



TOWN OF LAKE COWICHAN

Public Works and Environmental Services Committee

Tuesday, February 18th, 2020 at 6:00 p.m. – Council Chambers

AGENDA

1. CALL TO ORDER

Page #

INTRODUCTION OF LATE ITEMS (if applicable)

2. APPROVAL OF AGENDA

3. BUSINESS ARISING AND UNFINISHED BUSINESS

(a) Superintendent, Public Works and Engineering Services re: WTP Update

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(b) **Ongoing Items Still Being Addressed:**

(i) CLEC Water System-Update.

(ii) Updating of Signage.

4. DELEGATIONS AND REPRESENTATIONS

5. CORRESPONDENCE

6. VERBAL COMMENT FROM THE PUBLIC ON A SUBSEQUENT ITEM ON THE AGENDA–

(maximum 3 minutes per speaker and maximum time allotted 15 minutes)

7. REPORTS

(a) Superintendent, Public Works and Engineering Services re: Summary Report for Month.

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(b) Superintendent, Public Works and Engineering Services re: Turbidity Issues.

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(c) Superintendent, Public Works and Engineering Services re: January 31st, 2020 Flood Event.

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(d) Superintendent, Public Works and Engineering Services re: Grants Lake Road.

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8. NEW BUSINESS

None

9. NOTICES OF MOTION

10. PUBLIC RELATIONS ITEMS

11. QUESTION PERIOD (maximum 3 minutes per speaker and maximum time allotted 15 minutes)

- Limited to items on the agenda

12. ADJOURNMENT

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 Deficiency List

DATE: February 14, 2020

FROM: Superintendent, Public Works and Engineering Services

Background

At the 11-Feb-20 Finance Meeting, a report was presented by staff on the status of the Town's Water Treatment Plant. The report had stated that Stantec's deficiency walkthrough was conducted on 10-Feb-20. The walk-through was scheduled a year after substantial completion was granted on 28-Feb-19. Tritech is contractually bound to fix all deficiencies that were part of the walkthrough by 28-Feb-20.

The walkthrough was formally attended by the Mayor, Superintendent, Foreman, Stantec Project Manager and Tritech (Project Coordinator).

Attached is a copy of an email that listed the deficiencies after the walk-through.

Issue

When presenting the WTP Status report at the Finance meeting on the 11-Feb-20, the Superintendent stated that most of the deficiencies were not operational-related and would not impede the commissioning of the WTP.

There is a mistaken notion that the deficiencies are such that these would hold up the commissioning of the plant. The answer is "No". Council also stated that hold backs should not have been released on Stantec's progress payments.

The critical path to commission the WTP is the installation of the Soda Ash equipment and the installation of the check valves at the intake pumphouse and capping valves on the distribution network. Both activities were not part of Stantec's project scope and thus any hold-back would not be contractually legal when substantial completion was given by our consultants.

Review of Deficiencies

The following is a list of deficiencies and a comment if the deficiency affects the timing of the commissioning of the WTP:

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Items for Resolution	Comment	Operational required (Y/N)
Leaking flock tank	When tank is filled with water, the fittings will crystallize and plug the leak. Not an issue.	No
Kick plates on sluice gate stems above filters	Possible tripping hazard. Needs to be addressed.	No
Hand railing bolts	Missing and loose.	No
Flashing to be installed	Floor and walls are concrete. Can cause eventual deterioration to door and fitting, needs to be addressed for maintenance issues.	No
Thresholds to be installed at doors for water ingress.	Floor and walls are concrete. Can cause eventual deterioration to door and fitting, needs to be addressed for maintenance issues.	No
Loose bolts throughout on piping	Tripping hazard.	No
Bathroom <ul style="list-style-type: none"> • Door vent not installed • Toilet rocking, loose • Sing plug doesn't work 	Washroom still usable.	No
Electrical Room Needs Tidying <ul style="list-style-type: none"> • Spare cables • Cables loose 	Housekeeping	No
Genset fuel gauge alarm	Operational inconvenience.	No, unless then genset is active for long periods of time.
Panel in Elect room	Question about what it does?	No
Drain lines off air valves need unions	Housekeeping	No
Wall behind Genset cracked	Wall is partially used to protect the genset from accidental vehicle collisions. Wall is still in place, should be corrected for cosmetic reasons.	No
Hatches in backwash area leaking	Backwash pumps are still operational. Leaking can cause deterioration of fittings in the future. Water on ground is negligible because there is no proper drainage in Backwash camber room anyways.	No
Outside shower tee broken.	Eye flush shower was broken due to frost expansion. Needs to be replaced. Portable eye wash station can be placed on location.	Yes, would need portable eye flush system. Would not delay commissioning.

Elec Socket of cover	Put socket cover back on.	No
HVAC Issue	AHU is still investigating. Vibrating is a noise hazard and could potentially shake fittings off the unit. Only internal air is circulating. Low temperatures would turn off the HVAC. Should be addressed.	Yes, could be issue in the long run. Would not delay commissioning.
Domestic booster Pumps	Programming changes required.	Yes, can cause increased operator time during operations. But does not stop WTP from being commissioned.
Canopy above heat pump	Outside of Trittech contract.	Yes, possible issue during winter months. But does not stop WTP from being commissioned.
Enclosure around hydro cabinet	Cabinet is outdated, needs to be replaced. Outside of Trittech contract.	No
Battery Backup for River Road Boaster Station repeater	Not in Trittech contract. Being addressed in River Road Boaster Station Project.	Yes, in the event of a power outage.
Handles/grab bar for emergency for ladder from upper catwalks	Not in Trittech contract. Potential safety issue.	No

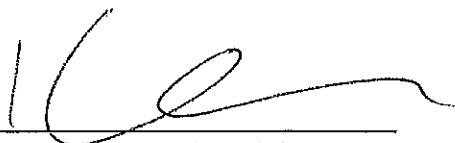
All these issues were identified to Trittech in writing on the previous walk-through. These deficiencies should be addressed by Trittech as they were identified by the 28th-Feb-20.

Conclusion

After reading the list of deficiencies, a holdback to Trittech's contract could not be justified from a contractual standpoint.

Although the list was if a page, many issues were minor in nature i.e. Electrical socket cover off, no water stop on bathroom toilet.

The commissioning of the WTP will commence once the check valves are installed, which are outside the scope of Trittech's contract.



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

Joseph Fernandez

From: Swarbrick, Shaun
Sent: February 10, 2020 5:53 PM
To: Corey Makortoff; Kam So; Rod Peters; Mandeep Gill
Cc: Joseph Fernandez; Puchajda, Bartek; Paul McRae
Subject: Lake Cowichan WTP: 1 Year Warranty Period Walkthrough Notes

Hi all,

Thanks for the time this afternoon – I will follow this up with a formal list but here is an informal list of discussions:

- Items for Trittech resolution:
 - o Leaking floc tanks
 - Mandeep, lets discuss tomorrow or Wednesday
 - o Kick plates on sluice gate stems above filters
 - o Hand railing bolts:
 - Missing and loose
 - o Flashing to be installed above NW corner door
 - o Thresholds to be installed at doors for water ingress
 - Stantec to provide details
 - o Loose bolts throughout on piping
 - o Bathroom:
 - Door vent not installed
 - Toilet rocking, loose
 - Sink plug doesn't work
 - o Elec room needs tidying:
 - Spare cables,
 - Cables loose
 - o Genset fuel gauge alarm:
 - General alarm continually on. Needs supplier input and resolution
 - o Panel in elec room left of HMI – what is this? (Believe incoming telus/shaw)
 - o Drain lines off air valves need unions
 - o Wall behind genset cracked:
 - Jack/Mandeep, lets discuss how to resolve
 - o Hatches in backwash area leaking
 - o Outside shower tee broken
 - o Elec socket in backwash pump vault to have cover installed
 - o Hvac issue (Stantec to be out on site next week to review)
 - o Domestic booster pumps:
 - Hope this will be resolved with some programming changes, STC to discuss with Paul
- Discussions for outside of Trittech contract:
 - o Canopy above heat pump to protect from ice
 - o Enclosure above/around hydro cabinet
 - o Battery backup for River road booster station for repeater
 - o Handles/grab bar for emergency ladder from upper catwalks

Mandeep/Jack, please let me know when you plan to be out there to resolve these, so I can plan someone from STC to be there and close most of these off. Would like Bartek there to discuss some programming points with Paul as well.

Cheers

Shaun Swarbrick P.Eng
Associate
Civil Engineer

Memo



TO: Chief Administrative Officer

SUBJECT: Summary Report for PWS - Jan 2020 / Feb 2020

DATE: February 14, 2020

FROM: Superintendent, Public Works and Engineering Services

Summary Report for PWS – Jan 2020 / Feb 2020

Asset Management Plan

- Asset Management Project –
 - Progress meeting with consultant on the 20th-Feb

Capital Projects

- River Road Booster Station Upgrade –
 - Proceeding to 95% design submission.
 - External Fire Pumps with diesel back-up is required.
 - Waiting to receive pricing and updated cost estimate.
- Sewage Lagoon Slope Stability –
 - Pre-tender walk-through 11th-Feb.
 - Tender closing on the 24th-Feb.
 - Slope significantly deteriorating. Trees are dried from the slope exposure.
- North Shore Water Intake – Genset
 - Electrical consultant on site on the 27th-Jan to inspect pump house.
 - Delivery of Genset in April.
 - To direct award contractor for installation.
- WTP
 - See WTP Memo; and
- Transportation Grant Proposal - submitted
- Writing Green Infrastructure – Environmental Quality Sub-Stream
- Repair of storm drain on North Shore Road.
- Repair of air valve on Indian Road.

Maintenance

- Repair 6 water leaks;
- All streetlight requests have been submitted to BC Hydro;
- Ongoing patching of roads; and
- Christmas lights removal

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Major Flood event

- See major Flood Memo.

Power outage

- None.

Operations

- PWS crew maintained weekly garbage collection.
- PWS crew contained daily water and wastewater collection.
- Fire hydrate checks conducted.
- PWS crew compiled quarterly Lagoon and Water reports.

Meetings

- Attended Municipal Engineer Division planning meeting AGBC.
- Met with CVRD on community transit needs.
- Met with concerned citizens about speed limit on Grants Lake Road.
- Met with Encon on snow removal coordination.
- Budget meetings for 2020 Capital Budget;

Training

- None

Safety

- Created Emergency Environmental Plan.
 - 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: Turbidity Issues

DATE: February 14, 2020

FROM: Superintendent, Public Works and Engineering Services

Background

On the night of 31-Jan-02, heavy rains from the Pineapple Express Storm struck the Town of Lake Cowichan and the surrounding areas. The result saw overflows of the Cowichan Lake and Cowichan River with considerable flooding which resulted in excessive run-offs into the receding waters. The runoff spiked the NTU's at the North Shore Intake Pumphouse to 10 NTU and ranging as high as 20 NTU.

Measured at Water Treatment Plan (WTP) the NTU's is checked twice a day and ranged between 2-8 NTU's. A Boil Water Advisory (BWA) has been in effect since 2nd-Feb-20.

Current situation

The raw water received into the WTP is filtered, but without the coagulation and flocculation processes that would lower the NTU's to 0.3. Check valves are still waiting to be installed to continue with the commissioning of the WTP.

At 5pm on 11-Feb-20, the NTU's was lowered to 1.25 NTU. The BWA would remain in effect until water is cycled through the distribution network and the NTU's would trend further downwards.

As of 13-Feb-20, the NTU's has risen to 2.29 NTU's and is trending upwards.

The Town is working with Island Health to monitor the water quality, BWA and ascertain when it would be appropriate to lift the BWA.

Possible Contamination from Septic Fields and Water Quality Issues?

As part of the BC Drinking Water and Protection Act and the Drinking Water Protection Regulation, the Town is required to collect water samples and monitor drinking water quality.

The following sampling results are considered acceptable for drinking water:

E. Coli - No *E. Coli* detectable per 100 ml of each water sample.

Coliform - At least 90% of samples will have no detectable Coliform per 100 ml of water, and sample has more than 10 total Coliform per 100ml of water.

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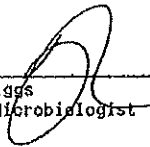
Attached below is a screen shot of the latest water quality test taken on 4-Feb-20 at 10 am at the Greendale Trestle.

Site Code	Date	Time	CFU/100 ml		CFU/100 ml		CFU/100 mL
			TC	T-NC	FC	F-NC	E.coli
Greendale	04Feb20	10:00a	0	0	0	0	0

TC = total coliform bacteria
FC = fecal coliform bacteria (aka thermotolerant coliforms)
NC = non-coliform bacteria
CFU/100 ml = colony forming units per 100 milli-litres

Results may be adversely affected if samples are submitted to the laboratory more than 24 to 30 hours after collection.

E. coli = Escherichia coli, FDA/BAM 8th ed, 1995 + Revision A, 1998
Bergey's Manual of Systematic Bacteriology vol 1, A0AC 1984; J.Clin.Micro.,
J. Intern.Systm.Bact.


W. Riggs
Sr. Microbiologist

The report shows E.Coli and Total Coliform bacteria at 0 per 100 ml of each water sample. This means that there are no traces of E.Coli and Total Coliform and the water quality is within water quality standards.

If the water quality has no E.Coli and Total Coliform, why is there still a BWA?

High turbidity interferes with the disinfection of drinking water by causing ultraviolet light and/or chlorination processes to become ineffective in destroying pathogens. Turbidity is still linked to diseases causing micro-organisms water.

A BWN is issued when there is an increased turbidity above the recommended level of 3.0 NTU.

Next Steps

When the turbidity from the water in Lake Cowichan stabilizes, the Town will turn off the intake pumps and stop filling the reservoir. The volume of water in the reservoir will be dropped to 20-40% at night when town water usages are at the lowest. The reduction will happen by user demand, and the remaining by flushing hydrants. During the night, all the intake pumps will work to refill the reservoir.

After the reservoir has been filled, after several hours for the water to flush through the distribution network, the residents will be advised by the Town to flush their own water systems by turning on their taps.

After the high turbidity water has been flushed out through the system, the Boil Water Advisory may well be lifted.

Due to the situation with the Town's BWA, the contractor responsible for installing the check valves have been expediting their timelines to allow for commissioning to occur sooner.



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



Memo

TO: Chief Administrative Officer

SUBJECT: January 31st 2020 – Flood Event

DATE: February 14, 2020

FROM: Superintendent, Public Works and Engineering Services

Background

On the night of 31-Jan-02, heavy rain from the Pineapple Express Storm struck the Town of Lake Cowichan and the surround areas. The result saw overflows of the Cowichan Lake and Cowichan River with considerable flooding which resulted in excessive run-offs into the receding waters. The runoff spiked the NTU's at the North Shore Intake Pumphouse to 10 NTU and ranging as high as 20 NTU.

Flooding – road closure and detours

Friday night, many areas in town were flooded with the head of the water from the river rising higher than areas in town, resulting in storm drains being backed up and flooded. Areas especially flooded were Poplar Street, Lakeview Ave, Riverside Dr, Saywell Park and the Duck Pond.

The PWS crew was out late Saturday night putting up road barriers and rerouting traffic.

Oil Spill

On Saturday afternoon 1st-Feb, the PWS crew and the Town's Fire Department responded to an oil spill to a house on King George St. The house in question and neighbouring houses were flooded with a foot of water with oil being visible. The PWS crew and Fire Department dispatch oil buoys and pads to absorb the oil and prevent spillage into the Cowichan River. PWS crew were onsite all night, replacing the oil pads.

BC Report a Spill was notified immediately, and a report was submitted.

At this time the location of the oil source is unknown. The home owner at King George contacted Geoscan to investigate the source of the oil, but their report came back inconclusive. The affected neighbour also contacted Geoscan to conduct an investigation of the source, but the report also came back inconclusive.

The oil spill remained on private property and the issue is now a civil issue.

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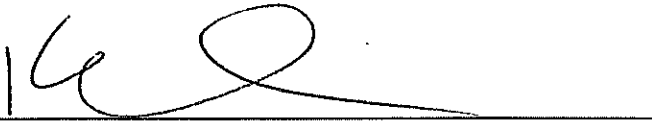
Lift Station 4 and Sewage Lagoon

The significance of Lift station 4 is that all the town sewage distribution collects at Lift Station 4 and is pumped to the Sewage Lagoon. During the flood, At Lift Station 4 a pump malfunctioned and there were issues with the control board. During the flood the pump station was at risk of flooding and there was a potential for serviceability disruptions.

The sewage lagoon overflowed during the flood event. The flow chart wheel indicated the lagoon flooded at midnight on the 31st-Jan and receded to normal levels on the 2nd-Feb. The timing of flood indicated that the flood was a direct result of rain at the lagoon. A sign of infiltration would indicate that the flood at the lagoon would have happened two days later, and subsided two days after.

The pump and control board is in the process of being replaced.

A condition assessment is proposed in the Capital Plan for the purposes of replacing the aging asset.



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

Memo



TO: Chief Administrative Officer
SUBJECT: Grants Lake Road
DATE: February 14, 2020
FROM: Superintendent, Public Works and Engineering Services

Background

On Dec 23, 2019, the Superintendent met with concerned residents about the speed limit concerns on Grants Lake Rd and safety concerns on Hudgrove Road.

The residents submitted a letter dated 6-Jan-20, attached to this memo.

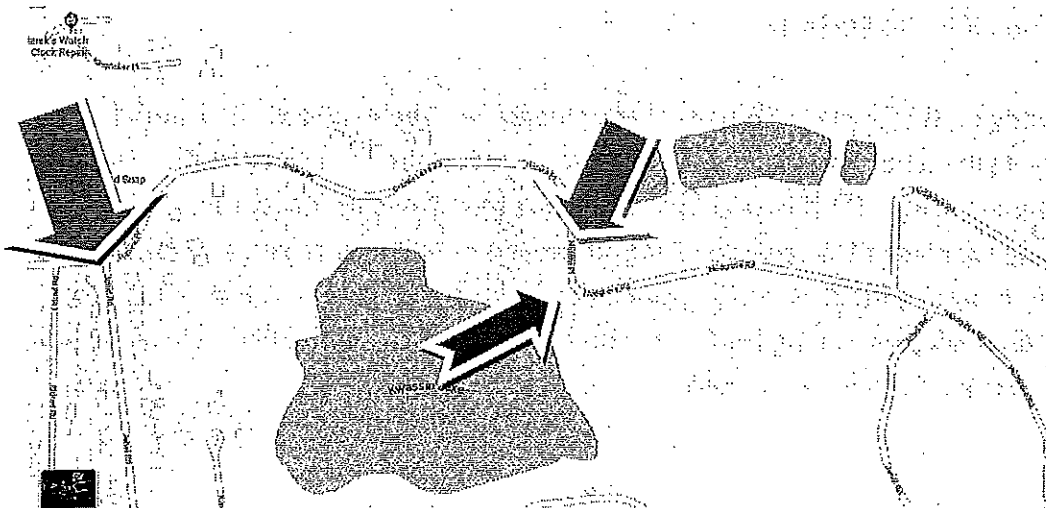
Request in the letter

Speed limit between Johel Road to Hudgrove Road reduced to 30km/hr. Road between two fat arrows arrows.

Corner of Natara Pl and Hudgrove Rd reduced to 10 km/hr. Area of thinnest arrow

Wildlife crossing signs placed along route. Watch for Wildlife sign posted at the start of Grants Lake Rd.

Hazard signs with arrow to be posted at either side of the junction.



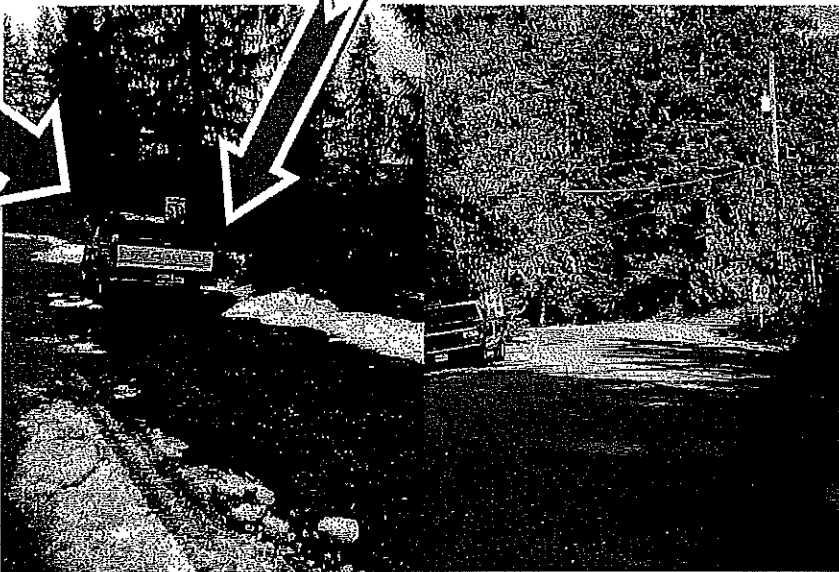
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Request in follow-up emails

Concrete barrier on the corner of Hudgrove road to prevent vehicles from slipping off the road and damaging a culvert.

Discussion

On Grants lake Rd, there are no visible posted speed limit signs, but it is assumed that the speed limit is 50km/hr. The exception is one 50km/hr sign (right on Hudgrove that is 5 meters in front of the 30km/hr turn sign (left). The 50km/hr sign needs to be removed.



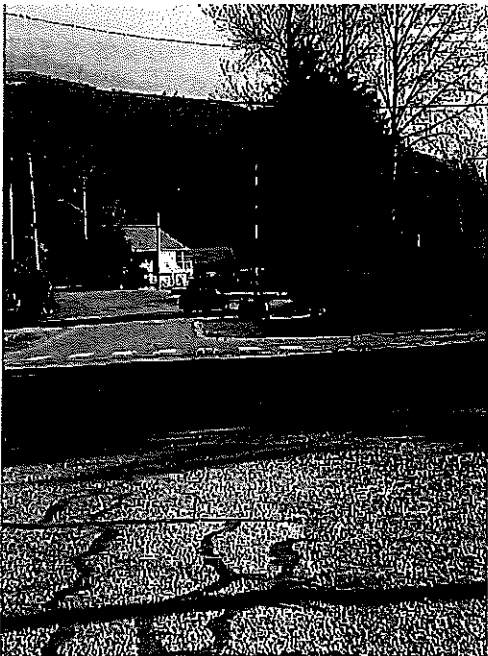
The driving on Grants Lake road, a driver would have a hard time maintaining 50km/hr. The natural safe speed for a vehicle would be 30-40km/hr.

There is not a lot of visibility on the corner of Natara Pl and Hudgrove. The height of the trees also does not allow a lot of sunlight to be shown in the area and it is hard to see oncoming traffic. There are no reflective signs on the corner. Driving over 30km/hr away from town on the corner of Hudgrove, the grade of the road increases and travelling at a speed of 30km/hr is safe and easy to do. Driving into town on Hudgrove Road, with the grade decreasing on the turn, a vehicle can pick up speed by gravity and serve into oncoming traffic to maintain control. Given the trees block the line of sight, there is no warning for oncoming traffic.

Status

The 50km/hr sign has been replaced by a 40km/hr sign and relocated on the other side of the road and facing the opposite direction. A second 40km/hr sign was placed on the entrance of Grants Lake road facing the direction that leads out of town. Right turn arrow signs will be placed on the corner of Hudgrove Road in the direction of town.

The Town can place wildlife hazard signs supplied by resident.



New 40 km/hr sign on Grants Lake Rd.

A handwritten signature in black ink, appearing to be 'Kam So', written over a horizontal line.

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