)

The Cannon wastewater treatment plant is subject to overloading during heavy rainfall events which has resulted in numerous marine discharges that have exceeded our Ministry of Environment discharge permit requirements and is at end of life. Additionally, the site is fully built out; no more expansion of the Cannon wastewater treatment plant is possible. The budget for this item is for design and construction of the replacement of the Cannon wastewater treatment plant with a pump station and new forcemain, pumping sewage to the Schooner wastewater treatment plant via the Schooner Lift Station.

Schooner Clarifier and Aeration Tank – 2018 (\$1,028,000)

The Schooner wastewater treatment plant is subject to overloading during heavy rainfall events, which has resulted in numerous marine discharges that have exceeded our Ministry of Environment discharge permit requirements. The budget for this item is for design and construction of the new clarifier and aeration tanks.

Inflow/Infiltration Reduction Program Phase 2 - 2019 (\$117,000)

Phase 2 of the Inflow/Infiltration Reduction Program – Phase 1 will identify key issues, where Phase 2 will address these issues.

Cannon Pump Station and Forcemain – 2019 (\$926,000)

The budget for this item is for the continuation of the 2016 capital project “Cannon Pump Station & Forcemain”, for continued construction.

Schooner Clarifier and Aeration Tank – 2019 (\$1,028,000)

The budget for this item is for the continuation of the 2016 capital project “Schooner Clarifier & Aeration Tank”, for continued construction.

Replace 325m of Pipe Along Buck Lake – 2020 (\$495,000)

The existing Asbestos Concrete 150mm diameter sewer along the east side of Buck Lake does not have sufficient capacity, has a shallow grade or reverse grade and needs to be increased to ensure the sewer system does not backup during peak flow events. The budget for this item is for design and replacement of the 325m of pipe along Buck Lake.

Replace 112m of Pipe on Privateers Road – 2020 (\$135,500)

The existing Asbestos Concrete 150mm diameter sewer on Privateers from Dubloon Road to Brigadoon Road does not have sufficient capacity and needs to be increased to a 200mm diameter pipe to ensure the sewer system does not backup during peak flow events. The budget for this item is for design and replacement of 112m of pipe on Privateers Road.

RECOMMENDATIONS

That the Magic Lake Estates Water and Sewer Committee recommend that the CRD Board:

1. Approve the 2016 operating and capital budget for the Magic Lake Estates Water Service as presented;
2. Authorize the 2015 Parcel Tax of \$496.57 and User Charge of \$281.69 for the Magic Lake Estates Water Service;
3. Balance the Magic Lake Estates Water Service 2015 actual revenue and expense on the 2015 transfer to the capital reserve fund;
4. Approve the 2016 operating for the Magic Lake Estates Water (2) Service as presented;
5. Authorize the 2016 Parcel Tax of \$189.03 for the Magic Lake Estates Water (2) Service;
6. Balance the Magic Lake Estates Water (2) Service 2015 actual revenue and expense on the 2016 Parcel Tax;
7. Approve the 2016 operating and capital budget for the Magic Lake Estates Sewer Service as presented;

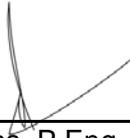
8. Authorize the 2016 Parcel Tax of \$1,196.03 and User Charge of \$271.12 for the Magic Lake Estates Sewer Service;
9. Balance the Magic Lake Estates Sewer Service 2015 actual revenue and expense on the 2015 transfer to the capital reserve fund; and
10. Authorize the transfer of the balance remaining in the Equipment Replacement Fund to the Capital Reserve Fund.



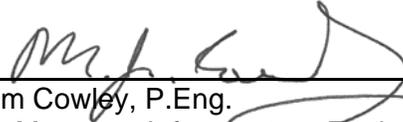
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Malcom Cowley, P.Eng.
Senior Manager, Infrastructure Engineering
Integrated Water Services
Concurrence



Ted Robbins, B.Sc., C Tech.
General Manager, Integrated Water Services
Concurrence

DR/SM/DP:ls
Attachments: 3

CAPITAL REGIONAL DISTRICT

2016 Budget

Magic Lake Estates Water (Pender)

Committee Review

Compiled and Presented by CRD Finance

September 2015

Service: 2.630 Magic Lake Estates Water (Pender) **Committee:** Electoral Area Services

DEFINITION:

LSA -1 To provide and operate water supply and distribution facilities for the Magic Lake Estates Water System. Specified Area on North Pender Island. Bylaw No. 1874 (June 11, 1991).

PARTICIPATION:

Local Service Area # 1 - D(764) LSA #9.

MAXIMUM LEVY:

Greater of \$160,000 or \$3.50 / \$1,000 of actual assessed value of land and improvements. To a maximum of \$1,144,953

MAXIMUM CAPITAL DEBT:

AUTHORIZED:	LA Bylaw No. 3633 (Nov 2009).	\$	2,560,000
BORROWED:	SI Bylaw 3677 (Feb 2010).	\$	(723,000)
BORROWED:	SI Bylaw 3769 (Feb 2011).	\$	(250,000)
BORROWED:	SI Bylaw 3850 (Aug 2012).	\$	(559,500)
BORROWED:	SI Bylaw 3882 (Apr 2013).	\$	(1,002,500)
BORROWED:	SI Bylaw 3910 (July 2013).	\$	(25,000)
REMAINING AUTHORIZATION:		\$	<u>0</u>

COMMITTEE:

Magic Lake Estates Water & Sewer Committee established by Bylaw No. 1870 (November 28, 1990).

FUNDING:

Any deficiencies after user charge and/or frontage tax or parcel tax to be levied on taxable school assessments.

User Charge:

Annual charge per single family equivalency unit connected to the system.
The consumption charge for water will be the total volume of water metered to the water service connections, measured in cubic meters at the following rate: (BL3987 March 2015)

- Greater than 50 cubic metres - \$0.50 / cubic metre
 - Greater than 80 cubic metres - \$1.00 / cubic metre
- LSA-1 Annual charge only on properties capable of being connected to the system.

Parcel Tax:

Connection Charges: Actual Engineering and Construction costs, plus 15% Administration costs. The minimum charge is \$500 - Bylaw No. 3987 (Mar 2015)

RESERVE FUND:

Magic Lake Estates - Water System Capital Reserve Fund. Bylaw No. 1498

	2015		2016			FUTURE PROJECTIONS			
	BOARD BUDGET	ESTIMATED ACTUAL	CORE BUDGET	SUPPLEMENTARY	TOTAL	2017	2018	2019	2020
Magic Lake Estates Water (Pender)									
<u>OPERATING COSTS:</u>									
Repairs & Maintenance Allocations	27,000	17,600	25,000	-	25,000	25,500	26,000	26,520	27,040
Water Testing	34,740	34,990	34,490	-	34,490	35,180	35,900	36,620	37,360
Electricity	17,500	16,500	17,500	-	17,500	17,850	18,210	18,570	18,940
Supplies	33,000	44,000	45,000	-	45,000	45,900	46,820	47,760	48,720
Labour Charges	50,400	44,000	49,500	-	49,500	50,480	51,480	52,500	53,550
Contingency	317,860	336,140	324,210	-	324,210	330,700	336,730	343,470	349,740
Other Operating Expenses	18,710	-	15,000	-	15,000	15,300	15,610	15,920	16,240
	45,360	34,720	38,610	-	38,610	39,390	40,180	40,980	41,820
TOTAL OPERATING COSTS	544,570	527,950	549,310	-	549,310	560,300	570,930	582,340	593,410
*Percentage Increase over prior year			0.9%			2.0%	1.9%	2.0%	1.9%
<u>DEBT/RESERVES</u>									
Transfer to Maintenance Reserve	15,000	15,000	15,000	-	15,000	15,300	15,610	15,920	16,240
Transfer to Capital Reserve Fund	152,820	169,690	100,000	-	100,000	100,000	100,000	100,000	100,000
MFA Debt Reserve Fund	-	-	-	-	-	-	-	-	-
MFA Debt Principal	127,850	127,850	127,850	-	127,850	127,850	206,880	232,790	253,520
MFA Debt Interest	91,800	91,800	91,800	-	91,800	145,180	185,550	207,050	227,050
TOTAL DEBT / RESERVES	387,470	404,340	334,650	-	334,650	388,330	508,040	555,760	596,810
TOTAL COSTS	932,040	932,290	883,960	-	883,960	948,630	1,078,970	1,138,100	1,190,220
<u>FUNDING SOURCES (REVENUE)</u>									
Estimated balance C/F from 2015 to 2016	-	-	-	-	-	-	-	-	-
Balance C/F from 2014 to 2015	(81,100)	(81,100)	-	-	-	(20,400)	(20,810)	(21,230)	(21,650)
Sales - Water	(20,000)	(19,800)	(20,000)	-	(20,000)	-	-	-	-
Connection Charges	(8,100)	(8,100)	(8,100)	-	(8,100)	(8,260)	(8,430)	(8,600)	(8,770)
User Charges	(253,000)	(253,000)	(285,920)	-	(285,920)	(296,630)	(306,970)	(318,080)	(328,860)
Grants in Lieu	-	-	-	-	-	-	-	-	-
Other Revenue	(850)	(1,300)	(950)	-	(950)	(970)	(990)	(1,010)	(1,030)
TOTAL REVENUE	(363,050)	(363,300)	(314,970)	-	(314,970)	(326,260)	(337,200)	(348,920)	(360,310)
REQUISITION - PARCEL TAX	(568,990)	(568,990)	(568,990)	-	(568,990)	(622,370)	(741,770)	(789,180)	(829,910)
*Percentage increase over prior year requisition			0.0%			9.4%	19.2%	6.4%	5.2%

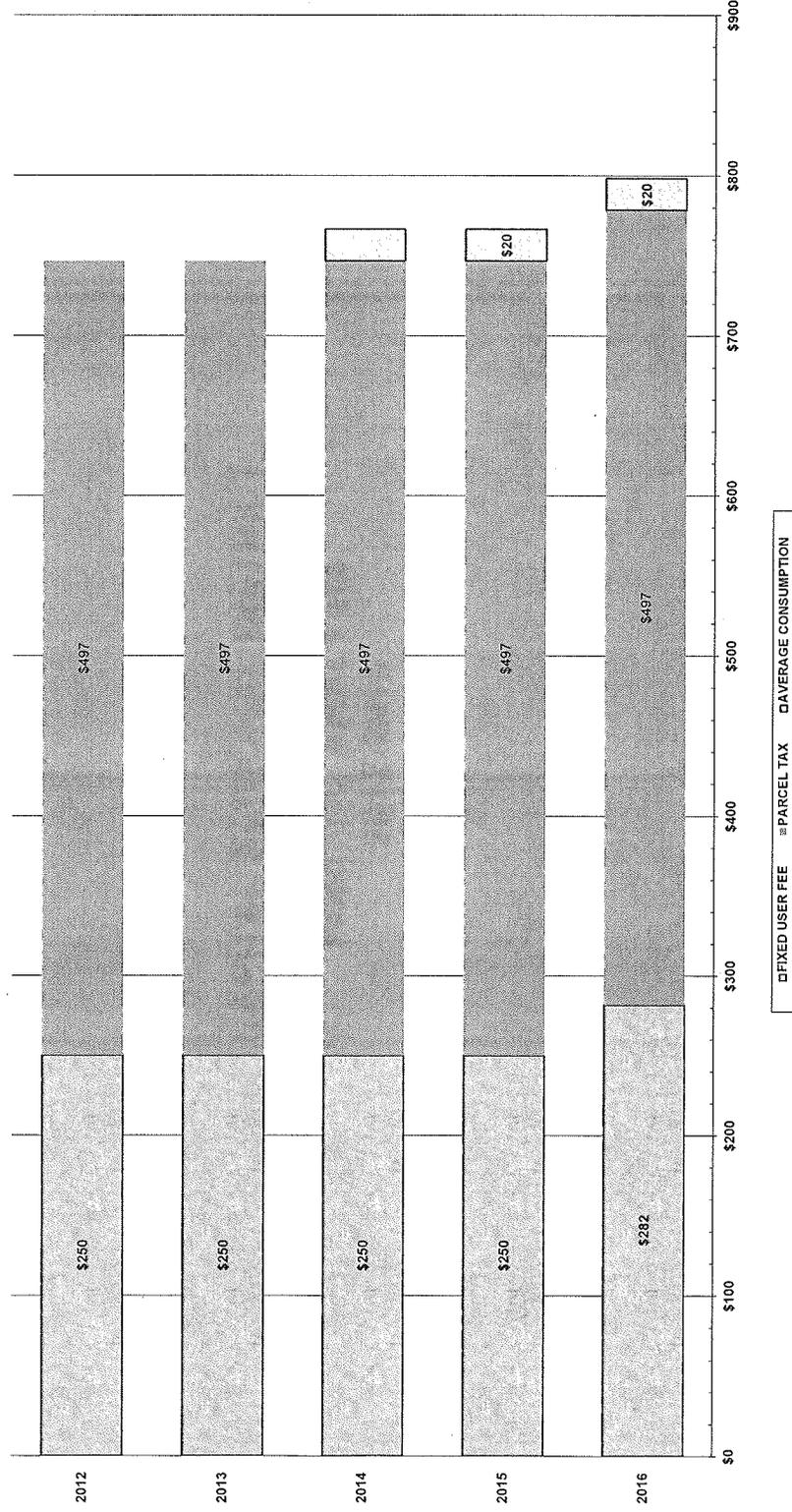
Service: 2.630 Magic Lake Estates Water (Pender) Committee: Electoral Area Services

<u>Year</u>	<u>Taxable Folios</u>	<u>Parcel Tax</u>	<u>SFE's</u>	<u>User Charge**</u>	<u>Tax & Charges</u>	<u>Assessments \$(000's)</u>
2011	1,207	\$496.57	999	\$250.00	\$746.57	394,368
2012	1,206	\$496.57	1,005	\$250.00	\$746.57	390,273
2013	1,206	\$496.57	1,008	\$250.00	\$746.57	356,311
2014	1,206	\$496.57	1,011	\$250.00	\$746.57	336,526
2015	1,206	\$496.57	1,012	\$250.00	\$746.57	327,129
2016 Budget	1,206	\$496.57	1,015	\$281.69	\$778.26	327,129

* Parcel Tax authority under LSA-1

**User Charge is an annual charge per connected SFE \$31.69

**CAPITAL REGIONAL DISTRICT
MAGIC LAKE ESTATES WATER, #1 ONLY
FUNDING ANALYSIS
2012-2016**



Actual Costs 2012-2015, Projected 2016
Prepared by CRD Finance
03/09/2015

CAPITAL REGIONAL DISTRICT - SCHEDULE G

CAPITAL BUDGET FORM 2016 & Forecast 2017 to 2020

Service #: **2.630**
Service Name: **Magic Lake Water (Pender)**

Note: ↓ indicates a drop down menu is available for selection - Type Code (2); Funding Source (4); Participants (8)

Year (1)	Type Code (2)* ↓	Specific Project Description (3)	Capital Expense	Funding Amount Total (5)		Grant Program Sponsor (6)	Loan Authorization # (7)	Participants (8) ↓	%
				Source (4)** ↓					
2016	S	Public Engagement for Future Projects	10,000	R	10,000				
2016	E	Safety Equipment	8,000	R	8,000				
2016	S	Buck Lake East Dam Detailed Design	120,000	R	120,000				
2016	S	Schooner PRV Upgrade	100,000	R	100,000				
2016	E	Electrical Power for Storage Building	8,000	R	8,000				
2016	S	Buck Lake Intake Line Assessment	5,000	R	5,000				
2017	S	Referendum - Funding for Future Projects	10,000	R	10,000				
2017	S	Capstan Way PRV Upgrade	100,000	D	100,000				
2017	S	Buck Lake East Dam Remediation	1,000,000	D	1,000,000				
2017	S	Replace Distribution Infrastructure - Phase 2	425,000	D	425,000				
2018	S	Replace Distribution Infrastructure - Phase 3	450,000	D	450,000				
2019	S	Replace Distribution Infrastructure - Phase 4	400,000	D	400,000				
2020	S	Replace Distribution Infrastructure - Phase 5	400,000	D	400,000				
				TOTAL					
				3,036,000		3,036,000			

Funding Source Codes (4)**

- D = Debenture Debt (new debt only)
- E = Equipment Replacement Fund
- G = Grants (Federal, Provincial)
- O = Donations / Third Party Funding

Type Codes (2)*

- L = Land
- S = Engineering Structures
- B = Buildings
- V = Vehicles
- E = Equipment

- C = Capital Funds on Hand
- R = Reserve Fund
- S = Short Term Loans
- L = Lands Sales

Service: 2.630 Magic Lake Estates Water (Pender)

Committee: Electoral Area Services

#1	Public Engagement for Future Projects (2016) Proposed planning and public engagement session for future projects to communicate the need, rationale and costs of water system improvements to the customers.	\$10,000
#2	Safety Equipment (2016) The CRD's safety advisor has undertaken a review of the treatment facility in consultation with the WorkSafe BC Officer and determined that additional eyewash safety equipment and tempered water connection is required at the water treatment plant.	\$8,000
#3	Buck Lake East Dam Detailed Design (2016) The 2013 geotechnical report identifies a sand layer in the dam that may liquefy during an earthquake, leading to possible dam failure. This item is to complete detailed design and obtain regulatory approvals for the remediation option selected in the preliminary design stage. Also included in this item is engineering contract administration which will take place during the project.	\$120,000
#4	Schooner PRV Upgrade (2016) Confined space PRV stations on the system (Signal Hill, Schooner, and Capstan Way) are badly corroded and operating with pressures as high as 135psi. Failure of could be very serious, with significant loss of water. This is to replace the second station at Schooner.	\$100,000
#5	Electrical Power for Storage Building (2016) The existing storage building at the front of the water treatment plant site requires electrical power service for lighting, heat, etc.	\$8,000
#6	Buck Lake Intake Line Assessment (2016) The existing Buck Lake raw water intake line has been experiencing air intrusion which requires manual priming of the line every one to two days. It is proposed to undertake an assessment using a camera and vacuum test to determine what upgrades or repairs are required.	\$5,000
#7	Referendum - Funding for future capital projects (2016) A referendum will be required to fund the future major capital projects for the period between 2017 and 2020 as there is insufficient capital reserves to fund future projects.	\$10,000
#8	Capstan PRV Upgrade (2017) Confined space PRV stations on the system (Signal Hill, Schooner, and Capstan Way) are badly corroded and operating with pressures as high as 135psi. Failure of could be very serious, with significant loss of water. This is to replace the third station at Capstan Way.	\$100,000
#9	Buck Lake East Dam Remediation (2017) The 2013 geotechnical report identifies a sand layer in the dam that may liquefy during an earthquake, leading to possible dam failure. This item is to complete remediation of the dam.	\$1,000,000
#10,11,12,13	Replace Distribution Infrastructure (\$400,000 to 450,000 each year - 2017-20) The 2011 Water Distribution Review (Strategic Asset Management Plan) recommended a prioritized list of water main replacements, Phase 1 was completed as part of the water treatment plant project. Phase 2 - 534 metres of water main replacement on Schooner Way - Privateers Road (\$425,000 in 2017) Phase 3 - 559 metres of water main replacement on Chart Drive - Galleon Way (\$450,000 in 2018) Phase 4 - 477 metres of water main replacement on Galleon Way (\$400,000 in 2019) Phase 5 - 487 metres of water main replacement on Jolly Roger Crescent - Cutty Sark Cres (\$400,000 in 2020)	\$1,675,000

Reserve Schedule

Reserve Fund: 2.630 Magic Lake Estates Water (Pender) Capital Reserve Fund - Bylaw 1498

Reserve Cash Flow

	Estimate 2015	Budget				
		2016	2017	2018	2019	2020
Fund: 1024 Fund Center: 101368						
Beginning Balance	519,205	681,895	530,895	620,895	720,895	820,895
Transfer to Cap Fund (Based on Capital Plan)	(11,000)	(251,000)	(10,000)	-	-	-
Transfer from Operating Budget	169,690	100,000	100,000	100,000	100,000	100,000
Interest Income*	4,000	-	-	-	-	-
Ending Balance \$	681,895	530,895	620,895	720,895	820,895	920,895

Assumptions/Background:

Transfer sufficient amounts to mitigate costs of debt

* Interest should be included in determining the estimated ending balance for the current year. Interest in planning years nets against inflation which is not included.

CAPITAL REGIONAL DISTRICT

2016 Budget

Magic Lake Estates Water (2)

Committee Review

Compiled and Presented by CRD Finance

October 2015

Service: 2.635 Magic Lake Estates Water (2)

Committee: Electoral Area Services

DEFINITION:

LSA-2 A second LSA was established to improve the works and services of Magic Lake Estates Water System.
Bylaw No. 2798 (Sept. 27, 2000).

PARTICIPATION:

Local Service Area # 2 - Q(764) LSA #40

MAXIMUM LEVY:

Greater of \$388,140 or \$2.65 / \$1,000 of actual assessed value of land and improvements. To a maximum of \$865,390.

MAXIMUM CAPITAL DEBT:

AUTHORIZED:	LA Bylaw No. 2799 (September 2000)	2,900,000
BORROWED:	S.I. Bylaw No. 2902 (August 2001)	(726,000)
	S.I. Bylaw No. 2963 (2002)	(1,498,900)
		Refinanced @3.05% from 5.69%
		Refinanced @3.05% from 6.06%

REMAINING AUTHORIZATION	<u>675,100</u>
PREPAIDS (312):	<u>0</u>
	<u>0</u>

COMMITTEE:

Magic Lake Estates Water & Sewer Committee established by Bylaw No. 1870 (November 28, 1990).

FUNDING:

Any deficiencies after user charge and/or frontage tax or parcel tax to be levied on taxable school assessments.

User Charge:	No User Charge
Parcel Tax:	LSA-2 Annual parcel tax levied only on properties capable of being connected to the system, and participation in debt servicing. Commuted Parcel Tax for prepayment 2001 - 312 properties.
Connection Charges:	N/A

	2015		BUDGET REQUEST				FUTURE PROJECTIONS			
	BOARD BUDGET	ESTIMATED ACTUAL	2016 CORE BUDGET	2016 SUPPLEMENTARY	2016 TOTAL	2017	2018	2019	2020	
Magic Lake Estates Water (2)										
<u>OPERATING COSTS:</u>										
Allocations	2,420	2,420	2,420	-	2,420	2,420	-	-	-	
Contingency	12,984	-	-	-	-	-	-	-	-	
Other Operating Expenses	-	150	-	-	-	-	-	-	-	
TOTAL OPERATING COSTS	15,404	2,570	2,420	-	2,420	2,420	-	-	-	
*Percentage Increase over prior year					-84.3%	0.0%				
<u>DEBT/RESERVES</u>										
MFA Debt Principal	103,107	103,107	103,110	-	103,110	69,460	-	-	-	
MFA Debt Interest	67,859	67,859	67,864	-	67,864	22,860	-	-	-	
TOTAL DEBT / RESERVES	170,966	170,966	170,974	-	170,974	92,320	-	-	-	
TOTAL COSTS	186,370	173,536	173,394	-	173,394	94,740	-	-	-	
<u>FUNDING SOURCES (REVENUE)</u>										
Estimated balance C/F from 2015 to 2016	-	12,834	(12,834)	-	(12,834)	-	-	-	-	
Balance C/F from 2014 to 2015	(17,050)	(17,050)	-	-	-	-	-	-	-	
Grants in Lieu	-	-	-	-	-	-	-	-	-	
Other Revenue	-	-	-	-	-	-	-	-	-	
TOTAL REVENUE	(17,050)	(17,050)	-	-	-	-	-	-	-	
REQUISITION	(169,320)	(169,320)	(160,560)	-	(160,560)	(94,740)	-	-	-	
*Percentage increase over prior year requisition					-5.2%	-41.0%				

Service: 2.635 Magic Lake Estates Water (2) Committee: Electoral Area Services

MLE - LSA # 2

Year	Taxable Folios	Parcel Tax	Actual Assessments	Converted Assessments
2010	894	\$279.05	370,099,600	37,159,781
2011	895	\$279.39	393,681,900	39,523,039
2012	894	\$199.15	390,174,100	39,172,961
2013	894	\$199.15	355,759,000	35,728,747
2014	894	\$199.15	335,956,601	33,740,591
2015	894	\$199.15	326,562,300	32,793,591
2016 Budget	894	\$189.03	326,562,300	32,793,591

CAPITAL REGIONAL DISTRICT

2016 Budget

Magic Lake Sewer Utility (Pender)

Committee Review

Compiled and Presented by CRD Finance

October 2015

Service: 3.830 Magic Lake Sewer Utility (Pender)

Committee: Electoral Area Services

DEFINITION:

To provide, operate and maintain sewage collection and disposal facilities for the Magic Lake Estates Sewerage System Specified Area on North Pender Island (Local Service Establishment Bylaw No. 1873 - June 26, 1991).

PARTICIPATION:

Specified Area - B(764) SA#8

MAXIMUM LEVY:

Greater of \$200,000 or \$7.10 / \$1,000 to a maximum of \$1,419,070 on actual assessed value of land and improvements.

MAXIMUM CAPITAL DEBT:

AUTHORIZED: LA Bylaw No. 768 (Dec. 1980), 969(Apr. 1982). Borrowed \$1,843,000 for 25 years, retired.

AUTHORIZED: LA Bylaw No. 2609 (July 1998). Borrowed \$650,000 for 15 years, to 2013. Issue 71 payout in 2009.

REMAINING: \$0

COMMITTEE:

Magic Lake Estates Water & Sewer Committee established by Bylaw No. 1870 (November 28, 1990).

FUNDING:

Any deficiencies after user charge and/or frontage tax or parcel tax to be levied on taxable school assessments, excluding property that is taxable for school purposes only by Special Act.

User Charge: Per single family equivalency unit to connected properties only (Bylaw No. 899, August 1981)

Parcel Tax: Only on properties capable of being connected to system.

Connection Charge: Actual Engineering and Construction costs, plus 15% Administration costs. The minimum charge is \$500 - Bylaw No. 3673 (Feb 2010), as consolidated into Fees and Charges Bylaw No. 3778 (April 2011).

RESERVE FUND:

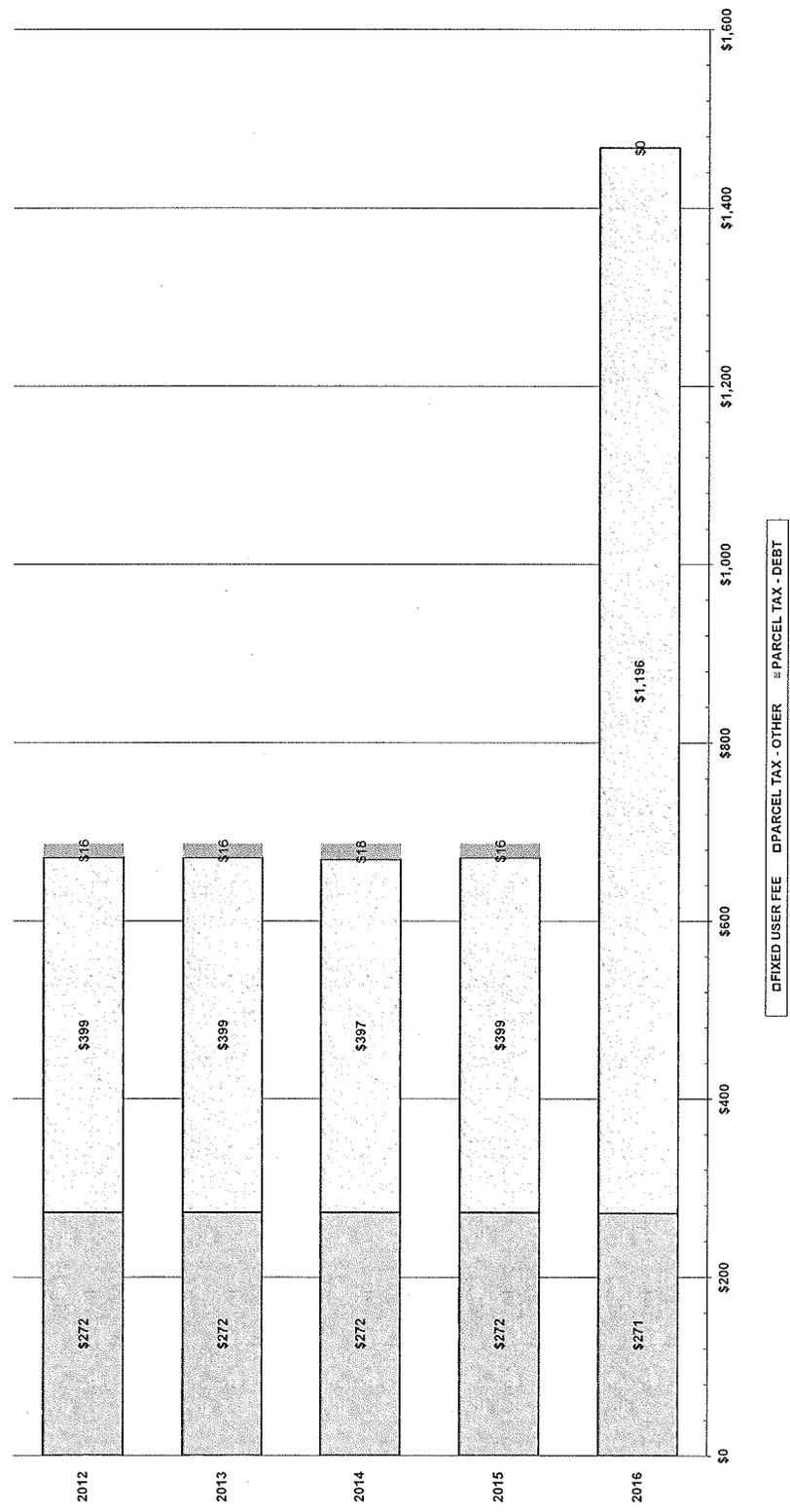
Magic Lake Estates sewage system capital reserve fund (Dec 17, 1986). Bylaw No. 1497.

	2015 BOARD ESTIMATED		2016 CORE BUDGET		FUTURE PROJECTIONS			
	BUDGET	ACTUAL	BUDGET	SINGLE SUPP	2017	2018	2019	2020
Magic Lake Sewer Utility (Pender)								
<u>OPERATING COSTS:</u>								
Sludge Hauling Contracts	40,000	42,000	43,000	-	43,860	44,740	45,630	46,540
Grit & Waste Sludge Disposal	32,000	42,000	42,000	-	42,840	43,700	44,570	45,460
Repairs & Maintenance	6,330	6,130	6,380	-	6,510	6,640	6,780	6,920
Allocations	31,380	31,380	32,070	-	32,720	33,370	34,030	34,700
Electricity	19,500	19,500	20,670	-	21,080	21,500	21,930	22,370
Supplies	15,060	14,650	14,260	-	14,540	14,820	15,110	15,400
Labour Charges	229,610	208,220	234,200	-	232,040	236,690	241,410	246,220
Contingency	11,000	-	7,780	-	7,940	8,100	8,260	8,430
Other Operating Expenses	28,920	29,640	27,340	-	27,880	28,420	29,000	29,580
TOTAL OPERATING COSTS	413,800	393,520	427,700	-	429,410	437,980	446,720	455,620
*Percentage Increase over prior year					0.4%	2.0%	2.0%	2.0%
<u>DEBT/RESERVES</u>								
Transfer to Capital Reserve Fund	85,910	85,910	53,930	530,000	22,400	14,930	15,250	15,590
Transfer to Maintenance Reserve Fund	5,000	5,000	5,000	-	5,100	5,200	5,300	5,410
Debt Reserve Fund	7,600	-	-	-	-	-	-	-
MFA Principal Payment	-	-	-	-	-	-	133,970	241,300
MFA Interest Payment	3,170	-	-	-	-	47,390	167,220	244,360
TOTAL DEBT / RESERVES	101,680	90,910	58,930	530,000	27,500	67,520	321,740	506,660
Sludge Disposal Recovery	(5,000)	(5,000)	(5,000)	-	-	-	-	-
TOTAL COSTS NET OF RECOVERIES	510,480	479,430	481,630	530,000	456,910	505,500	768,460	962,280
<u>FUNDING SOURCES (REVENUE)</u>								
Estimated balance C/F from 2015 to 2016	-	30,550	(30,550)	-	-	-	-	-
Balance C/F from 2014 to 2015	(58,840)	(58,840)	-	-	-	-	-	-
User Charges	(168,910)	(168,910)	(168,910)	-	(172,290)	(175,740)	(179,250)	(182,840)
Grants in Lieu	-	-	-	-	-	-	-	-
Other Revenue	(1,360)	(860)	(800)	-	(820)	(840)	(860)	(880)
TOTAL REVENUE	(229,110)	(228,610)	(169,710)	-	(173,110)	(176,580)	(180,110)	(183,720)
REQUISITION- PARCEL TAX	(281,370)	(281,370)	(281,370)	(530,000)	(283,800)	(328,920)	(588,350)	(778,560)
*Percentage increase over prior year requisition					-65.0%	15.9%	78.9%	32.3%

Service: 3.830 Magic Lake Sewer Utility (Pender) Committee: Electoral Area Services

<u>Year</u>	<u>Taxable Folios</u>	<u>Parcel Tax</u>	<u>SFE's</u>	<u>User Charge</u>	<u>Tax & Charges</u>	<u>Bylaw</u>	<u>Assessments \$(000's)</u>
2011	714	\$401.27	617	\$272.00	\$673.27	3778	242,173
2012	714	\$414.76	617	\$272.00	\$686.76	3823	238,971
2013	714	\$414.76	621	\$272.00	\$686.76	3892	217,896
2014	714	\$414.76	620	\$272.00	\$686.76	3924	205,430
2015	714	\$414.76	621	\$272.00	\$686.76		199,869
2016 Budget	714	\$1,196.03	623	\$271.12	\$1,467.16		199,869

CAPITAL REGIONAL DISTRICT MAGIC LAKE ESTATES SEWER FUNDING ANALYSIS 2012-2016



Actual Costs 2012-2015, Projected 2016
 Prepared by CRD Finance
 03/09/2015

CAPITAL REGIONAL DISTRICT - SCHEDULE G

CAPITAL BUDGET FORM 2016 & Forecast 2017 to 2020

Service #: **3.830**
 Service Name: **Magic Lake Sewer (Pender)**

Note: ↓ indicates a drop down menu is available for selection - Type Code (2); Funding Source (4); Participants (8)

Year (1)	Type Code (2)* ↓	Specific Project Description (3)	Capital Expense	Funding Amount Total (5)		Grant Program Sponsor (6)	Loan Authorization # (7)	Participants (8) ↓	%
				Source (4)** ↓					
2016	S	Chart Drive Interim Hauling	45,000	R	45,000				
2016	S	Public Engagement for Chart Drive	10,000	R	10,000				
2016	S	Chart Drive Replacement	760,000	R	760,000				
2017	S	Public Engagement for Infrastructure Replacement	15,000	R	15,000				
2017	S	Referendum for Infrastructure Replacement	10,000	R	10,000				
2018	S	Inflow/Infiltration Reduction Program - PH1	100,000	D	100,000		New debt		
2018	S	Schooner Lift Station Upgrades	557,000	D	557,000		New debt		
2018	S	New Cannon Pump Station & Forcemain - PH1	900,000	D	900,000		New debt		
2018	S	Schooner Clarifier & Aeration Tank - PH1	1,028,000	D	1,028,000		New debt		
2019	S	Inflow/Infiltration Reduction Program - PH2	117,000	D	117,000		New debt		
2019	S	New Cannon Pump Station & Forcemain - PH2	926,000	D	926,000		New debt		
2019	S	Schooner Clarifier & Aeration Tank - PH2	1,028,000	D	1,028,000		New debt		
2020	S	Replace 325m of Pipe Along Buck Lake	495,000	D	495,000		New debt		
2020	S	Replace 112m of Pipe on Privateer Rd	135,500	D	135,500		New debt		
*** Please insert more lines here (above this line) if required. ***									
TOTAL									
				6,126,500					

Type Codes (2) *	Funding Source Codes (4) **
L = Land	D = Debenture Debt (new debt only)
S = Engineering Structures	E = Equipment Replacement Fund
B = Buildings	G = Grants (Federal, Provincial)
V = Vehicles	O = Donations / Third Party Funding
E = Equipment	
	C = Capital Funds on Hand
	R = Reserve Fund
	S = Short Term Loans
	L = Lands Sales

Service: 3.830 Magic Lake Sewer Utility (Pender)

Committee: Electoral Area Services

#1 Chart Drive Interim Hauling (2016) \$45,000

The Chart drive septic system is still under the Island Health order for stop use until a replacement system is selected, designed and constructed. Funds are required to continue pumping and hauling sewage from the Chart Drive septic system to the Schooner wastewater system until the end of the 2016 fiscal year, or the capital project for replacement Chart Drive system is operational.

#2 Public Engagement for Chart Drive (2016) \$10,000

To engage the residents of Magic Lake Estates, an open house will be held with options for the Chart Drive replacement. The budget for this item is for staff time, presentation materials, notifications and advertisements, to hold and address an open house for the Chart Drive replacement.

#3 Chart Drive Replacement (2016) \$760,000

The Chart Drive septic system, which provides sewer service to 19 properties, has reached the end of its useful life and requires replacement. The budget for this item is for replacement of the septic system with a new system/process.

#4 Public Engagement for Infrastructure Replacement (2017) \$15,000

Public engagement is required to determine the direction that the residents will approve for an Infrastructure Replacement program. The budget for this item is for staff time, materials, notification and advertisement to hold and address an open house and town hall to seek the residents' input on an infrastructure replacement program for the Magic Lake Estates Sewer Local Service Area.

#5 Referendum for Infrastructure Replacement (2017) \$10,000

The budget item is for staff time, notification and advertisements to hold a referendum for an Infrastructure Replacement program based upon the results of the 2017 capital budget item, Public Engagement for Infrastructure Replacement.

- #6 Inflow/Infiltration Reduction Program – PH1 (2018) \$100,000**

Both Schooner and Cannon wastewater treatment plants are subject to overloading during heavy rainfall events which has resulted in numerous marine discharges that have exceeded our Ministry of Environment discharge permit requirements. A project plan will be developed in 2016, with key areas of investigation identified for further investigation or remediation.
- #7 Schooner Lift Station Upgrades (2018) \$557,000**

The Schooner Lift Station is past its serviceable life – the pumps, process piping and valving, pump lifting rails and electrical all have to be replaced. Additionally, confined space entry is required to isolate the pump station. The budget for this item is for design and the upgrades required for the Schooner Lift Station.
- #8 New Cannon Pump Station & Forcemain – PH1 (2018) \$900,000**

The Cannon wastewater treatment plant is subject to overloading during heavy rainfall events which has resulted in numerous marine discharges that have exceeded our Ministry of Environment discharge permit requirements and is at end of life. Additionally, the site is fully built out; no more expansion of the Cannon wastewater treatment plant is possible. The 2012 Stantec report recommends replacement of the Cannon wastewater treatment plant with a pump station and new forcemain, pumping sewage to the Schooner wastewater treatment plant via the Schooner Lift Station.
- #9 Schooner Clarifier & Aeration Tank – PH1 (2018) \$1,028,000**

The Schooner wastewater treatment plant is subject to overloading during heavy rainfall events, which has resulted in numerous marine discharges that have exceeded our Ministry of Environment discharge permit requirements. The budget for this item is for design and construction of the new clarifier and aeration tanks.
- #10 Inflow/Infiltration Reduction Program – PH2 (2019) \$117,000**

This is Phase 2 of the Inflow/Infiltration Reduction Program – Ph1 where key issues identified in Phase 1 will be addressed.

Service: 3.830 Magic Lake Sewer Utility (Pender) Committee: Electoral Area Services

- | | | |
|-----|--|--------------------|
| #11 | New Cannon Pump Station & Forcemain – PH2 (2019) | \$926,000 |
| | The budget for this item is for the continuation of the 2016 capital project New Cannon Pump Station & Forcemain, for continued construction. | |
| #12 | Schooner Clarifier & Aeration Tank – PH2 (2019) | \$1,028,000 |
| | The budget for this item is for the continuation of the 2016 capital project Schooner Clarifier & Aeration Tank, for continued construction. | |
| #13 | Replace 325 m of Pipe Along Buck Lake (2020) | \$495,000 |
| | The existing Asbestos Concrete 150mm diameter sewer along the east side of Buck Lake does not have sufficient capacity, has a shallow grade or reverse grade and needs to be increased to ensure the sewer system does not backup during peak flow events. | |
| #14 | Replace 112 m of Pipe on Privateers Rd (2020) | \$133,000 |
| | The existing Asbestos Concrete 150mm diameter sewer on Privateers from Dubloon Road to Brigadoon Road does not have sufficient capacity and needs to be increased to a 200mm diameter pipe to ensure the sewer system does not backup during peak flow events. | |

Reserve Schedule

Reserve Fund: 3.830 Magic Lake Sewer Utility (Pender) Capital Reserve Fund (Bylaw No.:1497)

Reserve Cash Flow

	Estimate				Budget		
	2015	2016	2017	2018	2019	2020	2020
Fund: 1042 Fund Center: 101386							
Beginning Balance	178,372	248,282	93,215	90,615	105,545	120,795	120,795
Transfer to Cap Fund (Based on Capital Plan)	(18,000)	(815,000)	(25,000)	-	-	-	-
Transfer from Operating Budget	85,910	583,930	22,400	14,930	15,250	15,590	15,590
Transfer from Equipment Replacement Fund	-	76,003	-	-	-	-	-
Interest Income*	2,000	-	-	-	-	-	-
Ending Balance \$	248,282	93,215	90,615	105,545	120,795	136,385	136,385

* Interest should be included in determining the estimated ending balance for the current year. Interest in planning years nets against inflation which is not included.

Reserve Schedule

Reserve Fund: 3.830 Magic Lake Sewer Utility (Pender) Equipment Replacement Fund

Reserve Cash Flow

**Fund: 1022 Fund Center: 101724
ERF Group: MGCLKSWR.ERF**

	Estimate 2015	Budget				
		2016	2017	2018	2019	2020
Beginning Balance	76,003	76,003	-	-	-	-
Transfer to Capital Reserve Fund	-	(76,003)	-	-	-	-
Ending Balance \$	76,003	-	-	-	-	-



Making a difference...together

**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, SEPTEMBER 8, 2015**

SUBJECT WATER QUALITY UPDATE – MAGIC LAKE ESTATES

ISSUE

This information report is to update the Committee on current water quality within the overall system.

BACKGROUND

Water Quality Sampling Program – July and August 2015

Buck Lake and Magic Lake provide the source waters for the Magic Lake Estates drinking water system. The water is treated through a new dissolved air floatation (DAF) treatment system. Under normal operating conditions, Buck Lake and Magic Lake are the combined water source with a blending rate of 80/20, respectively. However, as a result of water quality changes due to an algae bloom in Magic Lake in late July, Capital Regional District (CRD) staff decided to suspend the Magic Lake supply until water quality improved. Buck Lake was the sole water source for August and remains so.

For July and August 2015, operators collected samples for weekly chemistry (e.g., chlorine residuals) and bi-monthly biological (e.g., bacteria, algae), physical (e.g., taste and odour, pH, turbidity) and monthly chemical (e.g., total organic carbon, metals) parameters.

The potassium permanganate dosage was regularly adjusted in accordance with the findings from the regular jar tests by the operators. Ongoing monitoring of the effectiveness of the potassium permanganate and chlorine dosing continues.

Water Quality Monitoring

Analyses indicated the absence of bacteria throughout the distribution system, reinforcing the efficacy of the treatment system for this parameter, with the exception of one sample which was reported as positive *E. coli* in the distribution system on July 9. The positive result was determined to be a sampling error as it was confined to one location and resampling found no coliform bacteria or *E. coli* in the system. Staff reported one coloured water event in July. A metals sample collected on July 10 indicated elevated manganese in Magic Lake. It was determined that the elevated manganese was the source of the coloured water and the event was short-lived. Metals sampling in August found elevated concentrations of some metals including manganese in Magic Lake and relatively lower metals concentrations in Buck Lake.

Odour testing of the raw water found moderate to strong hay and/or grassy odours in July and moderate to strong earthy odours in August, which is similar to what was observed earlier this year. Taste and odour monitoring of the treated water continued to find moderate to strong earthy and chlorine characteristics.

CRD Water Quality staff analyzed Magic and Buck lakes source water samples collected on July 30 for biological parameters. In Magic Lake, results indicated blue-green algae species with the potential to produce cyanotoxins in sufficient numbers to present a water quality risk. Operations staff were directed to switch to Buck Lake as the sole water source for the system. Follow-up monitoring on August 11 confirmed that the blue-green algae population remained at an elevated level sufficient to continue to keep Magic Lake offline.

In late August, potential toxin-producing blue-green algae populations were found to be elevated in Buck Lake but subsiding in Magic Lake. A sample of each lake was collected and submitted to an external lab for toxin testing. Results from the toxin testing are expected in the second week of September. Should toxins be found in either lake, a review of the proportional combination of the two source waters will be undertaken to ensure the water delivered to the system remains high quality. Moreover, the existing treatment process is equipped to remove toxins before they enter the treated water system through the potassium permanganate pre-treatment, the DAF process and chlorination.

Surface algae mats have been observed on both Magic and Buck Lakes in August. Analysis of collected samples found a mixture of plant and algae material which likely accumulated around the shoreline due to wind effects. Some blue-green algae were found in algae mats on Buck Lake, however, concentrations were not at levels of concern and no risk was determined to the water system from the algae mats as they are confined to the surface of the lake, well above the elevation of the water intake.

Underwater growths were found in Magic Lake in late August (Appendix A). Water Quality staff analyzed a piece of the growth and found the organism to be a colony-forming, filter feeding animal called a bryozoan. Bryozoans are normal in freshwater and saltwater environments and generally indicate good water quality as they cannot flourish in high or low nutrient conditions. Bryozoans pose no risk to humans or the drinking water supply, however they have the potential to clog filters.

Commission members are working with CRD staff to investigate an abundant growth of lily pads on Magic Lake near the right of way access to the dam. Communications are underway to better understand the issue and the options to deal with the lily pads.

RECOMMENDATION

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



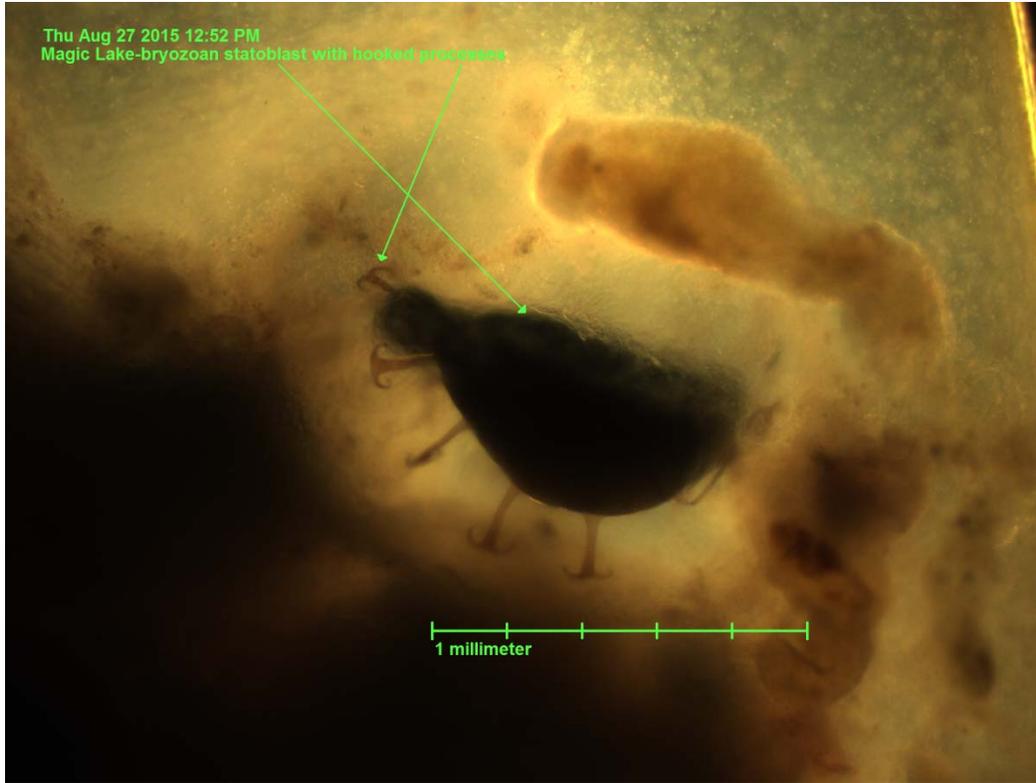
Christoph Moch, P.Eng.
Manager, Water Quality Operations



Glenn Harris, Ph.D., R.P.Bio
Senior Manager, Environmental Protection
Concurrence

CM/kw:cam
Attachment: 1

Section of Bryozoan Colony
From Magic Lake – August 2015





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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, SEPTEMBER 8, 2015**

**SUBJECT WATER AND WASTEWATER OPERATIONS REPORT – JULY AND AUGUST
2015**

ISSUE

The purpose of this report is to provide the Magic Lake Estates Water and Sewer Committee general information regarding significant operational activities carried out for the water and wastewater service.

BACKGROUND

During the month of July and August 2015, operations staff attended to the regular operational and maintenance activities for the water and wastewater service. The activities list below is intended to capture significant regular maintenance undertakings, capital project activities and unplanned emergency events.

Wastewater Service Activities

- Repaired failed “Muffin Monster” (rag chopping device) at the Schooner Wastewater Treatment Facility.
- Emergency response to Masthead sewage pump station due to pump overload as a result of “ragging” (occurs frequently due to inappropriate material being placed down the sewer system).
- Emergency response to Cutlass sewage pump station due to pump overload as a result of “ragging”.
- Continued weekly Chart drive septage hauling and disposal.
- Emergency response as a result of power outages (late August)

Water Service Activities

- Emergency response to Privateers pressure regulating station, as a result of receiving an over-pressurisation alarm. Replaced the “speed controller” on the pressure regulating valve.
- Emergency response to brown water complaint from 2682 Galleon Way; caused by hydrant maintenance in the area. Additional flushing completed as a result.
- Response to observed high water consumption within the Captains pressure zone area. Operational effort made to locate a possible water system leak which was eventually found and repairs performed.
- Additional Magic Lake raw water sampling performed as a result of a suspected blue-green algal bloom.
- Emergency repairs to the Magic Lake raw water pump station pump drive coupler.
- Water leak repair at 27143 Schooner Way
- Buck Lake intake is requiring priming / air purge every 2 days. Air purging becoming more frequent.
- Emergency response as a result of power outages (late August)

ALTERNATIVES

Alternative 1

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

Alternative 2

That the Magic Lake Estates Water and Sewer Committee request CRD staff to provide further information.

IMPLICATIONS

Alternative 1 - There are no implications.

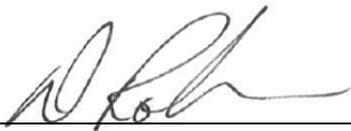
Alternative 2 - There will be extra staff time required in order to; collect additional information; prepare and present a staff report to the committee for their consideration. As a result there will be additional costs.

CONCLUSION

The operations staff attended to the regular operational and maintenance activities for the water and wastewater service for July and August 2015.

RECOMMENDATION

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



Dan Robson, AScT
Manager, Saanich Peninsula and Gulf
Islands Operations



Ted Robbins, B.Sc., C.Tech
General Manager, Integrated Water Services
Concurrence

DR:ls:



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REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE MEETING OF TUESDAY, SEPTEMBER 8, 2015

SUBJECT WATER SYSTEM CAPITAL IMPROVEMENT PROJECT UPDATE

ISSUE

This report is provided to the Magic Lake Estates Water and Sewer Committee as a general update regarding the activities and financial summary related to the water system capital improvement project.

BACKGROUND

This information report is provided to the Magic Lake Estates Water and Sewer Committee as an update for the water system capital improvement project. At the time of authoring this report the following work has been completed or is planned:

Activity Since Last Report

- Rohl has completed all deficiencies related to the capital project including delivery of the final copies of the operating and maintenance manuals and therefore, Rohl is expected to claim for total completion in accordance with the terms of the contract.
- The Capital Regional District (CRD) and Rohl have been working to finalize payments regarding the claims and liens filed against the project.

Planned Work for Next Period

- The warranty issue relating to corroding stainless steel pipe segments is awaiting a report from Rohl's materials testing consultant Accuren, to determine the extent of the issue and a plan from Rohl for repairs or replacement.
- The CRD staff will work on completing miscellaneous project close-out tasks including reporting to the Province of BC regarding agreement deliverables and liens issue oversight.
- Installation by the CRD staff of two eye wash/drench hose stations, one at each of the two raw water pump stations.

Project Financial Summary

The CRD staff conducted a project budget review and although there are still some issues to resolve, the overall project budget is estimated to be at a grantable surplus of approximately \$170,000.

Project expenditure items still to be finalized include:

1. AECOM's final engineering fees;
2. Finalizing lien claims, liquidated damages and legal costs;
3. Resolution of warranty issues;
4. Finalization of any interest credits or deductions related to the project;

The CRD staff will provide further financial details at the meeting based on possible outcomes.

ALTERNATIVES

Alternative 1

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

Alternative 2

That the Magic Lake Estates Water and Sewer Committee request the CRD staff to provide further information.

IMPLICATIONS

Alternative 1 – That the Magic Lake Estates Water and Sewer Committee receive this report information.

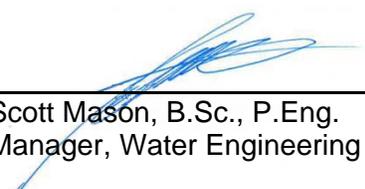
Alternative 2 - If the Magic Lake Estates Water and Sewer Committee requests further information, CRD staff will provide information at a future meeting.

CONCLUSION

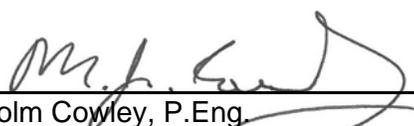
The water system capital improvement project has seen the commissioning of the new works and the contractor and consultant are in the project close-out phase with only warranty items remaining.

RECOMMENDATION

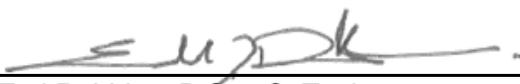
That the Magic Lake Estates Water and Sewer Committee receive the staff report for information.



Scott Mason, B.Sc., P.Eng.
Manager, Water Engineering and Planning



Malcolm Cowley, P.Eng.
Senior Manager, Infrastructure Engineering
Concurrence



Ted Robbins, B.Sc., C. Tech
General Manager, Integrated Water Services
Concurrence

JM/SM:ls