



## TOWN OF LAKE COWICHAN

### Public Works and Environmental Services Committee

*Tuesday, January 21<sup>st</sup>, 2020 at 6:00 p.m. – Council Chambers*

#### AGENDA

- |   | <b>Page #</b> |
|---|---------------|
| <b>1. CALL TO ORDER</b>   |               |
| <b>INTRODUCTION OF LATE ITEMS</b> (if applicable)   |               |
| <b>2. APPROVAL OF AGENDA</b>  |               |
| <b>3. BUSINESS ARISING AND UNFINISHED BUSINESS</b>  |               |
| <b>(a)</b> Superintendent, Public Works and Engineering Services re: WTP Update   | <b>3</b>      |
| <b>(c) Ongoing Items Still Being Addressed:</b>   |               |
| (i) CLEC Water System-Update.   |               |
| (ii) Updating of Signage.   |               |
| (iii) Correspondence from Ken Traynor re: Use of Jet Ski and Tubing on Cowichan River (referred from Finance Committee meeting) – see Delegation (a). | <b>4</b>      |
| <b>4. DELEGATIONS AND REPRESENTATIONS</b>   |               |
| <b>(a)</b> Alistair Crawford, Boating Safety Officer, Office of Boating Safety, Pacific Region re: Vessel Operation Restrictions on Waterways.        |               |
| <b>(b)</b> Sharon Combs and Pat Smith re: Safety Concerns on Grants Lake Road.  |               |
| <b>5. CORRESPONDENCE</b>  |               |
| <b>(a)</b> Nora Hayward re: Gypsy Moth.   | <b>5</b>      |
| <b>6. VERBAL COMMENT FROM THE PUBLIC ON A SUBSEQUENT ITEM ON THE AGENDA–</b><br>(maximum 3 minutes per speaker and maximum time allotted 15 minutes)  |               |
| <b>7. REPORTS</b>   |               |
| <b>(a)</b> Superintendent, Public Works and Engineering Services re: Summary Report for Month.  | <b>7</b>      |
| <b>(b)</b> Superintendent, Public Works and Engineering Services re: Grant Application for the Completion of Sewage Treatment Plant Upgrades.         | <b>9</b>      |
| <b>(c)</b> Superintendent, Public Works and Engineering Services re: Sewage Lagoon Quarterly 4 Report.  | <b>13</b>     |
| <b>8. NEW BUSINESS</b>  |               |
| None  |               |
| <b>9. NOTICES OF MOTION</b>   |               |
| <b>10. PUBLIC RELATIONS ITEMS</b>   |               |
| <b>11. QUESTION PERIOD</b> (maximum 3 minutes per speaker and maximum time allotted 15 minutes)<br>- Limited to items on the agenda                   |               |
| <b>12. ADJOURNMENT</b>  |               |

Please note: Should this meeting end sooner than 7:00 p.m., the next meeting may start no later than 10 minutes after adjournment of this meeting.

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# Memo



**TO:** Chief Administrative Officer

**SUBJECT:** WTP update

**DATE:** January 17, 2020

**FROM:** Superintendent, Public Works and Engineering Services

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## **Current Status: Construction is complete.**

- Archie Johnson Plumbing and Heating (AJPH) installation of the Soda Ash Equipment is complete.
- Velodyne (Supplier) – Was on site to commission Soda Ash system and train the PWS crew on the week of January 13<sup>th</sup>, 2020;
- 3 months of Chemicals: Clearpac,, Clearfloc,and Soda Ash are on site.
- Stantec process engineers were onsite week of January 13<sup>th</sup>. for commissioning and training of staff.
- AJPH on site to install additional check valves to prevent future chemical leaks into the distribution system.
- Water testing laboratory is being equipped.

## **Remaining work:**

- HVAC system is vibrating. DDC Control system is shutting down the unit on dirty filter status. Disabling the DCC Controls results in excess vibration of the AHU. Balancing is required to prevent further damage.
- Schedule February 4<sup>th</sup>, 2020 1 Year Warranty Walkthrough
  - Negotiating with Tritech for a 6-month extension of the Warranty
- Check valves to prevent Alum and Soda Ash to be released in the Lake and Distribution network is on order. Commissioning and training will continue when check valves are in place. Estimated 4-6 weeks.

Kam So, P.Eng, MBA (Candidate)  
Superintendent, Public Works and Engineering Services

PW20-01-21  
3(a)

## Joseph Fernandez

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**From:** Rod Peters  
**Sent:** January 9, 2020 7:29 AM  
**To:** trlm; Joseph Fernandez; Carolyne Austin; Kristine Sandhu; Lorna Vomacka  
**Subject:** Fwd: USE OF JET SKI AND TUBING ON THE RIVER  
**Attachments:** JET SKI TUBING AD.jpg

Sent from my iPad

Begin forwarded message:

**From:** Ken Traynor  
**Date:** January 8, 2020 at 10:23:43 PM PST  
**To:**


<rod.peters@lakecowichan.ca>

**Subject: USE OF JET SKI AND TUBING ON THE RIVER**

Dear All -- I received this email from Tom Roach about a new tubing company offering to use jet ski's on the river to tow people back so no shuttles. Has anyone seen this ad (copy attached) or know anything about the folks organizing the company?

Hi Ken fyi there is a notice up on 97 South Shore Rd (a commercial space) saying that there is a new river tube company opening there which will have seadoos towing the tubes back up the river instead of by shuttle bus. As you know this would be terrible both in terms of gravel and salmon egg disturbance as well as noise. I assume they haven't applied for their business license yet but wanted to give you a heads up. I will send a picture of the notice in a follow up email. Thanks Ken I hope you are having a great holiday season!

Best regards,  
Tom Roach

Ken Traynor 



FA20-01-14 → refer to PW20-1-21  
3(c)(iii).

## Joseph Fernandez

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**From:** Rod Peters  
**Sent:** January 2, 2020 9:27 PM  
**To:** trlm; Joseph Fernandez; Carolyne Austin; Kristine Sandhu; Lorna Vomacka  
**Subject:** Fwd: Gypsy moth  
**Attachments:** btk pamphlet 002.jpg; btk pamphlet 001.jpg

Sent from my iPhone

Begin forwarded message:

**From:** Nora Hayward  
**Date:** January 2, 2020 at 8:58:27 PM PST  
**To:** Rod Peters <rod.peters@lakecowichan.ca>  
**Subject:** Fwd: Gypsy moth

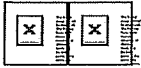
Dear Mr Peters,  
My name is Nora Hayward and I am a resident of Lake Cowichan.  
I have grave concerns about the 231 hectares that are to be sprayed on Central Cowichan to kill the gypsy moth.  
For over 20 years there have been pheromone traps strategically placed used to attract and trap the moth, this method has worked successfully. There have been gypsy moth sightings in different regions but not enough to warrant overhead spraying. According to the Canadian Food Inspection Agency(CFIA) and FLNRORD the pheromone trapping of 2019 provided 55 moths in 22 areas. Fifty five moth does not warrant the poisoning of human beings. This spray triggers attacks in persons suffering with COPD and asthma, contaminates farm lands, leaves negative effects on our environment that lasts for years. It sickens me that likely the MAIN reason the government is choosing to do the overhead spraying now is the US "requiring" BC to spray raw logs with bark and Christmas trees in order to allow them to be exported to the US. Must we bow down to them????  
In this time where the WORLD is concerned with its footprint isn't it neglectful for the government to blanket a large populated area with a poison when the ground crews using the pheromones has been working? There are most definitely alternative routes to investigate. What is wrong with us????  
I know the powers that be are attempting to promote how safe this spraying is, that it is not toxic. The spray is killing the gypsy moth, skippers, moths and butterflies so there is certainly something toxic. The public should be informed that pathogenic bacteria are permitted and found in insecticides such as Btk, these bacteria's include e coli, staph, step?? Is this what we want deposited on ourselves and our land, our children and our property???? NO!!!  
What do we expect when we spray our produce with these pathogens? Its no wonder the CFIA (Canadian Food Inspection Agency) is constantly recalling so called organic sprouts, lettuce etc.  
Please, when your staff does their research ensure that the information they gather is not all government promoted literature.

I will be at the meeting Jan 28 and I will continue to try to stop this enemy of our environment, I do know though its likely redundant.  
I believe that one voice can make a difference, if we don't even try our voice is never heard??

Where will the decision makers be when the spray is being released???

Thank you for your time.

Yours truly  
Nora Hayward



# Memo



**TO:** Chief Administrative Officer

**SUBJECT:** Summary Report for PWS - Dec 2019/Jan 2020

**DATE:** January 17, 2020

**FROM:** Superintendent, Public Works and Engineering Services

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## Summary Report for PWS – Dec 2019/Jan 2020

### Asset Management Plan

- Asset Management Project –
  - Kick off meeting and workshop conducted on the 18<sup>th</sup> Dec. 2019;
  - Confirmed scope and expectations with consultant.

### Capital Projects

- River Road Booster Station Upgrade –
  - 50% design submitted.
  - Proceeding to 95% design submission.
  - External Fire Pumps with diesel back-up is required.
- Sewage Lagoon Slope Stability –
  - 50% design submitted.
  - Re-grade slope to 2H:1V. Move fence and cut some cover.
  - Fence will be closer to Hudgrove Road, less tree cover.
- North Shore Water Intake – Genset
  - Genset is being delivered. 4-month delivery time. 3 months remaining.
  - Project trending to be on budget.
- WTP
  - See WTP Memo; and
- Writing Active Transportation Grant Proposal
- Writing Green Infrastructure – Environmental Quality Sub-Stream
- Scoping out new water and sewer model proposal for development

### Maintenance

- Repair 5 water leaks;
- All streetlight requests have been submitted to BC Hydro;
- Ongoing patching of roads; and
- Christmas lights removal

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7(a)

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#### Snow Removal

- 3 days of heavy snowfall.
- PWS came in early to address road situation.
- Prioritize ambulance, hills, major roads, sewage lagoon.

#### Power outage

- Several booster stations and lift stations went down at once.

#### Operations

- PWS crew maintained weekly garbage collection.
- Organics were postponed the week of the 13<sup>th</sup>-Jan due to snow priorities.
- PWS crew contained daily water and wastewater collection.
- Fire hydrate checks conducted.
- PWS crew compiled quarterly Lagoon and Water reports.

#### Meetings

- Attend CVRD Drinking water and Watershed program input session.
- Met with concerned citizens about speed limit on Grants Lake Road.
- Budget meetings for 2020 Capital Budget; and

#### Training

- WTP Operating training for PWS crew.

#### Safety

- Updated Water Emergency Plan.
  - More substantial information
  - Meets the requirements set out by Emergency BC
  - Conducting desk top training with crew.



Kam So, P.Eng, MBA (Candidate)  
Superintendent, Public Works and Engineering Services



# Memo



**TO:** Chief Administrative Officer

**SUBJECT:** Grant Application for the Completion of Sewage Treatment Plant Upgrades

**DATE:** January 17, 2020

**FROM:** Superintendent, Public Works and Engineering Services

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## Background

The Town of Lake Cowichan's sewage treatment plant (STP) needs to be upgraded in terms of capacity and environmental quality.

The Town's population is growing and there is a need to accommodate this future growth by the required upgrades at the sewage facility.

Sampling records from 2003 to 2018 show that there were no exceedances of the permit values for BOD5, TSS or failures of the LC50 96-hour acute toxicity tests. The effluent average was TSS was 23 mg/L and the maximum was 54 mg/L. There was one incident in 2017 for the TSS exceedance, but none in 2018, which might suggest this was an outlier.

The Ministry of the Environment is in the process of updating their Water Quality Objectives. There may be a need to address effluent discharges in the future.

## Design Plans

In 2015, the STP work program consisted of three phases:

Phase 1: Lagoon expansion (new cell No. 3) and desludging of Lagoon Cell 1 (by transferring sludge to the new lagoon).

Phase 2: Treatment Facility Headworks, aeration upgrades, and completion of the process hydraulic connections between Lagoon Nos. 1 and 2 and new Lagoon No. 3.

The intent of Phase 1 and 2 was to increase the secondary treatment capacity and will be required regardless of the final format of the Water Quality Objectives.

Phase 3: Phosphorus removal and disinfection.

Phase 3 will be dependent on the final requirements of the new Water Quality Objectives and the potential for ground discharge of effluent.

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If sewage is to continue being discharged to the Cowichan River an upgraded disinfection system and phosphorous removal technologies will be required. Effluent disinfection is required to reduce faecal coliform levels to meet a maximum 14/100 mL and median 2.2/100mL.

### **Current Status**

The completed sewage lagoon has a design population of 6000. With a population growth of 2.7%, the population is forecasted to be reached in the year 2033. There is a need to address the sewage lagoon size due to the increase in population.

The new cell is currently offline and is not connected to the existing treatment process. Sludge from Cell 1 was transferred to the new cell approximately 3 – 4 years ago and has remained untouched since then. No further upgrades have been conducted since that time, and the new cell has been allowed to partially fill with rainfall; currently the new cell is approximately 60 % full - mostly with water from rainfall.

### **Funding**

The Green Infrastructure – Environmental Quality Sub-Stream will fund infrastructure projects that will support quality and management improvements for drinking water, wastewater and stormwater.

Cost sharing is described below:

Ultimate Recipient	Government of Canada Contribution	Province of BC Contribution	Total Senior Government Contribution
Local Government Projects	40%	33.33%	73.33%
Indigenous Projects	75%	15%	90%

The remaining costs are the responsibility of the applicant.

Eligible Projects:

Increased capacity to treat and/or manage wastewater and/or stormwater.

### **Estimated costs**

The following tables provides an updated summary of the estimated costs for the phased approach of the remainder of the sewage lagoon upgrades. The costs for Phase 2 and 3 are in July 2017 dollars using the ENR Construction Cost Indices.

There has been a location factor, which was based on the 2015 RS Means Building Construction Cost Data.

	Phase 1	Phase 2	Phase 3	Estimate
	Lagoon	Headworks, Aeration, Connections	Phosphorus removal and Chlorination Upgrades	
Construction Costs	Complete	\$1,690,000	\$3,140,000	\$4,830,000
30% Contingency	Complete	\$510,000	\$950,000	\$1,460,000
Engineering	Complete	\$330,000	\$620,000	\$950,000
Project Costs (excluding GST)	Complete	\$2,530,000	\$4,710,000	\$7,240,000

### Recommendation

To be eligible for the grant under this program, the applicant needs a resolution from council supporting the grant.

It would be sensible for The Public Works and Environmental Services Committee to recommend that the Town of Lake Cowichan submit a grant application under the Green Infrastructure – Environmental Quality Program for the Completion of the Sewer Treatment Plant Upgrade Project at an estimated cost of totalling \$7,240,000 with council supporting the project and committing to its share of \$1,930,908 (see attached the recommended format for the resolution).



Kam So, P.Eng, MBA (Candidate)  
 Superintendent, Public Works and Engineering Services

**EXAMPLE TEXT FOR LOCAL GOVERNMENT RESOLUTION**

**[LOCAL GOVERNMENT LETTER HEAD]**

CERTIFIED RESOLUTION OF THE (XXcommunityXX) COUNCIL

I, (staff members full name), (staff members title) for the (community's legal name), hereby certify that the following is a true copy of the Resolution adopted by (XXXXXX) Council at its Meeting held on (Month, Day, Year) regarding the *Investing in Canada Infrastructure Program – Green Infrastructure: Environmental Quality Sub-stream* Funding Application for (Project Title).

THAT staff submit an application for grant funding application for (Project XXXX) through the *ICIP – Green Infrastructure: Environmental Quality Sub-stream*; and

THAT Council supports the project and commits to its share (\$XXX,XXX) of the project.

# Memo



**TO:** Chief Administrative Officer

**SUBJECT:** Sewage Lagoon Quarterly 4 report

**DATE:** January 17, 2020

**FROM:** Superintendent, Public Works and Engineering Services

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## Background

The Town of Lake Cowichan was in non-compliance with the discharges from Town's Sewage Treatment Plant (Permit No. 247) identified by the Ministry of Environment and Climate Change Strategy (MOECCS) in 2017. The Permit authorizes the discharge of effluent to the Cowichan River from a lagoon municipal sewage/wastewater treatment system as indicated below.

The permitted average and maximum rate of discharge is 2,200 m<sup>3</sup>/day and 4,500 m<sup>3</sup>/day, respectively. Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS) and Total Chlorine Residual levels of the effluent from an outfall should not exceed 45 mg/L, 60 mg/L and 0.05 mg/L, respectively.

MOECCS noted that the daily discharge rate was above the permitted value of 4,500 m<sup>3</sup>/d on 10 occasions in 2017 and 8 occasions in 2018. It was forecasted that the months of November, December and January would have the flows that exceed the daily maximum.

## Sewage Lagoon 2019 Quarterly 4 Report

There were three occurrences of daily flows that were between 3,989 and 2,713. Two of those readings were on the weekend and were calculated by a simple liner regression formula. Meaning, that given that was a high reading on the Friday 20<sup>th</sup> December and Monday 23<sup>rd</sup> December, then the readings on the Saturday and Sunday were high too.

## Previous reports

Prior to 2009, there were no exceedances of the permitted flows recorded using the old float level device and analogue recorder.

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In 2009, the Town replaced the flow recorder with a new Milltronics Ultrasonic level recorder, since this device was installed; maximum flows in excess of the permitted flow were recorded every year.

In 2019, the Millitronics device was replaced with an Endress & Hauser Ultrasonic Recorder.

There were issues with measure high flows with the old float level device and it was suggested that the new Milltronics Ultrasonic Level was more accurate.

The difficulty with the Milltronics Ultrasonic Level is that the readings are recorded by hand by the water operator, and not on the weekends. The numbers are then transcribed manually from the flow chart wheel into an excel spread sheet with the required formulas.

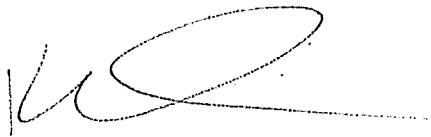
The data collection process should be upgraded with an Open Channel Monitoring function that electronically records the flows. This upgrade will be included in the Sewage Upgrade Project when funding is approved.

### **Analysis**

Implementation of the I&I reduction program is still recommended for the Town, recognizing that, since significant segments of the collection system are below the ambient groundwater level controlled by the Cowichan River, and this program may not achieve the full reduction in maximum daily flows required to meet the current permit limits.

Continued monitoring of the flows is required to satisfy regulatory requirements.

Recommendation is for the upgrade the STP with a digital chart recorder and flow totalizer connected to the Endress & Hauser Flow meter.



Kam So, P.Eng, MBA (Candidate)  
Superintendent, Public Works and Engineering Services