



CUMBERLAND'S SYSTEM TODAY

Cumberland's wastewater system, which dates back to 1968, faces a unique set of challenges that prevents it from meeting current provincial regulatory standards.

LAGOON SYSTEM

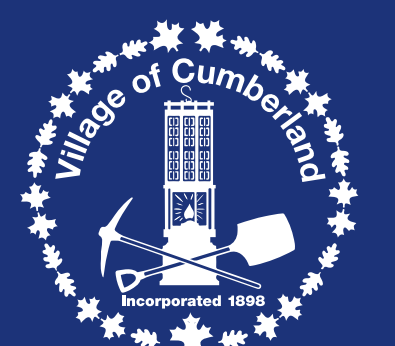
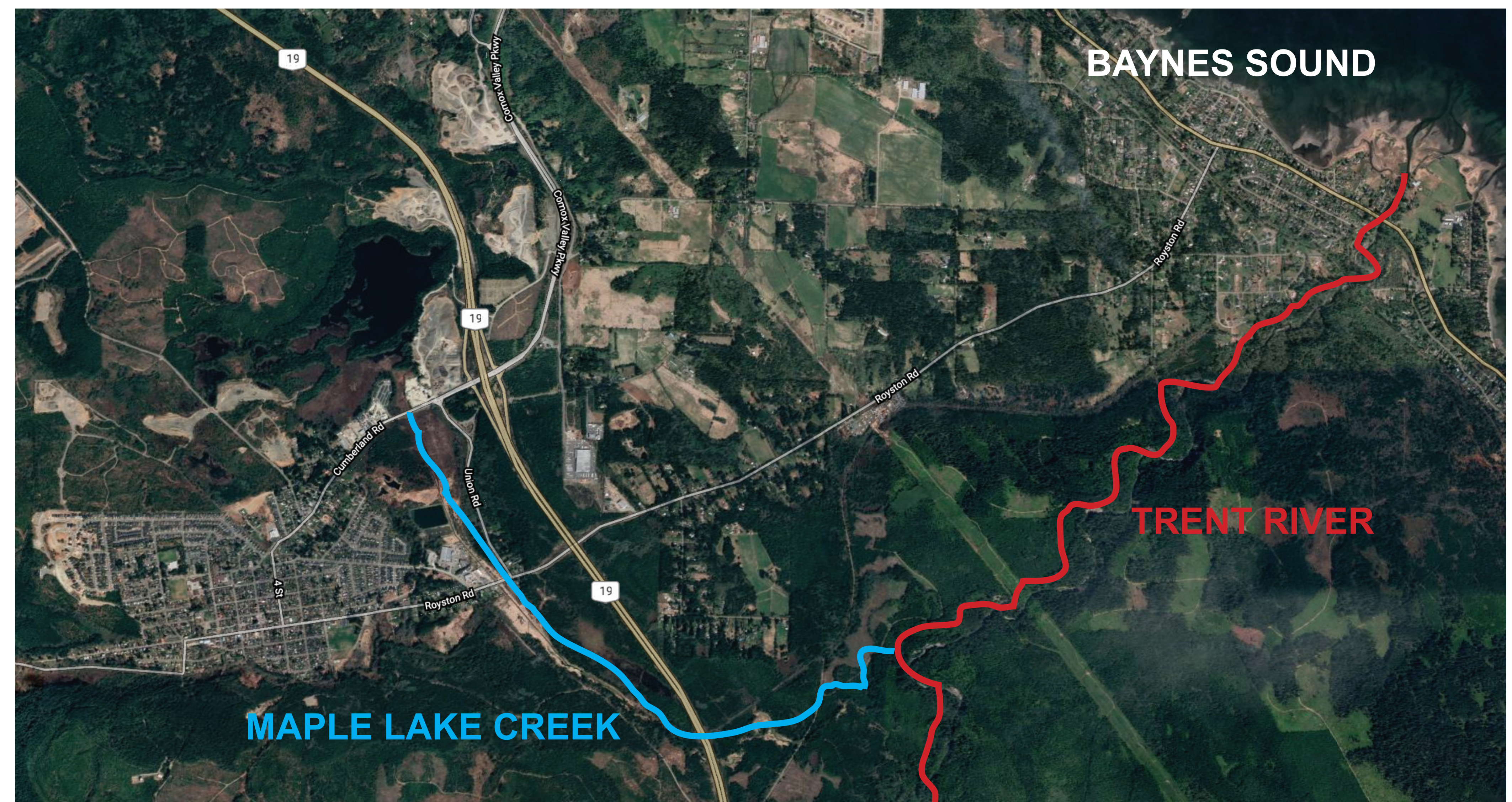
Wastewater is cleaned using two lagoon cells – one is aerated, while the other is a settling lagoon. Water is then released into Maple Lake Creek (man-made) and onto the Trent River, and ultimately Baynes Sound.

TOO MUCH WATER

Due to an aging sewer system (dating back to the 1920s), the lagoons receive a lot of rain water during wet weather events – with peak flows up to 20x average flows. The system can't keep up.

DRY RECEIVING CREEK

In the summer, effluent discharge is the only summer flow in Maple Lake Creek and accounts for half the flow of the lower Trent River. The treatment system does not meet the provincial requirements for discharge to river.



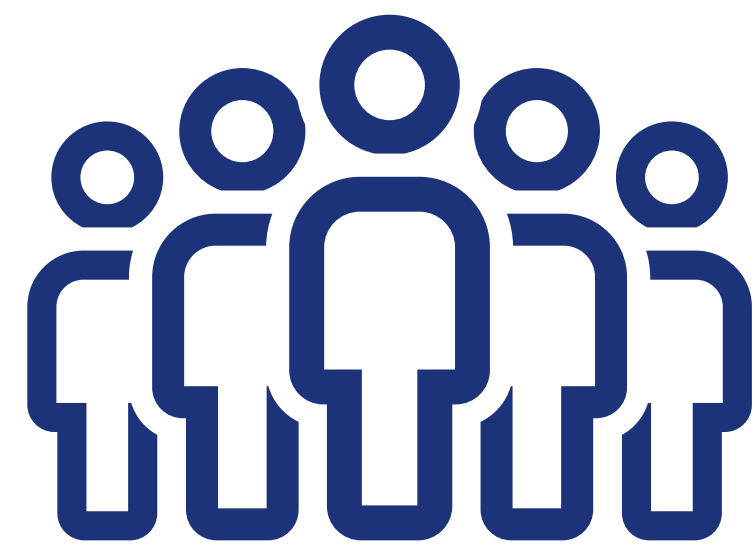


CUMBERLAND'S LIQUID WASTE MANAGEMENT PLAN

The Liquid Waste Management Plan is a tool used by local governments to develop long-term strategies to manage their sewage. It includes assessment of information, development of options and review, selection of a preferred option and the development of implementation plans.

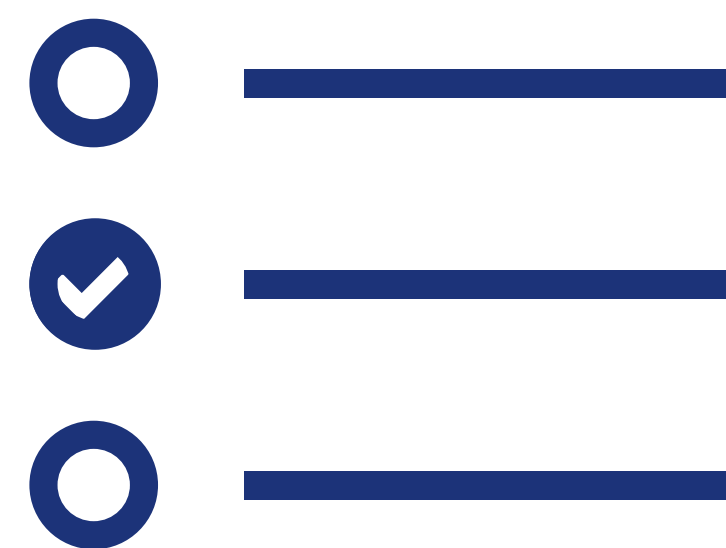
DID YOU KNOW?

Two Year Process: Cumberland's LWMP process kicked off in March 2016 and completed in July 2018 and included reviewing info, completing further study, development and narrowing of discharge and treatment option lists.



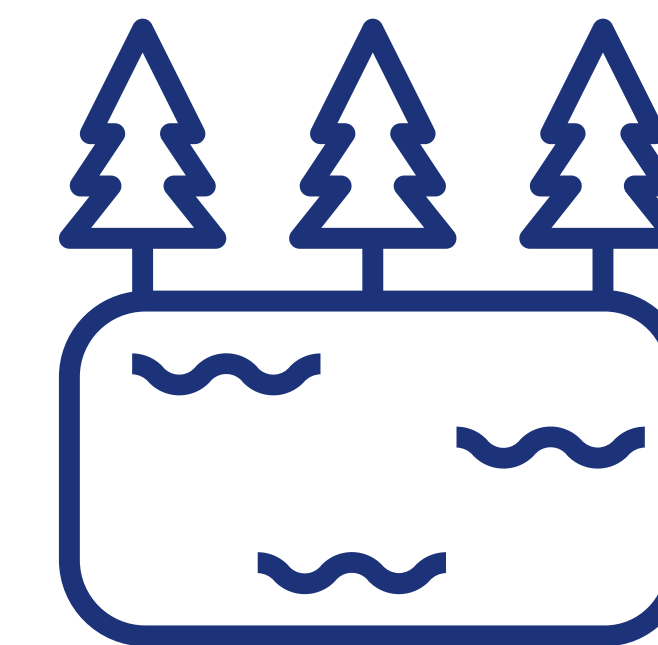
COMMITTEE INPUT

A wastewater advisory committee included representatives from the community and met regularly through the LWMP. The community was invited to weigh in on the short list of options in spring 2018.



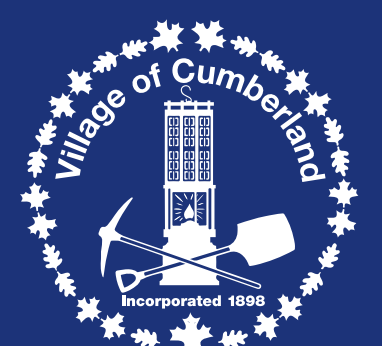
THREE OPTIONS REVIEWED

After reviewing studies and options, three options made it to the 'shortlist', including an upgrade of the lagoons, and two mechanical options (construction of a treatment plant)



LAGOON PREFERRED

After reviewing information and feedback, the committee selected the lagoon upgrades option as their preferred path forward. Council supported this decision, and sought the public's support for borrowing in fall 2018.



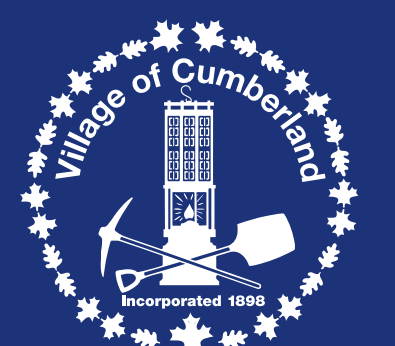
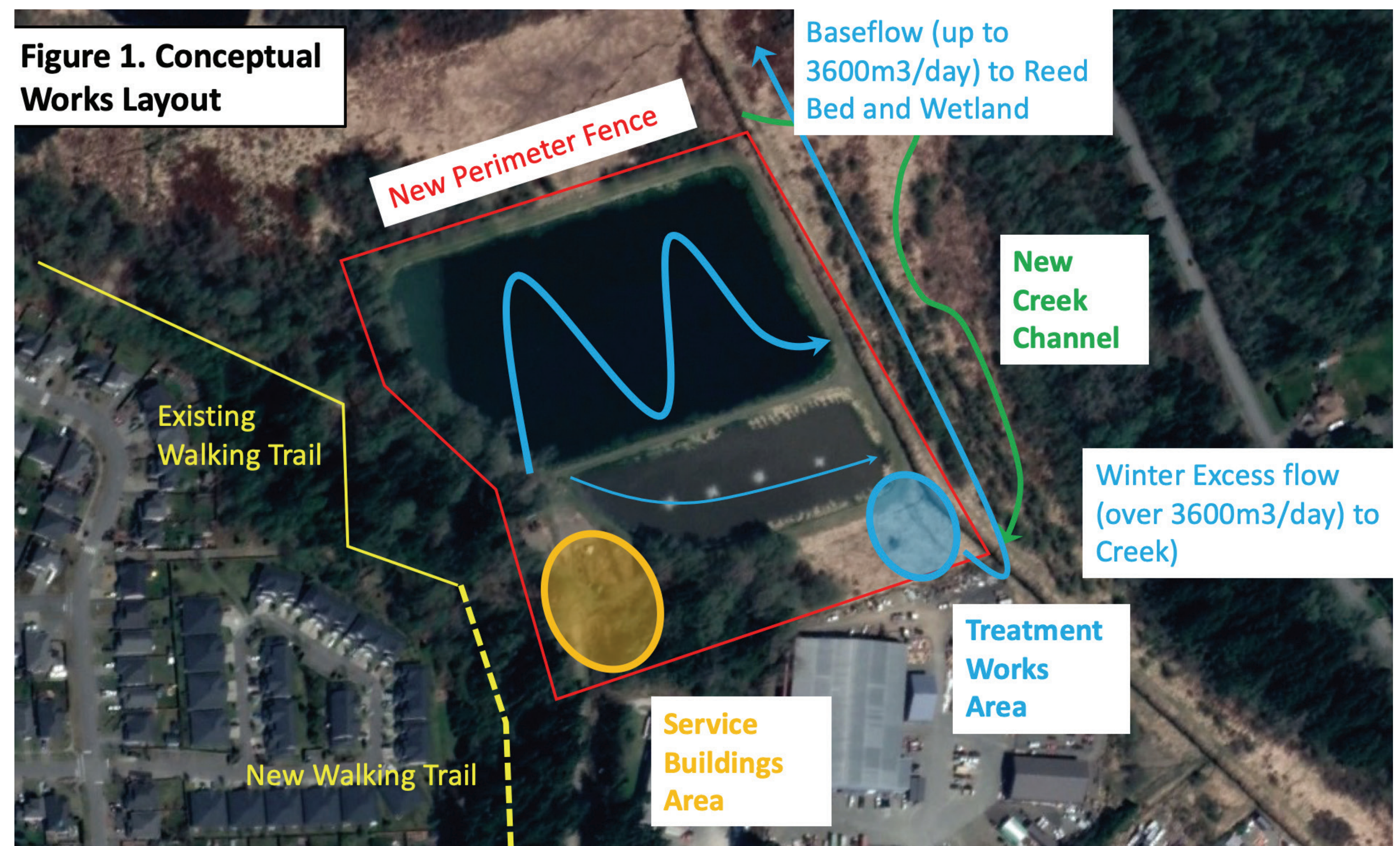


THE PLAN AHEAD – TREATMENT

The Wastewater Upgrades Project will include a number of improvements to the village's sewage treatment process that allow it to exceed provincial standards and meet other important community goals.

INCLUDED IN THE UPGRADES ARE:

- ✓ **Headworks Area Improvements:** New storage, security, instrumentation and flow measurement
- ✓ **Service Buildings:** Operators building, workshop, equipment storage, chemical storage, electrical room
- ✓ **Existing Lagoon Upgrades:** Improve the existing lagoon system by adding aeration to both lagoons and using baffle curtains to create meandering flow paths
- ✓ **New Processes:** Addition of treatment for phosphorus removal, solids separation, sludge dewatering and chemical disinfection
- ✓ **New Outfall:** Creation of a new outfall into Maple Lake Creek with a creek stream gauging station.
- ✓ **New Maple Lake Creek Channel:** Fill in the existing channel to ensure seismic stability of the lagoon berms, and create a new, meandering creek channel and ponds in the wetland area





THE PLAN AHEAD – THE SITE

The footprint of the treatment facility will expand to the south area, between the lagoons and the laundry building.

HIGHLIGHTS:

The improvements include three additional highlights that make this project especially unique.



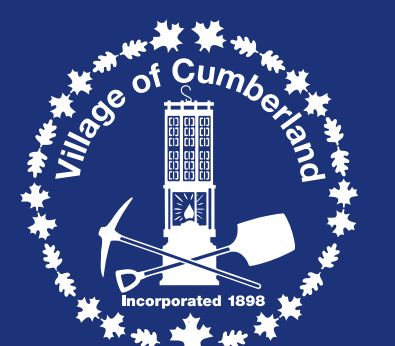
Biochar Media Reed Bed: A specially constructed, vertical flow wetland will ‘polish’ cleaned water to remove trace contaminants such as pharmaceuticals. This is not a regulatory requirement but is a realization of the goal expressed by Cumberland to remove man-made toxins from treated water.



Wetland Improvement: The peat wetlands were originally cleared and drained for agriculture in the 1930s, and drainage channels remain – drying out the wetland each summer. The wetland improvement project will see reclaimed, treated water redistributed over the nine-hectare area, reclaiming it to natural, wet, summer conditions. The community will be invited to provide input on this planning.



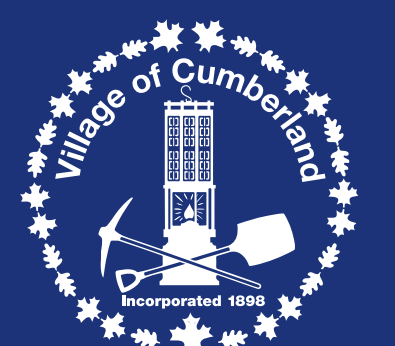
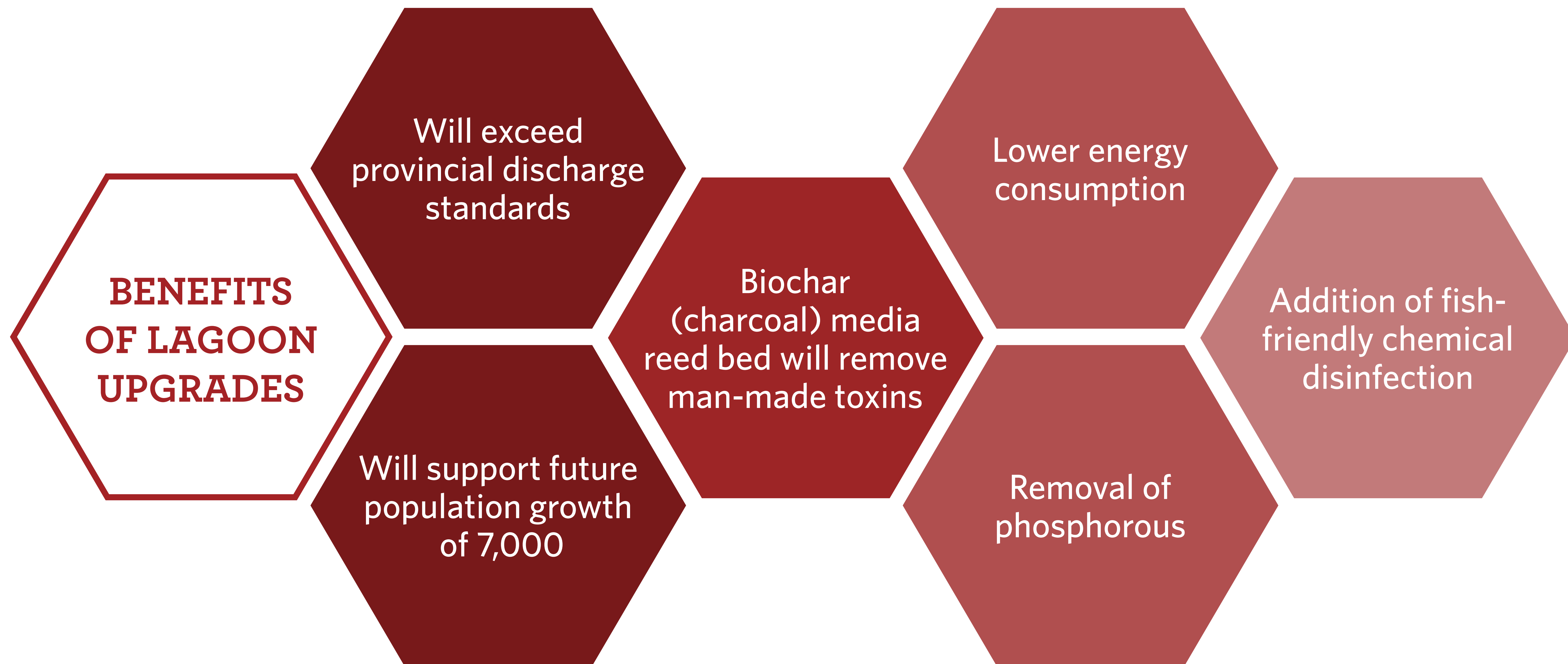
New Creek Channel: A new, creek channel will be constructed in the low are of the wetland near the lagoons with meandering flow and ponds. This will allow the existing man-made channel to be filled in to ensure seismic stability of the lagoon berms.





BENEFITS OF UPGRADES

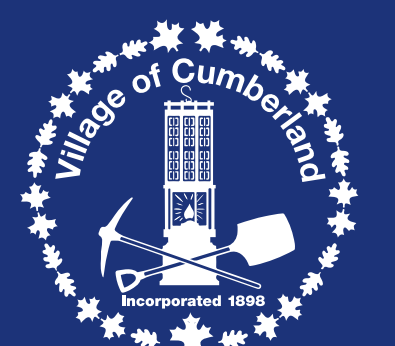
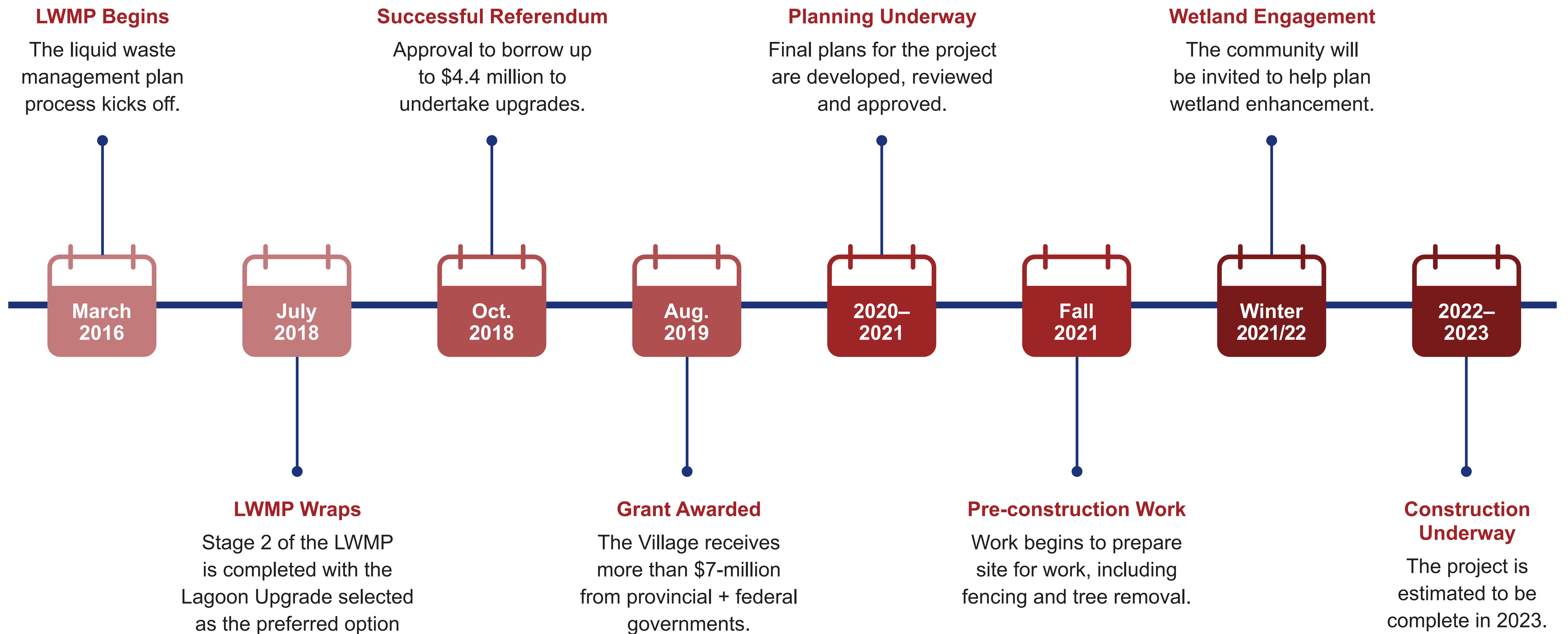
The Wastewater Upgrades Project will offer a number of benefits for the community, with this specific Made-in-Cumberland plan going 'above and beyond' the minimum requirements.





TIMELINE

Like many things in Cumberland, wastewater management has a long history. The below timeline covers the process to date for the Wastewater Upgrades Project.





PRE-CONSTRUCTION WORK

While the bulk of construction will get underway in 2022, residents may notice some preliminary steps to be undertaken in the fall of 2021.

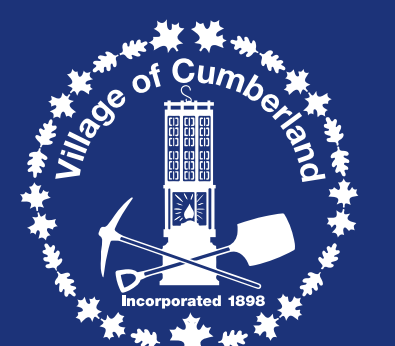
TRAIL RELOCATION

For the safety of the public, the lagoon site will be fenced. Trails that currently lead into the area, will be rerouted to connect with roadways.



TREE REMOVAL

A cluster of trees located on the southside of the access roadway (roughly behind the Island Health laundry facility) will be removed.



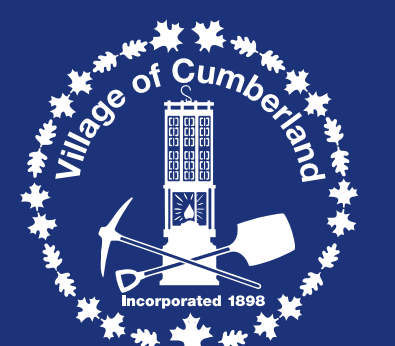
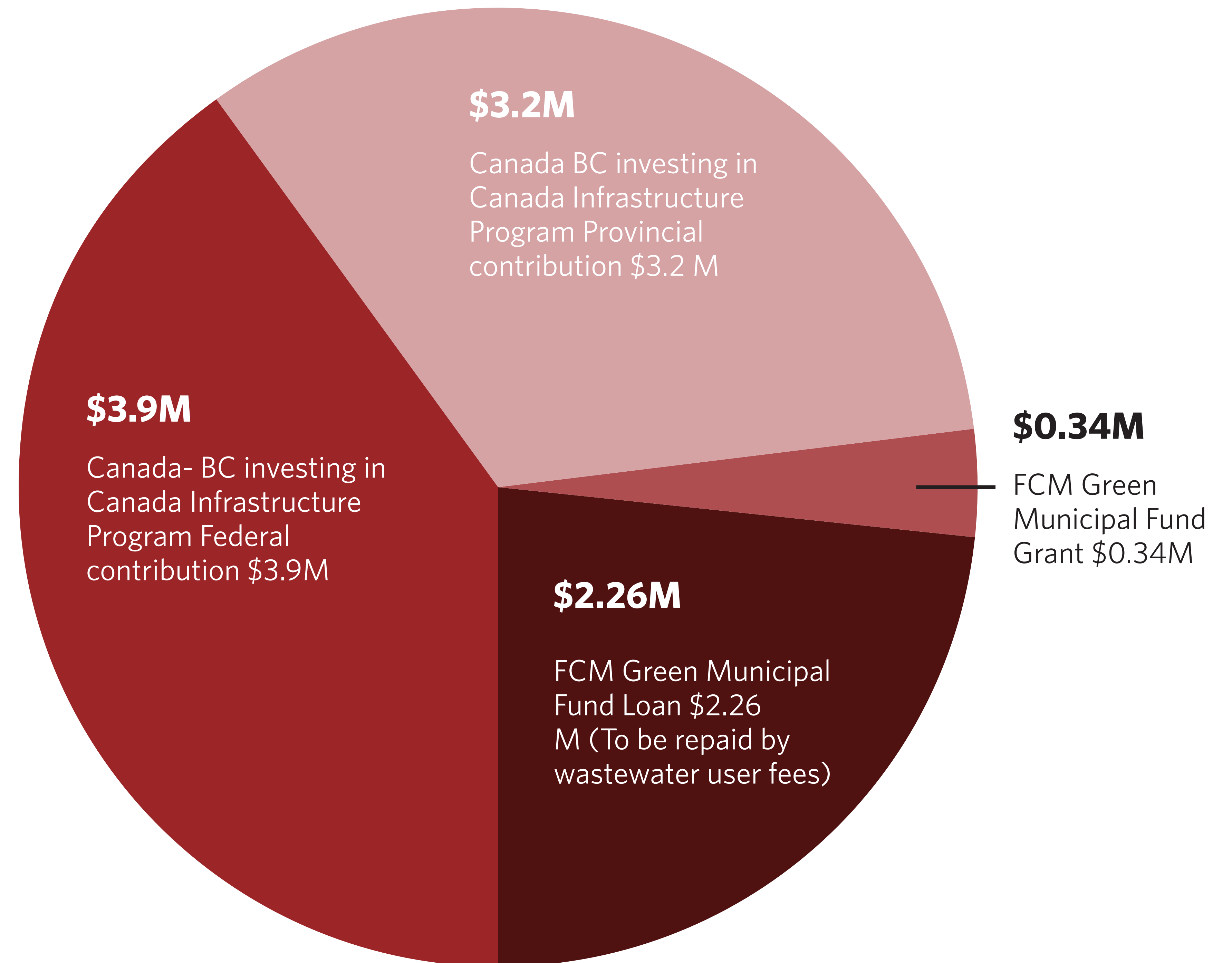


PAYING FOR THE UPGRADES

Grant funding will pay for the majority of this project, which is the Village of Cumberland's largest capital project to date.

The total estimated cost for the Village of Cumberland's wastewater project is \$9.7 million.

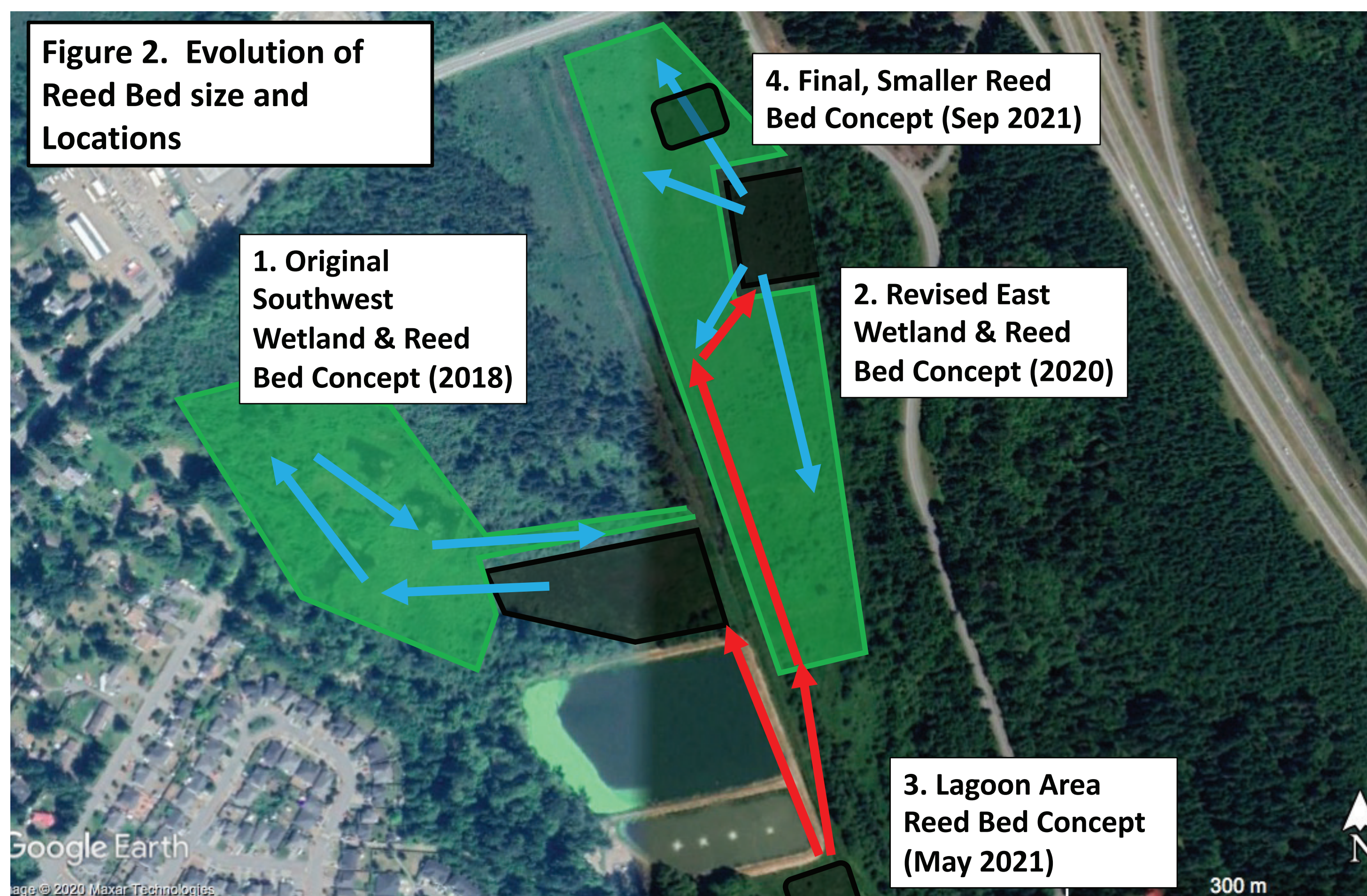
- Canada- BC investing in Canada Infrastructure Program Federal contribution \$3.9M
- Canada BC investing in Canada Infrastructure Program Provincial contribution \$3.2 M
- FCM Green Municipal Fund Grant \$0.34M
- FCM Green Municipal Fund Loan \$2.26M (To be repaid by wastewater user fees)



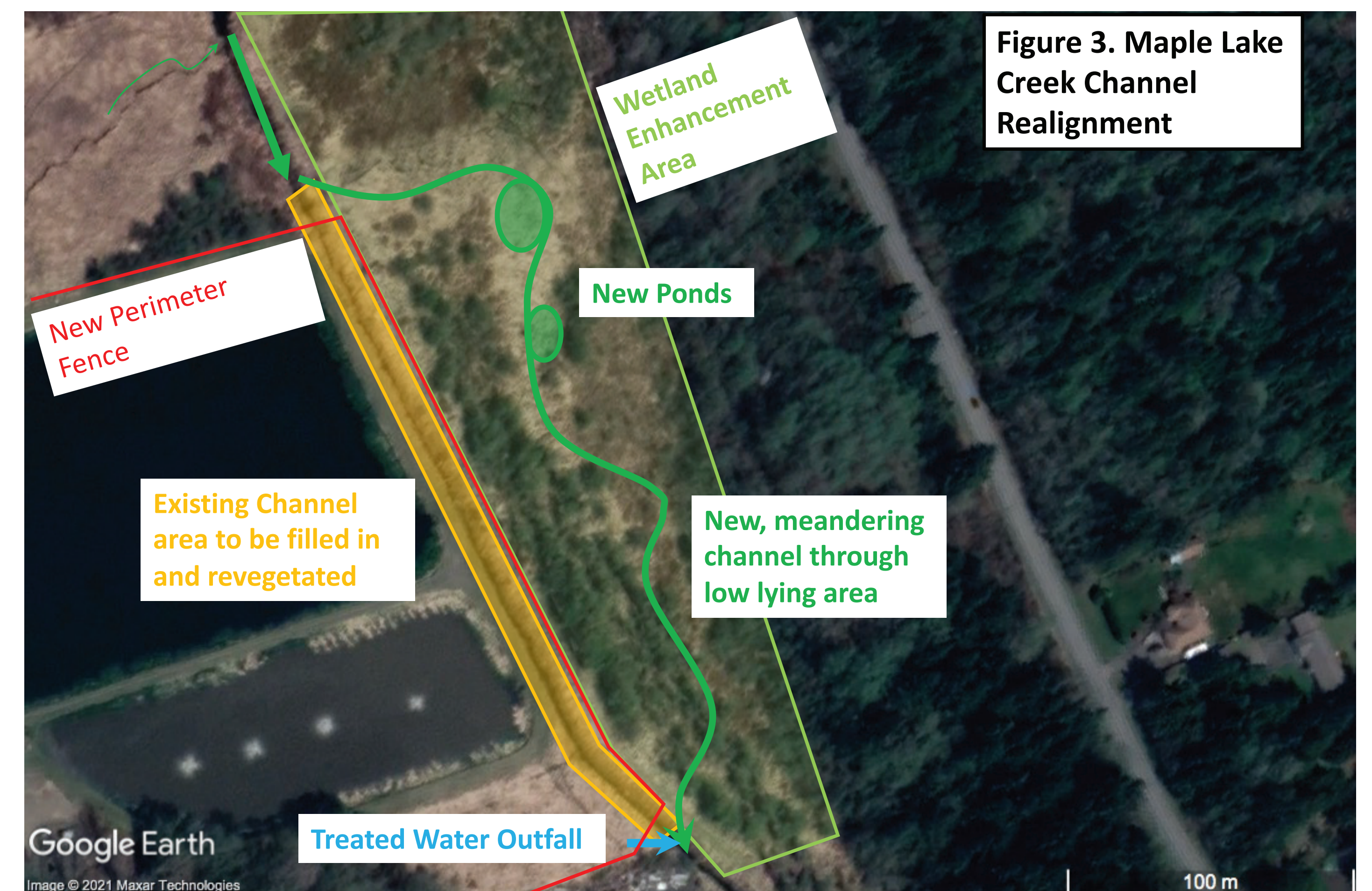


REED BED AND CHANNEL LOCATIONS

Along with the upgrades of the existing lagoons, there will be notable changes to the site including a revised location for the reed bed and a new creek channel. These graphics show the layout of those areas.



The reed bed will be located on the east side of the existing channel.



The revised channel will follow a low-lying area to the east of the existing channel.

