



REPORT TO MAGIC LAKE ESTATES WATER AND SEWER LOCAL SERVICES COMMITTEE MEETING OF TUESDAY, JUNE 11, 2019

SUBJECT **MAGIC LAKE ESTATES WASTEWATER INFRASTRUCTURE RENEWAL – RESULTS OF OPEN HOUSE AND NEXT STEPS**

ISSUE

To summarize the feedback received from the April 27, 2019 Open House and outline the Referendum process and the next steps required to advance to the Magic Lakes Estates Wastewater Infrastructure Renewal project.

BACKGROUND

At their meeting held March 12, 2019 the Magic Lake Estates Water and Sewer Committee requested staff to proceed with a Public Open House on April 27, 2019. Therefore, materials were prepared for the Open House including: a notice of the open house that was inserted with the second quarter utility bill, a Frequently Asked Questions sheet, 19 full-size display boards, take-away summary sheets, and a Feedback Form. In addition, the committee members informed people of the Open House through social media, an article in the Pender Post, and by word of mouth.

The Public Open House was well attended as about 125 people came out to receive information and some also attended a tour of the Schooner Wastewater Treatment Plant (to compare: approximately 60 people attended the 2014 Open House). Feedback from the residents was received until June 2, 2019. The number of feedback forms received (by hand, email and electronically), totalled 133.

A numerical summary of the responses received from the Feedback Form follows (additional comments are noted in the DRAFT Public Feedback Summary Report attached in Appendix A):

Questions		Responses	
		Number	% of total
1. Do you feel that you have received enough information and have a good understanding of the issues and challenges associated with the Magic Lake Estates wastewater system?		Yes - 113	89%
		No - 14	11%
2. Do you think upgrades are required on the wastewater system?		Yes - 122	95%
		No - 6	5%?
3. Do you live in the service area		Yes - 120	95%
		No - 6	5%
4. Which of the three options do you prefer and why	Option 1 – complete work in 3 phases	37	28%
	Option 2 – complete work in 2 phases	23	17%
	Option 3 – complete work in 1 phase	56	42%
	I need more information/no response	17	13%
5. If you chose Option 1 above, would you support the decision to borrow \$6,000,000 to proceed with option 1?		Yes - 36	76.5%
		No - 4	8.5%

Questions			Responses				
			Number		% of total		
			Need more info - 7		15%		
6. If you chose Option 2 above, would you support the decision to borrow \$9,000,000 to proceed with option 2?			Yes - 24		67%		
			No - 5		14%		
			Need more info - 7		19%		
7. If you chose Option 3 above, would you support the decision to borrow \$12,150,000 to proceed with option 3?			Yes - 53		81.5%		
			No - 2		3%		
			Need more info - 10		15.5%		
8. If options 1, 2 or 3 are chosen, would you prefer a 20-year, 25-year, or 30-year load period?	20-Year Amortization		19		14%		
	25-Year Amortization		22		17%		
	30-Year Amortization		67		50%		
	Other/no response		25		19%		
9. Rate the following from the most important (1) to the least important (5) factor that is influencing your decisions.	Criteria/Factor		1	2	3	4	5
	Affordability		24	17	15	19	35
	Renew infrastructure before it fails		65	20	22	3	2
	Protect the environment		15	42	16	22	14
	Meet Regulatory requirements		13	15	23	30	30
	Improve reliability of system		12	17	28	27	25

Based on the feedback received, the residents clearly agree they have received enough information and that upgrades are required. The majority of the responses favoured Option 3 and would strongly support the decision to borrow \$12.15 million. A majority of the respondents also favoured borrowing funds over a 30-year loan amortization period.

The most important factors influencing the community's decision appear to be renewing the infrastructure before it fails, affordability and protecting the environment. This seems to indicate that although people are concerned about affordability, (and likely favoured the 30-year loan as a result), they are still willing to pay for and invest in renewing the infrastructure and protecting the environment.

The next steps required to move the wastewater renewal work forward are for the Committee to decide on which option and loan amortization staff should proceed with for the upcoming referendum. See Appendix B for an outline and timeline of the referendum process.

ALTERNATIVES

Alternative 1

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

1. Approve proceeding with Option 3, for \$12.15 million and amortization period of 30 years for the loan authorization for the Magic Lake Estates Infrastructure Renewal Project,
2. Present the decision on the Project to the community at the Annual General Meeting in August, and

3. Direct staff to proceed with preparing the loan authorization bylaw, ballot question, election officer and voting day for the committees review prior to forwarding to the Electoral Area Services Committee and CRD Board for approval.

Alternative 2

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

1. Approve proceeding with Option 1, for \$6 million and amortization period of 30 years for the loan authorization for the Magic Lake Estates Infrastructure Renewal Project,
2. Present the decision on the Project to the community at the Annual General Meeting in August, and
3. Direct staff to proceed with preparing the loan authorization bylaw, ballot question, election officer and voting day for the committee's review prior to forwarding to the Electoral Area Services Committee and CRD Board for approval.

Alternative 3

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

1. Approve proceeding with Option 2, for \$9 million and amortization period of 30 years for the loan authorization for the Magic Lake Estates Infrastructure Renewal Project,
2. Present the decision on the Project to the community at the Annual General Meeting in August, and
3. Direct staff to proceed with preparing the loan authorization bylaw, ballot question, election officer and voting day for the committee's review prior to forwarding to the Electoral Area Services Committee and CRD Board for approval.

IMPLICATIONS

Alternative 1 – As indicated in the public feedback, the majority of respondents favoured Option 3 - completing \$12.15 million in required upgrades all in one phase, and also favoured a 30-year loan amortization period. As presented at the Open House, the financial implication of borrowing \$12.15 million over 30 years results in an annual parcel tax increase of approximately \$1,005 per year. This is in addition to the existing parcel taxes and user fees for both the sewer and water utilities.

If directed to proceed, staff anticipate that the referendum voting day could be held in November, 2019. If the Committee requires more time to make a decision, this will likely result in moving the referendum voting date to January or February 2020.

Alternative 2 – Approximately 28% of survey respondents favoured Option 1 - completing \$6.0 million in required upgrades all in three separate phases, and 50% favoured a 30-year loan amortization period. As presented at the Open House, the financial implication of borrowing \$6.0 million over 30 years results in an annual parcel tax increase of approximately \$496 per year. This is in addition to the existing parcel taxes and user fees for both the sewer and water utilities. This alternative will require subsequent funding/borrowing to complete the remaining \$6.15 million of required upgrades. Of particular concern with this Alternative, is that Cannon WWTP will not yet be replaced with a pump station, and the existing plant regularly exceeds its permitted capacity and the tanks are significantly corroded and could fail in the very near future.

If directed to proceed, staff anticipate that the referendum voting day could be held in November, 2019. If the Committee requires more time to make a decision, this will likely result in moving the referendum voting date to January or February 2020.

Alternative 3 – Approximately 17% of survey respondents favoured Option 2 - completing \$9.0 million in required upgrades all in two phases, and 50% favoured a 30-year loan amortization period. As presented at the Open House, the financial implication of borrowing \$9.0 million over 30 years results in an annual parcel tax increase of approximately \$744 per year. This is in addition to the existing parcel taxes and user fees for both the sewer and water utilities. This alternative will require subsequent funding/borrowing to complete the remaining \$3.15 million of required upgrades. This Alternative would include the replacing Cannon WWTP with a new pump station which is highly recommended in order to address capacity issues at the plant and eliminate the risk of tank failure.

If directed to proceed, staff anticipate that the referendum voting day could be held in November, 2019. If the Committee requires more time to make a decision, this will likely result in moving the referendum voting date to January or February 2020.

CONCLUSION

The April 27, 2019 Public Open House was well attended and the information presented was well received. The community overwhelmingly understood the information and agrees that upgrades are required. Of the options presented, the majority favoured Option 3 - completing \$12.15 million in required upgrades all in one phase. A majority of the respondents also favoured the 30-year loan amortization period. The most to least important factors influencing the community's decision is: renewing the infrastructure before it fails, affordability, and protecting the environment. The next steps required to move the wastewater renewal work forward are for the Committee to decide on which option and what loan amortization staff should proceed with on the upcoming referendum.

RECOMMENDATION

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

1. Approve proceeding with Option 3, for \$12.15 million and amortization period of 30 years for the loan authorization for the Magic Lake Estates Infrastructure Renewal Project,
2. Present the decision on the Project to the community at the Annual General Meeting in August, and
3. Direct staff to proceed with preparing the loan authorization bylaw, ballot question, election officer and voting day for the committee's review prior to forwarding to the Electoral Area Services Committee and CRD Board for approval.

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

MC: so

Attachments: Appendix A – Public Feedback Summary Report
 Appendix B - Referendum Process

APPENDIX B

REFERENDUM PROCESS		
1.	MLE Committee to decide on Option and loan amortization period	June 11, 2019
2.	Prepare Referendum Question and draft Loan Authorization Bylaw	July
3.	CRD Board approval of 1 st , 2 nd & 3 rd readings – Loan Authorization Bylaw.	Aug 14
4.	Send Loan Authorization Bylaw to Inspector of Municipalities (4-6 weeks)	Aug 15
5.	Town Hall meeting to Update the Community on the Referendum	Aug AGM
6.	CRD Board to establish Referendum question, polls & Election Officer	Sep
7.	Prepare Mail-out to include with water bill – Referendum Notice	Oct 3
8.	Approval of Inspector of Municipalities (based referendum date of Nov 16)	mid-Sep
9.	Advertise official notices prior to Referendum (Chief Election Officer)	Oct
10.	2 nd Town Hall Meeting (if required)	Nov 2
11.	Advance voting	Nov 7 & Nov 14
12.	Referendum Voting Day	Nov 16
13.	Board receives Referendum results and, if successful, adopts bylaws	Dec 11
14.	30-day quashing period ends	Jan 15, 2020
15.	Apply for Certificate of Approval	Jan 17, 2020
16.	Prepare Scope of Work for Detailed Design	Feb – Mar, 2020
17.	Secure initial draw on MFA Loan	April 2020

Magic Lake Estates

Public Feedback Summary Report

Wastewater Infrastructure Renewal Open House, April 27, 2019





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Introduction

The original Magic Lake Estates (MLE) Sewer System was installed by a developer in the late 1960's. There has been some expansion over the years and currently there is about 15 km of sewer pipe (primarily 150 mm in diameter and asbestos cement pipe), about 1 km of forcemain pipe from six pump stations, about 316 manholes and two treatment plants (Schooner and Cannon). The sewer service area is currently about 210 hectares and includes 714 parcels of which only 623 are currently connected (in 2018).

It has been well known for many years now that much of the original infrastructure is at or near the end of its life and that upgrades are now required. In 2011, Stantec completed a report entitled "Magic Lake Estates Sewerage System - Asset Condition and Engineering Study". The report identified a number of issues with the infrastructure and recommended upgrades to the collection system, pump stations and treatment facilities. A few upgrades have been completed since then, and the remainder of the MLE wastewater system was recently inspected, reviewed and evaluated again to identify additional upgrades that need to be completed. This information has been presented to the Magic Lake Estates Water and Sewer Committee and recently to the whole community at a Public Open House on April 27, 2019. All information has been posted onto the CRD website.

Feedback forms were provided to the public and were requested to be submitted by May 24 which was extended to June 2, 2019. The information received from the Feedback Forms has been summarized in this Summary Report and will be used to help the Committee make some decisions on the upcoming referendum to borrow funds to complete the upgrades.

The Feedback received was not binding and is unaudited, although it was strongly emphasized that only one form be submitted per person and that their comments truly reflect how they would vote on an upcoming referendum.

Feedback Summary

Total Magic Lake Estates Sewer System Feedback Forms submitted: **133**

Percentages of total responses indicating whether respondent felt they had received enough information about the project

Enough Information: **89%** Not Enough Information: **11%**

Do you think upgrades are required on the system?

Yes: **95%** No: **5%**

Percentages of total responses identifying a replacement project option

Option 1: **28%** Option 2: **17%** Option 3: **42%**

No Response/Need more information: **13%**

Percentages of total responses identifying a loan type option

20-Year: **14%** 25-Year: **17%** 30-Year: **50%**

No response/Other: **19%**

Top Ranking Criteria Influencing Preferences

Infrastructure Renewal
Affordability
Protect the Environment

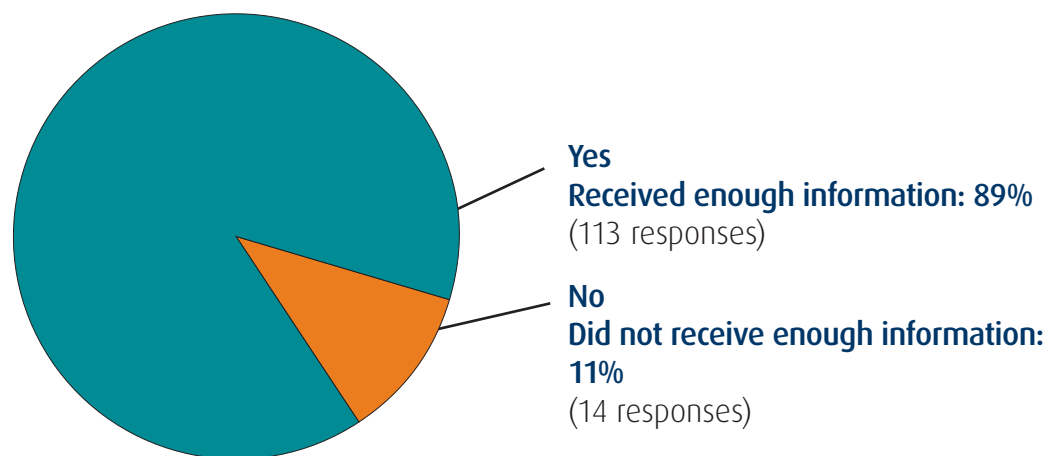
**Feedback numbers do not necessarily represent one response per person. Response was not required for all questions. Numbers are rounded up.*

***See the Written Comments (page 11-23) for further information.*

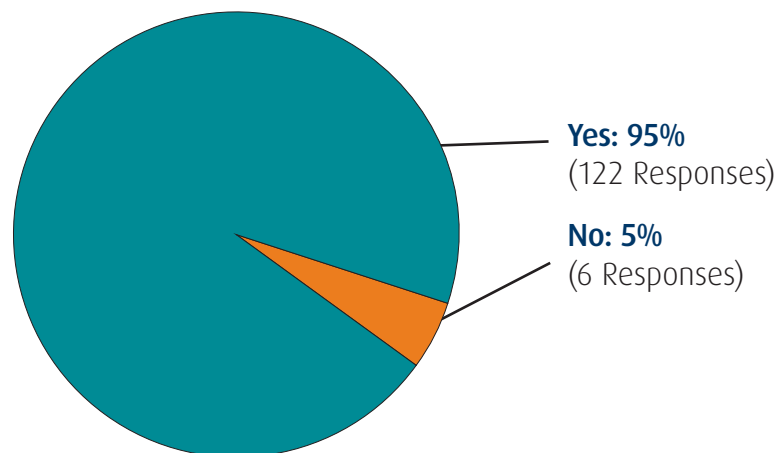
Feedback Data

Overall Feedback Summary

Question 1: Do you feel that you have received enough information and have a good understanding of the issues and challenges associated with the Magic Lake Estates wastewater system?



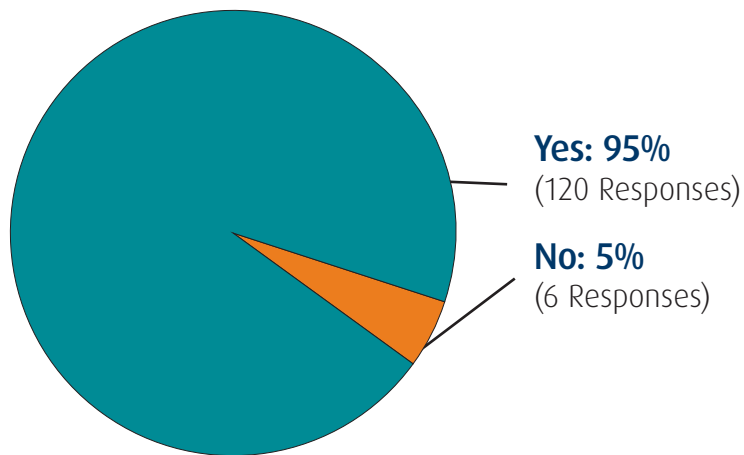
Question 2: Do you think upgrades are required on the wastewater system?



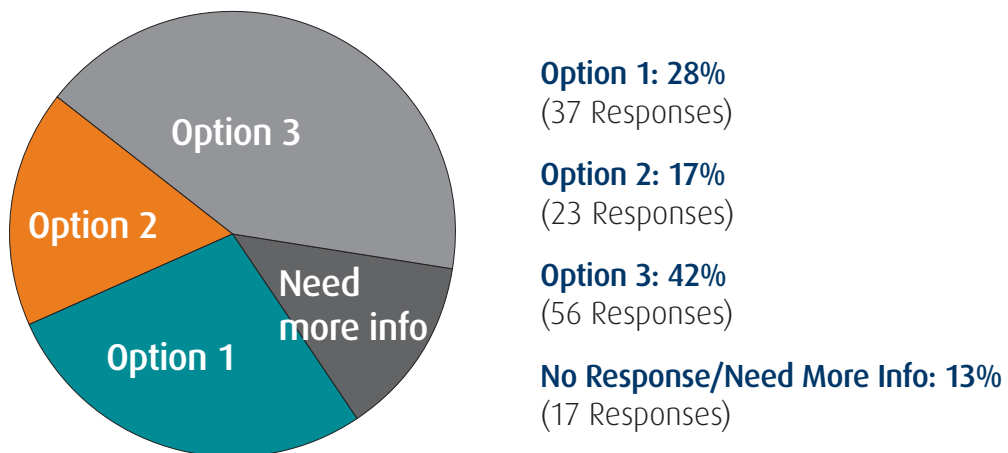
Feedback numbers do not necessarily represent one response per person. Response was not required for all questions. Percentages have been rounded to the nearest whole number.

Overall Feedback Summary

Question 3: Do you live in the service area?



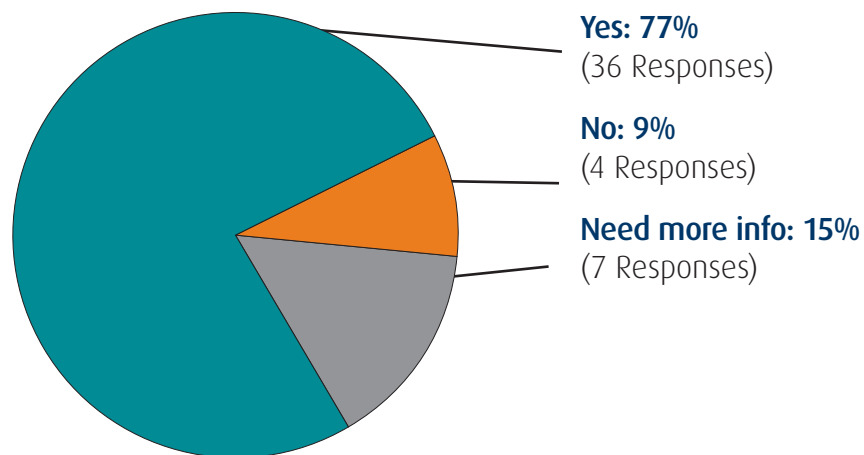
Question 4: Which of the three options presented do you prefer and why?



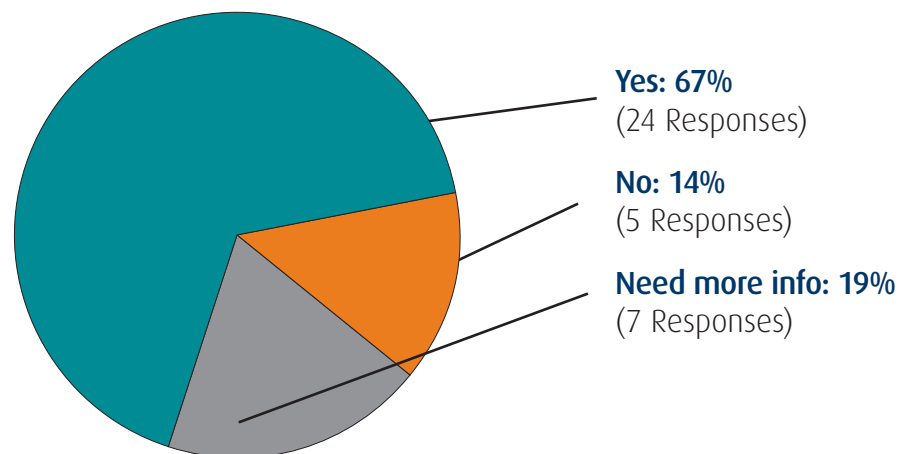
Feedback numbers do not necessarily represent one response per person. Response was not required for all questions. Percentages have been rounded to the nearest whole number. Numbers have been rounded up.

Overall Feedback Summary

Question 5: If you chose Option 1, would you support the decision to borrow \$6,000,000 to proceed with option 1?



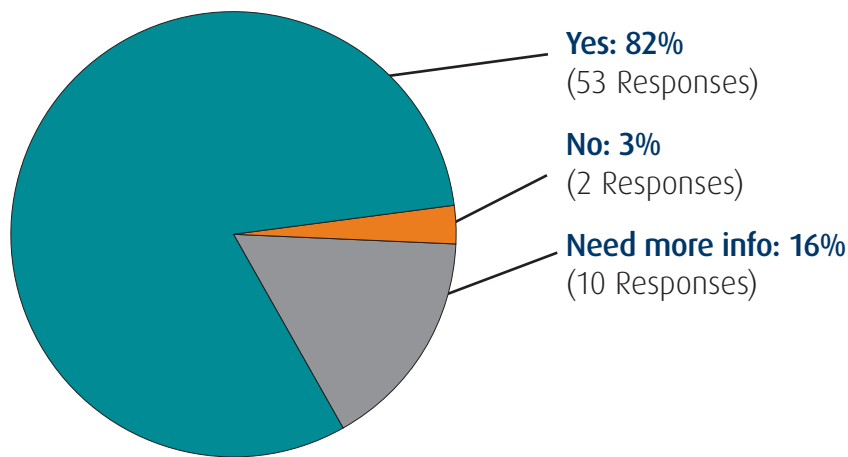
Question 6: If you chose Option 2, would you support the decision to borrow \$9,000,000 to proceed with option 2?



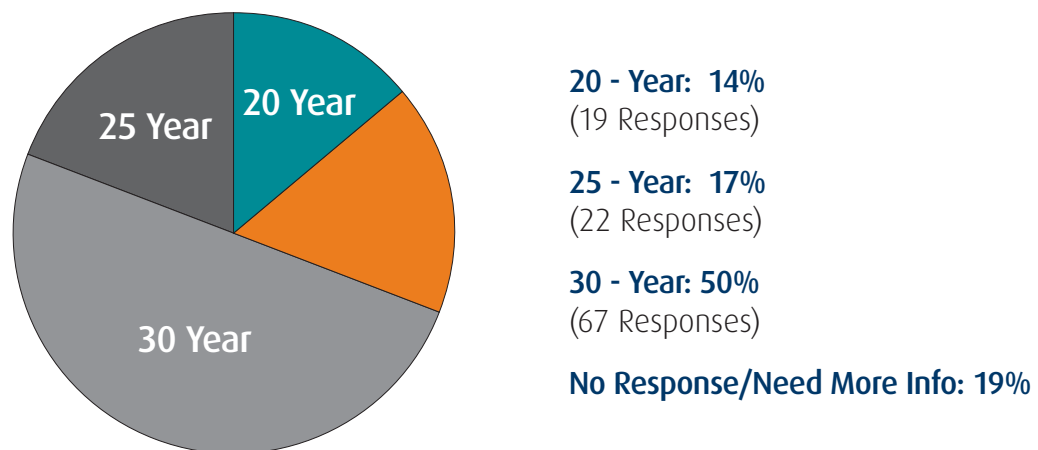
Feedback numbers do not necessarily represent one response per person. Response was not required for all questions. Percentages have been rounded to the nearest whole number. Numbers have been rounded up.

Overall Feedback Summary

Question 7: If you chose Option 3, would you support the decision to borrow \$12,150,000 to proceed with option 3?



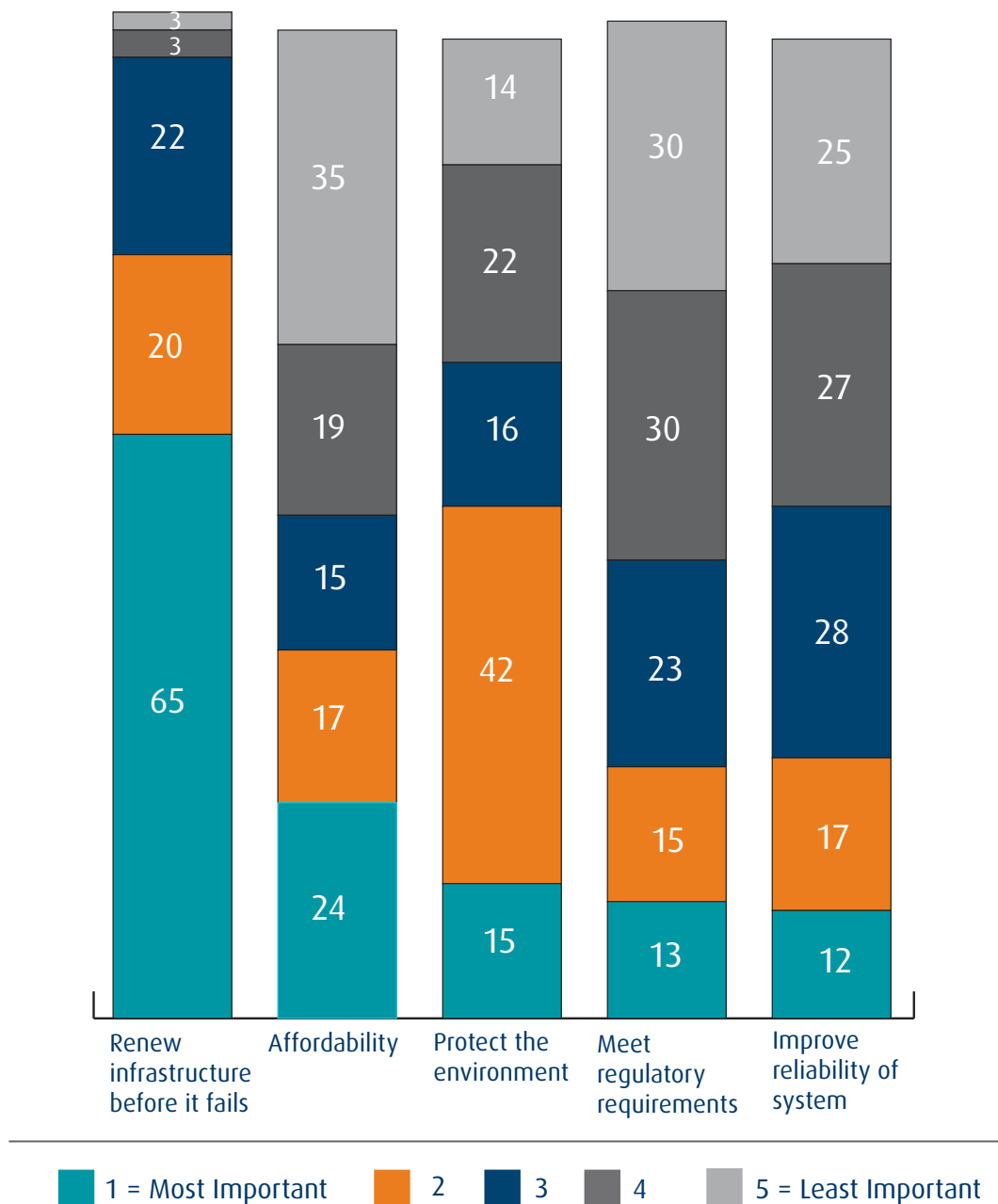
Question 8: If Options 1, 2 or 3 are chosen, would you prefer a 20-year, 25-year, or 30-year loan period?



Feedback numbers do not necessarily represent one response per person. Response was not required for all questions. Percentages have been rounded to the nearest whole number.

Overall Feedback Summary

Question 9: Rate the following from the most important (1) to the least important (5) factor that is influencing your decisions.



Feedback numbers do not necessarily represent one response per person. Response was not required for all questions. Percentages have been rounded to the nearest whole number.

Written Comments

Written Feedback Summary

Do you feel that you have received enough information and have a good understanding of the issues and challenges associated with the Magic Lake Estates Wastewater System?

Yes, BUT it is clear that the experts have not taken advantage of all the relevant information such as use of composting toilets in Sweden.

Yes and No. Year of increased tax start would be helpful to know – or immediately after referendum?

Yes. Charts and display panel very informative. Always issues, I could understand better though.

Yes. I also spoke by telephone to the CRD about this.

No. Is a referendum mandatory? Are grants likely to assist with tax burden for homeowners?

No. If the committee, who I presume are essentially experts at this point, cannot provide a clear recommendations, what chance do we the ordinary busy taxpayers have at making the best decision?

No. Since I was not able to attend the meeting,

I do not know what options have been considered. Were grant applications made for Phase 1? If yes, why is there an increase in cost to do the project in 3 phases?

No. Costs are not explained to part time residents adequately.

No. What are the ultimate goals for the project? Specifically, the collection system. The screening system and/or the processing system. If ultimately the processing system is to be upgraded, what are the ultimate goals of this upgrade, for example, the elimination of all bacterial, viral and prions? If so has a list of alternative technologies to do this been made?

No. Cost savings by going to phase 3 now plus ongoing operational costs/savings when problems fixed.

Do you think upgrades are required on the wastewater system?

Yes, BUT some costs could be reduced.

No. Maybe my answer is real. As just one example, in the report it says we need to “rehabilitate” manhole covers. The manhole covers I see are heavy steel and at least the one in front of my house appears to be in perfect condition. This makes me wonder if the approach is to just replace everything, even if they don’t have to (which unnecessarily drives

If you chose Option 1, what are the reasons?

Get it done sooner than waiting any longer.

Cost. Must keep the diversity of income we now have on Pender otherwise we'll look like Salt Spring Island.

Lower cost.

Option 1 leaves possibility open of obtaining grant money for phases 2 and 3. Also allow possibility of monitoring any improvements such as reduce stress on the sewer system from reduced infiltration before deciding on planning for future phases.

If you do not look after the wastewater system where are you going to live?

Best cash flow for fixed income retired seniors. Lowest cost impact on property tax payers If it is necessary to do (ie. See comments) let's spread out the cost and work load. Let's fix the leaks for now and see where we are.

Best strategy to secure future grants.

We will not know the amount of room for the connection of the Cannon plant to the Schooner plant until all of the leaks are corrected and at this point may buy us some time to secure some grants for the additional work required in the future.

I don't believe all three phases of upgrade are required at this time.

I want to see all 3 phases done, but let's make sure the most critical parts get done first, then proceed to the rest. If this takes a little longer, so

be it., but all phases should get done.

Easier hit financially.

Good to spread out into Phases, but reserve right to FastTrack later if system failures threaten.

CRD repeatedly goes over budget.

We should get started right away, and this may be easier if we begin with Option 1.

Improvements to the collection system will decrease the pressure on the treatment plants and provide opportunity to understand what we need for the future.

We have to be responsible and accept the fact that the current system is at EOL. Let's start the remediation effort and hope there is federal money available at some to assist.

Reduce inflow first then apply for grants also temp power c-can should be done permanently not twice.

If you chose Option 2, what are the reasons?

One more chance to apply for grants before the last phase.

Thanks for your efforts so far. Wish this had passed the referendum a few years ago.

Seems to best address the immediate issues.

Takes care of critical items in one project.

I would vote Option 3 if you could demonstrate immediate savings (either capital or ongoing operation) from Option 3 being implemented

immediately – I find this lack of detail problematic.

While we recognize that all of the work needs to be done, affordability plays a role in our decision.

That will cover the most important work yet keep the costs down somewhat for taxpayers.

The most affordable and effective solution for residents on lower income.

Option 1 doesn't address enough issues up front; Option 3 may involve too much to do at once; Option 2 gets critical work done and allows time for the final work which allows time for grant applications and addressing any new items that come up!

If you chose Option 3, what are the reasons?

So that the project can be completed in a timely and efficient manner avoiding any unwanted or harmful problems. We hope this will be the most cost effective approach and trust that efforts will be made to obtain grants to assist with these costs.

Provides greater flexibility should situation change. For instance unexpected failure of a civility.

Needs to be done, more efficient to have all on one plan.

Get it done – avoid environmental damage – avoid cost increase of the three phases.

Costs will likely increase if we wait to do the later phases.

The work is absolutely necessary and it will never get any cheaper. Let's get on with it.

It always costs more if projects are drawn out over time. Let's just get it done.

Would rather get the entire thing done. I suspect trying to implement the solution in phases will lead to extra costs and/or some decisions that compromise the overall solution in the future.

The cost will be greater if the project is prolonged and it will be the next generation that will pay for it similar to the George Massey Tunnel project.

Rip off the band aid and get it done. This has been going on for too long.

Option 1 or 3 would be fine.

Less disruptions – quicker. BUT, I feel the reasons given online were vague.

Do it properly and get it done.

If we truly care about our ocean, we need to suck it up and commit.

To quickly and efficiently (1) achieve environmental compliance/responsibility (2) system reliability.

The cost is only going up...(labour, parts, interest... etc.) so the sooner the better.

I live across from it. It needs to be done before it is an ecological disaster.

Too many delays to date. Just get it done!

We selected option 3 assuming there will be some grants to fund this...Otherwise Option 2.

Best to have the money available to do all the upgrades at today's prices than wait and see the cost escalate.

Cheaper overall...the system is failing and needs to be completed in one phase.

Lock in costs, potential for them to rise in the future, or potential for other problems to manifest if the repairs are delayed = more costs.

The work needs to get done, a complete system will minimize the risk and costs will just continue to go up if we wait too long in the future.

Cost savings.

We have had enough band aids. Need to get this done for the future. Next issue will be catastrophic failure of the system and ultimately environmental impacts. Opens us up to significantly more costs and liability risks. This needs to be done or we potentially will face much more sever costs.

Best to get all the work done consecutively. Get it over with.

We need to get the whole system fixed to prevent failure but also so we don't have to reopen the conversation in 10 years. At the very least, get to Phase 2.

Costs can never go down for infrastructure and compliance related activities. Best to get it all done at one time based on current requirements and save on mobilizing costs as well.

It will cost more the longer it is put off and a lower annual cost is more appealing.

Just do it! The inconvenience, cost and focus of getting it done all at once make sense. However,

it could also mean expensive renewal all at once in future if everything ages at one time.

Do it now before prices rise.

Need a realistic appraisal of Fed/Prov grant "likely" in 2020/21/22

I prefer Option 3 because the work has to be done. I don't know why it makes sense to offer to do the work in 2 or 3 phases, when it means having to go through multiple additional public consultations, and, as I understand it, more votes, all the while incurring more expense, after each phase. What would be the purpose in that when it's already been determined that this work is vitally necessary?

I need more information.

I want to see a credible analysis that really demonstrated the desire to get maximum value for the long term. It seems intuitive to me that this project gets done in one phase, possible over the course of one summer and fall period. Just get it done. The more phases that are created over a longer time period tends to increase the overall cost. I want to see creative solutions. Are the contractors local or from off island? How much of the cost is for travel and housing, each could be greatly reduced by various means. Show me a detailed budget.

Prefer one phase or two phases. Want to know more about payment options.

The information boards indicate that there may be grants available for Phase 2 and 3, so I favor proceeding with phase 1.

If my costs were diminished through grants I

would choose Option 1. However if my costs do not diminish then do it all and get it over with: Option 3

It's way too much money.

Please provide any further comments you have on the proposed works and the Magic Lake Estates wastewater system.

Up to now both have served us well. Now we need to do major maintenance before it fails completely. I suspect that the original owners who paid for the system have gone in the past 20 years and most of the current owners will have moved off the island or passed on.

Apply for as much grant money as possible. Give tax credits or rebates to low income / fixed income users. Require all property owners in the sewer service area to install a debris trap / filter in their sewer pipe to keep unwanted objects from reaching the waste water plant. If the sewer line plugs up, the owner is responsible for the cost to clean it out so other sewer users don't have to pay for a few irresponsible property owners. Revise the building code to allow composting toilets. Allow gray water collection and reuse by homeowners. Obtain reasonable priced budgets from reliable, honest contractor. Make the bidding process accessible to smaller / local contractors by removing unreasonable barriers. Eg., excessive insurance and bonding requirements.

We live in a digital age – please put more info online or have an online tour. We were away when the meeting was held. This form should have been available online – I think more people would have responded if it was. For such a big

project, it needed to be more available online - in depth. The info provided was very vague.

Keep pursuing more funding to keep cost down. Do it right once.

It has been an effective and reliable system and we wish it to continue to be so. In that regards the people operating it have been great and we want to support them by having a functional and reliable system.

30 – year amortization with option to apply for grants. To make one time payments.

Let's get on with it!

I would like to know how the expected savings have been worked into the system upgrade costs. Residents are being asked to make an investment, the benefits of which will include environmental compliance and greater system reliability. However, the benefit of cost savings is also noted in the open house material (“greatly reduced labour and trucking costs”, “emergency call-outs will be minimized”). Presumably these savings have been applied to reduce the estimated system upgrade costs, or the expected annual tax increases, but it is not clear where and how much. There should also be more insight into the financing: 1) is ten year financing the maximum available? 2) what is the borrowing entity, 3) what is the lending entity?

It needs to be done. Let people know what the lump sum payout is. That is a factor to consider for resale.

Provide information on the one time payment option.

Thanks!

Please try to make long-term savings plans for future projects, and apply for any grants possible. Thank you for an informative consultation process!

I don't understand how we got to this position. Some things are essential and I don't believe we should allow folks to opt out and hide their heads in the sand. Let's do it. And figure out how to make sure we address other issues earlier.

Have you considered any level of government help? Municipal, Prov., Federal? We pay fairly high taxes already with little shown for it locally.

The upgrade is important to complete.

The works need to be done and I wonder how it is so so bad that we are in this place. I hope the system will be better managed financially in the future so that we can do phase 3 fairly quickly.

Continue to pursue grants – this project is shovel ready.

Work to increase the service areas – there should be a deliberate, targeted effort to approach the obvious, logical lots that are currently not part of the service area in order to expand the base of users.

Tell people how much they would save by doing more now – both capital and operating. Coordinate with other service groups re: project work (street paving – do not end up with cross cuts or other challenges post project and share the costs across different service budgets.

Option 1 is not truly an option, it must be done, and this should not be presented as such

Future levies need to consider/ include capital replacement as it is unfair that long term users who have just moved away are not contributors

(rental model of the system, not ownership) Thank you to all on the committee for all your hard work on this and for keeping us so well informed!

I'll lower my standard of living before voting against environmental issues. That said, the basics matter for everyone – safe, dry home with nutritious meals. Oh, and a good dog.

My support of borrowing is contingent on a one-time lump sum payment option being made available.

As an owner of an empty, unconnected lot in the sewer service area, affordability is my prime concern; otherwise the parcel tax becomes ridiculous for a service I am not even using, and I will sell.

I expect increased taxes will significantly impact Magic Lake property values; however so will collectively sticking our heads in the sand and letting the situation deteriorate further.

Given the previous referendum failed to pass, I think keeping taxes affordable is the only hope of success in a referendum.

Property taxes are already prohibitive. Education is outrageous for kindergarten through middle school. The Island Trust is high. Not sure why. The CRD could provide land use services. It gets rid of one more government layer.

Clearly it is time for a bold solution to a failed sewer system and switch to lower cost composting toilets in tandem with grey water solutions. The stand alone toilet at the tennis courts has demonstrated, over the last 5 years, they can be successful in Moge Lake. Perhaps a small, subsidized pilot project could kick off this winning solution to our never ending battle with roots and shoddy infrastructure.

If not composting toilets and grey water usage at very least ensure each household has low flush toilets and low flow shower heads.

The tax burden is significant. This is worrisome for people on fixed incomes. Why are alternative treatment options for human waste not presented? This issue was raised at the last referendum. Technology has improved for electric toilets; we want to see a review of an option to install toilets of this type in each home. This would reduce water usage, and reduce treatment requirement and capacity of the whole system. A large part of this might be saved in cutting back other treatment plant costs. The system demand would also be reduced, reducing labour, clogging problems. Low flow toilets should be mandatory if nothing else done.

There needs to be an independent agency monitoring the progress to keep cost overruns at a minimum. Full accountability.

Get it right the first time. Do all three phases.

It needs to be done. The longer we wait, chances are that the higher the cost will run.

As I understand, this is the 3rd time residents of Magic Lake have been asked for feedback. So glad you have not given them/us a Do Nothing Option! In my opinion, get it done in its entirety as soon as possible! Prolonging the work over a longer period will only increase costs due to inflation and rising interest rates. One Porta-Potti costs \$90 a month to rent so as I see it, the increase in Property Taxes will be cheaper and more convenient!

It has to be done. It will be easier and cheaper to do it properly before it fails. Many people count on it. Borrowing on a 30 year period is too long as the system needs to pay itself before we have to borrow.

The CRD and province must lobby for any assistance possible. We've been paying water fees and taxes for years, now we are supposed to pay for utilities repairs?

That's what the taxes are for! I'm sick and tired of being taxed to death and the government owes us! They have no problem giving away millions to drug addicts and their special interest groups, but if you are a hard working taxpayer, don't even think about getting a dollar back.

If any moneys have not been spent and transferred into general revenue by the CRD in the past, this money should be included in the repairs of the existing system that requires fixing. Failure of this system will impact the marine Eco systems that are now under the endangered species at risk act. Chinook and southern resident whales. The out flow over private properties on Cannon may be a large liability to the CRD and MLPOs.

Regulatory requirement are too strict for such a small community to meet and afford.

This needs to be done before the system fails.

The kind of thinking I want to see is from someone who might be called an "efficiency expert". Maybe these efforts have already gone into this report. It's not clear to me they have and to be honest, I think it's rare. I see wasteful government spending everywhere I look. I'd like to change this and built a cost efficient and long lasting system that requires minimal maintenance (which could result in operation savings going forward, an idea I don't see mentioned here. I know what you're thinking, why don't I volunteer to be on the committee. If I had the time, I would. I do appreciate all of the hard work you have done and continue to do. I need to see one clear option that yields an optimal solution for the long term. I would love

to see a majority of the worker-hours of this project come from those residing on Pender. Why not make that a requirement for bidding on this job? I have an easier time voting to spend millions when I know a decent chunk will remain on Pender and line the pockets for wealthy owners elsewhere and pay for inefficiencies like excessive travel, overpriced short-term housing, long delays between phases, new manhole covers that weren't needed, etc.

Please start the upgrades a.s.a.p.

Are there any options for a property to pay their portion as one lump sum instead of amortizing? And how much would that be?

We are in an enviable position compared to many other islands including large parts of Vancouver Island to have water and sewer. If this fails, and it will if we don't finally deal with it, 12 million will seem like a great deal. We are opening ourselves up to significant litigation and overall issues with a failed system. If we push for this (option 3) it will be the most economic solution. Get it all done and make us on Pender all proud. If we don't and it fails, assuming contractors are available when we need them, which is a huge assumption, the loss will be much more significant. I also agree with option to pay the allotted amount upfront to avoid amortization charge.

Would like to know what amount due if the entire upfront cost paid.

Impressive presentation and very informative tour. Thank you!

My intention would be to pay in a lump sum, however, regardless of the amortization period.

Let's get the referendum process started so this

*work can start in 2020!
Thanks to all the volunteers!*

We are concerned about the reliability and the affordability of the system.

If an individual homeowner decided to go with a 20 year amortization period, could they pay off the debt earlier (at some point)?

All projects over the last (?) years have been over budget.

Was a grant applied for the project?

Any possibility of provincial coverage?

Septic field?

Need more info on other ways of funding the project.

In question 9, the purpose of regulatory requirement is to protect the environment . In the cost estimates, what percentage has been set aside for contingencies? Has consideration been given to earthquakes, and were grants available for upgrades? Will there be an option for property owners to pay a lump sum instead of annual?

These comments pertain to the sewage processing stage only. The collection of sewage and its initial screening remain the same regardless of the ultimate sewage processing that may occur. If your goal is the removal of the dangers associated with all the organics contained within the sewage and to allow the night soil to be sold to gardeners, then the sewage processing plant is very different than current ones, such as the one currently being installed in Victoria, where the goal appears to be to line the pockets of the contractors

building a clunky obsolete design. If the goal is to reduce the biological load of the sewage: parasites, microbes, viruses, prions, and active pharmaceuticals then check on the neutralization rate of the traditional sewage processing system that the CRD will otherwise force upon you compared to a water polishing system that would cost much less and is very much easier to maintain. There is a picture of Governor Brown Sr. drinking a glass of sewage water after going through a water polishing sewage treatment system. See if your wonderful CRD sewage engineer would drink a glass of water from one of the current CRD operating or proposed ST systems and you can see that the wool is being pulled over your eyes at considerable extra taxpayer expense. It raises the question of whether there is some kickback process underlying the CRD position in all of this.

It would be nice to know what the estimated lump sum amounts would be. I am assuming \$17,500 for all three phases?

Is this survey a lot of hooey? Surely the government is going to insist on the entire job being complete. Why not just say so. If further grants might be available later why are we not able to claim them now?

If we choose Option 1 or 2 what is the estimated time line to eventually complete all phases.

You give false hope to many when you suggest that they may be able to defer these costs. Only those whose ML home is their principal residence might do that!

It is bizarre that the magic lake board and CRD might choose to deprive those who are not able to attend and vote their right to have a say. What could possibly motivate such a decision! Finally, how is this survey anonymous when you want them emailed in?? Both the CRD and

MLPOS know my email address!

It was a while ago that I talked to the CRD. I asked them why are we being asked to pay for our own sewage treatment plant, when it is the expectation of most Canadians, certainly every Canadian in the Lower Mainland of BC and urban or populated areas everywhere, that sewage treatment plants are built and upgraded without open house presentations, public consultations and votes. It is my understanding that Magic Lake property owners are being asked to pay for this service because Magic Lake property owners are the only users of the sewage treatment system.

Many Canadians have sewage/wastewater treatment systems regardless of where they live and who uses it. I should think this would be covered though a combination of reasonable, sustainable. Taxes and government funding, as a benefit of modern society.

My property taxes were already high. This assessment will mean I will be paying, as I understand it, if I've added up the numbers correctly, approximately \$3,500 per year, for years to come (And that's assuming there will be future changes to taxes). If I lived in Vancouver, I could understand a higher tax rate, but this is rural property. It's a lot of money.

I do support this project. I know this work is vitally important to the Gulf Island and the environment. I fully support the 3-phase renewal project being done at once, without further consultation and votes; however, I wish to express my opinion that I feel it is a substantial burden of cost for ordinary people living a rural life.

I did not choose a financing amortization period because we will be opting to pay in a lump sum

to avoid the cost of borrowing. It is important that the option and instructions on how to pay in a lump sum be relayed to residents so the opportunity for those who would like to pay all at once can do so. I would also like some assurance that our property tax bill will reflect that we are exempt from the financed sewer costs, either as a line item showing the financed costs at \$0 or a note confirming that we have not been charged the same rate as those who have opted to amortize the cost over 20-30 years. This is very important.

Most present Magic Lake owners will not be on Pender Island in 10-15 years. The cost will be shared with future generations and will not have the angst associated with having to make an urgent decision with higher cost.

Grey pond, composting toilets etc. should be encouraged through education, tax incentives and informed people to regularly monitor such systems.

*Pay lump sum up front.
Need to ensure that design is robust and design/footprint can accommodate future expansion if possible.*

*Electrical works – a c-can, can be permanent.
Put roof over top.*

Build as much off site to keep costs down.

The CRD and elected officials must find some capital support for this project to offset the high cost on sewer system taxpayers in Magic Lake Estates. Only if significant financial support is found will I and others support a referendum to borrow millions for this project.

We trust that continued efforts will be made to acquire infrastructure funding grants to assist

with the completion of this important project. Support for complete repairs, all three phases ASAP, Magic Lake Sewar System . I [REDACTED]

[REDACTED] fully support the proposed upgrades and repairs to The Magic Lake Sewar system, including all three phases, to be completed as quickly as possible. We are prepared to pay our fair share through taxes or levies.

Station a CRD employee here on island during project to reduce travel time costs.

My idea was that if the money for the sewer upgrade was going to come from a bank or even government source, at interest, then why not let actual homeowners be given opportunity to finance or lend to this project? Perhaps this is one way is to incentivize people to pay their assessment portion sooner, so the project can get underway (i.e.- portion of the \$12M for each property owner would be \$10,000, if there are 1200 owners). Maybe we homeowners set up a trust fund with an agreement to front some of the money. It may get the project going and completed sooner (more years of delay only makes the project costs go up with inflation and labour and the cost of pipe etc). Then they would collect an interest payment on the amount they are willing to put up to get the project going. So homeowners get some return for stepping up to finance it. True, even if we 'invest' in the project, we still owe on the overall assessment as homeowners in the long run. But a modest return on the \$10,000 per year (put up front as investors to get the ball rolling), is a nice little chunk against our eventual assessment when it comes due, not a bad deal considering we would have to put up the money anyway. And the 'interest' could be paid to the individual investors, and that way if a they actually move

or sell, they still get their portion of that return as per the agreement, it wouldn't have to go with a title so to speak, it would be a finance model. Not sure if there is budget in those projected costs to include 'project capital finance interest/fees'. I suppose I should take a closer look. Anyway, I would think there are mechanisms to administrate this, I am sure a lawyer and accountant could provide the proper framework, but I think something like this has been used before. It may not be too complex if presented and administered well. First step would be finding out how this would be funded, and if a bank is going to make money off homeowners in funding this, then maybe it's worth looking at a different solution. Anyway, just an idea that came to mind, I might be out to lunch, but might be interesting to get some feedback on it.

There is a long list of issues facing the system, but what I see are two very distinct problems that drive this project:

- that reserves for the wastewater system are alarmingly low, the result of a pattern of insufficient service fees for some time, and
- that much of the system which was installed at largely the same time is now also showing acute signs of failure at the same time.

So, we have a systemic financing problem that should be addressed and borrowing is one tool at our disposal. We also have an extraordinary list of replacement needs and we need to prioritize works and address them sequentially, acknowledging liabilities and financial resources.

My suggestion is that we:

- undertake gradual, annual rate increases starting in year 2020 with a priority focus on both building reserves and gradually replacing both linear infrastructure and

lift stations, in a risk-based prioritized sequence;

- pipe with the worst condition adjacent or crossing creeks or lakes would be addressed proactively and planned on a year by year basis
- lift stations would be replaced gradually in priority sequence, with highest risk stations upgraded every two years or more; a key driver for priority would be overflows to high risk areas;
- pipe that serves largely service areas (trunks) would also be planned for and upgraded proactively
- only acute locations of I/I would be targeted first such as select manhole relining and all other I/I reductions would come gradually due to pipe replacements over time; cross-connections are another issue entirely and worth separate review
- any pipes that show rapid exfiltration or surface ponding would also be addressed proactively
- all other pipes would be replaced reactively as funds arise based on demonstrable failure or in a predetermined sequence
- the first few years of rate increases could be higher with a flattening period 5 or 10 years out
- pipe replacement and lift station renewal would become a long-term asset management initiative whereby upgrades are done in risk sequence
- borrow to replace and upgrade the wastewater treatment plant under two phases;
- conduct the WWTP in two phases, borrowing only for Phase 1 and allowing for Phase 2 to be financed by gradual rates and fee increases in the first 5+ years
- Phase 1: screens and grit removal, equalization tank, generator, aeration tank, replace Cannon with lift station and FM,

and also permanent electrical; potential for some clarifier remediation (minor)

- *Phase 2: site upgrades, RAS/sludge, full clarifier upgrades*

I'm sure there's been grant applications in the past but I do see strong alignment with Phase 1 and Phase 2 in many grant initiatives

We want to avoid a scenario where there is large scale borrowing for asset renewal without improved finances for long-term asset management (and there would be a lot of push back on raising rates and borrowing for all the work simultaneously). And when we borrow, we pay back the project costs 2x or 3x. What we can modestly defer and attack gradually is a way for us to pay ourselves rather than employ debt servicing. Also, I'm not sure the history or success with grants to date but can you clarify what we've applied to and the feedback received? I can imagine a great case being put together for improving effluent quality and asset optimization for the Phase 1 WWTP upgrades as laid out above.

I agree we have to make some major moves with the system. I do not wish to signal my support for any of the three options put forward so far. However, I'm grateful for the engineering work done to date on such a difficult system and tough circumstances.

I hope these thoughts might help develop a more palatable path forward for those of us who receive the service. I suspect part of the reason why you may not be getting significant feedback on the way forward is that it feels like a choice among three undesirable options: most of the public would rather ignore those situations. Perhaps a hybrid version that emerges from feedback would provide enough support by staff, the Director and the MLE board to move ahead.

Appendices



Appendices

- A | Public Open Houses - Bill Insert**
- B | Public Open House - Frequently Asked Questions**
- C | Public Open Houses - Feedback Form**
- D | Public Open Houses - Information Boards**

Open House: Magic Lake Estates Wastewater System Renewal

Learn more about system requirements and impacts to taxes.

DATE: Saturday, April 27, 2019

TIME: 10:00 am to 3:00 pm

LOCATION: St. Peter's Anglican Church, 4703 Canal Road

Tours of Schooner Wastewater Treatment Plant will be offered.
Tour registration required. Visit our website for more information.

www.crd.bc.ca/magiclake-sewer



Making a difference...together

Questions? Contact:
Malcolm Cowley, PEng
T: 250.360.3066
E: mcowley@crd.bc.ca

Magic Lake Estates Wastewater System Infrastructure Renewal Project

Frequently Asked Questions



Capital Regional District | 2019

Is my property located in the Sewer Service Area?

The sewer service area is defined in Bylaw 1873, as amended by Bylaw 4238, and is a prescribed area. A map showing the current Magic Lake Estates Sewer Service Area is available at www.crd.bc.ca/magiclake-sewer. All properties located within the defined boundary area are in the Sewer Service Area.

If I'm not in the Sewer Service Area, do I have to pay for the system Renewal?

No, only the properties within the Sewer Service Area will pay for the system renewal.

If I'm in the Sewer Service Area, but I am not connected to the sewer system yet, do I still have to pay for the system Renewal?

Yes, properties within the Sewer Service Area do pay Parcel Taxes towards capital costs of upgrading the system, but properties that are not yet connected to the system do not have to pay User Fees towards the operational cost of the system.

How do I connect to the Sewer?

If your property is already in the sewer service area, a resident can call 250.474.9611 to request an application to connect. If the property is not in the sewer service area, the owner will have to make a request for inclusion into the service area and submit it to the Magic Lake Estates Water and Sewer Local Services Committee for their review.

Why is the sewer system in such a bad condition?

A majority of the original system was installed by a developer in the late 1960's – early 1970's with few upgrades since, so much of the system has reached the end of its service life.

How much will it cost to renew the sewer system?

The total estimated cost to renew the system back to a safe, reliable state that meets regulatory requirements is about \$12.15 million. However, it is possible to upgrade the system in various phases over time.

Why do we have to borrow funds to do the sewer upgrades?

There is approximately \$200,000 saved in the Magic Lake Estates Sewer Capital Reserve Fund which is not enough to complete the upgrades, so funds will need to be borrowed to complete the work.

How much am I currently paying for the sewer service?

The 2019 annual Parcel Tax and User Fee rates are \$777.60 and \$381.54, respectively.

How much will my cost increase as a result of the system renewal?

It depends on what the community prefers for the loan amortization period and how many phases the work is completed in (i.e. one, two or three phases). Estimated costs for a number of options are shown on slide 16 of the Open House Boards (www.crd.bc.ca/magiclake-sewer).

Can I defer the cost (tax) increase?

If the property owner is at least 55-years old, then the Provincial government may allow parcel taxes to be deferred. However, please note that User Fees cannot be deferred. Visit the Province of BC website for more information, and to see if you qualify.

Can I pay the entire cost up front rather than over a long amortization period?

Yes. Subject to CRD Board approval of a specific financial bylaw, property owners could choose to pay a one-time lump sum cost for their share of the capital cost for the sewer upgrades rather than paying debt servicing costs over the whole amortization period.

What happens if the sewer system is not upgraded?

It will continue to deteriorate, service disruptions will increase, operational and emergency response costs will increase and it will remain out-of-compliance with Provincial and Federal regulations.

When would the sewer renewal work commence and how long will it take to complete?

The renewal work can only commence if the elector's support borrowing funds to complete the work through a referendum. If the referendum is held later this year, work could commence in 2020. The length of time to complete the work depends on the final scope of work that is decided by the community.

Will my service be disrupted during the sewer renewal work?

Generally, your service should not be disrupted during the renewal work. However, there could be brief periods of time where some residents could be asked to minimize wastewater discharges. There should be no interruptions to your water service.

When will a recommendation be made on which Option to proceed with?

After feedback has been received from the community by May 24, 2019, the Committee will make a recommendation to the CRD Board which will then determine how to proceed with the referendum.

When will be the voting day for the referendum to borrow funds for the sewer renewal work, and how will I be informed?

Generally the voting day in a referendum takes place about 3-6 months after the process commences and Ministry approval has been granted. Property owners and eligible electors of the sewer service can be informed through the CRD website, mail-outs, and statutory advertisements in addition to other community outlets (like the Pender Post, Facebook, etc.).

Who is eligible to vote on the referendum?

People who live in the Magic Lake Estates sewer service area and qualify as a resident elector, or who own property in the service area but live elsewhere in British Columbia and qualify as non-resident property elector, are eligible to vote.

Where will the referendum polling station be located?

The polling station will be located on Pender Island. The exact location is yet to be determined, but it will be advertised and posted on the CRD website in advance of the voting date.

Will there be an advance poll or an option for an absentee vote?

Yes. An advance poll is typically held in the week prior to the referendum voting date. Absentee (mail in) ballots are permitted under the Local Government Act, but the Magic Lake Estates Committee and CRD Board would determine this for this referendum.



MAGIC LAKE ESTATES WASTEWATER SYSTEM

Feedback Form

Infrastructure Renewal Project

This survey is anonymous. Please do not provide any information that could identify yourself or others in your response. No individuals will be identified and no comments will be attributed to any individual in any reports resulting from your feedback.

1. Do you feel that you have received enough information and have a good understanding of the issues and challenges associated with the Magic Lake Estates wastewater system?

☐ Yes ☐ No

If you answered no, what additional information do you need?

2. Do you think upgrades are required on the wastewater system?

☐ Yes ☐ No

If you answered no, what additional information do you need?

3. Do you live in the sewer service area?

☐ Yes ☐ No

4. Which of the three options presented do you prefer and why?

☐ Option 1 (Complete Work in 3 Phases)

☐ Option 2 (Complete Work in 2 Phases)

☐ Option 3 (Complete Work in One Single Phase)

☐ I need more information

Reasons:

5. If you chose option 1 above, would you support the decision to borrow \$6,000,000 to proceed with option 1?

☐ Yes ☐ No ☐ I need more information

6. If you chose option 2 above, would you support the decision to borrow \$9,000,000 to proceed with option 2?

☐ Yes ☐ No ☐ I need more information

7. If you chose option 3 above, would you support the decision to borrow \$12,150,000 to proceed with option 3?

☐ Yes ☐ No ☐ I need more information

8. If options 1, 2 or 3 are chosen, would you prefer a 20-year, 25-year or 30-year loan period (smaller annual payments but longer amortization period)?

☐ 20-Year Amortization period ☐ 25-Year Amortization period ☐ 30-Year Amortization period

(Cont.)

- _____ Affordability
- _____ Renew infrastructure before it fails
- _____ Protect the environment
- _____ Meet regulatory requirements
- _____ Improve reliability of the system

[illegible]

Only feedback received by 11:59 pm on Sunday, June 2, 2019 will be included in the Public Consultation Summary Report presented to the Magic Lake Estates Water and Sewer Local Services Committee.

Please email completed forms to water@crd.bc.ca



CRD INTEGRATED WATER SERVICES | MAGIC LAKE ESTATES WASTEWATER SYSTEM

Welcome

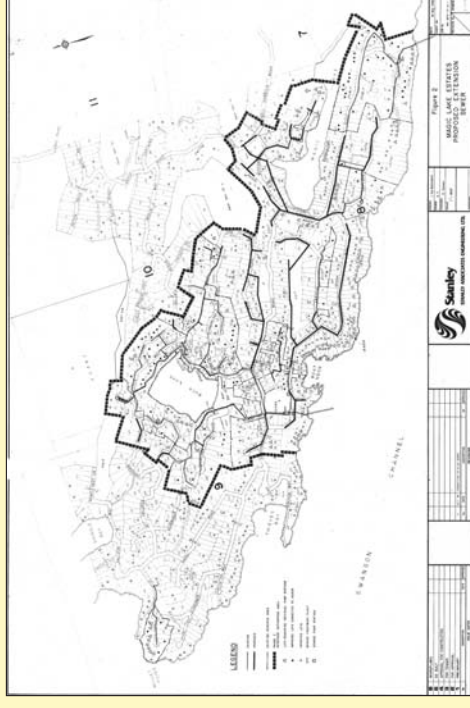
Magic Lake Estates Wastewater System Infrastructure Renewal Project

Public Open House

History



- 1967 - Sanitary Sewer System originally installed by developer
- Initially served approximately 320 properties primarily located around Buck Lake and Cannon Crescent
- The system included the following infrastructure:
 - 7.6 km of asbestos cement pipe
 - 2 Pump stations at Schooner and Galleon
 - Communal Septic Systems at Buccaneer, Capstan, Chart, and Cutlass
 - Buck (Schooner) Wastewater Treatment Plant,
 - and Magic (Cannon) Wastewater Treatment Plant



- 1980 - Ratepayers voted by referendum to transfer the utility to the CRD
- 1981 - due to failing septic systems around Magic Lake, the CRD installed four pump stations and 7km of PVC pipe
- 1999 - minor upgrades were completed to Schooner WWTP
- 2002 - 2005 - minor upgrades were completed on manholes to help reduce Inflow and Infiltration
- 2016 - Chart Drive Pump Station was installed to replace the failed septic system
- 2018 - replaced 425m of failed pipe around the SE side of Buck Lake

Background



END OF LIFE



SEWAGE OVERFLOWS



RAGS CLOGGING TANK

Why upgrades to existing wastewater system infrastructure are required:

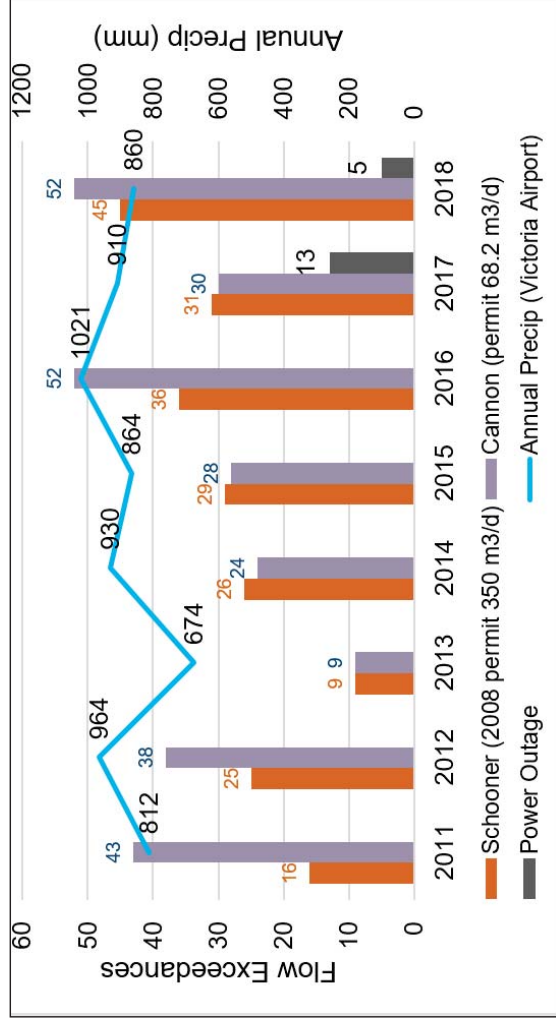
- Many facilities and the collection system are at or near end of life.
- Cannon and Schooner Wastewater Treatment Plants (WWTP) were constructed in the early 1970's with few upgrades since construction.
- Pump station mechanical and electrical equipment are 30-40 years old (end of life).
- Majority of original asbestos cement sewers have failed.

In 2011, Stantec Consulting completed a report confirming that much of the infrastructure was nearing end of life. Key recommendations from the report include:

- Upgrade or replacement of Schooner Wastewater Treatment Plant
- Replacement of the Chart Drive and Cannon Treatment Systems with pump stations and force mains
- Upgrade all six lift stations due to age and to increased capacity requirements
- Replace the failing sewers to prevent overflows and reduce inflow and infiltration

Schooner and Cannon Flow Exceedances

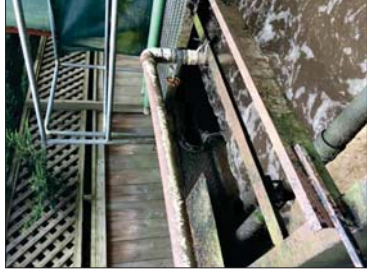
- Approximately 11 sewage overflows from the sewer system have been observed (a few of them into Buck Lake).
- Both wastewater treatment plants operate over their permitted and operational capacities during wet weather flow. This is due to inflow and infiltration as well as the lack of attenuation storage tanks at either plant.
- Four non-compliance letters have been received from the Ministry of Environment indicating that action is required.
- During power outages, pumps, blowers and treatment equipment shut down at both treatment plants affecting the ability to properly treat the sewage.



Current Conditions - Cannon WWTP

Item	History / Age	Condition / Remarks		
Site Access	Installed in 1971	<ul style="list-style-type: none"> Poor site access poses difficulty for maintaining/removing equipment, cleaning tanks, off-loading supplies etc. Sludge removal pipe is not properly supported 	 	 
Aeration Tank	Installed in 1971	<ul style="list-style-type: none"> Excessive corrosion on the tank - close to failing Air header is corroded Bubble diffuser is inefficient resulting in poor treatment 	 	 
Clarifier	Installed in 1971	<ul style="list-style-type: none"> Tight spaces restrict safe movement of people, equipment and material Does not meet worksafe BC requirements 	 	 
Blower Shed Electrical Shed	Installed in 1971	<ul style="list-style-type: none"> Sheds are deteriorating and require new roofs Rat infestation (evident by droppings) No standby generator - equipment does not run during power outages 		

Currently Cannon WWTP has no headwork equipment or equalization storage which clogs downstream equipment with rags/solids and peak flows are not dampened causing capacity exceedances.



Current Conditions - Schooner WWTP

Item	History / Age	Condition / Remarks		
Headworks	Inlet chamber and grinder installed in 1999	<ul style="list-style-type: none"> No grit removal and grinder is ineffective Grit and ground-up solids flow onto downstream tanks and equipment causing clogged pumps and increased wear Removal is expensive 	 	
Equalization Tank	Does not exist	<ul style="list-style-type: none"> No tank. Peak flows can not be attenuated which overwhelms the plant and washes out the solids 		
Aeration Tank	Installed in 1971	<ul style="list-style-type: none"> Minor corrosion at waterline but otherwise in good condition At least 15 years life remaining Additional aeration is required to treat Cannon flows 	 	
Clarifiers	Installed in 1971	<ul style="list-style-type: none"> Original tank emptied in 2008 with extensive corrosion noted Internal components need to be replaced Manual screen in splitter box, clogs with solids, unsafe to clean No foundation, not level, short-circuits, solids wash out during peak flows 	 	
Return Activated Sludge Pumps	Installed in 1999	<ul style="list-style-type: none"> Near end of life due to wear and grit Only one pump transfers sludge to the sludge tank which is not optimal for sludge blanket and RAS concentrations Pumps are hung without guide rails making them very difficult to remove and unclog 		

Current Conditions - Schooner WWTP

Item	History / Age	Condition / Remarks	
Sludge Tanks	Installed in 1999	<ul style="list-style-type: none"> 3 small poly tanks (various height and diameter) with manual gas-pump transfer and multiple decant valves Aerators hung by ropes broke and tangled in tank Manual polymer dosing Extremely labour intensive and in-efficient system with high trucking/disposal costs 	
Blowers	Installed in 1999	<ul style="list-style-type: none"> One blower replaced in 2016, the other is at end of life (provide air to aeration tank and sludge tank) Condition of piping and aerators unknown but likely at end of life Additional blowers/air required to treat Cannon flows and sludge thickening system 	
UV Disinfection	Installed in 1999	<ul style="list-style-type: none"> Recorded fouling with algae since DAF waste discharge from water treatment plant Operators use a plastic snake to clean the discharge pipe/magmeter Improved treatment may reduce algae growth Upgrades to UV unit not required at this time 	
Electrical and Blower Buildings	Installed in 1971	<ul style="list-style-type: none"> Two small wood-framed sheds are deteriorating, have groundwater issues, and poor access to maintain equipment Require upgrades to meet current electrical and building codes Electrical upgrade required to provide power for existing equipment New electrical equipment required to improve treatment No standby generator - pumps, blowers, UV, etc. shut down during a power outage 	
Site Access	Installed in 1971	<ul style="list-style-type: none"> Poor access into the plant makes it difficult to maintain, remove equipment, off-load supplies, clean tanks, etc. 	

Current Conditions - Pump Stations



SCHOONER



CAPSTAN



EXISTING PIPE CONDITIONS

- Items that are at the end of their life include:
- Pumps
 - Valves
 - Discharge Pipe
 - Controls/Instruments
 - Electrical Equipment
 - Guide Rails and Supports



BUCCANEER



MASTHEAD

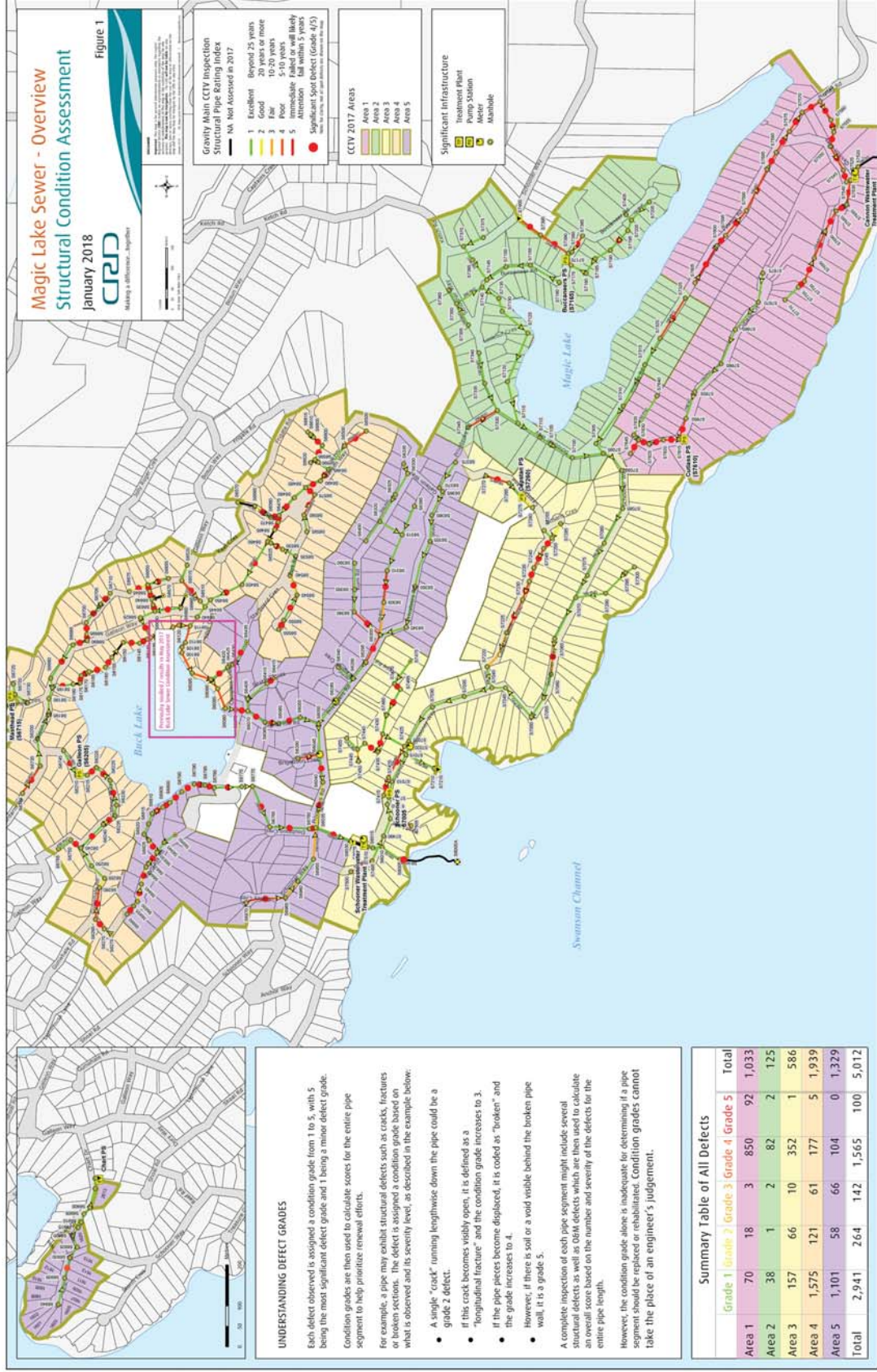


GALLEON

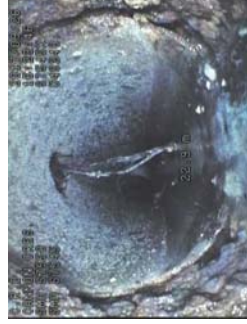
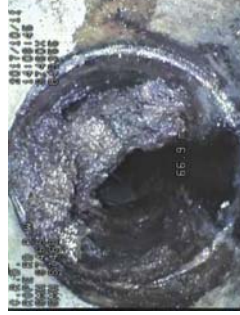
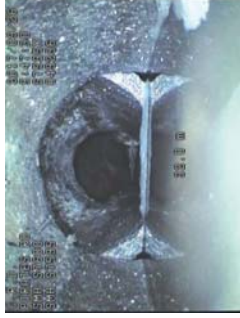


ELECTRICAL KIOSK

Current Conditions - Sewers



Current Conditions - Sewers



Defects identified include:

- Pipe collapse
- Holes in pipe
- Root intrusion
- Excessive pipe corrosion
- Joint displacement
- Obstructions in pipe
- Grease and solids build-up
- Insufficient capacity

Recommendation:

- Replace approximately 6.4km of the original (50-year-old), 7.6km asbestos cement pipe.

Summary of Proposed Phased Upgrades

Phase 1: Initial Upgrades

Improvements at Schooner WWTP:

- Sewage screen and grit removal
- New equalization tank
- Electrical upgrades (with temp seacan building)
- Standby generator

Renew 3 Pump Stations

(Buccaneer, Galleon and Schooner)

- Pumps
- Valves
- Piping
- Electrical kiosk

Pipe Replacement:

- Replace 4.6km of failing asbestos cement pipe
- Rehabilitate 84 manholes
- Install 0.75km of 100mm PVC forcemain (in common trench) for future Cannon Pump Station

Phase 2: Second Phase

Improvements at Schooner WWTP:

- Add second aeration tank
- Replace clarifiers
- Electrical upgrades in a permanent building

Replace Cannon WWTP:

- Install new pump station to divert flow to Schooner WWTP
- Decommission Cannon WWTP

Phase 3: Final Upgrades

Improvements at Schooner WWTP:

- Replace manual sludge thickening tanks with new thickening system

Renew 3 Remaining Pump Stations:

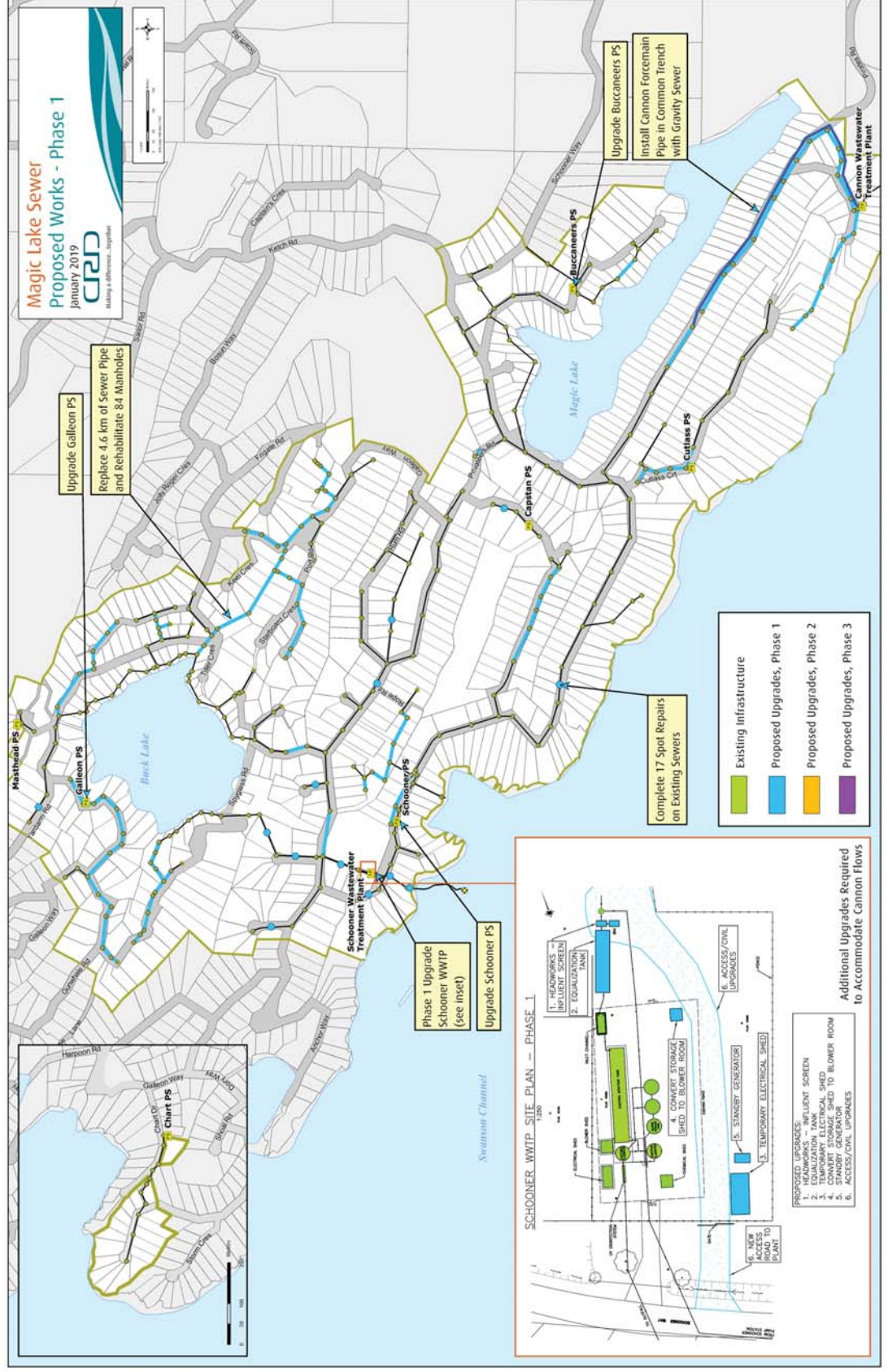
(Capstan, Cutlass and Masthead)

- Pumps
- Valves
- Piping
- Electrical Kiosk

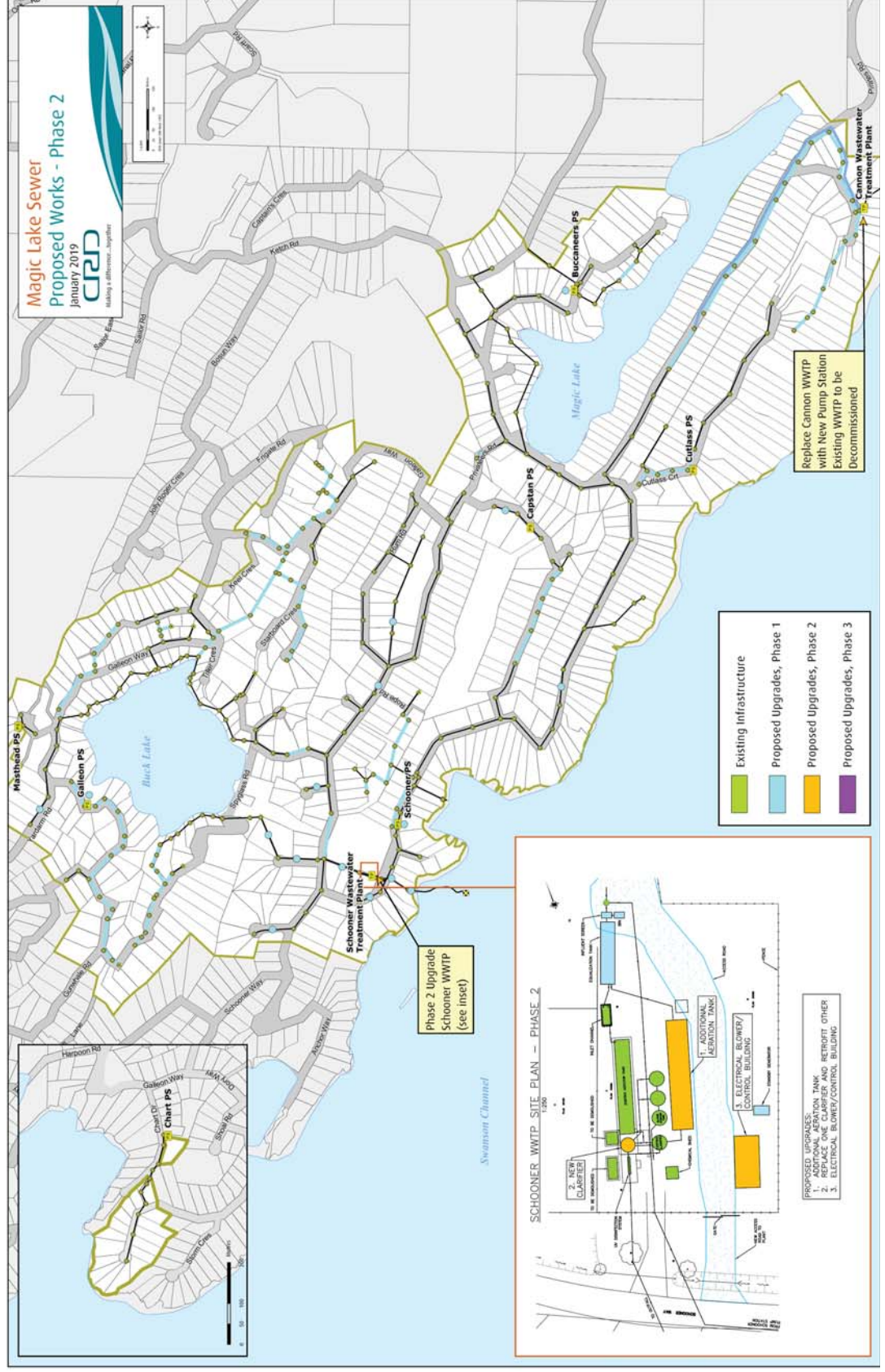
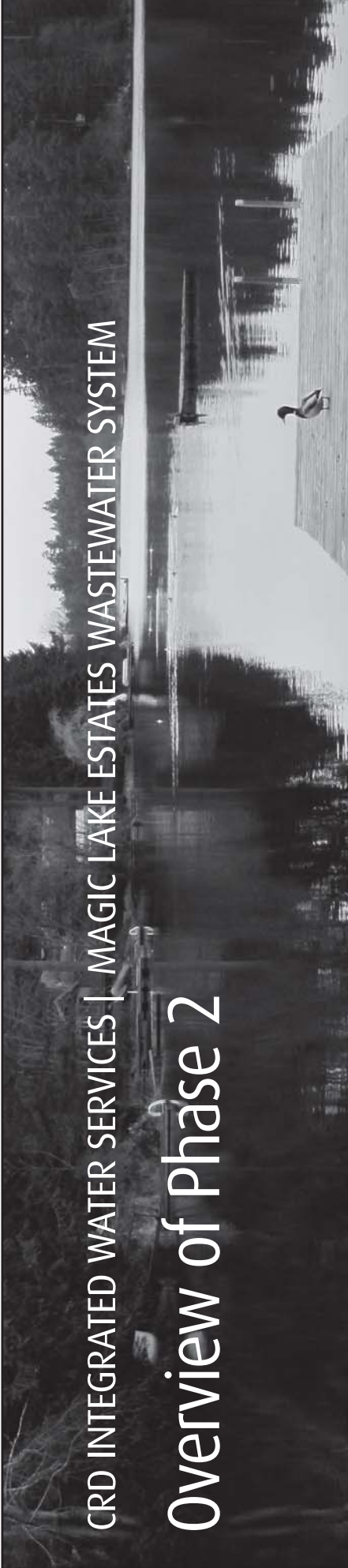
Pipe Replacement:

- Replace 1.8km of failing asbestos cement pipe
- Rehabilitate 36 manholes

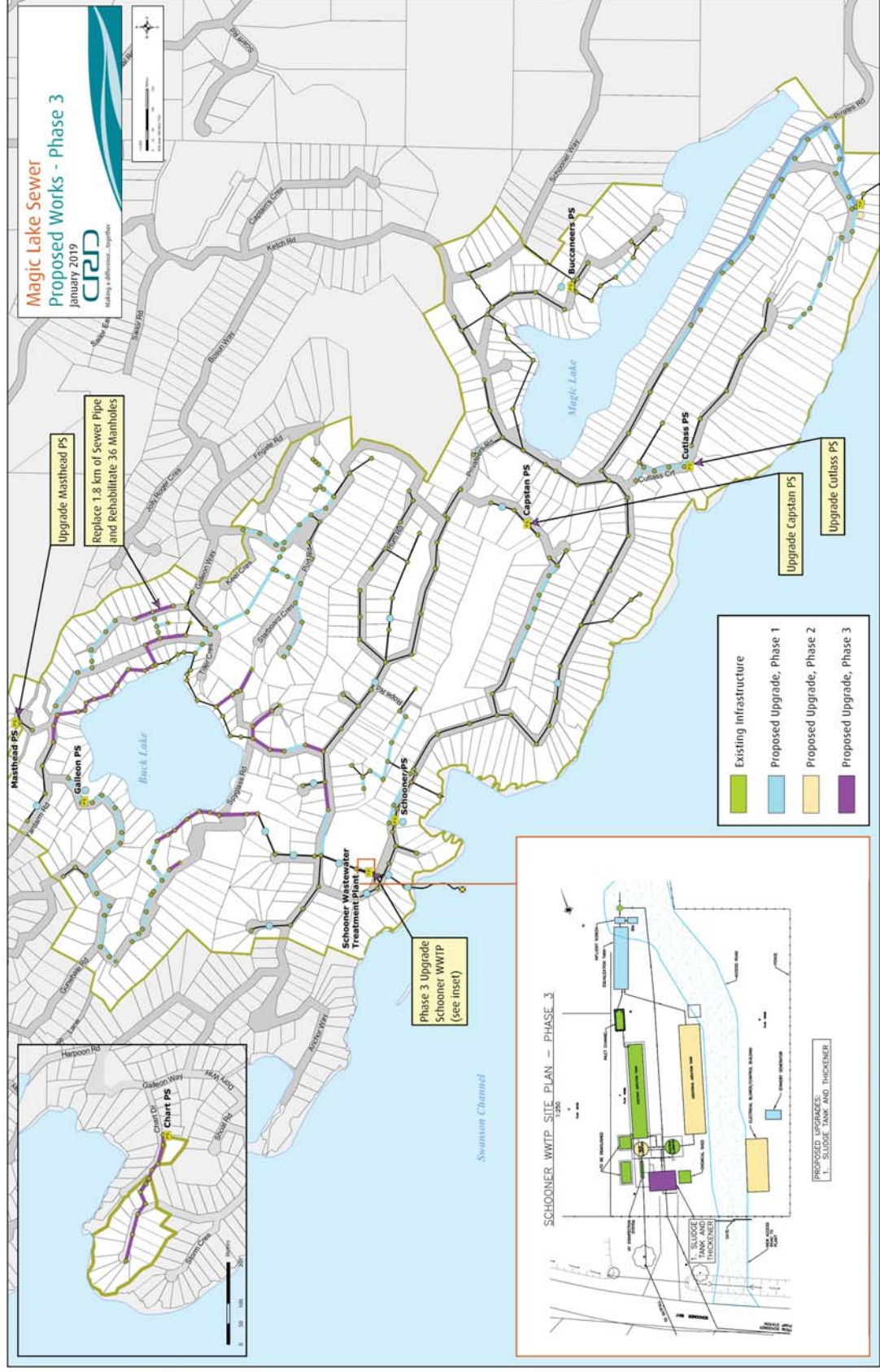
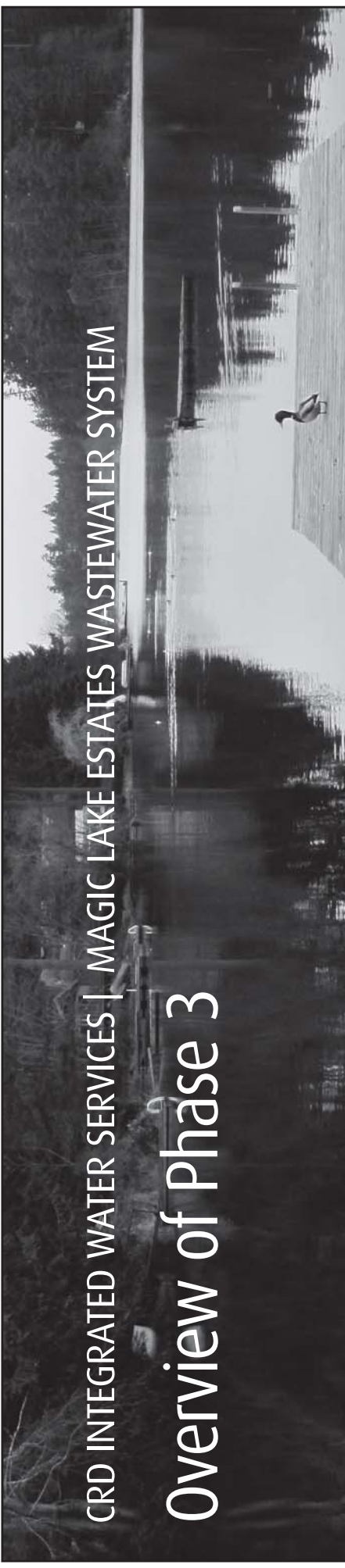
Overview of Phase 1



Overview of Phase 2



Overview of Phase 3



Proposed Phased Upgrades and Costs

Phase 1: Initial Upgrades

Proposed Upgrades	Cost Estimate (2019 \$)
Improvements at Schooner WWTP: <ul style="list-style-type: none"> • Sewage screen and grit removal • New equalization tank • Electrical upgrades (with temp seacan building) • Standby generator 	\$1.7M
Renew 3 Pump Stations (Buccaneer, Galleon and Schooner) <ul style="list-style-type: none"> • Pumps • Valves • Piping • Electrical kiosk 	\$1.1M
Pipe Replacement: <ul style="list-style-type: none"> • Replace 4.6km of failing asbestos cement pipe • Rehabilitate 84 manholes • Install 0.75km of 100mm PVC forcemain (in common trench) for future Cannon Pump Station 	\$3.2M
Total	\$6M

Phase 2: Second Phase

Proposed Upgrades	Cost Estimate (2019 \$)
Improvements at Schooner WWTP: <ul style="list-style-type: none"> • Add second aeration tank • Replace clarifiers • Electrical upgrades in a permanent building 	\$2.1M
Replace Cannon WWTP: <ul style="list-style-type: none"> • Install new pump station to divert flow to Schooner WWTP • Decommission Cannon WWTP 	\$0.9M
Total	\$3M

Phase 3: Final Upgrades

Proposed Upgrades	Cost Estimate (2019 \$)
Improvements at Schooner WWTP: <ul style="list-style-type: none"> • Replace manual sludge thickening tanks with new thickening system 	\$0.7M
Renew 3 Remaining Pump Stations: (Capstan, Cutlass and Masthead) <ul style="list-style-type: none"> • Pumps • Valves • Piping • Electrical Kiosk 	\$0.85M
Pipe Replacement: <ul style="list-style-type: none"> • Replace 1.8km of failing asbestos cement pipe • Rehabilitate 36 manholes 	\$1.6M
Total	\$3.15M

Annual Parcel Tax Implications

		Option 1	Option 2	Option 3
		Phase 1	Phase 1 & 2	Phase 1, 2 & 3
Total Estimated Capital Cost (2019 \$)		\$6M	\$9M	\$12.15M
New Additional Parcel Tax Based on Estimated Capital Cost				
Loan Amortization Period Options	20 Year	\$640	\$959	\$1,295
	25 Year	\$553	\$829	\$1,120
	30 Year	\$496	\$744	\$1,005
Existing Parcel Tax (2019)		\$777.60	\$777.60	\$777.60
Total Parcel Tax for Sewer (assuming a 30-year amortization)		\$1,273.60	\$1,521.60	\$1,782.60

- The above amounts do not include user fees and the annual parcel tax for the Water Service which is \$497.81 (2019).
- The additional parcel tax amounts are based on the total 713 taxable folios assuming an interest rate of 3.5% for the first 10 years of the loan and 5% on the remaining amortization period. Parcel taxes can vary over the years depending if there are changes to the interest rates or total number of folios.

Summary of Considerations/Implications

	Option 1	Option 2	Option 3
Item of Consideration	Complete Phase 1 now and Phase 2&3 later	Complete Phase 1 & 2 now and Phase 3 later	Complete Phase 1, 2, and 3 now
Financial Implication	<ul style="list-style-type: none"> Lowest Initial Cost (\$6M for Phase 1), but subsequent increases required to complete Phase 2 and 3 Future phases may be eligible for future grants 	<ul style="list-style-type: none"> Second Lowest Initial Cost (\$9M for Phase 1 and 2), but subsequent increase required to complete Phase 3 Future phase 3 may be eligible for a future grant 	<ul style="list-style-type: none"> Highest initial Cost (\$12.15M)
Regulatory Compliance	<ul style="list-style-type: none"> Exceedances will be reduced at Cannon and Schooner Standby power at Schooner will ensure compliance during BC hydro outages Still no standby power at Cannon 	<ul style="list-style-type: none"> Added capacity at Schooner and pumping Cannon flows to Schooner will bring both facilities into compliance 	<ul style="list-style-type: none"> Upgrading of all pump stations and all old/leaky sewers will ensure compliance
Reliability/Level of Risk	<ul style="list-style-type: none"> New Schooner Headworks will improve reliability at the front end of the WWTP Cannon WWTP is still a risk The three more important pump stations will be renewed (three still remain to be upgraded) 70% of high priority sewer pipe will be renewed 	<ul style="list-style-type: none"> Additional improvements and added redundancy at Schooner greatly improves reliability Decommissioning Cannon greatly reduces risk 	<ul style="list-style-type: none"> Once the whole system has been renewed, it will be much more reliable and level of risk will be greatly reduced
Operational	<ul style="list-style-type: none"> New Schooner headworks will help to reduce solids/rags from clogging tanks and pumps in the plant (other operational issues still remain) Cannon WWTP will still have many operational challenges Upgraded pump stations and 4.6km of sewer will reduce call outs on those improvements 	<ul style="list-style-type: none"> Decommissioning Cannon and centralizing treatment at Schooner significantly improves operations Additional redundancy at Schooner will greatly improve the ability to operate and maintain the plant 	<ul style="list-style-type: none"> Improving the solids handling at Schooner will greatly reduce labour and trucking costs for sludge disposal Once the whole system has been renewed all health and safety issues will have been addressed and emergency call-outs will be minimized
Environmental	<ul style="list-style-type: none"> Reducing inflow an infiltration and adding equalization storage at Schooner will improve treatment during peak flows Peak flows should be reduced at Cannon but may still exceed the plant's capacity Three renewed pump stations and replacing 4.6 km of leaky sewer pipe will reduce sewage releases/overflows 	<ul style="list-style-type: none"> Additional improvements at Schooner will improve treatment and quality of effluent Decommissioning Cannon and its outfall into Swanson Channel will greatly improve the marine environment 	<ul style="list-style-type: none"> Once the whole wastewater system has been renewed and optimized this will provide the best long-term environmental outcomes

Next Steps

- Report results of public open house and survey feedback to Magic Lake Estates Sewer Committee
- Sewer Committee recommends which option to proceed to referendum
- Approval of referendum question
 - Electoral Area Services Committee
 - Approval from CRD Regional Board
 - Inspector of Municipalities
- Referendum in the Fall of 2019
- Design of project
- Construction of project

Conceptual Timeline of Project Implementation:



Thank you for attending this Open House on the Magic Lake Estates Wastewater System Infrastructure Renewal Project. We look forward to receiving your questions and feedback. Please fill out a survey. They are available here at the open house or online at www.crd.bc.ca/magiclake-sewer.

We would be happy to collect your completed surveys in the submission box. Please have them returned by May 24, 2019 so the feedback can be included in the feedback compilation report and presented to the Magic Lake Estates Water and Sewer Local Services Committee.

Also if you would like to leave a quick comment, fill out a sticky note and post it in the box on the right.

YOUR COMMENTS AND FEEDBACK