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MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
Notice of Meeting on **Tuesday, October 13, 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 September 8, 2015
3. Chart Drive Project Update – Next Steps (staff report)
4. 2016 Operating and Capital Budgets (staff report)
5. Water System Capital Improvement Project Update (information report)
6. 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.*
7. Water and Wastewater Operations Report - July/August/September (information report)
8. Water Quality Update (information report)
9. Review of Action List
10. Correspondence
11. New Business
12. 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, September 8, 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: M. Cowley, Senior Manager, Infrastructure Engineering, P. Dayton, Senior Financial Analyst, S. Mason, Manager, Water Engineering and Planning, D. Puskas, Acting Manager, Wastewater Engineering and Planning, D. Robson, Manager, Saanich Peninsula and Gulf Islands Operations, L. Siemens (recorder)

The meeting was called to order at 9:35 am

1. Approval of Agenda

The order of the agenda was changed as follows:

- Item 5 will move to Item 4; Item 4 will move to Item 5

MOVED by P. Watson, **SECONDED** by K. Heslop,
That the agenda be approved as amended.

CARRIED

2. Adoption of Minutes of July 14, 2015

MOVED by K. Heslop, **SECONDED** by P. Watson,
That the minutes of the July 14, 2015 meeting be adopted as previously circulated.

CARRIED

3. Review of Action List

The action list was reviewed and updated.

4. Chart Drive Preliminary Alternative Assessment

Peter Gigliotti from Urban Systems presented a PowerPoint presentation and responded to questions from the committee.

5. Chart Drive Septic System Upgrade Cost Estimates and Magic Lake Estates Sewer Servicing

M. Cowley presented a written report.

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

CARRIED

6. Wastewater Infrastructure Replacement Project Update – Grant Application Response and Next Steps

M. Cowley presented a written report.

A lengthy discussion took place. Staff responded to several questions from the committee. A discussion took place regarding progressing with multiple design assignments to establish more accurate capital budget estimates.

MOVED by J. Gill, **SECONDED** by A. Wilson,
That the Magic Lake Estates Water and Sewer Committee direct staff to:

1. Complete tender ready designs for Options 2b (new design tank and raised bed synthetic media septic field) and 4 (pump station and force main) and proceed to tender once funding is approved and bring a recommendation back to the committee for approval; and
2. Fund associated costs to retain a design consultant from the capital reserves up to \$100,000.

Director Howe left the meeting at 12:45pm.

The vote was then taken.

CARRIED
Petrie Opposed
Steel Opposed

A. Wilson and P. Watson left the meeting at 12:50pm.

7. Draft 2016 Operating and Capital Budgets

Deferred – quorum lost.

8. Water Quality Update – Magic Lake Estates

Information report was included in the agenda. Item not discussed. Quorum lost.

9. Water and Wastewater Operations Report – July and August 2015

Information report was included in the agenda. Item not discussed. Quorum lost.

10. Water System Capital Improvement Project Update

Information report was included in the agenda. Item not discussed. Quorum lost.

11. Motion to Close the Meeting

Deferred – quorum lost.

12. Correspondence

Deferred – quorum lost.

13. New Business

Deferred – quorum lost.

14. Adjournment

The meeting was adjourned at 1:10 pm.

DRAFT



Making a difference...together

**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, OCTOBER 13, 2015**

SUBJECT CHART DRIVE PROJECT UPDATE – NEXT STEPS

ISSUE

To provide an update on the Chart Drive septic field replacement project and identify next steps to advance the project forward.

BACKGROUND

At the September 8, 2015 committee meeting, the following resolution was passed:

1. Complete tender ready designs for Option 2b (new dosing tank and raised bed synthetic media septic field) and Option 4 (pump station and force main), proceed to tender once funding is approved, and bring a recommendation back to the committee for approval; and
2. Fund associated costs to retain a design consultant from the capital reserves up to \$100,000.

Since that time, staff have prepared and issued a Request for Proposals (RFP) for design consulting services to complete two designs as per the committee's motion. The RFP will close on October 21, 2015 and it is anticipated that the design work will commence early in December and be complete by the end of February 2016.

Although, there are sufficient funds available in the capital reserve fund for the design phase, there are insufficient funds in the Capital Reserve to issue a tender and award a construction contract, therefore, direction and approval is required from the committee on how to fund the remainder of this project.

Funding Source Options and Approval Process

The following funding options are available for consideration to continue advancement of the project(s):

1. Capital reserve funds (partial funding only);
2. Capital requisition (parcel tax increase over one year to fund the project without financing/loan);
3. Alternative approval process (AAP) (to obtain approval of the electors to undertake long term financing/loan);
4. New referendum (to obtain assent of the electors to undertake long term financing/loan).

The Capital Reserve Fund balance at the end of 2015 is estimated at \$148,282, which is not enough to fund the project. The shortfall would have to be funded through, capital requisition

(one-time parcel tax increase), or by taking out a loan subject to elector approval through a AAP or a new referendum.

Local governments, under Part 2 of the *Local Government Act* may requisition capital funds through parcel taxes up to the maximum amount specified in the service establishment bylaw which is \$1,418,000 for this service (Bylaw No. 1873). However, the requisition amount would have to be approved by the committee and the Capital Regional District (CRD) Board as part of the 2016 budget so that taxes could be requisitioned in 2016. For the Chart Drive project, the full amount would have to be requisitioned in order for the project to proceed. This would result in a significant parcel tax increase for the 714 taxable folios within the service area.

The other option for securing funds is by obtaining a loan, but this must be approved by the electors through either a referendum or an alternative approval process as prescribed in the *Local Government Act*. Some of the key components of these two processes are noted below.

The Alternative Approval Process (AAP) requires two public notices to be published, after which the eligible voters have 30 days to submit their opinion to whether to adopt the borrowing bylaw. If more than 10% of the electors oppose the adoption of the bylaw, then either a referendum is required to borrow funds or a capital requisition to increase parcel taxes could be implemented as noted above. The AAP would take approximately 3 to 6 months depending on the extent of public engagement. A Frequently Asked Questions about AAP is attached as Appendix A.

The referendum process is used to seek approval by assent of the electors where a majority votes are required to pass the borrowing bylaw. There are a number of additional steps required for a referendum including: advertising notices, approving the referendum question, retaining an Election Officer, preparing ballots, additional staffing for polling stations, etc. which is why it is typically a more expensive process than an AAP, and takes approximately six to nine months to complete.

The decision on which approval process to use depends on a number of factors including: history, scale, cost, timing, and public expectations. If the public have been actively engaged in understanding the process and the rationale for choosing it, then there is a more likely outcome of support.

Estimated Project Costs

Numerous conceptual solutions and cost estimates have been prepared for the Chart Drive project, ranging from \$700,000 for a raised bed septic field to \$760,000 for a pump station and force main. The committee wants to determine the best-value solution and, therefore, have requested that both options be designed and tendered (as noted in the motion from September 8, 2015). While it is hoped that the actual costs will be less than the project budget, it is recommended that the project budget be established that includes appropriate construction allowances and contingencies to ensure that the project can be completed within budget.

Now that two designs are being undertaken and a conceptual project schedule has been developed, there are some additional costs that need to be included into the project cost as follows:

1. Additional Design - \$50,000 (as noted at the September 8, 2015 meeting); and
2. Additional Pumping & Hauling - \$45,000 to \$82,000 (depending on funding approval process which affects the project duration).

Additional Project Scope and Financing Considerations

At the September 8, 2015 committee meeting, committee members inquired about two issues:

1. Can funds be borrowed over a longer term in order to reduce the annual cost per household?; and
2. If funds are borrowed over a longer term, should additional projects be completed as part of the same loan so that the community is not asked to borrow money year after year?

To assist with answering these questions, staff have prepared two options for the committee's consideration as follows:

Option 1 – Complete Chart Drive septic field replacement, upgrade the under capacity sewers along Buck Lake and Privateers Road, complete the Inflow & Infiltration program, and assess the tanks at Schooner WWTP (collectively, these projects were identified as Phase 1 and Phase 2 in the September 8, 2015 staff report). Various funding scenarios have been developed based on AAP or a referendum for 5, 10 and 15 year amortization periods.

Option 2 – Complete Chart Drive septic field replacement only, with partial funding from capital reserves and the remainder from capital requisition.

The two options and their estimated cost per household implications are included in Appendix B. The table in the appendix notes that \$240,000 is funded from the Capital Reserve Fund, but only \$140,000 is noted in the alternatives below because \$100,000 was already approved by the Committee to complete the Chart Drive designs.

Based on the preceding information the following alternatives are presented for the committee's consideration.

ALTERNATIVES

Alternative 1

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

- A. Direct staff to proceed with Option 1, (replacement of the Chart Drive septic field, upgrade Buck Lake and Privateers sewers, complete the I&I program, and assess the tanks at Schooner WWTP), to be funded by a combination of capital reserve funds and a long term loan, in the amounts as follows:
 - a. Capital Reserve funds: \$140,000
 - b. Loan (up to): \$1,530,000.
- B. Direct staff to proceed with public engagement on the AAP process; and

- C. Subject to a successful AAP, prepare a loan authorization bylaw for CRD Board approval, based on a principle of up to \$1,530,000 and a 10-year term.

Alternative 2

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

- A. Direct staff to proceed with Option 2, (replacement of Chart Drive septic field only), to be funded by a combination of capital reserve funds and capital requisition (one-time parcel tax increase) in the amounts as follows:
- a. Capital Reserve funds: \$140,000
 - b. Capital Requisition (one-time parcel tax increase): \$615,000; which based on 714 folios and including the 5.25% surveyors fee, equates to approximately \$907 per folio.

IMPLICATIONS

Alternative 1 – Should the committee approve this alternative, staff will commence preparation of materials for the public engagement for the projects and the AAP rationale and requirements.

Additional costs for pumping and hauling from Chart Drive (for three to six months) will be required due to the duration of the AAP, but this amounts to a relatively small cost when included in the overall loan. However, this alternative enables other high priority projects to be completed which will help to prevent potential wastewater overflows.

The estimated new annual parcel tax, in addition to the existing parcel tax levy, for the new loan and 10-year amortization period is approximately \$260.

The AAP sometimes can be perceived to be a negative process, but the electors have already been informed on many aspects of the required work and this process can achieve the required approval at least cost. In addition, this process takes the least amount time which will minimize the amount of pumping and hauling from Chart Drive. Staff intend to engage the community again to present the new (smaller set of projects) and explain the rationale of AAP and why it is being recommended.

Alternative 2 – Should the committee approve this alternative, only Chart Drive will be addressed, but the estimated completion for this project is anticipated to be the end of 2016. Staff will commence preparation of budget documents to complete the capital requisition process. This alternative will result in a one-time parcel tax increase of approximately \$907 per folio.

CONCLUSION

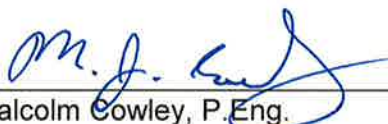
A solution to replace the Chart Drive septic field must proceed to minimize the duration and cost of pumping and hauling which is financially unsustainable. At the request of the committee, a consultant is being retained to complete detailed design of a raised sand bed septic field and a pump station and force main for Chart Drive. Funding for the Chart Drive Septic System Replacement project will require a combination of using existing reserve funds and another funding method. The committee can decide just to proceed with Chart Drive (identified as Phase 1 in the September 8, 2015 staff report) only or to undertake some other critical projects

at the same time (Phase 1 and 2). The remaining identified wastewater infrastructure (Phase 3 and 4) still must be addressed, but they have been re-prioritized into future phases to allow for easing in of tax increases as well as to provide time to explore alternative solutions and approaches.

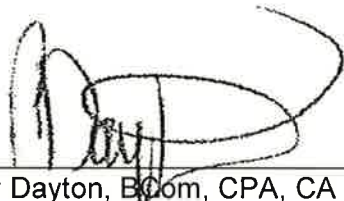
RECOMMENDATION

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


- A. Direct staff to proceed with Option 1, (replacement of the Chart Drive septic field, upgrade Buck Lake and Privateers sewers, complete the I&I program, and assess the tanks at Schooner WWTP), to be funded by a combination of capital reserve funds and a long term loan, in the amounts as follows:
 - a. Capital Reserve funds: \$140,000
 - b. Loan (up to): \$1,530,000.
- B. Direct staff to proceed with public engagement on the AAP process; and
- C. Subject to a successful AAP, prepare a loan authorization bylaw for CRD Board approval, based on a principle of up to \$1,530,000 and a 10-year term.



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



Peggy Dayton, B.Com, CPA, CA
Senior Financial Analyst
Financial Services



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

DP/MC:

- Attachments: 1: Appendix A – AAP FAQ Sheet
Appendix B – Chart Drive Replacement Project – Alternative Scope and Financing Options

Frequently Asked Questions

- Q:** *When a corporation owns all or part of a property, can an elector response form be submitted on behalf of the property owner(s) as either resident or non-resident property elector?*
- A:** **No.** Eligibility to submit elector response forms for an AAP parallels eligibility to vote in general local elections. There is no business or corporate vote in British Columbia, therefore when a corporation owns all or part of a property, even if it is in the minority or owns that property with an individual who is otherwise eligible to submit an elector response form, no one may submit an elector response form in relation to that property.
- Q:** *Can local governments cancel the AAP while in process and proceed with an assent vote?*
- A:** **No.** When a local government has initiated an AAP and decides part way through that an assent vote is more appropriate – such as in cases where the 10% threshold is reached early in the AAP – the local government must still complete the AAP. However, the local government may incorporate insight into public opinion obtained during the AAP into decision-making on whether to proceed to an assent vote.
- Q:** *If 10% or more of electors sign a response form and the local government decides to proceed to an assent vote, is the local government required to seek Inspector of Municipalities (Inspector) approval for a bylaw again?*
- A:** **No.** The local government is not required to seek Inspector approval again.
- Q:** *Can an elector withdraw an AAP response form after it was submitted to the local government?*
- A:** **Yes.** An elector can ask the Corporate Officer to return their response form or to have their name removed from the petition-style form prior to the AAP deadline. An elector can no longer withdraw their form or have their name removed from the petition-style form after the AAP deadline has passed.
- Q:** *Can the number of responses received while the AAP is underway be released to the public?*
- A:** Releasing this information could alter the outcome of the AAP, as electors may base their decision on the number of response forms already submitted and whether the 10% threshold has been met. The appropriate time to release the number of elector responses is after the deadline for submissions has passed and the Corporate Officer has certified the results.
- Q:** *Who can access and/or review the elector response forms during or after the AAP?*
- A:** Only the Corporate Officer, or their designate, can review and certify elector response forms during an AAP. The Corporate Officer is responsible for the safe-keeping of the elector response forms throughout, and after, the AAP. Local governments must retain elector response forms as per requirements established in the *Freedom of Information and Protection of Privacy Act* (FIPPA, Part 3) after the AAP has been completed.
- Q:** *When determining deadlines in relation to AAPs, are weekends and holidays counted?*
- A:** **Yes.** All days are counted as per the *Interpretation Act*. Under the *Interpretation Act* rules for counting time, the day the second notice is published and the deadline date itself *do not count* as part of the 30 day minimum requirement. An AAP can therefore not be completed in less than 32 days.

- Q:** *Can elector response forms be submitted by electronic means?*
- A:** **Yes.** Local governments can allow elector response forms to be submitted by electronic means, such as by fax or email. It is best to establish and set out any related requirements in a formal policy document. If local governments intend to accept electronic submissions in accordance with their policy, this information should be present on the elector response form. Local governments may also require that the original, hardcopy of forms sent electronically also be submitted.
- Q:** *What are the alternative means of advertising for an AAP?*
- A:** Local governments may undertake providing notice through alternative means if publication in a locally circulated newspaper is not practicable. Alternative means could include any type of notice that the council or regional district board believes will adequately reach the electorate, such as online advertising, open houses, direct mailing and/or public meetings.
- Q:** *Are local governments allowed to spend taxpayers' money promoting the bylaw that is subject to an AAP?*
- A:** **Yes.** Local governments may advertise and communicate information about the proposed bylaw including placing radio and newspaper ads, writing internet articles or posting notices throughout the community. Although information-sharing and advertising are permitted, councils and regional district boards would need to give consideration to the public perception of expending public funds and staff resources to promote a particular viewpoint during an AAP. Councils and regional district boards that engage in promotional activities that are seen as biased, will likely face questions from the public about whether or not the AAP process was fair.
- Q:** *How long does a local government have to hold an AAP after receiving Inspector of Municipalities approval of a bylaw?*
- A:** Local governments that have received Inspector of Municipalities approval may initiate the AAP at any time. However, an AAP cannot be held before a local government receives Inspector approval.
- Q:** *How early can a local government begin advertising for an AAP?*
- A:** Local governments must not publish the two required AAP notices until after Inspector of Municipalities approval has been granted. However, a local government can provide general information to electors about the initiative under consideration in the AAP at any time.
- Q:** *Can the 30-day period for receiving elector response forms be extended after the public notices have been published?*
- A:** **No.** The 30-day period cannot be extended once the required notices have been published.
- Q:** *Can signs, for or against, the AAP be posted in public places?*
- A:** **Yes.** Local governments generally establish bylaws to regulate the size, placement, maintenance and removal of signs within the community. Any signs or posters used during an AAP must comply with the applicable local government bylaw. The Ministry of Transportation and Infrastructure (MoTI) regulates sign placement along provincial highways, medians, bridges and major roadways. Therefore, signs placed on MoTI property must comply with provincial regulations.

**Magic Lake Estates Sewer Service
Chart Drive Replacement Project - Alternative Scope and Financing Options**

Project Options	Project Description	Original Estimated Project Cost (Sept. 2014)	Funding Options		Estimated Completion Date for Chart Drive	Revised Project Cost			Estimated Annual Cost per Household (parcel tax increase) ^e						
			Option	Funding Approval Process Duration		Estimated Funding Approval Costs	Estimated Pump & Haul Costs ^c	Added Cost for 2 Chart Drive Designs	Revised Total Cost of each of the Options	Partial Funding from Reserve Fund ^e	Remaining Funding (from Parcel Tax or Loan)	1-Year Term (no interest)	3-Year Term (3% interest)	5-Year Term (3% interest)	10-Year Term (3% interest)
1	Chart Drive Septic Field Replacement Buck Lake and Privateers Sewer Upgrades Inflow & Infiltration Program Ultrasonic Testing of Schooner Tanks	\$1,625,000	AAP	3-6 months ^a	\$25,000	\$70,000	\$50,000	\$1,770,000	\$240,000	\$1,530,000	N/A	\$819	\$488	\$260	\$230
			Referendum	6-9 months ^a	\$40,000	\$82,000		\$1,797,000	\$240,000	\$1,557,000	N/A	\$834	\$497	\$265	\$234
2	Chart Drive Septic Field Replacement	\$760,000	Parcel Tax	0 days	\$0	\$45,000	\$50,000	\$855,000	\$240,000	\$615,000	\$907	N/A	N/A	N/A	N/A

Notes:

- ^a - Duration for AAP and Referendum Processes includes 2 months added to the schedule for public engagement.
- ^b - Estimated Completion Date for Chart Drive, under AAP, includes 6 months added to the schedule, and under the referendum it includes 9 months added to the schedule.
- ^c - Estimated Pump and Haul Costs for Option 1 is from Feb. to Dec. 2016 at \$1,000 per week.
- ^d - Estimated Pump and Haul Costs for Option 2, under AAP, is from Feb. 2016 to June 2017 at \$1,000 per week.
- ^e - Estimated Pump and Haul Costs for Option 2, under Referendum, is from Feb. 2016 to September 2017 at \$1,000 per week.
- ^f - \$100,000 previously approved at the September 8, 2015 Committee meeting
- ^g - Parcel tax per household, in addition to current parcel tax levy



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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, OCTOBER 13, 2015**

SUBJECT 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. To reduce the annual financial burden on the tax payer, and to replace more critical infrastructure, the Chart Drive septic system replacement is bundled with the Buck Lake and Privateers pipe replacement, I&I program and assessment of the Schooner WWTP aeration and clarifier tanks for an estimated total project cost of \$1,770,000. It is proposed that \$240,000 of capital reserves be used to partially fund the project while the remaining \$1,530,000 be funded through an alternative approval process.

In 2015, the Committee approved the expenditure of \$118,000 from the capital reserve fund for: Facilitation of Public Process for Referendum (\$3,000), Chart Drive Assessment of Options (\$15,000), and Detailed Design of two options Chart Drive (\$100,000), Taking this expenditure

into account, as well as interest that will be earned during 2015, the capital reserve fund balance at the end of 2015 is projected to be \$148,282.

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 upcoming capital projects in order to minimize parcel tax increases.

MFA Debt

Subject to a successful Alternative Approval Process, there will be an initial debt cost in 2016 to establish the loan. The full cost of the loan, (at an estimated parcel tax increase of \$260), will come in to effect in 2017.

2016 Revenue (User Charge and Parcel Tax)

It is proposed that:

- User charge revenue remain unchanged at \$168,910, based on 623 SFE's, equating to \$271.12 per SFE, down \$0.88 from 2015.
- Parcel tax revenue be increased by \$53,590 to \$334,960 to allow for the set-up of new debt for the 2016 projects as noted below; based on 714 taxable folios, and including the 5.25% surveyors tax fee, this equates to \$493.76 per folio, an increase of \$79.00 from 2015.

2016 Sewer Capital Plan

The following capital work is planned for 2016:

Chart Drive Interim Hauling: (\$70,000)

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 new Chart Drive system is operational.

Public Engagement for Approval of 2016 Projects: (\$25,000)

To engage the residents of Magic Lake Estates on upcoming projects, an open house will be held to discuss the projects and the approval process required to borrow funds. The budget for this item is for staff time, presentation materials, notifications, advertisements, open house costs, and AAP costs.

Replace 325m of Pipe Along Buck Lake: (\$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: (\$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. The budget for this item is for design and replacement of 112m of pipe on Privateers Road.

Inflow/Infiltration Reduction Program: (\$217,000)

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.

Ultrasonic Testing of Schooner Tanks: (\$20,000)

The 2012 Stantec assessment report questioned the condition of the Schooner WWTP aeration and clarifier tanks, their condition and possible cost of replacement has a direct impact on the requirement and timeline for replacement of the Schooner WWTP. This budget item is for consultant services to assess the condition and estimate the serviceable life remaining for the Schooner WWTP aeration and clarifier tanks.

Chart Drive Septic Field: (\$710,000)

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. The detailed design of two options for Chart Drive was approved at the September 8, 2015 Committee meeting at a cost of \$100,000 funded from the Capital Reserve Fund.

Forecast 2017-2020

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

The following capital projects are proposed:

Annual Pipe Replacement – 2018 (\$512,000)

Sections of pipe identified in the 2016 capital project, Inflow/Infiltration Reduction Program, will need to be replaced. The budget for this item is for pipe and manhole replacement or remediation.

Upgrade 5 Lift Stations – 2018 (\$1,000,000)

The 2012 Stantec assessment report identified that the Masthead, Galleon, Cutlass, Capstan and Buccaneers pump stations pumps, pipes and valving were in need of replacement due to age and condition. This budget item is for replacement of the pumps, pipes and valving at the 5 pump stations.

Schooner Lift Station Upgrades – 2019 (\$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.

Replace Cannon WWTP with Pump Station and Forcemain – 2020 (\$1,826,000)

The Canon wastewater treatment plant is nearing the end of its design life and is subject to overloading during heavy rainfall events which has resulted in numerous marine discharges that have exceeded the Ministry of Environment's discharge permit. In addition, the site is fully built out and there is no more room for expanding the plant. The 2012 Stantec report recommends replacement of the treatment plant with a new pump station and forcemain that would direct the wastewater towards Schooner WWTP.

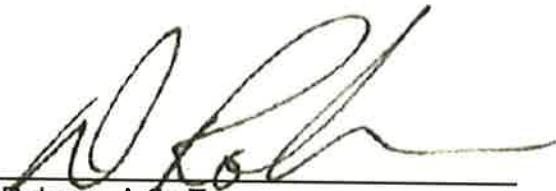
Schooner Clarifier and Aeration Tanks – 2020 (\$2,056,000)

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

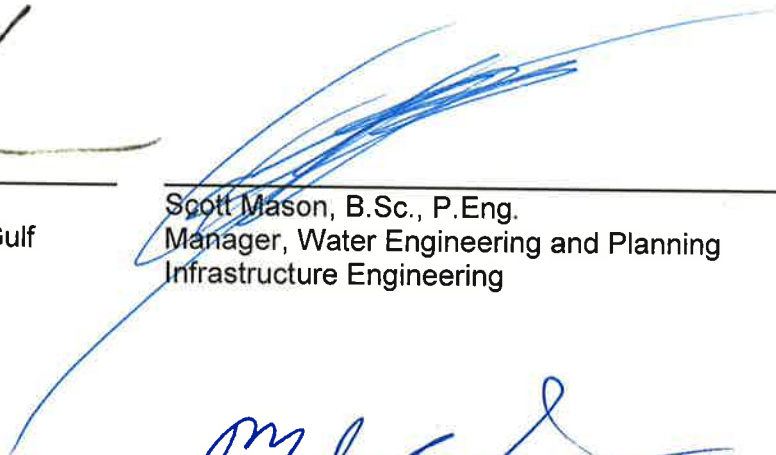
RECOMMENDATIONS

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 \$493.76 and User Charge of \$271.12 for the Magic Lake Estates Sewer Service; and
9. Balance the Magic Lake Estates Sewer Service 2015 actual revenue and expense on the 2015 transfer to the capital reserve fund.
10. Authorize the transfer of the balance remaining in the Equipment Replacement Fund to the Capital Reserve Fund



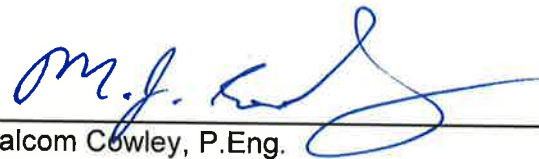
Dan Robson, A.Sc.T
Manager, Saanich Peninsula and Gulf
Islands Operations
Infrastructure Operations



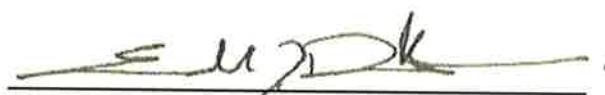
Scott Mason, B.Sc., P.Eng.
Manager, Water Engineering and Planning
Infrastructure Engineering



Dale Puskas, P.Eng.
Project Engineer, Wastewater Engineering
and Planning
Infrastructure Engineering



Malcom Cowley, P.Eng.
Acting Sr. 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

Oct 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.
- 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

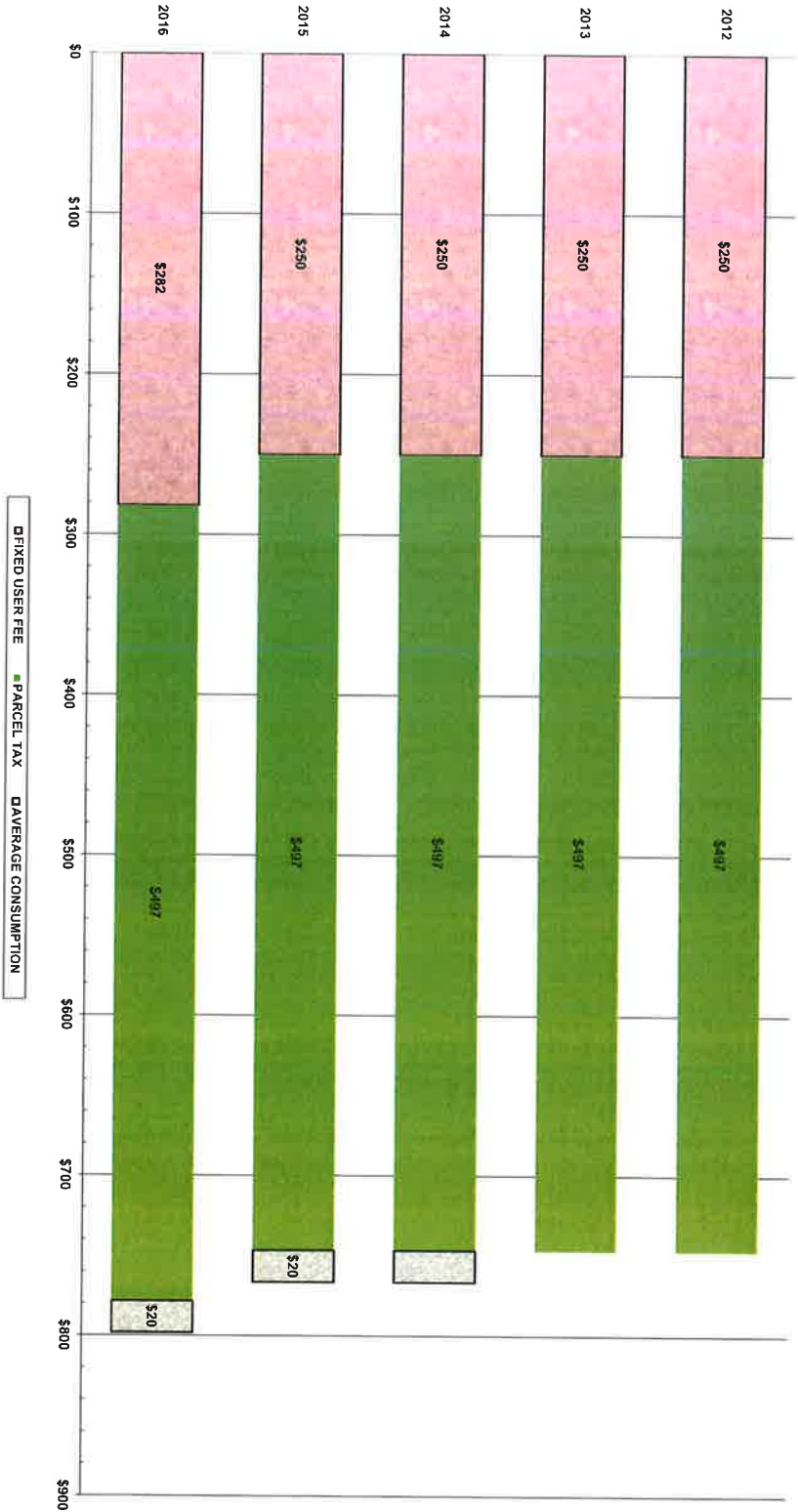
	2015 BOARD BUDGET		2015 ESTIMATED ACTUAL		BUDGET REQUEST				FUTURE PROJECTIONS				
	2015 BOARD BUDGET	2015 ESTIMATED ACTUAL	2016 CORE BUDGET	2016 SUPPLEMENTARY	2016 TOTAL	2017	2018	2019	2020				
Magic Lake Estates Water (Pender)													
OPERATING COSTS:													
Repairs & Maintenance	27,000	17,600	25,000	-	25,000	25,500	26,000	26,520	27,040				
Allocations	34,740	34,990	34,490	-	34,490	35,180	35,900	36,620	37,360				
Water Testing	17,500	16,500	17,500	-	17,500	17,850	18,210	18,570	18,940				
Electricity	33,000	44,000	45,000	-	45,000	45,900	46,820	47,760	48,720				
Supplies	50,400	44,000	49,500	-	49,500	50,480	51,480	52,500	53,550				
Labour Charges	317,860	336,140	324,210	-	324,210	330,700	336,730	343,470	349,740				
Contingency	18,710	-	15,000	-	15,000	15,300	15,610	15,920	16,240				
Other Operating Expenses	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%				
DEBT/RESERVES													
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				
FUNDING SOURCES (REVENUE)													
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)	(20,400)	(20,810)	(21,230)	(21,650)				
Connection Charges	-	-	-	-	-	-	-	-	-				
Lease Revenue	(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
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<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
05/10/2015

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	Source (4)** ↓	Funding Amount Total (5)	Grant Program Sponsor (6)	Loan Authorization # (7)	Participants (8) ↓	%
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				

Type Codes (2) * L = Land S = Engineering Structures B = Buildings V = Vehicles E = Equipment	Funding Source Codes (4) ** D = Debenture Debt (new debt only) E = Equipment Replacement Fund G = Grants (Federal, Provincial) O = Donations / Third Party Funding C = Capital Funds on Hand R = Reserve Fund S = Short Term Loans L = Lands Sales
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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 - Cully 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		Budget			
	2015	2016	2017	2018	2019	2020
Fund: 1024 Fund Center: 101368						
Beginning Balance	519,205	571,895	420,895	510,895	610,895	710,895
Transfer to Cap Fund (Based on Capital Plan)	(121,000)	(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 \$	571,895	420,895	510,895	610,895	710,895	810,895

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)	Refinanced @3.05% from 5.69%
	S.I. Bylaw No. 2963 (2002)	(1,498,900)	Refinanced @3.05% from 6.06%

REMAINING AUTHORIZATION		675,100	
PREPAIDS (312):	REDUCES remaining borrowing to:	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.

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		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

Oct 2015

Page 1

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.

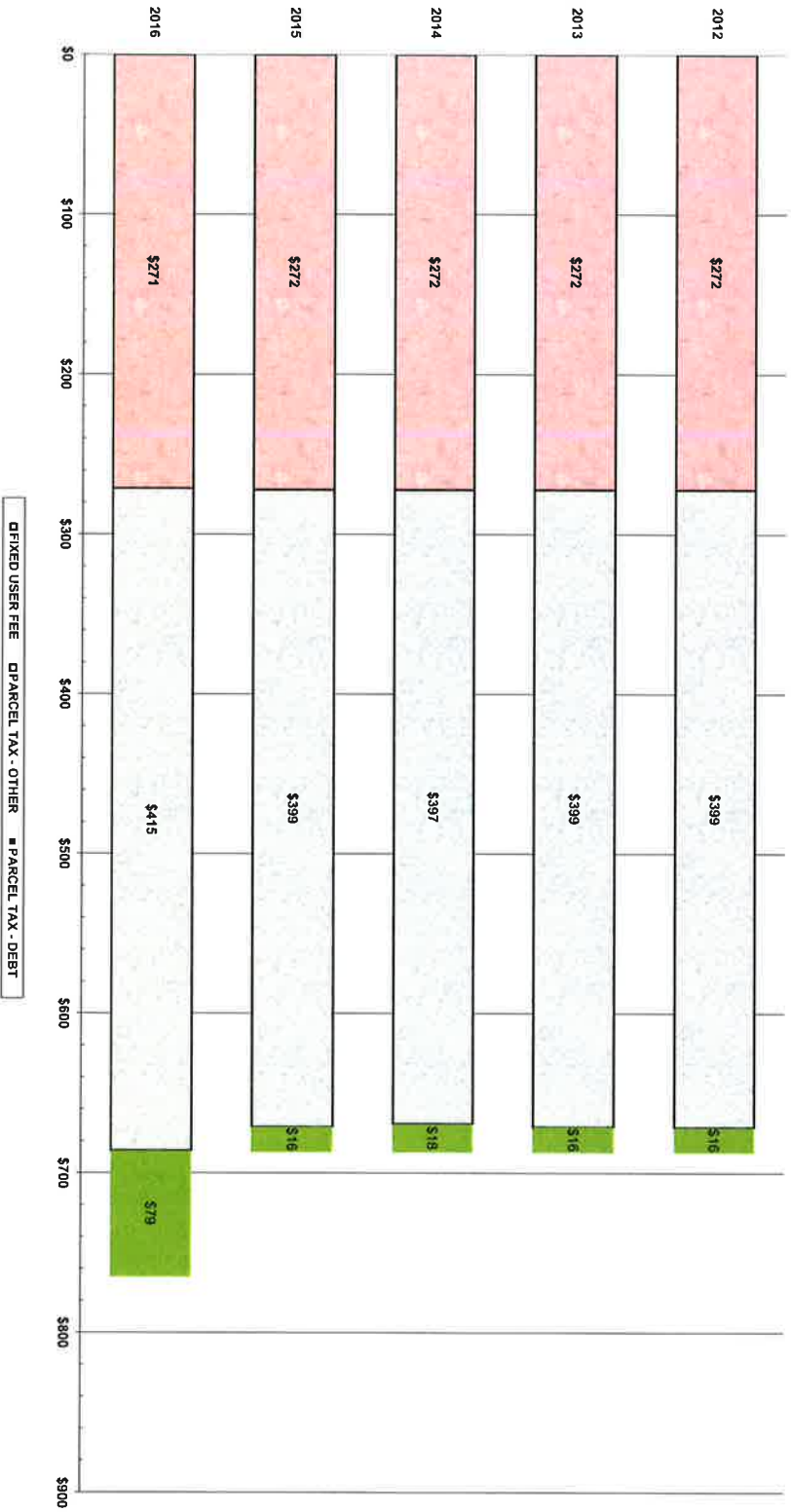
	2015		2015		BUDGET REQUEST				FUTURE PROJECTIONS						
	BOARD BUDGET	ESTIMATED ACTUAL	2016 CORE BUDGET	2016 SINGLE SUPP	2016 TOTAL	2017	2018	2019	2020						
Magic Lake Sewer Utility (Pender)															
<u>OPERATING COSTS:</u>															
Sludge Hauling Contracts	40,000	42,000	43,000	-	43,000	43,860	44,740	45,630	46,540						
Grit & Waste Sludge Disposal	32,000	42,000	42,000	-	42,000	42,840	43,700	44,570	45,460						
Repairs & Maintenance	6,330	6,130	6,380	-	6,380	6,510	6,640	6,780	6,920						
Allocations	31,380	31,380	32,070	-	32,070	32,720	33,370	34,030	34,700						
Electricity	19,500	19,500	20,670	-	20,670	21,080	21,500	21,930	22,370						
Supplies	15,060	14,650	14,260	-	14,260	14,540	14,820	15,110	15,400						
Labour Charges	229,610	208,220	234,200	-	234,200	232,040	236,690	241,410	246,220						
Contingency	11,000	-	7,780	-	7,780	7,940	8,100	8,260	8,430						
Other Operating Expenses	28,920	29,640	27,340	-	27,340	27,880	28,420	29,000	29,580						
TOTAL OPERATING COSTS	413,800	393,520	427,700	-	427,700	429,410	437,980	446,720	455,620						
*Percentage Increase over prior year															
					3.4%	0.4%	2.0%	2.0%	2.0%						
<u>DEBT/RESERVES</u>															
Transfer to Capital Reserve Fund	85,910	85,910	53,930	-	53,930	22,400	14,930	15,250	15,590						
Transfer to General Capital Fund	-	-	-	-	-	-	-	-	-						
Transfer to Maintenance Reserve Fund	5,000	5,000	5,000	-	5,000	8,300	8,400	8,500	8,610						
Debt Reserve Fund	7,600	-	15,300	-	15,300	-	25,850	20,710	6,310						
MFA Principal Payment	-	-	-	-	-	130,420	130,420	264,390	371,720						
MFA Interest Payment	3,170	-	38,250	-	38,250	45,900	67,440	192,410	283,950						
TOTAL DEBT / RESERVES	101,680	90,910	112,480	-	112,480	207,020	247,040	501,260	686,160						
Sludge Disposal Recovery	(5,000)	(5,000)	(5,000)	-	(5,000)	(5,100)	(5,200)	(5,300)	(5,410)						
TOTAL COSTS NET OF RECOVERIES	510,480	479,430	535,180	-	535,180	631,330	679,820	942,680	1,136,390						
<u>FUNDING SOURCES (REVENUE)</u>															
Estimated balance C/F from 2015 to 2016	-	30,550	(30,550)	-	(30,550)	-	-	-	-						
Balance C/F from 2014 to 2015	(58,840)	(58,840)	-	-	-	-	-	-	-						
User Charges	(168,910)	(168,910)	(168,910)	-	(168,910)	(172,290)	(175,740)	(179,250)	(182,840)						
Grants in Lieu	-	-	-	-	-	-	-	-	-						
Other Revenue	(1,360)	(860)	(800)	-	(800)	(820)	(840)	(860)	(880)						
TOTAL REVENUE	(229,110)	(228,610)	(169,710)	-	(169,710)	(173,110)	(176,580)	(180,110)	(183,720)						
REQUISITION-PARCEL TAX	(281,370)	(281,370)	(334,920)	-	(334,920)	(458,220)	(503,240)	(762,570)	(952,670)						
*Percentage increase over prior year requisition															
					19.0%	36.8%	9.8%	51.5%	24.9%						

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	\$493.70	623	\$271.12	\$764.83		199,869

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



Actual Costs 2012-2015, Projected 2016
 Prepared by CRD Finance
 07/10/2015

CAPITAL REGIONAL DISTRICT - SCHEDULE G

CAPITAL BUDGET FORM 2016 & Forecast 2017 to 2020

Service #: **3.830**
Service Name: **Magik 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	Source (4)**	Funding Amount (5)	Grant Program Sponsor (6)	Loan Authorization # (7)	Participants (8)	%
				(4)** ↓				(8) ↓	
2016	S	Chart Drive Interim Hauling	70,000	D	70,000		New debt		
2016	S	Public Engagement & Alternative Approval Process	25,000	D	25,000		New debt		
2016	S	Replace 325m of Pipe Along Buck Lake	495,000	D	495,000		New debt		
2016	S	Replace 112m of Pipe on Privateer Rd	133,000	D	133,000		New debt		
2016	S	Inflow/Infiltration Reduction Program	217,000	D	217,000		New debt		
2016	S	Ultrasonic Testing of Schooner Tanks	20,000	D	20,000		New debt		
2016	S	Chart Drive Septic Field	140,000	R	140,000		New debt		
			570,000	D	570,000		New debt		
2017									
2018	S	Annual Pipe Replacement Program	512,000	D	512,000		New debt		
2018	S	Upgrade 5 Lift Stations	1,000,000	D	1,000,000		New debt		
2019	S	Upgrade Schooner Lift Station	557,000	D	557,000		New debt		
2020	S	Replace Cannon WWTP with Pump Station & FM	1,826,000	D	1,826,000		New debt		
2020	S	Schooner Clarifier & Aeration Tank	2,056,000	D	2,056,000		New debt		
*** Please insert more lines here (above this line) if required. ***									
TOTAL					7,621,000				

Type Codes (2) * L = Land S = Engineering Structures B = Buildings V = Vehicles E = Equipment	Funding Source Codes (4) ** D = Debenture Debt (new debt only) E = Equipment Replacement Fund G = Grants (Federal, Provincial) O = Donations / Third Party Funding C = Capital Funds on Hand R = Reserve Fund S = Short Term Loans L = Lands Sales
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- #1 Chart Drive Interim Hauling (2016) \$70,000**
- 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 & Alternative Approval Process (2016) \$25,000**
- To engage the residents of Magic Lake Estates, an open house will be held with options for the Chart Drive replacement as well as carry out the alternative approval process to borrow necessary funds to carry out the 2016 planned works. 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 to carry out the alternative approval process.
- #3 Replace 325 m of Pipe Along Buck Lake (2016) \$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.
- #4 Replace 112 m of Pipe on Privateers Rd (2016) \$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.
- #5 Inflow/Infiltration Reduction Program (2016) \$217,000**
- 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 develop a hydraulic model and carry out inflow and infiltration study to identify problem sections of pipe.

Service: 3.830 Magic Lake Sewer Utility (Pender)

Committee: Electoral Area Services

#6 Ultrasonic Testing of Schooner Tanks

\$20,000

The 2012 Stantec assessment report questioned the condition of the Schooner WWTP aeration and clarifier tanks, their condition and possible cost of replacement has a direct impact on the requirement and timeline for replacement of the Schooner WWTP. This budget item is for consultant services to assess the condition and estimate the serviceable life remaining for the Schooner WWTP aeration and clarifier tanks.

#7 Chart Drive Septic Field (2016)

\$710,000

In 2014 Island Health issued an order to stop discharging to the Chart Drive septic field. This budget item is for retaining a contractor to either construct a replacement field or replace the field with a pump station and forcemain.

#8 Annual Pipe Replacement Program (2018)

\$512,000

Sections of pipe identified in the 2016 capital project, Inflow/Infiltration Reduction Program, will need to be replaced. The budget for this item is for pipe and manhole replacement or remediation.

#9 Upgrade 5 Lift Stations (2018)

\$1,000,000

The 2012 Stantec assessment report identified that the the Masthead, Galleon, Cutlass, Capstan and Buccaneers pump stations pumps, pipes and valving were in need of replacement due to age and condition. This budget item is for replacement of the pumps, pipes and valving at the 5 pump stations.

#10 Upgrade Schooner Lift Station (2019)

\$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

Service: 3.830 Magic Lake Sewer Utility (Pender)

Committee: Electoral Area Services

#11 Replace Cannon WWTP with Pump Station & FM (2020)

\$1,826,000

The Cannon WWTP is frequently exceeds the discharge permit volume. The budget for this item is for the design and construction of removal of the old WWTP and construction of a pump station and sanitary forcemain.

#12 Schooner Clarifier & Aeration Tank (2020)

\$2,056,000

The addition of clarifier and aeration tanks at the Schooner WWTP was identified in the 2012 Stantec report to obtain additional treatment capacity. The budget for this item is for design and construction of an additional clarifier and aeration tanks at the Schooner WWTP.

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	
Fund: 1042 Fund Center: 101386							
Beginning Balance	178,372	148,282	138,215	160,615	175,545	190,795	190,795
Transfer to Cap Fund (Based on Capital Plan)	(118,000)	(140,000)	-	-	-	-	-
Transfer from Operating Budget	85,910	53,930	22,400	14,930	15,250	15,590	15,590
Transfer from Equipment Replacement Fund	-	76,003	-	-	-	-	-
Interest Income*	2,000	-	-	-	-	-	-
Ending Balance \$	148,282	138,215	160,615	175,545	190,795	206,385	206,385

* 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

	Estimate	Budget				
	2015	2016	2017	2018	2019	2020
Fund: 1022 Fund Center: 101724						
ERF Group: MGCLKSWR.ERF						
Beginning Balance	76,003	76,003	-	-	-	-
Transfer to Capital Reserve Fund	-	(76,003)	-	-	-	-
Ending Balance \$	76,003	-	-	-	-	-



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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, OCTOBER 13, 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.
- The CRD has installed two eye wash/drench hose stations, one at each of the two raw water pump stations.

Planned Work for Next Period

- The CRD has received a second report from Rohl's materials testing consultant, Accuren which discusses the corroding stainless steel pipe segments and a proposal from Rohl for the associated repairs under warranty. The CRD and Rohl are currently discussing the extent and any conditions related to the proposed repair work.
- 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.

Project Financial Summary

The CRD staff conducted a project budget review and the 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

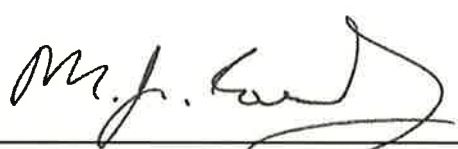
The water system capital improvement project has seen the commissioning of the new works and the contractor and consultant are in the project close-out phase.

RECOMMENDATION

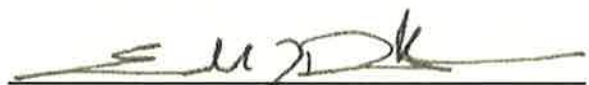
That the Magic Lake Estates Water and Sewer Committee receive this report for information.



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



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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE
MEETING OF TUESDAY, OCTOBER 13, 2015**

**SUBJECT WATER AND WASTEWATER OPERATIONS REPORT – JULY, AUGUST AND
SEPTEMBER 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, August and September 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 pumping 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 pumping 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).
- Emergency response to a high level alarm in the sanitary collection system that services properties around Buck Lake. A section of the sewer system was found to be blocked with fats, oils and grease in addition to “rag” material as reported by the contractor who responded to clear the blockage. As a result of the quick response, overflows were avoided.
- Annual Buck Lake sewer collection system jet flushing preventative maintenance including public notification.

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 and repairs to a significant water leak near 36161 Galleon Way. In order to conduct repairs, it was necessary to shut down a portion of the water system resulting in a number of customers to be without water for an extended period.
- Emergency response as a result of power outages (late August and early September)
- Installation of combination eyewash/drench hose safety equipment at Buck Lake and Magic Lake raw water pumping stations.
- Response to a water leak reported near 2705 Brigadoon.

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, August and September 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:



Making a difference...together

REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE MEETING OF TUESDAY, OCTOBER 13, 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 – September 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. The decision to use Buck Lake as the sole source of water for the system following water quality changes due to an algae bloom in Magic Lake in late July, remained in effect in September.

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

The potassium permanganate dosage continues to be regularly adjusted in accordance with the test findings conducted by the operators. Ongoing monitoring of the effectiveness of the potassium permanganate and chlorine dosing continues.

Water Quality Monitoring

Analyses indicate the absence of bacteria throughout the distribution system, reinforcing the efficacy of the treatment system for this parameter. All other water quality testing found the treated water to be in compliance with all Canadian Drinking Water Guidelines. The Capital Regional District (CRD) received no water quality complaints in September.

Odour testing of the raw water found strong grassy odours, which is similar to July, and not the typical earthy odour found for the majority of this year. Taste and odour monitoring of the treated water continued to find moderate to strong earthy and chlorine characteristics.

In the warm-weather months, staff analyze Magic and Buck lakes source water samples bi-monthly for biological parameters. In July, analyses of Magic Lake indicate populations of blue-green algae species with the potential to produce cyanotoxins in sufficient numbers to present a water quality risk. As a result, staff switched to Buck Lake as the sole water source for the system. Subsequent monitoring in late August found populations of potential toxin-producing blue-green algae were elevated in Buck Lake but subsiding in Magic Lake. Staff collected a sample from each lake and submitted them to an external lab for cyanotoxin testing. Neither lake was found to contain cyanotoxins.

Algae sampling in September found generally low algae activity in Magic Lake with no blue-green species present. However, blue-green species began to be dominant in Buck Lake and have been increasing as the month progressed. Staff will conduct cyanotoxin testing if the October samples indicate that the blue-green algae bloom continues to increase (samples expected the first week of October).

In light of a potential bloom on Buck Lake, staff are actively reviewing operation of the Magic Lake Estates water system with respect to water sources and the use of potassium permanganate. Potassium permanganate oxidizes organic material in the water and may need to be turned off at the Buck Lake source to prevent the release of toxins in the treated water.

Alternatively, staff are considering the use of Magic Lake as the primary source of water to eliminate the risk from Buck Lake. Potassium permanganate use on either system is also being evaluated to assess it's risk versus the benefit with the current raw water quality issues.

Committee 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



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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