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**MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE**

Notice of Meeting on **Tuesday, June 13, 2017 at 9:30 a.m.**

Main Conference Room, 479 Island Highway, Victoria, BC

Kathy Heslop (Chair)  
Director Dave Howe

David Reed  
Courtenay Rodash

Jim Petrie  
Alex Wilson

Joe Gill



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**AGENDA**

1. Approval of Agenda
2. Presentations/Delegations
3. Adoption of Minutes of May 9, 2017
4. Motion to Close the Meeting  
*That the Magic Lake Estates Water and Sewer Committee close the meeting in accordance with the Community Charter, Part 4, Division 3, 90(1)(g) litigation or potential litigation affecting the municipality.*
5. Buck Lake and Privateers Road Sewer Replacement Update (staff report)
6. Water Update (verbal report with handout)
7. Wastewater Update (verbal report with handout)
8. Operations Report (verbal report with handout)
9. Correspondence
10. New Business
11. Adjournment

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*To ensure quorum, advise Lorrie Siemens 250.360.3087 or [lsiemens@crd.bc.ca](mailto:lsiemens@crd.bc.ca) if you cannot attend.*

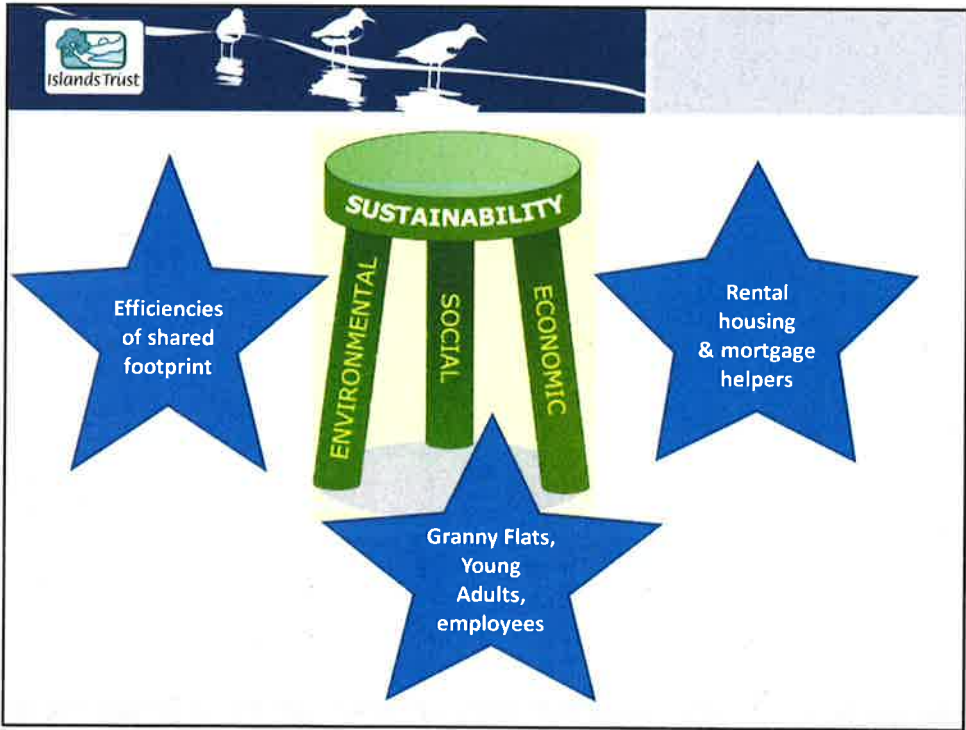


North Pender Island  
Local Trust Committee

# Housing on North Pender Island

## SECONDARY SUITES

*North Pender Island Local Trust Committee  
'Top Priority Policy Project'*



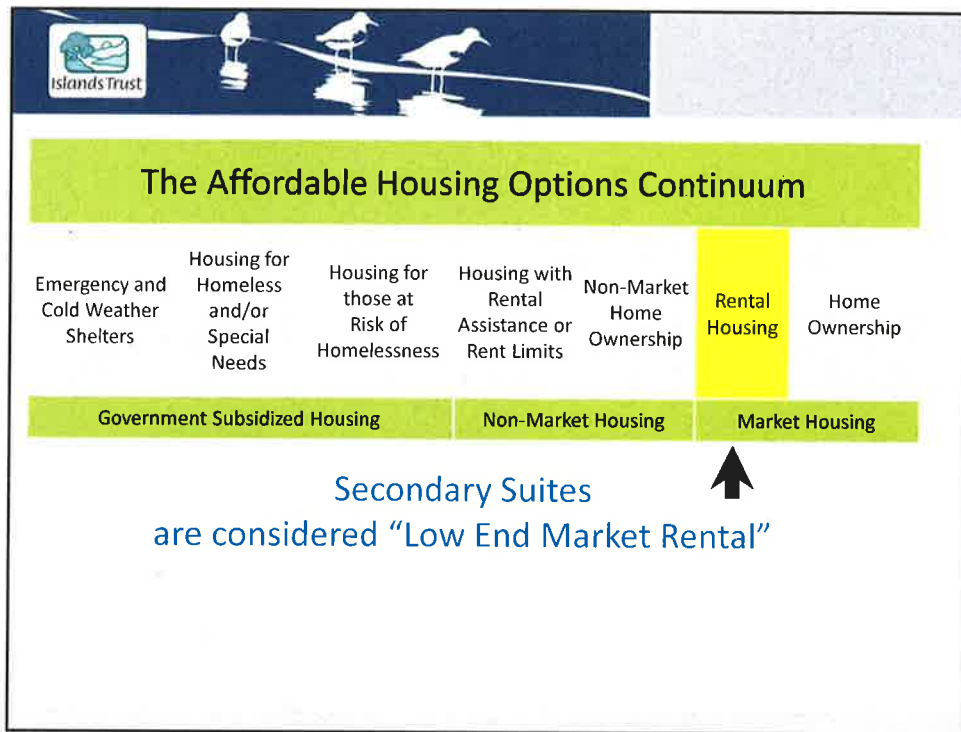


## North Pender 2008 Housing Task Force:

*“Concerns about existing rental rates, lack of affordable housing for service providers, employees in the business sectors, and for the aging community members.”*



- Legalization of suites is the most frequently suggested action to increase the supply of affordable housing stock in the community.
- Integrated into existing settlement pattern, compatible with Rural sense of place
- Offers rental housing, seniors can age in place, employee housing, mortgage helpers.
- Diversifying the housing stock supports a diverse community.



Islands Trust Zoning +  
CRD Building Permit Approval  
(Must prove septic and water)  
=  
Legal Suite



## Standard Regulations:

- Secondary suites are accessory to the principal use of a single detached dwelling unit.
- Use of a secondary suite for short term vacation rentals is prohibited
- There is a maximum of one secondary suite permitted per principal dwelling.
- A secondary suite must be contained within the walls of the principal dwelling unit.
- A secondary suite must have separate access and egress from the principal dwelling unit.
- The maximum floor area for a secondary suite is 90 m (968 ft<sup>2</sup>) or a maximum of 40% of the floor area of the principal dwelling unit, whichever is the lesser.
- One on-site parking space must be provided for the occupant(s) of the suite.



## Suites on other Islands:

- Hornby Island
- Denman Island
- Gabriola Island
- Bowen Island
- Salt Spring Island
- Mayne Island
- Galiano Island



## Magic Lake Water & Sewer Service Area:

### Water

- Service area includes 1,206 parcels of which 1,012 are serviced.
- All serviced lots are metered – Great for monitoring.
- At 3 people per service, the estimated current service population is 3,036 with a buildout population of 3,618.
- Based on recent system upgrades and allowing 3 people per service, the ultimate population that can be served is 7,024.



## Magic Lake Water & Sewer Service Area:

### Sewer

- Two separate sewage systems in one service area
- Service area of 714 parcels, 638 are serviced.
- Currently the two systems cannot meet the current peak wet weather flows; no capacity available for growth.
- Sewage system upgrades within next 4 years, subject to a borrowing referendum.



## Bylaw Amendment Process



## DISCUSSION





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**Minutes of a Meeting of the Magic Lake Estates Water and Sewer Committee**  
**Held Tuesday, May 9, 2017 in the Main Conference Room, 479 Island Highway, Victoria, BC**

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**PRESENT:**     **Committee Members:** K. Heslop (Chair), A. Wilson, J. Gill, D. Reed, J. Petrie, C. Rodash  
                  **Staff:** M. McCrank, Senior Manager, Infrastructure Operations, I. Jesney, Senior Manager, Infrastructure Engineering, D. Puskas, Manager, Capital Projects (for Item 8), M. Cowley, Manager, Wastewater Engineering and Planning (for Item 5), L. Siemens (recorder)  
**ABSENT:**     Director D. Howe

The meeting was called to order at 9:30 a.m.

**1.     Approval of Agenda**

**MOVED** by A. Wilson, **SECONDED** by J. Gill,  
That the agenda be approved as distributed.

**CARRIED**

**2.     Adoption of Minutes of April 11, 2017**

**MOVED** by A. Wilson, **SECONDED** by J. Gill,  
That the minutes of April 11, 2017 be adopted as previously distributed.

**CARRIED**

**3.     Motion to Close the Meeting**

**MOVED** by C. Rodash, **SECONDED** by J. Gill,  
That the Magic Lake Estates Water and Sewer Committee close the meeting in accordance with the Community Charter, Part 4, Division 3, 90.1 (e) *the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality.*

**CARRIED**

The Magic Lake Estates Water and Sewer Committee closed the meeting at 9:32 a.m. and resumed in open session at 9:39 a.m.

**4.     Water Update**

I. Jesney presented a verbal report and distributed a hand-out. The hand-out will be included as part of the agenda package.

**5.     Wastewater Update**

I. Jesney presented a verbal report and distributed a hand-out. The hand-out will be included as part of the agenda package.



**6. Operations Update**

M. McCrank provided a verbal report and distributed a hand-out. The hand-out will be included a part of the agenda package.

**7. Buck Lake Sewer Update**

M. Cowley provided a verbal update of the Buck Lake Sanitary Sewer video camera inspection report.

**8. Capital Projects Overview**

D. Puskas provided a capital projects overview.

**9. Correspondence**

There was no correspondence.

**10. New Business**

At the request of the committee, staff gave a brief overview of navigating the CRD website to the Magic Lake Estates Water and Sewer documents.

**11. Adjournment**

**MOVED** by J. Gill, **SECONDED** by D. Reed,  
That the meeting be adjourned at 11:25 a.m.

**CARRIED**



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## **REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE MEETING OF TUESDAY, JUNE 13, 2017**

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### **SUBJECT     BUCK LAKE AND PRIVATEERS ROAD SEWER REPLACEMENT UPDATE**

### **ISSUE**

To provide an update to the Magic Lake Estates Water and Sewer Committee (Committee) on the Buck Lake and Privateers Road Sewer Replacement project.

### **BACKGROUND**

At the May 9, 2017 Committee meeting, the Committee requested staff to provide an update on the Buck Lake and Privateers Road Sewer Replacement projects that were approved by the Alternative Approval Process in 2016. The 2011 Stantec Condition Assessment report first identified and recommended that these sewer sections be replaced due to their age, condition, flat grade, and history of sewage back-ups. Last month, the Committee was presented with a summary of the closed circuit television (CCTV) pipe inspection that was completed on the Buck Lake sewer. The inspection identified numerous defects in the sewer and confirmed that the pipe grade is flat and has solids build up along a majority of the pipe length (see attached summary), causing flow restriction.

The developer, who originally installed the pipe, located it along the shores of Buck Lake likely to minimize the depth of excavation required to install the pipe and allow homes to connect to the sewer by gravity (without the need for pumps). The developer acquired a right-of-way for the pipe, but its alignment meanders in and out of the right-of-way. Due to the proximity of the pipe to Buck Lake and existing houses, the pipe has a number of alignment changes and would be impractical to replace by trenchless methods because those methods work best on long-straight runs. Additionally, in order to increase the flushing velocity of the sewer to minimize the potential for solids to settle, the pipe should be installed with greater grade (currently it ranges from 0.1% to 0.6% and has numerous sags or low points).

Should the Committee decide to proceed with replacing the pipe, staff recommend that the start of the replacement be located on Signal Hill Road where the pipe can be lowered to achieve a better grade (closer to 1.0%). This combined with new and larger diameter PVC pipe (which has less frictional resistance than asbestos cement pipe) should eliminate the potential for solids build-up and sewage back-ups into Buck Lake.

However, starting the pipe replacement at Signal Hill means that the end of the 325m long pipe replacement will occur at 3710 Tiller Crescent instead of the planned replacement to 36133 Galleon Way (the length remains about the same but the start/end shifts towards Signal Hill Road).

During the preliminary design it was also discovered that a 60m length of pipe, (from 3706 to 3710 Tiller Crescent), must be replaced by a trenchless method in order to avoid impacting the lake and/or people's homes. In addition, in order to increase the pipe grade, the trench excavation will have to be deeper. Therefore, design changes have increased the overall cost estimate of the project from \$495,000 to \$550,000. It should also be noted that there still are a number of unknown design/construction details such as underlying ground conditions and private property land-use costs that could affect the overall project cost.

However, offsetting the increased cost for the Buck Lake sewer section is an estimated decrease in costs to install the sewer along Privateers Road. Shifting this proposed sewer into the shoulder versus the middle of the road has lowered the overall cost estimate from \$133,000 to \$110,000. Further cost savings may be realized by designing and tendering these two sewer replacement projects together, (less administration, mobilization/demobilization, etc.). The length of the Buck Lake sewer replacement can be increased or decreased depending on the tendered unit rates received to keep the project within its overall budget.

The current financial status of the sewer replacement projects are as follows:

<b>Project</b>	<b>Budget</b>	<b>Actual Cost to Date</b>	<b>Cost to Complete</b>	<b>Variance</b>
Buck Lake Sewer	\$495,000	\$26,364	\$491,636	\$(23,000)
Privateers Road Sewer	\$133,000	\$4,815	\$105,185	\$23,000
<b>Total</b>	<b>\$628,000</b>	<b>\$31,179</b>	<b>\$596,821</b>	<b>\$0</b>

Approximately 5% of the budget has been expended to prepare the project plan, complete the survey, base plans, preliminary design, CCTV inspection, cost estimates, etc. This amount is within the allotted budget for the work that has been completed to date.

## **ALTERNATIVES**

### **Alternative 1**

That the Magic Lake Estates Water and Sewer Committee direct staff to proceed with the detailed design, acquire land-use agreements, and tender the Buck Lake and Privateers Road Sewer Replacement projects as previously approved by the community through the Alternative Approval Process.

### **Alternative 2**

That the Magic Lake Estates Water and Sewer Committee direct staff to stop the Buck Lake and Privateers Sewer Replacement projects and continue to flush these sewers to minimize the risk of plugging and overflows.

## **IMPLICATIONS**

Alternative 1 – The project can proceed as planned. The next steps would be to complete a couple of test holes to confirm the ground conditions, commence with completing the detailed design, and retain a land agent to start negotiations on land use agreements with 16 landowners along Buck Lake. Construction is proposed for summer 2018 during dry weather conditions and while the lake is low to minimize potential environmental impacts.

Alternative 2 – Staff can continue to flush these sewers to minimize the potential of solids building up in the pipes and sewage overflowing into Buck Lake. It was previously noted that it costs approximately \$6,000 to flush these sections of sewer using the CRD flush truck and Operations staff. Recently, the flush truck has reached the end of its life and it is not planned to be replaced, so to hire a flush truck company could increase the cost to about \$11,000 per visit (actual cost in 2016 was \$10,900).

CRD Operations recently flushed the sewer in November 2016 and based on solids build-up shown in the recent CCTV inspection, the sewer should probably be flushed at least 3-4 times per year. Therefore, the annual cost to flush the sewer would be in the order of \$33,000 - \$44,000. Not accounting for inflation or any remediation costs related to overflows into Buck Lake, (should that occur), it would take about 14-18 years to reach \$600,000. However, the sewer would likely fail or collapse prior to 15 years and would have to be replaced anyway.

### **CONCLUSION**

The Buck Lake and Privateers Road Sewer replacement projects were approved through the Alternative Approval Process in 2016. The preliminary design has been completed and staff are seeking further direction from the Committee prior to commencing with detailed design. Based on the recent CCTV inspection of the Buck Lake Sewer it is evident that solids regularly build-up in the pipe and that there are a number of defects. The ongoing sewer flushing alternative is not recommended due to the risk of overflows and contamination of the whole community's primary drinking water source. It is proposed that the design be completed this year, all land use agreements be secured by early 2018, and construction commence next summer when Buck Lake water level is low.

### **RECOMMENDATION**

That the Magic Lake Estates Water and Sewer Committee direct staff to proceed with the detailed design, acquire land-use agreements, and tender the Buck Lake and Privateers Road Sewer Replacement projects as previously approved by the community through the Alternative Approval Process.

Submitted by:	Malcolm Cowley, P.Eng., Manager, Wastewater Engineering and Planning
Concurrence:	Ian Jesney, P.Eng. Senior Manager, Infrastructure Engineering
Concurrence:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services

MC:ls





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June 13, 2017

File: 0360-20

Magic Lake Estates Water and Sewer Committee

## **Magic Lake Estates Water Service**

### Magic Lake North Dam (Saddle Dam) License Agreements:

- The purpose of the license is to enable CRD to access, operate and maintain the saddle dam.
- The new landowner at 3804 Pirates Road is willing to enter into an agreement to enable CRD to access, repair and maintain the dam. Working towards getting this executed. This addresses the majority of the dam that is on private land.
- The landowner at 3806 was contacted again and is not willing to enter into an agreement with the CRD.

### Buck Lake Intake:

- Staff are completing budget estimates based upon the design/specification for Committee review.

### Magic Lake Dam Safety Upgrade (Siphon):

- Design and specifications completed for valve upgrade. Work will be undertaken by CRD Operations staff in the summer of 2017 with testing in the fall after the high water demand period.

### Signal Hill, Schooner and Capstan Way PRV's:

- Works will be tendered externally and construction for all three sites is scheduled to take place in late summer/fall of 2017.
- Recent Progress –Confirmation that proposed works will be within budget.

### Chemical (ISOPAC) Storage and Handling:

- The CRD is evaluating recommendations to determine the most appropriate method.
- Recent Progress – Project initiated, Ergonomics consultant conducted site visit and has provided recommendations.

### Buck Lake East Dam Detailed Design:

- The CRD is currently developing a new dam safety philosophy; and as such, this project has been put on hold.

### Public Engagement for Future Projects and Referendum:

- It is proposed to complete the water (and wastewater) Strategic Asset Management plan to determine the comprehensive future capital implications before conducting the public engagement and subsequent referendum.

Prepared by: Stephen Henderson, Dale Puskas and Scott Mason.



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File: 0360-20

Magic Lake Estates Water and Sewer Committee

June 13, 2017

## **MAGIC LAKE ESTATES WASTEWATER**

### **Wastewater Infrastructure Projects – Phase 1 Update**

#### **Chart Drive**

- The door to the electrical room is being upgraded (see Operations Report).

#### **Sewer Pipe Replacement – Buck Lake & Privateers Road**

- See attached staff report.

#### **Inflow & Infiltration Program**

- Tender for cleaning, flushing, CCTV and manhole (MH) inspections of the entire collection system closed on May 11. The breakdown of the total tendered amount is attached and is within the overall \$217,000 project budget.
- The contract will be awarded and work will likely commence later this summer and be complete before the end of the year.
- After the inspection work is complete, a report will be prepared summarizing the pipe condition and priority repairs.

#### **Schooner Tank Assessment**

- A consultant/material testing firm has been retained. Stazuk and Stantec.
- Complete the inspection in May; assessment report to be received in June.

### **Wastewater Projects - 2017 Capital Plan**

#### **Schooner WWTP Blower and Electrical Room Roof Replacement**

- The new roofing work is tentatively planned for summer 2017.

#### **Schooner Outfall Protection**

- A consultant has been retained. They will be conducting a site visit with the outfall inspection to better refine scope of works.
- The work is tentatively scheduled for late summer 2017 during low tide.

#### **Phase 2 Wastewater Infrastructure Upgrades – Public Consultation**

- No change from last report. Staff are working towards having materials ready for a Public Open House later this year. This can include tours of the facilities.
- Once feedback has been received on the options, a referendum will be scheduled to obtain elector assent for fund the proposed upgrades.

Schooner and Cannon Outfall Inspections

- Outfall inspections for Schooner and Cannon is anticipated June 7<sup>th</sup>.

High Level Float Alarm in Schooner and Cannon Aeration Tanks

- Complete

Report Prepared by: Malcolm Cowley and Dale Puskas



Summary of Prices from Tender No. 2017-252 – Core Area, Ganges, and Magic Lake Estates  
CCTV Inspection

<b>Pender Island – Magic Lake Estates Sewer:</b>					
16	AC/PVC/DI/ST/HDPE 150 dia				
	a) Sewer Cleaning	Meters	12,204	\$3.61	\$44,056.44
	b) CCTV Inspection	Meters	12,204	\$4.00	\$48,816.00
17	PVC/DI 200 to 300 dia				
	a) Sewer Cleaning	Meters	3,390	\$3.61	\$12,237.90
	b) CCTV Inspection	Meters	3,390	\$4.00	\$13,560.00
18	Concrete Pipe 900 dia				
	a) Sewer Cleaning	Meters	66	\$5.38	\$355.08
	b) CCTV Inspection	Meters	66	\$4.88	\$322.08
19	Removal of root masses	Hourly	40	\$380.00	\$15,200.00
20	Removal from Site and Disposal of Debris from Sewer Cleaning Process	Tonnes	25	\$185.00	\$4,625.00
20.1	Travel Cost for Disposal of Debris from Site to approved Dump Site	Hourly	40	\$195.00	\$7,800.00
21	Traffic Control	LS	--	--	\$0.00
21.1	Flag Persons	Hourly	80	\$40.00	\$3,200.00
22	Manhole/Chamber Inspection (various sizes and depths)	Each	300	\$100.00	\$30,000.00
	<b>Subtotal Magic Lake Estates (Items 16 to 22)</b>	–	–	–	<b>\$180,172.50</b>



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June 13, 2017

File: 0360-20  
Magic Lake Estates Water and Sewer Committee

Magic Lake Estates Water and Sewer Committee

## **OPERATIONS REPORT**

### **Water Operations Highlights:**

- Sodium hypochlorite leak found and repaired at the Magic Lake Estates Water Treatment Facility.
- Hydrant #28, fronting 3772 Privateers, permanent repair work scheduled for June 13, 2017; public notification of water service interruption posted on the CRD website and also hand delivered to those impacted by this work. Public notification attached.

### **Wastewater Operations Highlights:**

- Operating Permit Regulatory Non-compliance reporting for May 2017:

Facility	# of Reports Issued for May	Total # of Reports Issued 2017	Cause
Schooner WWTP	1	11	UV failure (effluent disinfection system) as a result of power outages (typically).
Schooner Pump Station	0	1	Occurred in February during an extended power system outage. Raw sewage discharged into the marine environment.
Cannon WWTP	0	17	Exceeding maximum daily flows due to storm water entering through I&I.

### **Capital Improvement work:**

- Completed the installation of the aeration tank high level float switches at Schooner and Cannon Wastewater Treatment Facilities. High level alarm system is fully functional.
- Schooner Wastewater Treatment Facility aeration tank ultrasonic wall thickness testing project. Operations assisted with this project by excavating several pit locations around the aeration tank in order for testing to be conducted below grade. Pit locations backfilled after testing completed.
- Schooner Wastewater Treatment Facility blower and electrical building roof replacement completed.
- Chart Drive pump station door delaminated and required replacement along with some minor exterior wall repairs. This work was funded by Chart Drive capital project.

Prepared by: Dan Robson and Matt McCrank, Integrated Water Services



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## **NOTICE TO LOCAL AREA RESIDENTS MAGIC LAKE ESTATES WATER SERVICE AREA**

### **WATER INTERRUPTION**

On Tuesday, June 13, 2017 between the hours of 9am and 3pm, the Capital Regional District will be performing a fire hydrant repair in the Magic Lake Estates Water Service Area. In order to complete the work, it will be necessary to turn off the water and interrupt water service to a portion of the community. Please refer to the attached map for the properties likely to be impacted by this work.

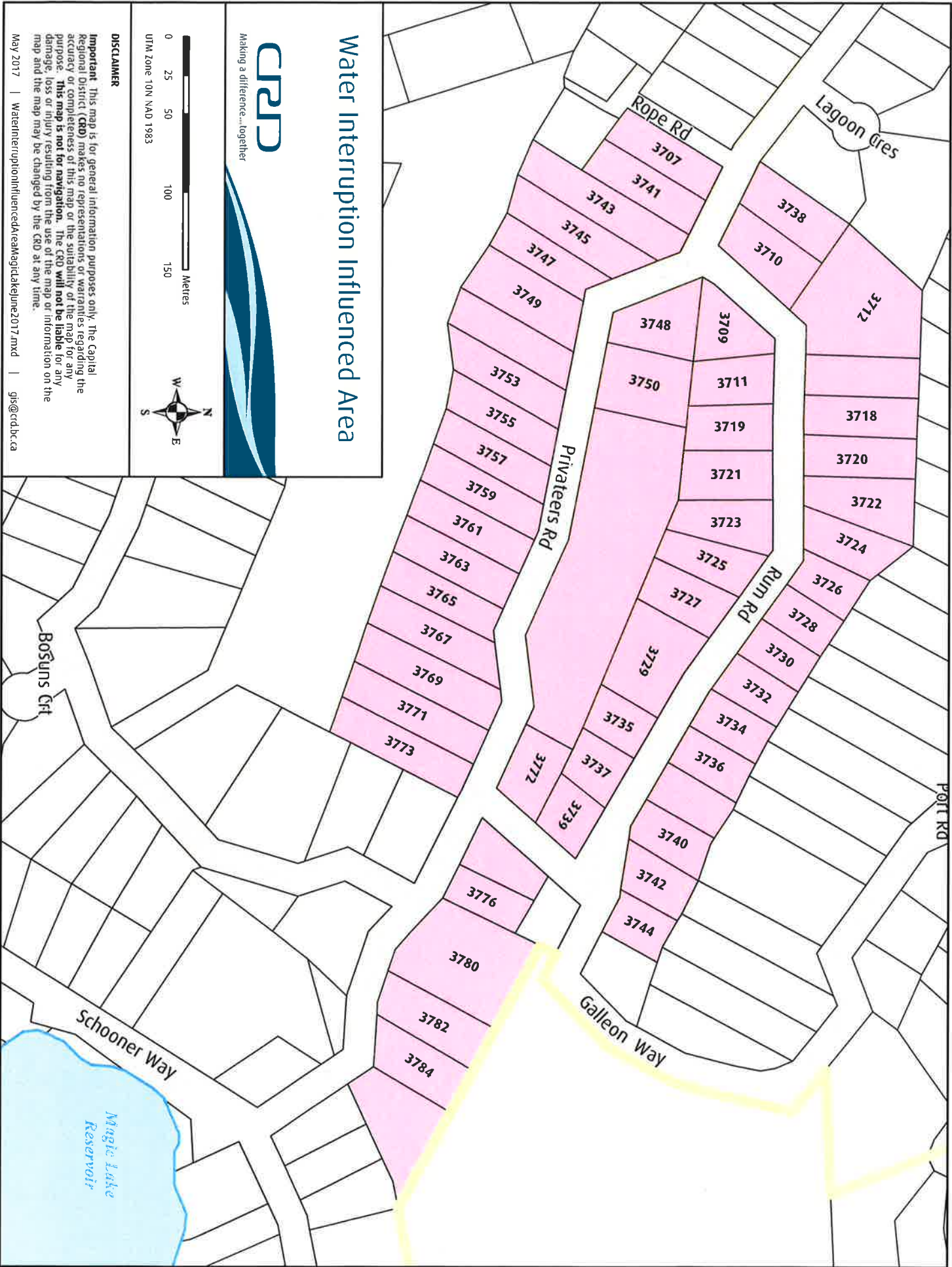
As water to your property will be shut off during this period, residents may want to set aside some water to meet their individual needs during this time.

It is also important to note that after the work has been completed and services restored, you may experience intermittent brown water and/or air at your tap for short durations. Should this occur, continue to run your water until it clears. The water remains safe to drink.

***Thank you for your patience and understanding.***

***Questions? Please call***

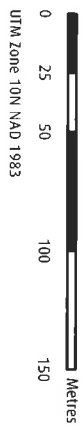
***John Magi, Field Supervisor  
Saanich Peninsula & Gulf Islands Operations  
Cell: 250.883.2550***



# Water Interruption Influenced Area



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## DISCLAIMER

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