



**INFRASTRUCTURE COMMITTEE MEETING
OF THE VILLAGE OF LIONS BAY
HELD ON TUESDAY, 11 February, 2025 AT 6:00 PM
COUNCIL CHAMBERS, 400 CENTRE ROAD, LIONS BAY
AND VIA ZOOM VIDEO CONFERENCE**

MINUTES

In Attendance : Councillor Neville Abbott (NTA) – Chair
 Mayor Ken Berry (KB)
 Councillor Michael Broughton (MB)
 Committee Member Anthony Greville (ASG) - via Zoom
 Committee Member Hilary Monfared (HM) - via Zoom
 Committee Member Brian Ulrich (BU)

Absent with regrets :

Absent : Councillor Jaime Cunliffe (JC)
 Committee Member Mark Ignas (MI)

Staff : Director of Operations Karl Buhr (DOO)

1. Call to Order

The Chair called the Infrastructure Committee Meeting to order at 18:05 pm.

2. Appointment of Recorder

ASG was appointed recorder this meeting.

3. Approval of the Agenda

Moved/Seconded

THAT the agenda of 11 February, 2025, Infrastructure Committee be adopted as circulated.

Amendment

CARRIED.

4. Public Questions & Comments

No public comments or delegation were forthcoming.

5. Approval of Minutes

- A. Infrastructure Committee Meeting Minutes – 14 January, 2025
THAT the Infrastructure Committee Meeting Minutes of January 14, 2025 be approved as amended.

Amendment - Under Business Arising, the DOO clarified that it was the Ministry of Transportation and Transit (MOTT) Inspector who offered an opinion of bridge supports corrosion.

CARRIED.

6. Business Arising from the Minutes

Portable Potable Water Treatment Plant – To facilitate a presentation to the UBCM in September, the following assignments were agreed;

NTA – to contact emergency management and First Nations associations.

ASG – to contact municipal water treatment associations throughout the Province.

MI – to contact the ISC and individual Circuit Rider groups/associations.

Submissions to the UBCM are due in May, meaning feedback is required by April for collation during the May I.C. meeting.

Universal Water Metering – The DOO reported that doppler functionality to isolate water leaks was outside the scope of the recent grant application. The DOO further reported 47 grant applications had been received, with 17 shortlisted. Lions Bay has been asked to modify our application, and the Village has responded by lowering the grant request by \$1 M, to \$3.8 M, with an associated reduction in installed meter costs from \$8,200 to \$6,200 per unit. There have been some positive signs in regards to individual residence metering, less positive for zone metering upgrading.

pH Adjustment of the Potable Water Supply – A possible option for the pH enhancement of the treated potable water supply using well water was introduced. A decision from Council regarding the 2025 capital expense budget has not yet been made in regards to chemical enhancement options. See below for further details.

Bridge End Corrosion Analysis – The DOO reported that the anticipated bridge end inspections had been delayed due to extreme weather conditions. This task will now be a mid – late spring exercise.

7. Unfinished Business

23112 – While no action has been taken, this action item must be kept open, and should be addressed after the 2025/6 committee mandate becomes clearer.

23117 – No immediate action is required, as the PWD has gained some in-house expertise and is modifying the SCADA system continually. However, a review will be necessary, and this action step should be kept open.

24081 – This action step remains on-going; note a change has been made to replace “*water quality data*” with “*water supply data*”.

24112 – As reported previously, Lions Bay missed the 2024 grant deadline for assistance in preparing an Active Transportation Plan, however, it is anticipated another opportunity will arise in September, 2025. The I.C. will assist Staff in preparing a grant application when appropriate.

24113 – Some gains, and further protocols have been achieved/become necessary, with the installation of UVT analyzers on the raw water in-take lines. ASG to contact DOO to pursue this action step further.

24114 – An on-going project – see detailed notes below.

25011 – Contact with emergency management groups, First Nations and interior/Island water supply associations, plus ISC Circuit Rider providers is necessary. See above.

8. New Business

A. Recent Snow Pack Announcement.

January dry weather and February snow melt has become somewhat concerning – although there is still 3 months of winter remaining. A discussion was held with respect to the current snow pack level announcements and the associated forecast for potential water shortages in 2025. See notes and graph below.

B. 2025/6 I.C. Mandate.

NTA reported on the general discussions at the Council table with respect to funding for capital infrastructure projects and operational improvements. No decisions have been made at this time, so a focused mandate for 2025/6 is still unknown.

C. Infrastructure Master Plan up-date.

The DOO indicated the Infrastructure Master Plan (IMP) is considered a living document, and is used daily by the PWD. However, the IMP is now 9 years old, and much has changed within the Village. Refreshing and up-dating the IMP would be a useful exercise. See below for further comment.

D. Training Opportunities.

The DOO indicated with some new technologies and operating protocols being put in place, some “in-house” training, utilizing the expertise available within the I.C., and possibly also within the larger Village community, would be appropriate. See below.

9. Public Questions & Comments

No public comments or delegation were forthcoming.

10. Adjournment

Moved/Seconded

THAT the Infrastructure Committee Meeting be adjourned.

CARRIED

The meeting adjourned at 19:46.

11. Next Meeting

Next meeting of the Infrastructure Committee was scheduled for 11 March 2025.



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Discussion and Background Notes

Contribution by : Anthony Greville (ASG) - via Zoom

Also in attendance : Councillor Neville Abbott (NTA) – Chair
Mayor Ken Berry (KB)
Councillor Michael Broughton (MB)
Committee Member Hilary Monfared (HM) – via Zoom
Committee Member Brian Ulrich (BU)

Absent with regrets :

Absent : Councillor Jaime Cunliffe (JC)
Committee Member Mark Ignas (MI)

Staff : Director of Operations Karl Buhr

Discussion and Background Notes.

NOTES:

Long Term Water Supply Strategy spreadsheet – BU presented a revised Long Term Water Supply Strategy spreadsheet that included CAPEX and OPEX columns, and a weighting for full water supply or simply a peak shaving option.

There was further discussion as to which parameter might take importance/precedence over a different parameter within the matrix. It was determined that each option criteria needed to be given a weighting based on its relative importance and influence on the final recommendation. Each committee member was asked to submit their thoughts before the next meeting.

Identifier	Description	Responsible	Status
23112	Convene a February I.C. Round Table Meeting to focus on a 10 and 20 year horizon plan to identify the new and replacement infrastructure requirements and related expenses.	NTA/All	
23117	BU will review the SCADA system on behalf of the I.C. and work with the PWM to up-grade the hardware and software. A Requirements Document is anticipated at mid 2024.	BU/PWM	Partial
23121	HM to assist the PWM in preparing REQ/RFP documentation for estimate and work on water main replacement Creekview Place and for the estimate for Highview Place. HM to assist the PWM and CAO in reviewing submissions once received.	HM/PWM	
24073	In light of discussion at the 03 July Finance and Audit Committee Meeting, the documents relating to asset management and asset replacement funding deficiencies need to be up-dated and presented to the F & A C, the CAO and staff and the Village as a whole. This should be an early Fall project for this group.	All	
24081	BU to set up and manage a Google Drive (or similar) to manage the water supply data as it is collected.	BU	
24112	The I.C. should provide direction and support to Staff in order for the Village to prepare an Active Transport Plan. Coordinating same with the Climate Action Committee should be evaluated.	HM	
24113	ASG to work with the DOO and VCH to revise the ENSuRe trigger points and guidelines recommendations.	DOO/ASG	
24114	BU to further up-date the Long Term Water Supply Strategy spreadsheet to separate out CAPX and OPX costs for each raw water source/treatment option to assist in the evaluation process.	BU	
25011	NTA, ASG and MI to contact to contact various groups/associations they believe may support Lions Bay in advocating/petitioning higher levels of Governments to inventory portable potable WTP to use should raw water supplies become contaminated as a consequence of forest fires in their watersheds.	NTA/ASG/MI	

pH Adjustment to the potable water supply – It has been accepted and agreed that pH adjustment of the treated potable water supply is necessary, so the question remains as how best to achieve this operational requirement. Chemical enhancement of pH is the most practiced option, and there is currently a proposal before Council to approve funding for such. No decision has been made on this request from Staff. There MIGHT be a second option; should local well waters contain alkalinity in sufficient concentrations, some blending ratio of raw water sources could achieve the alkalinity and pH loadings necessary to mitigate treated water corrosion potential without adding chemicals.

Potential benefits of this approach include elimination of hazardous chemicals, increased raw water supply in times of low flows conditions in the creeks, and as an emergency source of water to the Village in times of an extended ENSuRe interruption in creeks water supply. Well and spring water could not replace the current demand volumes, but they could provide enough water for “the necessities of life” such as cooking, hand dishwashing, teeth cleaning and sewage (showers, laundry, dishwashers etc. would all be forbidden during such emergencies).

Any well water supply would almost certainly have to be fed (pumped or gravity flow) to the existing WTPs for disinfection. Even though many groundwater sources do not require disinfection, any aquifers in Lions Bay that might be close to the many septic fields, would have to be governed by either GARP (Groundwater at Risk of containing Pathogens) or GWUDI (Ground Water Under the Direct Influence of Surface Water) assessments.

The potential risk factors include the cost of drilling through some significant hard rock (previous reports suggest 75 – 100 m deep) to find water, and such test wells are expensive. Presently, the chemical loadings in any groundwater source are unknown; well water may not carry the required alkalinity and could easily be “acid rock drainage”. Similarly, and more likely, any groundwater may contain unacceptable concentrations of iron, manganese or other minerals which will require significant treatment to remove. Such water treatment plants are expensive, and would defeat the objective.

So, there is risk in terms of monies expended, especially if the water, when found, is proven to be unsuitable for the project. The meeting consensus was that the current recommendation for chemical enhancement of alkalinity/pH will stand, as we do not want to introduce uncertainty to the budgeting process.

However, the Village is looking at the options to install a heat pump for the community centre heating, with both air/air and geothermal heat sources being considered. If a geothermal option is successful, then a geothermal well will be drilled, and water samples for analyses can be drawn at that time to assist in informed decision making. Lots of potential benefits, and lots of unknowns at this time.

Infrastructure Master Plan up-date – The IMP is 9 years old (April 2016) and requires some freshening up. It is a document that informs a lot of the “soft work” the PWD does on a regular basis. Many of the projects have been completed, and are no longer required to be a part of the IMP. Other projects have changed in scope and/or importance.

Changes to the disinfection protocols, including an increased number of higher intensity UV lamps, UVT monitoring, recalibration of the UVT set point to 80%, in-line chlorine analyzers, a recalculation of the water storage tanks Baffle Factors, will mean the IMP will need to be up-dated.

Corrosion in some water distribution main lines, and possibly corrosion on the bridge deck supports will also alter some of the priorities. A lack of funding for some significant drainage projects is concerning, and climate change and forest fire potential is redirecting thoughts and priorities around raw water supplies.

Government mandated densification is a new factor in Village business, and while controversial, may provide additional monies in the short term to fund projects. Long term impacts on infrastructure, including possible costs to accommodate increased populations, will have to be evaluated, regardless of whether densification is due to infill or new builds.

Current projects looking for approval include CUBB 3 and pH adjustment of the potable water supply. Should one or both be approved for 2025, the DOO has requested I.C. input in the planning, commissioning, and early operational stages of the projects.

Training Opportunities – Training opportunities for PWD staff have presented themselves in several fields of their current work including;

pH Enhancement – theory, goals, handling chemicals, operational parameters.

Chlorine Residual – theory, water quality influence, Ct management protocols, using the new in-line Cl_2 analyzers.

Water storage – UVT, chlorine residual and Ct, revised B.F. calculations, water residence time, summer and winter level control.

Ultra-violet radiation disinfection – The UV disinfection protocols have been upgraded and adjusted in recent weeks. One UVT analyser is in place, with a second on order. In combination with the chlorine analyzers, a new level of water disinfection sophistication is achievable. One significant change has been setting the UV reactors to a standard 80% UVT rather than 90%. This will have an impact on the volume and frequency of raw water that will be rejected from the in-takes, above the UV reactors, under any ENSuRe protocols. Once the ENSuRe protocols are fully in place, neither water treatment plant will be able to accept any “off spec” water that the UV disinfection lamps cannot properly disinfect.

Working with the VCH inspector, the intensity of the UV radiation will have to be increased from 26 mJ/cm^2 up to the current and standard 39 mJ/cm^2 . There is a need to pen a notice to VCH addressing the requirement to run with 4 UV lamps at all times, rather than simply 2 lamps.

As noted, there is a request from the PWD for the I.C. committee to provide assistance in preparing the draft ENSuRe protocol, and in rewriting the SOP for disinfection now there is improved equipment and knowledge to work with.

Recent Snow Pack Announcement -January dry weather and February snow melt has become somewhat concerning – although there is still 3 months of winter remaining. Palisade Lake Snow Monitoring Station was at 79% of Normal on 15 December, and 56% of Normal on 15 January. However, recent warmer weather and rain, has reduced the snow pack to 17% of Normal for 08 February and 12% of Normal for 15 February (and 13% of Normal for 01 March). See graph below.

The DOO is fully aware of this data, and suggested that rigorous demand side water management and the ASAP supply will be required yet again in 2025.

Palisade Lake Snow Weather Station – 05 March, 2025.

Blue line (at the bottom!) is 2024/5, green line is 2023/4.

