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## MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE

Notice of Meeting on **Thursday, November 26, 2020 at 9:30 am**  
Goldstream Conference Room, 479 Island Highway, Victoria, BC

For members of the public who wish to listen to the meeting via telephone please call **1-833-353-8610** and enter the **Participant Code 1911461 followed by #**. You will not be heard in the meeting room but will be able to listen to the proceedings.

Kathy Heslop (Chair)  
Wally Foster  
David Reed

Jean Deschenes  
Director Dave Howe

Michael Fossli  
Marika Kenwell

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### AGENDA

#### 1. ELECTION OF CHAIR

#### 2. APPROVAL OF AGENDA

*Recommendation: That the agenda be approved.*

#### 3. ADOPTION OF MINUTES OF OCTOBER 13, 2020

*Recommendation: That the minutes of October 13, 2020 be adopted.*

#### 4. COMMITTEE BUSINESS

- Water Update (verbal report with handout)
- Wastewater Update (verbal report with handout)
- Operations Update (verbal report with handout)
- Grants Discussion

#### 5. MLE 20-04 BUCK LAKE DAM 2019 SAFETY REPORT

*Recommendation: That the Magic Lake Estates Water and Sewer Committee:*

- a) *Receive the Dam Safety Review report prepared by Hatch for information; and*
- b) *Cancel capital project number 19-02 "Buck Lake East Dam Detailed Design".*

#### 6. MLE 20-05 2021 OPERATING AND CAPITAL BUDGET

*Recommendation: That the Magic Lake Estates Water and Sewer Committee:*

1. *Approve the 2021 Operating and Capital Budget for the:*
  - *Magic Lake Estates Water System Local Service as presented and recommend that the 2020 actual surplus or deficit be balanced on the 2020 transfer to the Capital Reserve Fund; and*
  - *Magic Lake Estates Sewerage System Local Service as presented and recommend that the 2020 actual surplus or deficit be balanced on the 2020 transfer to the Capital Reserve Fund; and*
2. *Recommend that the Electoral Areas Committee recommend that the CRD Board approve the 2021 Operating and Capital Budget and the five year Financial Plan for the Magic Lake Estates Water and Sewer Services as presented.*

#### 7. CORRESPONDENCE

#### 8. NEW BUSINESS

#### 9. ADJOURNMENT

**Next meeting: Annual General Meeting, December 8, 2020**

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To ensure quorum, advise Sharon Orr at 250-474-9622 or [sorr@crd.bc.ca](mailto:sorr@crd.bc.ca) if you are unable to attend.

**MINUTES OF A MEETING OF THE MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE held Tuesday, October 13, 2020 in the Goldstream Meeting Room, 479 Island Highway Victoria, BC**

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**PRESENT:**    **Committee Members:** M. Fossil (Vice-Chair), D. Reed  
                 **By WebEx:** K. Heslop (Chair), J. Deschenes, M. Kenwell, W. Foster

**Staff:** I. Jesney, Senior Manager, Infrastructure Engineering; S. Orr (recorder)

**REGRETS:**    D. Howe, Southern Gulf Islands Electoral Area Director

The Vice-Chair called the meeting to order at 9:30 am.

**1. APPROVAL OF AGENDA**

The following item was added to the agenda:

5.1 New Business - Annual General Meeting Discussion

**MOVED** by K. Heslop, **SECONDED** by W. Foster,  
That the agenda be approved as amended.

**CARRIED**

**2. ADOPTION OF MINUTES OF SEPTEMBER 8, 2020**

**MOVED** by M. Kenwell, **SECONDED** by J. Deschenes,  
That the minutes of the meeting held September 8, 2020 be adopted.

**3. COMMITTEE BUSINESS**

**3.1. Water Update**

I. Jesney provided the following update:

**Water Treatment Plant – Stainless Steel Pipe Replacement**

The situation with pipe replacement has progressed since the last update. Details are as follows:

- Capital Regional District (CRD) staff and the CRD lawyer continue to work on the Stainless Steel Replacement issue involving Rohl/insurer through Rohl's lawyer.
- Currently the insurer is prepared to pay for the work and the contract is being prepared for execution between Rohl Enterprises Ltd. and the CRD. Further, an Interim Release Agreement is being prepared between the CRD and Rohl's Insurer (Travelers Insurance).
- The Contract documents are being updated and will address COVID-19 related issues, including the protection of the plant operators as much as possible during construction, and obligates the Contractor to have a COVID-19 Safety Plan.

**Buck Lake Dam Safety Review**

The Buck Lake Dam Safety Review (DSR) is complete and will be presented at the November Committee meeting. Budget implications from the DSR have been included in the 2021 budget which will also be presented at the November meeting.

### 3.2. Wastewater Update

I. Jesney provided the following update:

#### Collection System Upgrades

- Stantec was retained in May 2020 to complete the design, tendering and construction of 3 kilometers of sewer replacement work.
- Stantec has submitted the 60% complete design drawings, and CRD reviewed and returned them with comments for Stantec to work towards the 90% complete submittal.
- The design was adjusted to minimize the need for additional right-of-ways, but working space agreements on several private properties are required. Staff plan to meet with the affected home owners in late October to discuss the proposed work and restoration.
- The design should be finalized including all details and specifications by end of November. The tender could be issued in December and close in January 2021.

#### One-time Lump Sum Payment Process

- A Bylaw has been prepared to enable the one-time lump sum payment for a customer to pay for their share of the \$6 million loan versus making debt-servicing payments over 30 years.
- A letter has been sent to all parcel owners to inform them of the process.

Staff answered questions regarding project updates.

The Committee requested that staff report back in November with information regarding the status of the loan pre-repayments.

### 3.3. Operations Update

I. Jesney provided the following update:

#### Water Operations Highlights:

- Water leak repair – 3727 Bosun Way (Environmental Incident Report issued for this event)
- Water leak repair – 3703 Signal Hill (Environmental Incident Report issued for this event)
- Magic Lake Estates Water Treatment Plant operational adjustment. The raw water blending ratio was changed from 80/20 to 100/0 for Buck Lake/Magic Lake on September 14, 2020 as a result of increased Magic Lake algal activity.
- Corrective maintenance completed on Magic Lake raw water pump.

#### Wastewater Operations Highlights:

- System wide hydro outage on Sept 23, 2020 resulting in increased operational effort/emergency response to various facility alarms.

**Capital Improvement work:**

- Air Valve Replacement Project:
  - Work commenced on air valve replacements for the Magic Lake Water Service project 18-04. Infrastructure Operations is completing this work.

Staff answered questions from the Committee about:

- Water testing and how testing is conducted
- Origin of leaks
- Unmetered water

**3.4. Grants Discussion**

There was no new information to report.

**4. CORRESPONDENCE**

There was no correspondence.

**5. NEW BUSINESS**

**5.1. Annual General Meeting Discussion**

Discussion took place about the scheduling of the Annual General Meeting and upcoming budget presentation scheduled for November.

Staff answered questions from the Committee regarding:

- Member's terms and appointments.
- 2021 budget and report preparation.

**6. ADJOURNMENT**

**MOVED** by D. Reed, **SECONDED** by M. Kenwell,  
That the meeting be adjourned at 10:02 am.

**CARRIED**

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Chair

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Secretary

**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE  
MEETING OF THURSDAY, NOVEMBER 26, 2020**

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**SUBJECT     Buck Lake Dam 2019 Safety Report**

**ISSUE SUMMARY**

Hatch Ltd. (Hatch) completed an audit-type Dam Safety Review (DSR) for Buck Lake Dam. The final report has been received along with recommendations to resolve a prioritized list of dam safety deficiencies and non-conformances. To comply with the *B.C. Dam Safety Regulation*, (BC Reg. 40/2016) and the *Water Sustainability Act*, CRD staff have prepared a plan to address the list of concerns identified during the audit.

**BACKGROUND**

The Buck Lake Dam is comprised of two dams, a 10.4 metre high and 61 metre long main earthfill dam (West Dam) with spillway and a 3 metre high and 83 metre long saddle earthfill dam (East Dam). The two dams are separated by a bedrock outcrop. The Buck Lake Dam has a dam failure consequence classification (DFCC) of “*High*”, based on the analyses completed during the previous comprehensive Dam Safety Review (DSR), completed by EBA Engineering Consultants Ltd. in 2009. The B.C. Dam Safety Office has not taken any exception to the current DFCC.

The B.C. Dam Safety Regulation (Regulation) states that dam owners must complete a formal DSR with a minimum frequency of once every 10 years, for dams with a “*High*” DFCC. In July 2019, the CRD hired Hatch Ltd. (Hatch) to complete the 2019 Buck Lake Dams Safety Review. The audit-type DSR was selected because a “comprehensive” DSR was completed in 2009. The audit-type DSR does not include any sophisticated analyses or design calculations. Instead, it involves:

1. A thorough review of the available background information and data;
2. A comprehensive site review to assess the condition of the structures, confirm whether conditions have changed from the previous studies, if previously identified deficiencies and non-conformances have been adequately addressed and if new deficiencies and non-conformances have developed since the last DSR.
3. An evaluation of the previous DSRs and subsequent dam safety analyses to determine if they were done to an acceptable standard. The audit addresses the previously identified deficiencies and non-conformances that remain relevant given the existing conditions of the structure.
4. Review of the current DFCC and recommendations to resolve the list of deficiencies and non-conformances; and
5. A “Dam Safety Review Assurance Statement” prepared by the dam safety expert with answers to important safety related questions.

The project was successfully completed and Hatch submitted the final DSR report. Hatch provided a presentation of the results to CRD staff and concluded that:

- The dam is “in a reasonably safe condition”; and
- The overall total of outstanding issues to resolve is 24. Of these, 21 are non-conformances and three are potential or actual deficiencies. A total of 20 new deficiencies and non-conformances were identified. Hatch identified 11 outstanding items from the previous DSR in 2009 which have been resolved (refer to the attached executive summary section of the hatch report.)

The 24 outstanding issues to be resolved have been reviewed and validated by CRD staff. The issues are a mix of operations, maintenance and surveillance related items, along with a recommended geotechnical site investigation and new dam safety analyses work. The justification for issues and recommended actions, and further details are available in the Hatch report. Hatch applied an initial priority ranking to the list of outstanding issues. CRD staff have used the initial priority ranking and developed an action plan (see below) that considers sequencing of dam safety projects necessary to reduce risk to life, the environment, and improved property.

Since 2009, the CRD has taken action to address many of the previously identified deficiencies. In 2012, the spillway structure was upgraded to provide additional spill capacity. In 2013, a seismic stability assessment was completed at the dam, which included a subsurface drilling investigation at both dams. Results of the investigation led to recommendation by an engineering consultant to plan for seismic upgrade of the East Dam. A preliminary design for the seismic upgrade was completed in 2015, including a cost estimate to complete the work. Hatch has reviewed the seismic upgrade recommendations during the DSR, and recommends that additional investigation and analysis work should be completed to be able to make an informed decision regarding the need for an expensive seismic retrofit project. Therefore, the CRD’s action plan includes additional investigation and analysis work in Phase 2, and does not include a seismic retrofit of the East Dam. It is recommended that the current East Dam remediation projects (19-02 Buck Lake East Dam Detailed Design, and 21-03 Buck Lake East Dam Remediation) are removed from the current capital budget, and the decision regarding whether or not to proceed with the remediation projects be deferred until the additional investigation and analysis work is completed. The timing of the investigation and analysis in Phase 2 recognizes the importance of taking action on Phase 1 issues in the short term, which will have immediate impact on dam operations and public safety, and will confirm the DFCC level for the East Dam and West Dam.

#### Dam Safety Action Plan

CRD staff have prepared a dam safety action plan for the following important reasons:

1. The CRD is obligated by the Regulation to provide the DSR report to the B.C. Dam Safety Section, and prepare and submit a plan to resolve the outstanding issues. Potential and actual deficiencies could be considered by the B.C. Dam Safety Section as ‘potential hazards’ (refer to Regulation Division 3 Clause 15). CRD staff have submitted a copy of

the DSR report to the B.C. Dam Safety Section, with information that a plan is currently being prepared. The plan will be submitted to the B.C. Dam Safety Section for acceptance;

2. The dam safety plan prioritizes the issues to be resolved, identifies financial resources, (estimate of capital expenditures and operating expenditures), and establishes a phased approach and schedule for consideration by the Magic Lake Estates Water and Sewer Committee; and
3. Continues to provide safe and reliable drinking water for the community.

A copy of the dam safety action plan is attached (Appendix A). The outstanding issues have been prioritized into two phases:

1. Phase 1 is aimed to improve dam safety by improving routine operations, maintenance, and surveillance activities, and emergency preparedness. Additionally, Phase 1 will include completing a dam breach assessment to confirm each of dam's failure consequence classification, which will have implications to future dam safety analysis and assessment of need for dam upgrades. Phase 1 is anticipated to cost \$200,000 over the next five years (2021-2025).
2. Phase 2 work will build upon Phase 1 and focus on gathering data and conducting analysis to determine whether or not there is unacceptable risk with the dam's current condition and anticipated seismic response, specifically with the dams' foundations, core, and shell materials. Phase 2 is anticipated to cost \$360,000, with a target timeframe to resolve the issues between five and ten years (2026-2030), prior to the next scheduled DSR. Outcomes of Phase 2 will be used to assess whether dam upgrades are required.

## **ALTERNATIVES**

### *Alternative 1*

That the Magic Lake Estates Water and Sewer Committee:

- a) Receive the Dam Safety Review report prepared by Hatch for information; and
- b) Cancel capital project number 19-02 "Buck Lake East Dam Detailed Design".

### *Alternative 2*

That the Magic Lake Estates Water and Sewer Committee do not receive the Hatch Dam Safety Review report and ask CRD staff to report on further information.

## **IMPLICATIONS**

### *Regulatory*

The DSR audit has identified potential hazards that may exist at the dam, and the B.C. Dam Safety Regulation stipulates that dam owners must notify the B.C. Dam Safety Section of the potential hazards and a plan to address them. A copy of the DSR report has been submitted to the Dam Safety Section. The action plan will need to be shared with the B.C. Dam Safety Section for acceptance.

### *Financial*

Resolving the dam safety issues will require financial resources. Hatch provided an initial high-level cost estimate for addressing the dam safety deficiencies. CRD staff have updated the cost estimate to distinguish between CAPEX and OPEX, and reflect the inclusion of contingency, taxes, and CRD staff time. The cost estimates are included in the action plan. The action plan includes additional investigation and analysis work that will replace the existing plan for completing a seismic retrofit of the East Dam. It is recommended that the seismic retrofit design project, called #19-02 Buck Lake East Dam Detailed Design, be cancelled and removed from the capital budget, and the decision regarding whether or not to proceed with the project be deferred until the additional investigation and analysis work is completed in Phase 2 of the action plan.

### *Public Safety*

In order to continue to provide a safe drinking water supply to the community, and mitigate risks associated with an unlikely dam failure, the 24 outstanding dam safety issues need to be resolved.

## **CONCLUSION**

The completion of the DSR has shown that the dam is considered by dam safety experts to be “in a reasonably safe condition”, but the DSR did reveal dam safety issues.

- There are 24 outstanding dam safety issues that require action.
- CRD staff have prepared an action plan, including cost estimates, to address the 24 outstanding dam safety issues in a prioritized, phased approach.

## **RECOMMENDATION**

That the Magic Lake Estates Water and Sewer Committee:

- a) Receive the Dam Safety Review report prepared by Hatch for information; and
- b) Cancel capital project number 19-02 “Buck Lake East Dam Detailed Design”.

Submitted by:	Scott Mason, B.Sc., P.Eng., Manager, Water Supply Engineering & Planning
Concurrence:	Ian Jesney P. Eng., Senior Manager, Infrastructure Engineering
Concurrence:	Ian Jesney P. Eng., Acting General Manager, Integrated Water Services
Concurrence:	Larisa Hutcheson P. Eng., Acting Chief Administrative Officer

## **ATTACHMENTS**

Appendix A: Dam Safety Action Plan

Appendix B: Executive Summary Excerpt from the 2019 Buck Lake Dams Safety Review, prepared by Hatch Ltd., dated May 25, 2020.

## **REFERENCES**

Hatch Ltd. “Buck Lake Dam – Dam Safety Review Audit”, technical report dated May 25, 2020.



**Dam Safety Action Plan – Buck Lake Dam**

Hatch has consulted with CRD staff and prioritized the dam issues, (i.e., deficiencies and non-conformances), qualitatively into categories of high, medium, and low. Hatch's scope of work included estimating the costs to resolve outstanding dam safety issues. CRD staff were able to supplement the cost estimates with additional detail as needed for the plan. For those tasks that require effort by Infrastructure Operations, Hatch has simply stated, "By CRD Staff", as the estimated cost. In many other cases, Hatch's cost estimate does not include effort by CRD staff to manage the projects. Therefore, CRD staff have updated the cost estimates to be comprehensive prior to communicating the plan to the B.C. Dam Safety Section and the Magic Lake Estates (MLE) Water and Sewer Committee.

Resolving the issues will require both capital expenditure (CAPEX) and operating expenditure (OPEX) to resolve. Some of the tasks can be completed by CRD staff alone, while others will require CRD staff to manage support services from contractors and consultants. CRD staff have estimated the Infrastructure Engineering (IE) and Infrastructure Operations (IO) staff budget needed. A contingency of 20% to reflect that current level of effort and project understanding has been included. All cost estimates are in 2020 dollars and include applicable taxes. The budget estimates for future years do not include inflation costs. Cost estimates should be updated annually.

Installation of new dam safety instruments has been recommended in Phase 1 and Phase 2, (refer to Issues 8 and 11 below). Although the instruments are limited, it should be recognized that the instruments will likely need to be automated in the future, and therefore IO should be planning for an increase in operations, maintenance and surveillance (OMS) effort. The increase is reflected in the proposed annual operating budget and should be reviewed annually.

**Phase 1 Dam Safety Improvements and Dam Breach Analysis (Complete from 2021 to 2025 years)**

Phase 1 will focus on higher priority issues that will lower dam safety risk, improve operations, maintenance and surveillance activities, assess dam failure consequence classification (DFCC), and improve dam emergency planning. Confirming the DFCC soon is important because regulation and guidelines set dam safety criteria, (e.g., seismic hazard, flood hazard, etc.), that is commensurate with the DFCC level. Therefore, it is recommended that any future dam safety analyses be deferred until the DFCC is confirmed in order to prevent any unnecessary analyses in the future.

Action for Phase 1 can begin after approval of the plan by MLE Water and Sewer Committee and acceptance by the B.C. Dam Safety section. The target duration time to resolve Phase 1 issues is five years. A list of the issues that are recommended to be completed during Phase 1 is provided in the Table 1 below.

Table 1 – Phase 1 Proposed Actions and Budget (CAPEX and OPEX)

Hatch Issue No.	Description	Priority	Proposed Capital Budget	Proposed Annual Operating Budget
1	Install barrier and 'no stopping' sign at West Dam.	High	\$7,000	\$0
2	Conduct dam breach analysis for both dams to confirm DFCC and improve DEP.	High	\$60,000	\$0
3	Implement CRD's Public Alert Notification System.	High	\$7,500	\$0
4	DEP/OMS manual improvements.	High	\$7,500	\$0
5	Increase frequency of vegetation control.	Medium	\$0	\$5,000
6	Survey dams and CRD property boundary and create a dam settlement monitoring program.	Medium	\$25,000	TBD
7	Monitor leakage through box culvert joints during weekly inspection.	Medium	\$0	\$5,200
8	Install v-notch weir and automated water level sensor.	Medium	\$25,000	\$1,000
9	Conduct Inflow Design Flood and Freeboard Analysis.	Medium	\$45,000	\$0
10	Discuss current freeboard analysis with Dam Safety office.	Medium	Nominal	\$0
14	Inspect inside of spillway box culvert annually and report.	Medium	\$0	\$1,000
15	Create an emergency drawdown procedure, (e.g., mobilize syphon), and update the DEP.	Medium	\$20,000	\$2,000
16	Document how and when to operate Shingle Creek diversion in the DEP and OMS manual.	Medium	\$2,000	\$500
18	Pressure wash concrete surfaces annually.	Low	\$0	\$1,500
20	Additional Inspections – Inspect the upstream and downstream face riprap protection after large wind storms – add to OMS manual.	Low	\$0	\$0
22	Change the format of the weekly and annual inspection forms to align closely with the inspection forms from the BC Dam Safety office.	Low	\$1,000	\$0
		TOTAL	\$200,000	\$16,200

To resolve the Phase 1 issues, it is recommended that a capital budget of \$200,000, including taxes, and an initial annual operating budget increase of \$16,200 per year (commencing in 2021) be approved. Additional operating budget increase for survey work under Issue No.6 will be estimated after the initial capital work is completed. The target date to complete all of the capital project tasks is end of 2025. Operational tasks will continue on an annual basis. Items labelled "TBD" will be reviewed when more information is available from the outcome of the capital work.

## Phase 2 Additional Dam Safety Investigation, Analysis and Maintenance Items (complete within 5 to 10 years)

Phase 2 work will build upon Phase 1 and focus on gathering data and conducting an investigation and analysis to determine whether or not there is unacceptable risk with the dam's current condition and anticipated seismic response, specifically with the dams' foundations, core, and shell materials. The target duration time to resolve Phase 2 issues is between five and ten years, (i.e., prior to the next DSR in 2029). A list of the issues and Hatch's high level cost estimates for resolving the issues is provided in Table 2 below.

*Table 2 – Phase 2 Proposed Actions and Budget (CAPEX and OPEX)*

Hatch Issue No.	Description	Priority	Proposed Capital Budget	Proposed Annual Operating Budget
11	Perform additional geotechnical investigation, laboratory testing, and analysis. Install, operate, and maintain piezometers. Conduct soil characterization and geotechnical stability analysis.	Medium	\$145,000	\$1,800
12	Conduct seepage analysis, (internal erosion and piping potential).	Medium	\$75,000	\$0
13	Seepage turbidity monitoring – site staff should be trained to properly inspect the in-situ seepage turbidity. Carry out laboratory tests and analysis.	Medium	\$0	\$5,000
17	CRD to adopt a formal policy statement on Dam Safety to satisfy the CDA Dam Safety guidelines.	Low	\$0	\$0
19	Continue to look for background information on the design and construction of Buck Lake dams.	Low	\$0	\$500
21	Obtain a rating curve for the spillway structure and add rating to OMS manual.	Low	\$12,000	\$0
23	Remove trees from the downstream slope of West Dam.	Low	\$18,000	\$0
24	Remove mature trees from the toe of East Dam.	Low	\$30,000	\$0
DSR	2029 Dam Safety review.	High	\$80,000	\$0
		Total	\$360,000	\$7,300

To resolve the Phase 2 issues, it is recommended that a capital budget of \$360,000, including taxes, and an annual operating budget increase of \$7,300 per year (commencing in 2026) be approved. Operational tasks will continue on an annual basis. The target start date to begin Phase 2 tasks is 2026, and the completion target date is end of 2029. Table 3 below provides the proposed CAPEX budget for each year from 2020 to 2029, and provides a breakdown of the issues, (numbered above), to be completed during each year.

*Table 3 – Proposed 10 year CAPEX Plan for Resolving Issues at Buck Lake Dam*

	2021	2022	2023	2024	2025	Total
Phase 1	\$68,000	\$40,000	\$25,000	\$45,000	22,000	\$200,000
Issues	1, 2, 10, 22	3, 4, 6	8	9	15, 16	
	2026	2027	2028	2029	2030	Total
Phase 2	\$145,000	\$75,000	\$60,000	\$80,000	TBD	\$360,000
Issues	11	12	21, 23, 24	Next DSR	TBD/DSR	

Outcomes of the dam safety analyses in Phase 1 and Phase 2 will be used to evaluate risk and determine whether or not dam rehabilitation options should be identified and evaluated to plan further dam safety improvements in future. The next DSR in 2029 is an opportunity for expert review of the analyses and resolution of the issues above, prior to taking further act.

## Executive Summary

An audit-type Dam Safety Review (DSR) of the Buck Lake Dam (East and West Dams) and associated works was carried out by Hatch. The review has been completed in compliance with the Engineers and Geoscientists B.C. (EGBC) Professional Practice Guidelines – Legislated Dam Safety Reviews V3.0 [EGBC, 2016], Canadian Dam Association – Dam Safety Guidelines published in 2007 (revised 2013) [CDA, 2013a], and meeting the requirements of the B.C. Water Sustainability Act and the B.C. Dam Safety Regulation [Reg. 44/2016]. The Buck Lake Dam (East and West Dams) is considered to be a High classification dam in terms of loss of life and potential damage in the event of an uncontrolled release of the water that is impounded. The associated Inflow Design Flood (IDF) for this classification is 1/3 between the 1,000 year flood and PMF with a peak flow of 4.0 m<sup>3</sup>/s.

This report represents the condition of the dam and ancillary structures at the time of the site inspection on October 3, 2019. This constitutes the second formal DSR completed for the Buck Lake Dam. The first was completed in 2009 by EBA and was performed as a “comprehensive” type DSR. This DSR was performed as an audit-type DSR and involved reviewing the previous DSR, performing a site inspection and reviewing the dam safety, dam maintenance and improvements that have taken place since the previous DSR to determine if the dam still meets current legislation, guidelines and industry practice.

The discussion, conclusions and recommendations of this DSR are based on a review of selected project information including drawings, reports, manuals, photographs, instrumentation records and other miscellaneous documents as well as detailed visual investigation of all accessible components of the site and discussions with operating and surveillance staff during the site investigation.

This review includes a cursory assessment of the hydrology/hydraulic aspects of the project, including an assessment of the established IDF, and the Dam Failure Consequence Classification (DFCC). It also includes a cursory review of the hydraulic capacity of the new spillway and freeboard considerations in order to ensure capability to safely pass the specified IDF.

The DSR also includes a review and assessment of the concrete components of the dam. This includes an evaluation of the performance of the dam up to the time of the site inspection.

This report recommends that the next independent DSR be done in 2029 to comply with the B.C. Dam Safety Regulation [B.C. Reg 44/2016] under the Water Sustainability Act.

As stated in the DSR assurance statement this DSR found that the “Dam is reasonably safe but the dam safety review did reveal deficiencies and non-conformances as set out in **Section 9** of the attached dam safety review report”.

The Buck Lake Dam is in a safe condition, however, Hatch identified 20 new deficiencies and non-conformances during this DSR and was able to resolve 11 outstanding issues from the 2009 DSR. There are a total of 25 outstanding issues, comprised of 22 non-conformances and three (3) deficiencies. The outstanding items are summarized in **Table ES-1** below and all outstanding and resolved items are summarized in **Table 13-2** in the report. The definition of the various types of deficiencies are defined in **Table 13-1**.

Four (4) issues are identified as being a High priority. These include:

- The potential for instability due to the over steepened downstream slope of the West Dam.
- The overly simplistic dam breach flood routing is not conducive to emergency response.
- Emergency notification systems to alert the public should be expanded to include a text message template to facilitate public notification in the event of an emergency.

DEP could be improved by including more information to assist Dam Safety inspectors in detecting and responding to an emergency situation. The first major item, dealing with the over steepening of the West Dam downstream slope, could be addressed simply with a vehicle barrier and a "No Stockpiling of Materials or Stopping of Heavy Equipment Permitted" sign without additional action necessary. See **Sections 6.2** and **8.3.2**

The second issue is the simplistic current dam breach flood routing that is not conducive to emergency response planning. The inundation maps included in the DEP are not very detailed and are likely very conservative for the East Dam and don't adequately represent the potential inundation downstream of the West Dam. This mapping should be improved using a more accurate approach. See **Section 7**.

The third issue is that the emergency notification systems to alert the public should be expanded to include a text message template to facilitate public notification in the event of an emergency. It is recommended that the CRD leverage their Public Alert Notification System (PANS) to allow for public signup in order to receive external text message notifications during an emergency. This in turn will allow the CRD to warn the public and facilitate evacuations if necessary in a much more efficient fashion. See **Section 10.1**.

The final high priority item is that the current DEP could be improved by including more information to assist Dam Safety inspectors in detecting and responding to an emergency situation. This can be accomplished by incorporating additional specific information on detection and response into DEP OMS Manual such as that found in the BC Dam Safety Pocketbook and the Dam Owners Emergency Intervention Toolbox, FEMA, 2016. See **Section 10.2**.

The estimated costs associated with implementing the new an existing deficiencies and non-conformances are summarized in **Table 14-1**.

**Table ES-1: List of New and Existing Outstanding Deficiencies and Non-Conformances**

Issue No.	Deficiency/Non-Conformance	Type	Recommendation	Report Section Ref.	Priority Rating
1	Potential for instability of the over-steepened downstream slope on the West Dam. Stability reviewed by KCB (2012), may experience localized failures.	Pq	Stockpiles or heavy equipment (surcharge loading) should not be placed near the downstream crest of West Dam. Install barrier and "No Stockpiling of Materials or Stopping of Heavy Equipment Permitted" sign. A survey should be conducted prior to next DSR to verify the current geometry of the dam.	2009 DSR 6.2, 8.3.2	High
2	Current dam breach flood routing is simplistic and not conducive to emergency response planning. The inundation maps included in the DEP are not very detailed and are likely very conservative for the East Dam and don't adequately represent the potential inundation downstream of the West Dam.	NCp	This mapping should be improved using a more accurate approach. Should LiDAR information become available in the future, dam breach impacts could be reviewed through the use of a relatively simple 2-D hydrodynamic model of the downstream area.	7	High
3	Emergency notification systems to alert the public should be expanded to include a text message template to facilitate public notification in the event of an emergency.	NCp	It is recommended that the CRD's Public Alert Notification System (PANS) be setup to allow for public signup in order to receive external text message notifications during an emergency.	10.2	High
4	DEP could be improved by including more information to assist Dam Safety inspectors in detecting and responding to an emergency situation.	NCp	Incorporate addition specific information on detection and response into DEP OMS Manual such as that found in the BC Dam Safety Pocketbook and the Dam Owners Emergency Intervention Toolbox, FEMA, 2016.	10	High
5	Increase frequency of vegetation clearing.	NCm	Increase frequency to ensure proper inspection of the dam. Current frequency is annual. Should be documented in DEP OMS Manual.	2009 DSR, 6.2, 9.4	Medium
6	The existing dam crest survey and sections are outdated should be updated with current information.	NCi	A survey of the dam crest and sections of both the East Dam and West Dam should be conducted to assess how they compares to the original design, assist in future evaluations, delineate areas for vegetation growth, monitor dam seepage, etc. This would include several survey pins (3 to 4 per dam) for future monitoring.	6.2	Medium
7	No plan is documented to increase monitoring of leakage through the spillway box culvert joints during high water periods.	NCs	It is recommended that the leakage of the water through the box culvert joints be monitored on a regular basis, and especially when the lake levels are higher, to review if the higher elevation of lake water results in any significant increase in the leakage.	6.4, 8.4.1	Medium
8	Parshall flume is decommissioned and not effective for measuring low flows.	NCs	Install V-notch weir and automated water level gauge. This will require less maintenance than Parshall flume.	6.2, 9.4	Medium

Issue No.	Deficiency/Non-Conformance	Type	Recommendation	Report Section Ref.	Priority Rating
9	The 1,000 year flood event was based on only 33 years of rainfall data up to 1998. Probable Maximum Flood estimator for the province was updated in 2010 where the original one used was developed in 1985.	NCi	The assessment of the IDF should be updated using current information prior to the next DSR to confirm that no significant change has occurred that would impact the current estimates.	8.2.1	Medium
10	The current freeboard barriers on the dam have gaps present in the barriers for newt migration.	Pn	The CRD should open a dialogue with BC Dam Safety to discuss whether the freeboard analysis performed for this DSR along with the partial wave barrier would be acceptable in lieu of meeting the minimum 1 m requirement.	8.2.5	Medium
11	East Dam foundation is susceptible to liquefaction during an MDE.	Pu	Perform additional geotechnical investigation to confirm and characterise presence of liquefiable material for the East Dam and West Dam. Perform rehabilitation if confirmed. Install piezometers and monitor using holes drilled for investigation.	8.3.5, 9.4	Medium
12	No assessment of internal erosion potential and piping assessment (seepage-based analysis) has been completed to date.	NCi	Perform seepage analysis to confirm if the dam meets CDA requirements based on geotechnical investigation completed for Issue No. 11.	8.3.8	Medium
13	In its existing condition, the total probability of failure at the Buck Lake Dam is close to unacceptable ranges, however, failure probabilities may be improved with remedial measures and maintaining the inspection intervals.	NCp	Site staff should be trained to properly inspect the in-situ seepage turbidity. Laboratory seasonal turbidity tests can be carried out on the water samples. Installation of a reverse filter blanket at the toe of the dams is another measure which might be suitable.	8.3.9	Medium
14	Inspection of the box culvert was not completed for this DSR and documentation of its inspection was not available for review.	NCs	It is recommended that inspection of the box culvert be performed during annual dam inspections, for continued monitoring of the condition of the inside of the culvert. Add inspection requirements to OMS manual including routine estimate of leakage through joints.	8.4.1	Medium
15	No information is available for the rate of drawdown and the procedures that should be used to accommodate lowering the reservoir.	NCo	It is recommended that a better understanding of the rate of drawdown that can be achieved. Currently CRD has a syphon system constructed for the Magic Lakes Dam nearby. A plan to utilize this system for emergency drawdown or develop a similar system for Buck Lake Dams would be a cost effective way to providing required drawdown capacity. This should be evaluated for operations planning as well as potential sources for emergency pumps if needed. Under the CDA guidelines, it is recommended to provide information on staffing requirements and the time required to complete system operations. Add syphon Standard Operating Procedure (SOP) to OMS Manual.	9.1.3	Medium



Issue No.	Deficiency/Non-Conformance	Type	Recommendation	Report Section Ref.	Priority Rating
16	No formal documentation of Shingle Creek Diversion Operation.	NCp	Document how and when to operate Shingle Creek Diversion in DEP OMS Manual.	9.4	Medium
17	No formal Dam Safety Policy is in place for their dam safety program.	NCp	The CRD appears to be meeting the intent of a dam safety management system and should continue to improve and develop their system and adopt a formal policy statement on Dam Safety for their program to satisfy the CDA Dam Safety Guidelines.	12	Medium
18	Build-up of organics and moss of downstream outlet section of spillway.	NCm	Pressure wash concrete surfaces annually.	6.4	Low
19	Limited design information and no as-built construction documentation to confirm information on whether a filter zone was or was not constructed in either dams.	NCi	Continue to look for background information on design and construction of Buck Lake Dams. Ex: Design reports, construction records.	2009 DSR	Low
20	No plan exists to conduct special inspections following extreme events such as floods or wind storms.	NCs	It is recommended that CRD inspect the dam and the upstream riprap protection after large wind storms to confirm if any damage has occurred and repair as necessary. Add inspection procedure to OMS manual.	6.1.1	Low
21	No rating curve was provided in the literature for the spillway.	NCi	The CRD should obtain a rating curve for the spillway and add rating curve to OMS manual.	8.2.2	Low
22	Annual Dam Inspection report format does not contain all aspect of BC Dam Safety Office's Annual Formal Inspection Form	NCp	Format should be improved to more closely follow the Annual Formal Inspection Form.	9.4	Low
23	Several trees are present on the downstream slope of the West Dam	NCm	Remove trees for downstream slope of West Dam.	6.2	Low
24	Several mature trees are present at the toe of the East Dam.	NCm	Remove trees for downstream slope of East Dam.	6.3	Low

Refer to **Table 13-1** for legend and definitions of the type of deficiencies and non-conformances.

**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE  
MEETING OF THURSDAY, NOVEMBER 26, 2020**

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**SUBJECT     2021 Operating and Capital Budget**

**ISSUE SUMMARY**

To present the 2021 operating and capital budget for committee approval pursuant to Bylaw No 2339 "Magic Lake Estates Water and Sewer Committee Bylaw 1995".

**BACKGROUND**

The Capital Regional District (CRD) is required by legislation under the *Local Government Act* (LGA) to prepare an annual Operating and Capital budget and a five year Financial Plan. CRD staff have therefore, prepared the financial plans for the following services:

1. Magic Lake Estates Water System Local Service.
2. Magic Lake Estates Sewerage System Local Service.

The Operating Budgets include the regular annual costs to operate the service. The Capital Expenditure Plan shows the anticipated expenditures for capital additions. These may include purchases of new assets or infrastructure upgrades, improvements to existing assets or asset review and study work potentially leading to future capital improvements.

In preparing the Operating Budget, CRD staff took into account:

1. Actual expenditures incurred between 2018 and 2020.
2. Anticipated changes in level of service (if any).
3. Maximum allowable tax requisition.
4. Annual cost per taxpayer and per Single Family Equivalent (SFE).

Factors taken into consideration in the preparation of the Capital Expenditure Plan included:

1. Available funds on hand.
2. Projects in progress.
3. Condition of existing assets and infrastructure.
4. Regulatory, environmental and health and safety factors.

Adjustments for surpluses or deficits from 2020 may be made in January 2021. The CRD Board will give final approval to the budget and financial plan in March 2021.

The Financial Plan for the years 2022 – 2025 may be changed in future years.

**Magic Lake Estates Water and Sewer Committee – November 26, 2020**  
**2021 Operating and Capital Budget**

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**BUDGET OVERVIEW**

**Magic Lake Estates Water System Local Service**

***Operating Budget***

It is projected that the 2020 operating expenses will be approximately \$25,561 over budget. Factors contributing to the operating overage include emergency response and corrective maintenance primarily due to the following events:

- Emergency storm event response on January 10, 2020.
- Replacement of the primary water treatment plant server.
- Water system leak repair 2705 Anchor Way.
- Water system leak repair 2646/2648 Galleon Way.
- Water system leak repair 27142 Schooner Way
- Water system leak repair Schooner Way/Shoal Road
- Buck Lake raw water pumps tear down and clean.
- Increase frequency of Buck Lake raw water intake cleaning by divers.
- Installation of duplex water strainers at Capstan, Schooner and Signal Hill pressure regulating stations.

These events resulted in additional labour and material/supply costs that go beyond operating budget contingencies.

The 2020 operating budget included the cleaning and inspection of Captains Reservoir in the amount of \$20,000. Funding for this activity is from the operating reserve fund.

It is projected that the 2020 operating revenue will be \$5,380 less than budget due primarily to lower water sales revenue for the service. Water sale leak adjustments were applied to the 2020 budget from quarter 4 of the 2019 billing as one-time adjustment to correct the overstated water sale revenue in 2019.

This results in an operating deficit of approximately \$30,941.

In order to balance the 2020 operating budget, CRD staff recommend that the 2020 transfer to the capital reserve fund be reduced by the deficit amount. This is recommended as this reserve fund is sufficient in relation to the forecast capital upgrades in the coming years and can therefore absorb this one time reduction.

The 2021 operating budget for regular annual operating costs has been increased by 4.9% primarily to account for core inflation and an on-going supplementary cost related to increased operational activities stemming from the Buck Lake Dam Safety Review audit.

***Municipal Finance Authority (MFA) Debt***

Loan Authorization Bylaw 3633 (LA3633) was approved and adopted in 2009 to borrow \$2,560,000 to upgrade water treatment and water systems. Table 1 below summarizes the detailed information for existing MFA debt issue related to LA3633.

**Magic Lake Estates Water and Sewer Committee – November 26, 2020**  
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**Table 1 – Existing Debt Summary**

<i>MFA Issues</i>	<i>Term</i>	<i>Borrowing Year</i>	<i>Retirement Year</i>	<i>Refinance Year</i>	<i>Original Interest Rate</i>	<i>Current Interest Rate</i>	<i>Principal</i>	<i>Principal Payment</i>	<i>Interest Payment</i>	<i>Total Annual Debt Cost</i>
LA3633-110	15	2010	2025	2020	4.50%	1.28%	\$723,000	\$38,812	\$9,254	\$48,066
LA3633-116	15	2011	2026	2021	4.20%	4.20%	\$250,000	\$12,485	\$10,500	\$22,985
LA3633-121	15	2012	2027	2022	2.90%	2.90%	\$559,500	\$27,942	\$16,226	\$44,168
LA3633-124	15	2013	2028	2023	3.15%	3.15%	\$1,002,500	\$50,066	\$31,579	\$81,645
LA3633-126	15	2013	2028	2023	3.85%	3.85%	\$25,000	\$1,249	\$963	\$2,212
<b>Total</b>							<b>\$2,560,000</b>	<b>\$130,554</b>	<b>\$68,522</b>	<b>\$199,076</b>

***Operating Reserve Fund***

The Operating Reserve Fund is used to undertake maintenance activities that typically do not occur on an annual basis. Typical maintenance activities include hydrant/standpipe maintenance, reservoir cleaning and inspection. The operating reserve also funds the procurement of equipment and supplies that are not purchased on an annual basis. Additionally, the operating reserve could be used for emergency unplanned repairs.

It is proposed that transfers to the operating reserve fund be maintained at \$10,000 in 2021 to ensure future maintenance activities are fully funded and an optimum minimum balance in the reserve fund be maintained. There is approximately \$20,000 of non-annual maintenance planned over the next five years that will be funded from reserves.

The operating reserve balance at the end of 2020 is projected to be \$98,131.

***Capital Reserve Fund***

The Capital Reserve Fund is used to pay for capital expenditures that are not funded by other sources such as grants, operating budget or debt.

It is proposed that the budgeted transfer to the Capital Reserve Fund in 2021 be maintained at the same level as 2020 being \$92,390 to ensure future capital expenditures can be funded. The balance at the end of 2020 is projected to be \$952,160, including the estimated surplus funding from completed projects.

***Capital Expenditure Plan***

The 5-year plan includes \$570,000 of expenditures to be funded by the service's Capital Reserve Funds. Proposed capital expenditures include design and construction of replacement Buck Lake and Magic Lake adjustable intakes, Phase 1 of Buck lake Dam Repairs, standby water treatment plant SCADA control, and decommissioning of the abandoned Magic Lake syphon.

***Capital Projects Fund***

As specific capital projects are approved, the funding revenues for them are transferred into the Capital Project Fund from multiple possible funding sources as applicable, including Capital Reserve Fund (CRF), grant funding, external contributions and Debt. Any funds remaining upon

**Magic Lake Estates Water and Sewer Committee – November 26, 2020**  
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completion of a project will be transferred back to its original funding source(s) if required. Whenever possible, any funds remaining upon completion of a project are transferred back to the Capital Reserve Fund for use on future capital projects.

The *South Dam Safety Upgrade*; *Buck Lake East Dam*; *Buck Lake Public Engagement*; and *Water Referendum* projects are anticipated to be complete by the end of 2020 and estimated unspent funds of \$138,729 will be transferred back to the Capital Reserve Fund.

***User Charge and Parcel Tax***

The service is funded by fixed user charges, parcel taxes and variable water consumption charges. Properties connected to the water system pay the annual user charge and all properties within the local service area are responsible for the parcel tax. The tiered water consumption rates remain unchanged from 2020.

Table 2 below summarizes the 2021 over 2020 changes for parcel tax and user charge.

**Table 2 – Parcel Tax and User Charge Summary**

<i>Budget Year</i>	<i>Parcel Tax</i>	<i>Taxable Folios Numbers</i>	<i>Parcel Tax per Folio*</i>	<i>User Charge</i>	<i>SFE Numbers</i>	<i>User Charge per SFE</i>	<i>Parcel Tax &amp; User Charge</i>
<b>2020</b>	\$568,517	1202	\$497.81	\$332,903	1034	\$321.96	<b>\$819.77</b>
<b>2021</b>	\$568,517	1202	\$497.81	\$343,555	1043	\$329.39	<b>\$827.20</b>
<b>Change (\$)</b>	\$0.00	\$0.00	\$0.00	\$10,625	9	\$7.43	<b>\$7.43</b>
<b>Change (%)</b>	0.0%	0.0%	0.0%	3.2%	0.9%	2.3%	<b>0.9%</b>

\* Includes the 5.25% admin fee charged by the Ministry of Finance (not CRD revenue)

**Magic Lake Estates Sewerage System Local Service**

***Operating Budget***

It is projected that the 2020 net operating expenses will be under budget by approximately \$7,629. The 2020 operating budget included the cleaning of the Schooner WWTP aeration ditch in the amount of \$15,000. This work is being deferred to 2021 and is funded from the Operating Reserve Fund.

It is projected that the 2020 operating revenue will be slightly higher than budget by approximately \$1,510 primarily due to higher user charge revenue as a result of additional sewer connections.

This results in an operating surplus of approximately \$9,139. In order to balance the 2020 operating budget, CRD staff recommend that the 2020 transfer to the Capital Reserve Fund be increased by the projected surplus amount.

The 2021 operating budget for regular annual operating costs has been increased by \$13,756 (2.4%) to account for core inflation.

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***Municipal Finance Authority (MFA) Debt***

Loan Authorization Bylaw 4048 to borrow \$1,530,000 was approved and adopted in 2016 for wastewater system renewal and upgrade. Table 3 below summarizes the detailed information for existing MFA debt issues related to LA4048.

**Table 3 – Existing Debt Summary**

<i>MFA Issues</i>	<i>Term</i>	<i>Borrowing Year</i>	<i>Retirement Year</i>	<i>Refinance Year</i>	<i>Interest Rate</i>	<i>Principal</i>	<i>Principal Payment</i>	<i>Interest Payment</i>	<i>Total Annual Debt Cost</i>
LA4048-139	10	2016	2026	NA	2.10%	\$745,000	\$64,987	\$15,645	\$80,632
LA4048-142	10	2017	2027	NA	3.15%	\$250,000	\$21,808	\$7,875	\$29,683
LA4048-146	10	2018	2028	NA	3.20%	\$535,000	\$46,668	\$17,120	\$63,788
<b>Total</b>						<b>\$1,530,000</b>	<b>\$133,463</b>	<b>\$40,640</b>	<b>\$174,103</b>

In 2020, new debt borrowing (\$5,000,000) was planned to fund the Phase 1 Wastewater Renewal Project based on the capital plan. The estimated debt servicing cost of \$133,000 was levied by parcel tax in 2020. However the long-term debt issuance is deferred to 2021 due to the one-time lump sum payment option offered to the ratepayers. The \$133,000 surplus will be transferred to Capital Project Fund to fund the project and be used to cover the interim financing.

***Operating Reserve Fund***

The Operating Reserve Fund is used to undertake maintenance activities that typically do not occur on an annual basis. Typical maintenance activities include treatment facility tank draining/cleaning/inspection and outfall inspections. The operating reserve also funds the procurement of equipment and supplies that are not purchased on an annual basis. Additionally, the operating reserve could be used for emergency unplanned repairs.

It is proposed that transfers to the operating reserve fund in 2021 be maintained at the same level as 2020 being \$13,260 to ensure future maintenance activities are fully funded and an optimum minimum balance in the reserve fund be maintained. There is approximately \$25,000 of non-annual maintenance planned over the next five years.

The Operating Reserve Fund balance at the end of 2020 is projected to be \$44,513.

***Capital Reserve Fund***

The Capital Reserve Fund is to be used to pay for capital expenditures that are not funded by other sources such as grants, operating budget or debt.

It is proposed that the budgeted transfer to the Capital Reserve Fund be maintained at the same level as 2020 being \$80,000 to build up the reserve fund to assist funding future capital projects

The estimated balance in the Capital Reserve Fund at the end of 2020 is \$254,167.

**Magic Lake Estates Water and Sewer Committee – November 26, 2020**  
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***Capital Expenditure Plan***

The 5-year plan includes \$11,930,000 of expenditures. In 2021, \$8,780,000 in expenditures are forecasted to be funded by a combination of the service's Capital Reserve Funds, capital funds on-hand, new debt approved by 2019 referendum, and possible grant funding from an application made in 2021. The new debt will fund Phase I of wastewater system infrastructure improvement projects. If successful, the grant will fund almost all of the Phase II and Phase III of wastewater system infrastructure projects.

Table 4 below provides the future debt servicing cost simulation for analytical purpose with the indicative interest rate provided by MFA at the time of simulation. This new debt simulation illustrates the current best estimate of new borrowing staggered over two years (2020-2021) based on the cash flow requirement to support the Phase 1 project.

**Table 4 – Future New Debt Simulation**

	<i>Term</i>	<i>Borrowing Year</i>	<i>Retirement Year</i>	<i>Refinance Year</i>	<i>Estimated Interest Rate</i>	<i>Principal</i>	<i>Principal Payment</i>	<i>Interest Payment</i>	<i>Total Annual Debt Cost</i>
<b><i>Future Borrowing(s) Estimation</i></b>	30	Spring 2021	2051	2031	1.90%	\$2,554,000	\$62,956	\$48,526	\$111,482
	30	Fall 2021	2051	2031	1.90%	\$1,250,000	\$30,812	\$23,750	\$54,562
	30	Spring 2022	2052	2032	1.90%	\$1,500,000	\$36,975	\$28,500	\$65,475
<b>Total</b>						<b>\$5,304,000</b>	<b>\$130,743</b>	<b>\$100,776</b>	<b>\$231,519</b>

At the commencement of each loan, 1% of the gross amount borrowed is withheld and retained by MFA as Debt Reserve Fund (DRF). In order to provide the full amount to fund the capital project, this 1% DRF amount is budgeted in operating budget in the year of borrowing. However, there is no principle payment required in the year of borrowing.

***Capital Projects Fund***

As specific capital projects are approved, the funding revenues for them are transferred into the Capital Project Fund from multiple funding sources as applicable, including Capital Reserve Fund (CRF), grant funding, external contributions and Debt. Any funds remaining upon completion of a project will be transferred back to its original funding source(s) if required. Whenever possible, any funds remaining upon completion of a project are transferred back to the Capital Reserve Fund for use on future capital projects.

It is anticipated that *Phase 2 of the Waste Water Public Consultation* and the *Sewer Pipe Replacement* project will be complete at the end of 2020 and estimates unspent funds of \$35,000 will be transferred back to the Capital Reserve Fund at the end of 2020.

***User Charge and Parcel Tax***

The service is mainly funded by user charge and parcel tax. Properties connected to the wastewater system pay the annual user charge and all properties within the local service area are responsible for the parcel tax. Table 5 below summarizes the 2021 over 2020 changes for parcel tax and user charge.

**Magic Lake Estates Water and Sewer Committee – November 26, 2020**  
**2021 Operating and Capital Budget**

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**Table 5 – Parcel Tax 1 and User Charge Summary**

Budget Year	Parcel Tax1	Taxable Folios Numbers	Parcel Tax per Folio*	User Charge	SFE Numbers	User Charge per SFE	Parcel Tax & User Charge
<b>2020</b>	\$698,611	714	\$1,029.82	\$248,230	630	\$394.02	<b>\$1,423.83</b>
<b>2021</b>	\$577,806	714	\$851.74	\$250,203	635	\$394.02	<b>\$1,245.76</b>
<b>Change (\$)</b>	-\$120,805	0	-\$178.08	\$1,973	5	\$0	<b>-\$178.07</b>
<b>Change (%)</b>	-17.3%	0.00%	-17.3%	0.8%	0.8%	0%	<b>-12.5%</b>

\* Includes the 5.25% admin fee charged by the Ministry of Finance (not CRD revenue)

The parcel tax in the table above (Parcel Tax 1) to all taxable folios in 2021 is lower by \$178.08 or 17.3% per parcel. The reduction is a result of the Phase 1 Wastewater Renewal Project debt borrowing administration as a separate Parcel Tax (Parcel Tax 2).

Property owners were provided the option of paying a one-time lump sum of \$8,249.30 for their share of the cost or to pay debt servicing costs over 30 years through parcel tax. The deadline for the one-time payment to be received by CRD is November 27, 2020. The new debt servicing cost has to be budgeted and levied separately through a second parcel tax roll (Parcel Tax 2) in order to facilitate parcel tax only levied to those taxable folios that did not pay the lump-sum.

The estimated parcel tax on the second parcel roll (Parcel tax 2) related to the new debt servicing cost is displayed in Table 6 below.

**Table 6 – Parcel Tax 2 Summary – New Debt Only**

Budget Year	Parcel Tax 2	Taxable Folios Numbers**	Parcel Tax per Folio*
<b>2020</b>	\$0	0	<b>\$0.00</b>
<b>2021</b>	\$80,372	643	<b>\$131.56</b>
<b>Change (\$)</b>	\$80,372	643	<b>\$131.56</b>

\* Includes the 5.25% admin fee charged by the Ministry of Finance (not CRD revenue)

\*\* The number of taxable folios subject to parcel tax 2 will be confirmed after the November 27, 2020

This parcel tax 2 excludes an estimated \$586,000 which represents a projected 10% of taxable folios that may elect to pay a one-time lump sum. After the November 27, 2020 deadline and before final budget in March 2021, the parcel tax will be recalculated to deduct the actual total of the one-time lump sum prepayments collected.

A summary of total parcel tax (1&2) and user charge arranged by payment option on new debt is displayed in table 7 below.

**Table 7 – Comparative - Total Parcel Tax and User Charge per Folio by Payment Option**

Parcel Tax and User Charge	2020	2021 Lump-sum option			2021 Debt-servicing option		
		Amount	Change (\$)	Change (%)	Amount	Change (\$)	Change (%)
<b>Parcel Tax 1</b>	\$1,029.82	\$851.74	-\$178.08	-17.3%	\$851.74	-\$178.08	-17.3%
<b>Parcel Tax 2 *</b>	\$0.00				\$131.56	\$131.56	
<b>User Charge</b>	\$394.02	\$394.02	\$0.00	0%	\$394.02	\$0.00	0%
<b>Total</b>	<b>\$1,423.83</b>	<b>\$1,245.76</b>	<b>-\$178.07</b>	<b>-12.5%</b>	<b>\$1,377.32</b>	<b>-\$46.52</b>	<b>-3.3%</b>

\* Parcel tax 2 on new debt is an estimation based on an estimate of 90% of folios participating in debt-servicing.



**Magic Lake Estates Water and Sewer Committee – November 26, 2020**  
**2021 Operating and Capital Budget**

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**RECOMMENDATION**

That the Magic Lake Estates Water and Sewer Committee:

1. Approve the 2021 Operating and Capital Budget for the:
  - Magic Lake Estates Water System Local Service as presented and recommend that the 2020 actual surplus or deficit be balanced on the 2020 transfer to the Capital Reserve Fund; and
  - Magic Lake Estates Sewerage System Local Service as presented and recommend that the 2020 actual surplus or deficit be balanced on the 2020 transfer to the Capital Reserve Fund; and
2. Recommend that the Electoral Area Committee recommend that the CRD Board approve the 2021 Operating and Capital Budget and the five year Financial Plan for the Magic Lake Estates Water and Sewer Services as presented.

Submitted by	Matthew McCrank, M.Sc., P.Eng., Senior Manager, Wastewater Infrastructure Operations
Submitted by	Ian Jesney, P.Eng. Senior Manager, Infrastructure Engineering
Submitted by	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence	Ian Jesney, P.Eng., Acting General Manager, Integrated Water Services
Concurrence	Robert Lapham, MCIP, RPP, Chief Administrative Officer

**ATTACHMENT:**

Appendix A: 2021 Magic Lake Estates Water Operating and Capital Budget  
 2021 Magic Lake Estates Sewer Operating and Capital Budget

# **CAPITAL REGIONAL DISTRICT**

## **2021 Budget**

### **Magic Lake Water**

#### **Commission Review**

**Service:** 2.630 Magic Lake Estates Water

**Committee:** Electoral Area

**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 \$1,785,438.

**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:

- Greater than 50 cubic metres - \$0.50 / cubic metre
- Greater than 80 cubic metres - \$1.00 / cubic metre

**Parcel Tax:** LSA-1 Annual charge only on properties capable of being connected to the system.

**Turn on/Turn Off Fee:** \$0 during normal working hours; \$25 outside of normal working hours

**Connection Charges:** Actual Engineering and Construction costs, plus 15% Administration costs. The minimum charge is \$500

**RESERVE FUND:**

Magic Lake Estates - Water System Capital Reserve Fund. Bylaw No. 1498  
Magic Lake Estates - Water System Operating Reserve Fund. Bylaw No. 4144

**2.630 - Magic Lake Water**

	2020		BUDGET REQUEST				FUTURE PROJECTIONS			
	BOARD BUDGET	ESTIMATED ACTUAL	CORE BUDGET	2021 ONGOING	ONE-TIME	TOTAL	2022	2023	2024	2025
<u>OPERATING COSTS</u>										
Repairs & Maintenance	42,080	46,830	25,910	5,000	20,000	50,910	31,540	32,200	32,870	33,520
Allocations	44,164	44,164	48,363	-	-	48,363	52,280	53,230	54,208	55,183
Water Testing	18,850	14,200	19,170	-	-	19,170	19,550	19,940	20,340	20,750
Electricity	51,380	45,460	48,640	-	-	48,640	49,610	50,600	51,610	52,640
Supplies	45,820	58,090	46,590	-	-	46,590	47,520	48,460	49,430	50,410
Labour Charges	377,009	400,000	383,418	11,200	-	394,618	402,346	410,228	418,266	426,465
Other Operating Expenses	47,330	43,450	49,190	-	-	49,190	50,150	51,120	52,130	53,160
<b>TOTAL OPERATING COSTS</b>	<b>626,633</b>	<b>652,194</b>	<b>621,281</b>	<b>16,200</b>	<b>20,000</b>	<b>657,481</b>	<b>652,996</b>	<b>665,778</b>	<b>678,854</b>	<b>692,128</b>
*Percentage Increase over prior year						4.9%	-0.7%	2.0%	2.0%	2.0%
Transfer from Operating Reserve Fund	(20,000)	(20,000)	-	-	(20,000)	(20,000)	-	-	-	-
<b>NET OPERATING COSTS</b>	<b>606,633</b>	<b>632,194</b>	<b>621,281</b>	<b>16,200</b>	<b>-</b>	<b>637,481</b>	<b>652,996</b>	<b>665,778</b>	<b>678,854</b>	<b>692,128</b>
Percentage Increase over prior year										
<u>DEBT / RESERVES</u>										
Transfer to Operating Reserve Fund	10,000	10,000	10,000	-	-	10,000	10,000	10,000	10,000	10,000
Transfer to Capital Reserve Fund	92,390	61,449	92,390	-	-	92,390	92,390	92,390	92,390	92,390
MFA Debt Reserve Fund	670	670	730	-	-	730	730	730	730	730
MFA Debt Principal	127,860	127,860	130,553	-	-	130,553	130,553	130,553	130,553	130,553
MFA Debt Interest	91,810	91,810	68,521	-	-	68,521	68,521	68,521	68,521	63,894
<b>TOTAL DEBT / RESERVES</b>	<b>322,730</b>	<b>291,789</b>	<b>302,194</b>	<b>-</b>	<b>-</b>	<b>302,194</b>	<b>302,194</b>	<b>302,194</b>	<b>302,194</b>	<b>297,567</b>
<b>TOTAL COSTS</b>	<b>929,363</b>	<b>923,983</b>	<b>923,475</b>	<b>16,200</b>	<b>-</b>	<b>939,675</b>	<b>955,190</b>	<b>967,972</b>	<b>981,048</b>	<b>989,695</b>
<u>FUNDING SOURCES (REVENUE)</u>										
Sales - Water	(18,000)	(11,043)	(18,000)	-	-	(18,000)	(18,000)	(18,000)	(18,000)	(18,000)
Lease Revenue	(8,500)	(8,100)	(8,100)	-	-	(8,100)	(8,100)	(8,100)	(8,100)	(8,100)
User Charges	(332,903)	(335,550)	(327,355)	(16,200)	-	(343,555)	(353,387)	(360,429)	(367,705)	(370,482)
Other Revenue	(1,443)	(773)	(1,503)	-	-	(1,503)	(1,503)	(1,503)	(1,503)	(1,513)
<b>TOTAL REVENUE</b>	<b>(360,846)</b>	<b>(355,466)</b>	<b>(354,958)</b>	<b>(16,200)</b>	<b>-</b>	<b>(371,158)</b>	<b>(380,990)</b>	<b>(388,032)</b>	<b>(395,308)</b>	<b>(398,095)</b>
<b>REQUISITION - PARCEL TAX</b>	<b>(568,517)</b>	<b>(568,517)</b>	<b>(568,517)</b>	<b>-</b>	<b>-</b>	<b>(568,517)</b>	<b>(574,200)</b>	<b>(579,940)</b>	<b>(585,740)</b>	<b>(591,600)</b>
*Percentage increase over prior year										
Sales - Water						0.0%	0.0%	0.0%	0.0%	0.0%
User Fees						3.2%	2.9%	2.0%	2.0%	0.8%
Requisition						0.0%	1.0%	1.0%	1.0%	1.0%
<b>Combined</b>						<b>1.2%</b>	<b>1.7%</b>	<b>1.4%</b>	<b>1.4%</b>	<b>0.9%</b>

**Magic Lake Water  
Reserve Summary Schedule  
2021 - 2025 Financial Plan**

**Reserve/Fund Summary**

	<b>Estimated</b>	<b>Budget</b>				
	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Capital Reserve Fund	952,160	704,550	761,940	839,330	796,720	844,110
Operating Reserve Fund	98,131	88,131	98,131	108,131	118,131	128,131
<b>Total</b>	<b>1,050,291</b>	<b>792,681</b>	<b>860,071</b>	<b>947,461</b>	<b>914,851</b>	<b>972,241</b>

<b>Reserve Schedule</b>
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<b>Reserve Fund: 2.630 Magic Lakes Estate Water - Capital Reserve Fund</b>
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Bylaw 1498
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<b>Reserve Cash Flow</b>
--------------------------

Fund: Fund Centre:	1024 101368	Estimated	Budget				
		2020	2021	2022	2023	2024	2025
Beginning Balance		754,542	952,160	704,550	761,940	839,330	796,720
Transfer from Ops Budget		61,449	92,390	92,390	92,390	92,390	92,390
Transfer to Cap Fund		(14,000)	(340,000)	(35,000)	(15,000)	(135,000)	(45,000)
Transfer from Cap Fund		138,729					
Interest Income		11,440	-	-	-	-	-
Ending Balance \$		952,160	704,550	761,940	839,330	796,720	844,110

<b><u>Assumptions/Background:</u></b>
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<b>Reserve Schedule</b>
-------------------------

<b>Reserve Fund: 2.630 Magic Lakes Estate Water - Operating Reserve Fund - Bylaw 4144</b>
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Reserve fund used for: unforeseen operational repairs and maintenance; infrequent maintenance activities such as reservoir cleaning and inspection, hydrant maintenance etc. Optimum minimum balance of \$50,000 (approximately 10%) of the annual operating budget.
--

<b>Reserve Cash Flow</b>
--------------------------

Fund: Fund Centre:	1500 105212	Estimated	Budget				
		2020	2021	2022	2023	2024	2025
Beginning Balance		106,481	98,131	88,131	98,131	108,131	118,131
Transfer from Ops Budget		10,000	10,000	10,000	10,000	10,000	10,000
Transfer to Ops Budget		(20,000)	(20,000)	-	-	-	-
Planned maintenance activity		Captains Reservoir cleaning & inspection	Frigate Reservoir cleaning & inspection				
Interest Income		1,650	-	-	-	-	-
Ending Balance \$		98,131	88,131	98,131	108,131	118,131	128,131

<b><u>Assumptions/Background:</u></b>
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**CAPITAL REGIONAL DISTRICT**  
**FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2021 to 2025**

<b>Service No.</b>	<b>2.630</b>	<b>Carry</b>						
	<b>Magic Lake Estates Water</b>	<b>Forward from</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>TOTAL</b>
	<b>(Pender)</b>	<b>2020</b>						

**EXPENDITURE**

Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$250,000	\$0	\$0	\$0	\$0	\$250,000
Land	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Engineered Structures	\$0	\$90,000	\$35,000	\$15,000	\$135,000	\$45,000	\$320,000
Vehicles	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<b>\$0</b>	<b>\$340,000</b>	<b>\$35,000</b>	<b>\$15,000</b>	<b>\$135,000</b>	<b>\$45,000</b>	<b>\$570,000</b>

**SOURCE OF FUNDS**

Capital Funds on Hand	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Debenture Debt (New Debt Only)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment Replacement Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Grants (Federal, Provincial)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Donations / Third Party Funding	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Fund	\$0	\$340,000	\$35,000	\$15,000	\$135,000	\$45,000	\$570,000
	<b>\$0</b>	<b>\$340,000</b>	<b>\$35,000</b>	<b>\$15,000</b>	<b>\$135,000</b>	<b>\$45,000</b>	<b>\$570,000</b>



## CAPITAL REGIONAL DISTRICT CAPITAL PLAN

CAPITAL BUDGET FORM  
2021 & Forecast 2022 to 2025

Service #: 2.630

Service Name: Magic Lake Estates Water (Pender)

**Proj. No.**

The first two digits represent first year the project was in the capital plan.

**Capital Exp. Type**

**Study** - Expenditure for feasibility and business case report.

**New** - Expenditure for new asset only

**Renewal** - Expenditure upgrades an existing asset and extends the service ability or enhances technology in delivering that service

**Replacement** - Expenditure replaces an existing asset

**Funding Source Codes**

Debt = Debenture Debt (new debt only)

ERF = Equipment Replacement Fund

Grant = Grants (Federal, Provincial)

Cap = Capital Funds on Hand

Other = Donations / Third Party Funding

**Funding Source Codes (cont)**

Res = Reserve Fund

STLoan = Short Term Loans

WU = Water Utility

**Asset Class**

L - Land

S - Engineering Structure

B - Buildings

V - Vehicles

E - Equipment

**Capital Project Title**

Input Title of Project. For example "Asset Name - Roof Replacement", "Main Water Pipe Replacement".

**Capital Project Description**

Briefly describe project scope and service benefits.

For example: "Full Roof Replacement of a 40 year old roof above the swimming pool area; The new roofing system is built current energy standards, designed to minimize maintenance and have an expected service life of 35 years".

**Total Project Budget**

This column represents the total project budget not only within the 5-year window.

## FIVE YEAR FINANCIAL PLAN

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Proj Budget	Asset Class	Funding Source	C/F from 2020	2021	2022	2023	2024	2025	5 - Year Total
21-02	Replacement	Design and Construction Buck Lake and Magic Lake Adjustable Intakes	Detailed design and construction of adjustable intakes to inform future capital works to maintain water quality.	\$225,000	E	Res	\$0	\$225,000	\$0	\$0	\$0	\$0	\$225,000
21-03	Renewal	Safety Improvements	Improve sampling site safety with a pull out.	\$20,000	S	Res	\$0	\$20,000	\$0	\$0	\$0	\$0	\$20,000
21-04	Renewal	Buck Lake Dam Repairs - Phase 1	Conduct additional inspections, minor repairs, and performance analysis highlighted in the 2019 Dam Safety Review. Phase 2 dam improvements to be completed in the following five years.	\$180,000	S	Res	\$0	\$70,000	\$35,000	\$15,000	\$40,000	\$20,000	\$180,000
21-05	New	WTP SCADA Hot Standby	Provide a second human interface to operate the WTP in the event the single one fails.	\$15,000	E	Res	\$0	\$15,000	\$0	\$0	\$0	\$0	\$15,000
21-06	Replacement	Buck Lake Lighting Replacement	The Buck Lake pump station lighting requires replacement.	\$10,000	E	Res	\$0	\$10,000	\$0	\$0	\$0	\$0	\$10,000
23-01	Renewal	Decommission Magic Lake old Syphon	The old syphon is still in place and will require decommissioning to ensure dam performance.	\$35,000	S	Res	\$0	\$0	\$0	\$0	\$35,000	\$0	\$35,000
23-02	New	ISOPAC Permanent Handling & Storage	Safety improvements to the handling of ISOPAC for the WTP were carried out in 2020, permanent solution to reduce drum waste and reduce handling is proposed.	\$60,000	S	Res	\$0	\$0	\$0	\$0	\$60,000	\$0	\$60,000
25-01	Renewal	Public Engagement and Referendum	Undertake a referendum to borrow funds to carry out water system and dam safety improvements in future years.	\$25,000	S	Res	\$0	\$0	\$0	\$0	\$0	\$25,000	\$25,000
<b>GRAND TOTAL</b>				<b>\$570,000</b>			<b>\$0</b>	<b>\$340,000</b>	<b>\$35,000</b>	<b>\$15,000</b>	<b>\$135,000</b>	<b>\$45,000</b>	<b>\$570,000</b>

Service: 2.630 Magic Lake Estates Water (Pender)			
Proj. No.	21-02	Capital Project Title	Design and Construction Buck Lake and Magic Lake Adjustable Intakes
Asset Class	E	Board Priority Area	0
Capital Project Description	Detailed design and construction of adjustable intakes to inform future capital works to maintain water quality.		
Corporate Priority Area	0		
Project Rationale	Both the Buck and Magic Lake adjustable intakes are unsafe to clean and adjust without the employing divers. Funds are required to design and construct adjustable intakes.		
Proj. No.	21-03	Capital Project Title	Safety Improvements
Asset Class	S	Board Priority Area	0
Capital Project Description	Improve sampling site safety with a pull out.		
Corporate Priority Area	0		
Project Rationale	A water sampling site is positioned off side from a road, but has inadequate road shoulder for staff to pull over without impeding traffic. Funds are required to widen the shoulder to allow for the pull out.		
Proj. No.	21-04	Capital Project Title	Buck Lake Dam Repairs - Phase 1
Asset Class	S	Board Priority Area	0
Capital Project Description	Conduct additional inspections, minor repairs, and performance analysis highlighted in the 2019 Dam Safety Review. Phase 2 dam improvements to be completed in the following five years.		
Corporate Priority Area	0		
Project Rationale	Resulting from the Hatch 2019 Dam Safety Review, funds are required to conduct additional inspections, minor dam repairs, and performance analysis. Phase 2 dam improvements to be completed in the following five years.		
Proj. No.	21-05	Capital Project Title	WTP SCADA Hot Standby
Asset Class	E	Board Priority Area	0
Capital Project Description	Provide a second human interface to operate the WTP in the event the single one fails.		
Corporate Priority Area	0		
Project Rationale	The water treatment plant has only one human interface to operate the treatment plant, in the event of an equipment failure the plant may not be able to be operated. Funds are required to supply and install a second human interface to operate the water treatment plant.		

<b>Proj. No.</b> 21-06	<b>Capital Project Title</b> Buck Lake Lighting Replacement	<b>Capital Project Description</b> The Buck Lake pump station lighting requires replacement.
<b>Asset Class</b> E	<b>Board Priority Area</b> 0	<b>Corporate Priority Area</b> 0
<b>Project Rationale</b> The lighting at the Buck Lake pump station is failing and requires replacement. Funding is required to supply and install new lighting.		

<b>Proj. No.</b> 23-01	<b>Capital Project Title</b> Decommission Magic Lake old Syphon	<b>Capital Project Description</b> The old syphon is still in place and will require decommissioning to ensure dam performance.
<b>Asset Class</b> S	<b>Board Priority Area</b> 0	<b>Corporate Priority Area</b> 0
<b>Project Rationale</b> The old syphon at Magic Lake is no longer required, and does not function. Funds are required to remove the overland and underwater pipe, and decommission the underground pipe.		

<b>Proj. No.</b> 23-02	<b>Capital Project Title</b> ISOPAC Permanent Handling & Storage	<b>Capital Project Description</b> Safety improvements to the handling of ISOPAC for the WTP were carried out in 2020, permanent solution to reduce drum waste and reduce handling is proposed.
<b>Asset Class</b> S	<b>Board Priority Area</b> 0	<b>Corporate Priority Area</b> 0
<b>Project Rationale</b> Safety improvements to reduce Operator injury when handling the ISOPAC drums were carried out in 2019-2020. A permanent solution to reduce the use of drums which cannot be readily disposed of, and reduce handling of the product is proposed in 2023.		

<b>Proj. No.</b> 25-01	<b>Capital Project Title</b> Public Engagement and Referendum	<b>Capital Project Description</b> Undertake a referendum to borrow funds to carry out water system and dam safety improvements in future years.
<b>Asset Class</b> S	<b>Board Priority Area</b> 0	<b>Corporate Priority Area</b> 0
<b>Project Rationale</b> Funds are required to conduct a referendum for future funding of water system improvements including major dam improvements.		

## 2.63 - Magic Lake Water

### Capital Projects Fund

Updated @ Oct 02, 2020

Year	Project#	Status	Capital Project Description	Total Project Budget	Expenditure Actuals	Remaining Funds	Funding Source				Total Funding in Place	Return Project Surplus After Completion****
							CRF*	CWF**	OPS***	MFA Debt		CRF
2014	CE.258	OPEN	Water System Upgrade	8,972,500	8,650,965	321,535	360,166	5,310,334	742,000	2,560,000	8,972,500	-
2014	CE.400	CLOSE	South Dam Safety Upgrade	39,000	38,711	289	39,000	-	-	-	39,000	289
2016	CE.493	CLOSE	Buck Lake East Dam	120,000	1,560	118,440	120,000	-	-	-	120,000	118,440
2016	CE.514	CLOSE	Buck Lake Public Engagement	10,000	-	10,000	10,000	-	-	-	10,000	10,000
2017	CE.625	CLOSE	MLE Wtr Referendum	10,000	-	10,000	10,000	-	-	-	10,000	10,000
2018	CE.671	OPEN	MLE Wtr Air Valve Upgrades	110,000	17,678	92,322	110,000	-	-	-	110,000	-
2019	CE.678	OPEN	2019 Buck Lake Dam - Dam Safety Review (19-04)	50,000	45,715	4,285	50,000	-	-	-	50,000	-
2020	CE.733	OPEN	WTP Roof Snowguard Installation (20-04)	14,000	-	14,000	14,000	-	-	-	14,000	-
											-	
			<b>Totals</b>	<b>9,325,500</b>	<b>8,754,629</b>	<b>570,871</b>	<b>713,166</b>	<b>5,310,334</b>	<b>742,000</b>	<b>2,560,000</b>	<b>9,325,500</b>	<b>138,729</b>

- \* CRF (Capital Reserve Fund)
- \*\* CWF (Community Work fund) and Provincial Grants
- \*\*\* OPS (Operating Budget)
- \*\*\*\* Actual project surplus will be finalized at 2020 year-end.

Service:

**2.630 Magic Lake Water**Committee: **Electoral Area**

<u>Year</u>	<u>Taxable Folios</u>	<u>Parcel Tax Per Folio</u>	<u>SFE's</u>	<u>User Charge Per SFE*</u>	<u>Total Tax &amp; Charges</u>	<u>Bylaw</u>	<u>Actual Assessments \$(000's)</u>
2012	1,206	\$496.57	1,005	\$250.00	<b>\$746.57</b>	3847	\$390,273.10
2013	1,206	\$496.57	1,008	\$250.00	<b>\$746.57</b>	3892	\$356,311.00
2014	1,206	\$496.57	1,011	\$250.00	<b>\$746.57</b>	3924	\$336,525.60
2015	1,206	\$496.57	1,012	\$250.00	<b>\$746.57</b>	3987	\$327,129.00
2016	1,205	\$496.98	1,015	\$281.69	<b>\$778.67</b>	4074	\$327,129.00
2017	1,203	\$497.81	1,020	\$280.31	<b>\$778.12</b>	4170	\$328,976.80
2018	1,203	\$497.81	1,020	\$291.37	<b>\$789.18</b>	4233	\$407,278.90
2019	1,203	\$497.81	1,028	\$302.10	<b>\$799.91</b>	4274	\$469,844.20
2020	1,202	\$497.81	1,034	\$321.96	<b>\$819.76</b>	4337	\$510,125.00
2021	1,202	\$497.81	1,043	\$329.39	<b>\$827.20</b>		

*Change from 2020 to 2021*

\$0.00

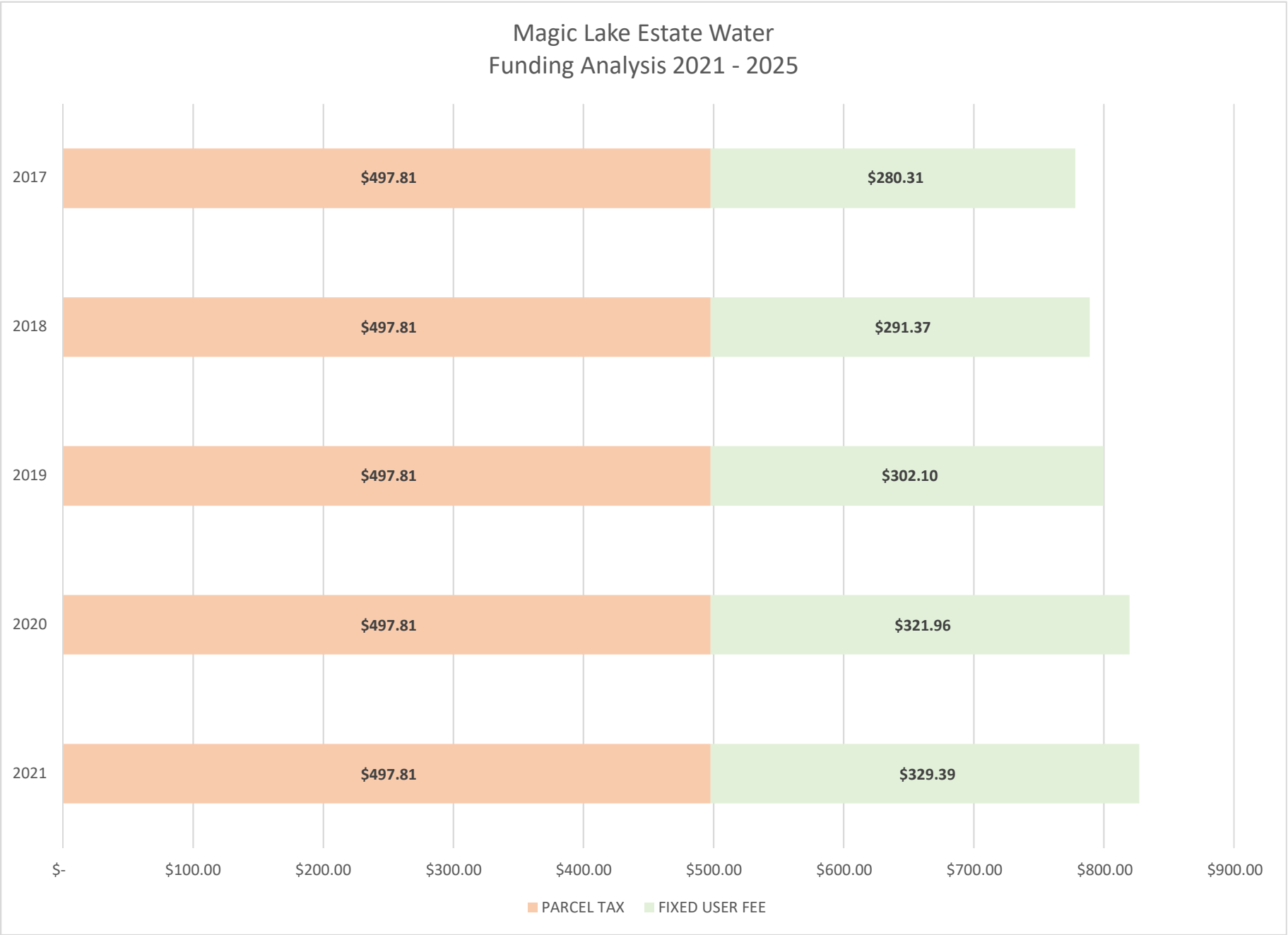
\$7.43

\$7.43

0.00%

2.31%

0.91%



# **CAPITAL REGIONAL DISTRICT**

## **2021 Budget**

### **Magic Lake Estates Sewer**

#### **Commission Review**

**Service:** 3.830 Magic Lake Sewer Utility (Pender)

**Committee:** Electoral Area

**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 on actual assessed value of land and improvements. To a maximum of \$2,201,148.

**MAXIMUM CAPITAL DEBT:**

**AUTHORIZED:** LA Bylaw No. 4048 (Dec 2015). Fall Borrowing \$1,530,000 for 10 years

**COMMITTEE:**

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

**FUNDING:**

**User Charge:** Per single family equivalency unit to connected properties only

**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.

**RESERVE FUND:**

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



3.830 - Magic Lake Estates Sewer	2020		BUDGET REQUEST				FUTURE PROJECTIONS			
	BOARD BUDGET	ESTIMATED ACTUAL	CORE BUDGET	ONGOING	ONE-TIME	TOTAL	2022	2023	2024	2025
<u>OPERATING COSTS</u>										
Sludge Hauling Contracts	87,450	87,450	88,940	-	-	88,940	90,720	92,530	94,380	96,270
Grit & Waste Sludge Disposal	87,450	84,000	88,940	-	-	88,940	90,720	92,530	94,380	96,270
Repairs & Maintenance	23,480	5,760	8,640	-	15,000	23,640	18,810	8,990	9,180	9,370
Allocations	37,588	37,588	43,961	-	-	43,961	46,557	47,394	48,246	49,115
Electricity	22,810	20,040	23,200	-	-	23,200	23,660	24,130	24,610	25,100
Supplies	21,160	19,880	21,520	-	-	21,520	21,940	22,360	22,800	23,240
Labour Charges	261,136	265,777	264,429	-	-	264,429	269,741	275,135	280,637	286,247
Other Operating Expenses	32,300	30,250	32,500	-	-	32,500	33,140	33,800	34,470	35,150
<b>TOTAL OPERATING COSTS</b>	<b>573,374</b>	<b>550,745</b>	<b>572,130</b>	<b>-</b>	<b>15,000</b>	<b>587,130</b>	<b>595,288</b>	<b>596,869</b>	<b>608,703</b>	<b>620,762</b>
*Percentage Increase over prior year						2.4%	1.4%	0.3%	2.0%	2.0%
Transfer from Operating Reserve Fund	(15,000)	-	-	-	(15,000)	(15,000)	(10,000)	-	-	-
<b>NET OPERATING COSTS</b>	<b>558,374</b>	<b>550,745</b>	<b>572,130</b>	<b>-</b>	<b>-</b>	<b>572,130</b>	<b>585,288</b>	<b>596,869</b>	<b>608,703</b>	<b>620,762</b>
Percentage Increase over prior year										
<u>DEBT / RESERVES</u>										
Transfer to Capital Reserve Fund	80,000	89,139	80,000	-	-	80,000	80,000	80,000	80,000	80,000
Transfer to Operating Reserve Fund	13,260	13,260	13,260	-	-	13,260	13,260	13,260	13,260	13,260
Transfer to Capital Project Fund (6M Phase 1)	-	133,064	-	-	-	-	-	-	-	-
Debt Reserve Fund	50,260	260	370	-	-	370	370	370	370	370
MFA Principal Payment	133,470	133,470	133,463	-	-	133,463	133,463	133,463	133,463	133,463
MFA Interest Payment	123,704	40,640	40,640	-	-	40,640	40,640	40,640	40,640	40,640
<b>TOTAL DEBT / RESERVES</b>	<b>400,694</b>	<b>409,833</b>	<b>267,733</b>	<b>-</b>	<b>-</b>	<b>267,733</b>	<b>267,733</b>	<b>267,733</b>	<b>267,733</b>	<b>267,733</b>
<b>Sludge Disposal Recovery</b>	<b>(10,424)</b>	<b>(10,424)</b>	<b>(10,654)</b>	<b>-</b>	<b>-</b>	<b>(10,654)</b>	<b>(10,888)</b>	<b>(11,128)</b>	<b>(11,372)</b>	<b>(11,600)</b>
<b>TOTAL COSTS NET OF RECOVERIES</b>	<b>948,644</b>	<b>950,154</b>	<b>829,209</b>	<b>-</b>	<b>-</b>	<b>829,209</b>	<b>842,133</b>	<b>853,474</b>	<b>865,064</b>	<b>876,895</b>
<u>FUNDING SOURCES (REVENUE)</u>										
User Charges	(248,230)	(250,000)	(250,203)	-	-	(250,203)	(290,913)	(352,234)	(413,804)	(475,615)
Grants in Lieu	(743)	(743)	(10)	-	-	(10)	(10)	(10)	(10)	(10)
Other Revenue	(1,060)	(800)	(1,190)	-	-	(1,190)	(1,210)	(1,230)	(1,250)	(1,270)
<b>TOTAL REVENUE</b>	<b>(250,033)</b>	<b>(251,543)</b>	<b>(251,403)</b>	<b>-</b>	<b>-</b>	<b>(251,403)</b>	<b>(292,133)</b>	<b>(353,474)</b>	<b>(415,064)</b>	<b>(476,895)</b>
<b>REQUISITION - PARCEL TAX</b>	<b>(698,611)</b>	<b>(698,611)</b>	<b>(577,806)</b>	<b>-</b>	<b>-</b>	<b>(577,806)</b>	<b>(550,000)</b>	<b>(500,000)</b>	<b>(450,000)</b>	<b>(400,000)</b>
*Percentage increase over prior year										
User Fees						0.8%	16.3%	21.1%	17.5%	14.9%
Requisition						-17.3%	-4.8%	-9.1%	-10.0%	-11.1%
<b>Combined</b>						<b>-12.6%</b>	<b>1.6%</b>	<b>1.3%</b>	<b>1.4%</b>	<b>1.4%</b>

**3.830 - Magic Lake Estates Sewer - Debt Only**  
*- 6M Phase 1 Wastewater Treatment Plan Upgrade*

DEBT

Debt Reserve Fund  
MFA Principal Payment  
MFA Interest Payment

**TOTAL DEBT**

**REQUISITION - PARCEL TAX**

\*Percentage increase over prior year  
Requisition

	2020		BUDGET REQUEST				FUTURE PROJECTIONS			
	BOARD BUDGET	ESTIMATED ACTUAL	CORE BUDGET	ONGOING	ONE-TIME	TOTAL	2022	2023	2024	2025
Debt Reserve Fund	-	-	38,040	-	-	38,040	15,000	-	-	-
MFA Principal Payment	-	-	-	-	-	-	93,768	130,743	130,743	130,743
MFA Interest Payment	-	-	42,332	-	-	42,332	93,651	100,776	100,776	100,776
<b>TOTAL DEBT</b>	-	-	<b>80,372</b>	-	-	<b>80,372</b>	<b>202,419</b>	<b>231,519</b>	<b>231,519</b>	<b>231,519</b>
<b>REQUISITION - PARCEL TAX</b>	-	-	<b>(80,372)</b>	-	-	<b>(80,372)</b>	<b>(202,419)</b>	<b>(231,519)</b>	<b>(231,519)</b>	<b>(231,519)</b>
*Percentage increase over prior year Requisition							151.9%	14.4%	0.0%	0.0%

Magic Lake Estates Sewer  
Reserve Summary Schedule  
2021 - 2025 Financial Plan

Reserve/Fund Summary						
	Estimated	Budget				
	2020	2021	2022	2023	2024	2025
Capital Reserve Fund	254,167	304,167	384,167	464,167	544,167	624,167
Operating Reserve Fund	44,513	42,773	46,033	59,293	72,553	85,813
Total	298,681	346,941	430,201	523,461	616,721	709,981

<b>Reserve Schedule</b>
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<b>Reserve Fund: 3.830 Magic Lake Sewer System - Capital Reserve Fund</b>
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Bylaw 1497
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<b>Reserve Cash Flow</b>
--------------------------

Fund: 1042 Fund Centre: 101386	Estimated	Budget				
	2020	2021	2022	2023	2024	2025
Beginning Balance	137,087	254,167	304,167	384,167	464,167	544,167
Transfer from Ops Budget	80,000	80,000	80,000	80,000	80,000	80,000
Transfer from Cap Fund	-	(30,000)	-	-	-	-
Transfer to Cap Fund	35,000	-	-	-	-	-
Interest Income	2,080	-	-	-	-	-
Ending Balance \$	254,167	304,167	384,167	464,167	544,167	624,167

<b><u>Assumptions/Background:</u></b>
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<b>Reserve Schedule</b>
-------------------------

<b>Reserve Fund: 3.830 Magic Lake Sewer System - Operating Reserve Fund - Bylaw 4144</b>
--

Reserve fund used for: unforeseen operational repairs and maintenance; infrequent maintenance activities such as treatment facility tankage draining/cleaning/inspection etc. Optimum minimum balance of \$50,000 (approximately 10%) of the annual operating budget.
---

<b>Reserve Cash Flow</b>
--------------------------

Fund: 1500 Fund Centre: 105217	Estimated	Budget				
	2020	2021	2022	2023	2024	2025
<b>Beginning Balance</b>	30,743	44,513	42,773	46,033	59,293	72,553
<b>Transfer from Ops Budget</b>	13,260	13,260	13,260	13,260	13,260	13,260
<b>Planned Expenditures</b>	-	(15,000)	(10,000)	-	-	-
Planned Maintenance Activity		Clean Schooner aeration ditch	Outfall inspection			
<b>Interest Income</b>	510	-	-	-	-	-
<b>Ending Balance \$</b>	<b>44,513</b>	<b>42,773</b>	<b>46,033</b>	<b>59,293</b>	<b>72,553</b>	<b>85,813</b>

<b><u>Assumptions/Background:</u></b>
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**CAPITAL REGIONAL DISTRICT**  
**FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2021 to 2025**

<b>Service No.</b>	<b>3.830</b>	<b>Carry</b>						
	<b>Magic Lake Sewer Utility</b>	<b>Forward from</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>TOTAL</b>
	<b>(Pender)</b>	<b>2020</b>						

**EXPENDITURE**

Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Land	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Engineered Structures	\$5,750,000	\$8,780,000	\$3,150,000	\$0	\$0	\$0	\$11,930,000
Vehicles	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<b>\$5,750,000</b>	<b>\$8,780,000</b>	<b>\$3,150,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$11,930,000</b>

**SOURCE OF FUNDS**

Capital Funds on Hand	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Debenture Debt (New Debt Only)	\$5,750,000	\$5,750,000	\$0	\$0	\$0	\$0	\$5,750,000
Equipment Replacement Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Grants (Federal, Provincial)	\$0	\$3,000,000	\$3,150,000	\$0	\$0	\$0	\$6,150,000
Donations / Third Party Funding	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Fund	\$0	\$30,000	\$0	\$0	\$0	\$0	\$30,000
	<b>\$5,750,000</b>	<b>\$8,780,000</b>	<b>\$3,150,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$11,930,000</b>

CAPITAL REGIONAL DISTRICT CAPITAL PLAN

CAPITAL BUDGET FORM  
2021 & Forecast 2022 to 2025

Service #:  
3.830

Service Name:  
Magic Lake Sewer Utility (Pender)

**Proj. No.**  
The first two digits represent first year the project was in the capital plan.

**Capital Exp. Type**  
**Study** - Expenditure for feasibility and business case report.  
**New** - Expenditure for new asset only  
**Renewal** - Expenditure upgrades an existing asset and extends the service ability or enhances technology in delivering that service  
**Replacement** - Expenditure replaces an existing asset

**Funding Source Codes**  
Debt = Debenture Debt (new debt only)  
ERF = Equipment Replacement Fund  
Grant = Grants (Federal, Provincial)  
Cap = Capital Funds on Hand  
Other = Donations / Third Party Funding

**Funding Source Codes (cont)**  
Res = Reserve Fund  
STLoan = Short Term Loans  
WU = Water Utility

**Asset Class**  
L - Land  
S - Engineering Structure  
B - Buildings  
V - Vehicles  
E - Equipment

**Capital Project Title**  
Input Title of Project. For example "Asset Name - Roof Replacement", "Main Water Pipe Replacement".

**Capital Project Description**  
Briefly describe project scope and service benefits.  
For example: "Full Roof Replacement of a 40 year old roof above the swimming pool area. The new roofing system is built current energy standards, designed to minimize maintenance and have an expected service life of 35 years".

**Total Project Budget**  
This column represents the total project budget not only within the 5-year window.

FIVE YEAR FINANCIAL PLAN													
Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Proj Budget	Asset Class	Funding Source	C/F from 2020	2021	2022	2023	2024	2025	5 - Year Total
20-01	Renewal	Wastewater Improvements - Phase I	1. Upgrade Schooner WWTP (add screen & grit removal, EQ tank, access road, electrical upgrades, genset) 2. Renew Buccaneer, Galleon and Schooner PS 3. Replace 4.6 km of failing AC pipe and rehab 84 manholes	\$6,000,000	S	Debt	\$5,750,000	\$5,750,000	\$0	\$0	\$0	\$0	\$5,750,000
21-01	New	Safety Upgrades	Various safety upgrades to address risks identified through safety audit completed in early 2020.	\$30,000	S	Res	\$0	\$30,000	\$0	\$0	\$0	\$0	\$30,000
24-01	Renewal	Wastewater Improvements - Phase II	1. Replace Cannon WWTP with a new pump station 2. Upgrade Schooner WWTP (2nd aeration tank, new clarifiers, electrical)	\$3,000,000	S	Grant	\$0	\$3,000,000	\$0	\$0	\$0	\$0	\$3,000,000
29-01	Renewal	Wastewater Improvements - Phase III	1. Renew Capstan, Outlass and Masthead Pump Stns 2. Replace 1.8 km of failing AC pipe and rehab 36 manholes 3. Upgrade Sludge Thickening at Schooner WWTP	\$3,150,000	S	Grant	\$0	\$0	\$3,150,000	\$0	\$0	\$0	\$3,150,000
GRAND TOTAL				\$12,180,000			\$5,750,000	\$8,780,000	\$3,150,000	\$0	\$0	\$0	\$11,930,000

Service: **3.830** **Magic Lake Sewer Utility (Pender)**

Proj. No. 20-01

Capital Project Title Wastewater Improvements - Phase I

Capital Project Description

1. Upgrade Schooner WWTP (add screen & grit removal, EQ tank, access road, electrical upgrades, genset)
2. Renew Buccaneer, Galleon and Schooner PS
3. Replace 4.6 km of failing AC pipe and rehab 84 manholes

Asset Class S

Board Priority Area 0

Corporate Priority Area 0

**Project Rationale** Funding is required to carry out Phase I of wastewater improvements including: 1. Upgrade Schooner WWTP (add screen & grit removal, EQ tank, access road, electrical upgrades, genset)  
2. Renew Buccaneer, Galleon and Schooner PS  
3. Replace 4.6 km of failing AC pipe and rehab 84 manholes

Proj. No. 21-01

Capital Project Title Safety Upgrades

Capital Project Description

Various safety upgrades to address risks identified through safety audit completed in early 2020.

Asset Class S

Board Priority Area 0

Corporate Priority Area 0

**Project Rationale** Funding is required to make safety upgrades, such as replacement of heavy hatches, ventilation of the testing building and access improvements.

Proj. No. 24-01

Capital Project Title Wastewater Improvements - Phase II

Capital Project Description

1. Replace Cannon WWTP with a new pump station
2. Upgrade Schooner WWTP (2nd aeration tank, new clarifiers, electrical)

Asset Class S

Board Priority Area 0

Corporate Priority Area 0

**Project Rationale** 1. Replace Cannon WWTP with a new pump station  
2. Upgrade Schooner WWTP (2nd aeration tank, new clarifiers, electrical)

Proj. No. 29-01

Capital Project Title Wastewater Improvements - Phase III

Capital Project Description

1. Renew Capstan, Cutlass and Masthead Pump Stns
2. Replace 1.8 km of failing AC pipe and rehab 36 manholes
3. Upgrade Sludge Thickening at Schooner WWTP

Asset Class S

Board Priority Area 0

Corporate Priority Area 0

**Project Rationale** 1. Renew Capstan, Cutlass and Masthead Pump Stns  
2. Replace 1.8 km of failing AC pipe and rehab 36 manholes  
3. Upgrade Sludge Thickening at Schooner WWTP



### 3.83 - Magic Lake Sewer Utility (Pender)

#### Capital Projects Fund

Updated @ Oct 09, 2020

Year	Project#	Status	Capital Project Description	Total Project Budget	Expenditure Actuals	Remaining Funds	Funding Source				Total Funding in Place	Funding Pending Receivable	Return Project Surplus After Completion***
							CRF*	MFA Debt	OPEX**	Lump Sum****			CRF*
2016	CE.573	Close	Ph 2 WW Upg Public Consultation	60,000	52,186	7,814	60,000	-	-		60,000	-	5,000
2016	CE.536.8301	Close	Replace Sewer Pipe	812,558	783,011	29,547	127,558	685,000	-		812,558	-	30,000
2020	CE.708	Open	MLE Wastewater Treatment Plant Upgrade	6,000,000	112,922	5,887,078	-	-	110,000	461,961	571,961	5,428,039	-
			<b>Total</b>	<b>6,872,558</b>	<b>948,118</b>	<b>5,924,440</b>	<b>187,558</b>	<b>685,000</b>	<b>110,000</b>	<b>461,961</b>	<b>1,444,519</b>	<b>5,428,039</b>	<b>35,000</b>

\* CRF (Capital Reserve Fund)

\*\* OPEX (Transfer from Operating)

\*\*\* Actual project surplus will be finalized at 2020 year end

\*\*\*\* Total payments received as of time of report preparation; 56 folios X \$8,249.30

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

<u>Year</u>	<u>Taxable Folios</u>	<u>Parcel Tax 1 per Folio</u>	<u>Taxable Folios</u>	<u>Parcel Tax 2 per Folio</u>	<u>SFE's</u>	<u>User Charge per SFE</u>	<u>Total Tax(1&amp;2) &amp; Charges</u>	<u>Bylaw</u>
2010	714	\$401.28			616	\$252.00	<b>\$653.28</b>	
2011	714	\$401.27			617	\$272.00	<b>\$673.27</b>	3778
2012	714	\$414.76			617	\$272.00	<b>\$686.76</b>	3823
2013	714	\$414.76			621	\$272.00	<b>\$686.76</b>	3892
2014	714	\$414.76			620	\$272.00	<b>\$686.76</b>	3924
2015	714	\$414.76			621	\$272.00	<b>\$686.76</b>	3987
2016	714	\$493.70			623	\$271.12	<b>\$764.83</b>	4074
2017	713	\$750.36			623	\$271.12	<b>\$1,021.48</b>	4170
2018	713	\$750.37			623	\$300.40	<b>\$1,050.77</b>	4233
2019	713	\$777.60			623	\$381.54	<b>\$1,159.14</b>	4274
2020	714	\$1,029.82			630	\$394.02	<b>\$1,423.83</b>	4337
2021	714	\$851.74	643	\$131.56	635	\$394.02	<b>\$1,377.32</b>	
<i>Change from 2020 to 2021</i>								
		-\$178.08		\$131.56		\$0.00	-\$46.52	
		-17.29%		N/A		0.00%	-3.27%	

<b>Total Parcel Tax(1) and Charges (lump-sum payment option only)</b>	<b>\$ 1,245.76</b>
<i>Change from 2020 to 2021</i>	-\$178.07
	-12.51%

