LIONS BAY INFRASTRUCTURE COMMITTEE

MINUTES OF MEETING OF THURSDAY, 23 JANUARY 2020 AT 7:00 PM IN COUNCIL CHAMBERS, 400 CENTER ROAD, LIONS BAY BC

Appointed Committee members in attendance:

Neville Abbott – elected Councillor
Fred Bain – elected Councillor (Chair)
Norm Barmeier - elected Councillor
Karl Buhr, resident –non-elected member
Tony Greville, resident –non-elected member
Ron McLaughlin -- elected Mayor
Brian Ulrich, resident –non-elected member

Staff members in attendance:

Naizam Jaffer – Lions Bay Public Works Manager

Members of the public:

Marek Sredski (arrived 7:20 p.m. departed approx. 8:30 p.m.)
David Shore (arrived 7:15 p.m. departed approx. 8:30 p.m.)

1) **Call to Order**: the Chair called the meeting to order at 7:04 pm.

2) **Appointment of Recorder**: reluctant Committee member Karl Buhr was appointed Recorder.

3) **Approval of the Agenda** upon insertion of two further items:
   a) Lions Bay Ave. stairs
   b) Defer Item 7C (corrosion control) to after discussion of drainage report

4) **Public Questions & Comments**: deferred to New Business.

5) **Approval of Minutes of Previous Meetings**: Minutes of the 02 December 2019 meeting (noting the 2010 typo) were approved as an accurate with the following amendments:
   a) 2nd sentence of 2nd full para on p.2 (Unfinished Business – EV Charging Station) is not accurate but in any case is better stated at this stage of the project as "The maintenance fees are negotiable."

   b) Similarly the last sentence of the para is too specific for what's known about costs today, and should simply be struck.

   c) Similarly, the last sentence of the next para is too specific for what's known about costs today and would more accurately reflect discussion at "Rate options were discussed."

6) **Business Arising from the Minutes**: Neville asked re. bid options for the third PRV, whether the municipality performed detail design or only specified and relied on the vendor.

7) **Unfinished Business**
   a) Norm reported that BC Hydro has deemed power supply feasible, that a surveyor for the site and selected design (to prepare for federal grant) has been appointed, and that a business case has been (will be?) requested from ChargePoint.
   b) Nai reported continual mechanical issues with the WWTP (a broken "serpentine coupler" causing the second cell to cease rotating). The Village received 4 expressions of interest to the RFP, with 2 requesting a bid extension after a site visit. Bid closes Feb. 3 4 p.m.
   c) Deferred to later
   d) PRV: 5 vendors for 3 PRVs based on AECOM design
   e) Drainage: ISL Engineering and Land Services' draft final report dated Jan. 10, 2020, (ISL) to assessing options for local drainage, was reviewed by the Committee. Previous versions of the report had been reviewed by the Committee at earlier meetings, and additional work requested. The final report finds that sections of open channel ditch are undersized for a 10-year rainfall event, and that covered culverts under driveways and roadways are all in poor condition and often undersized. The report assessed three options:
      - Option 1 – Modify ditch cross section and upsize the culverts below 270 Oceanview Road, estimated at $733,000 on a 20 percent contingency.
      - Option 2 – Reinstall a culvert in the easement for the purpose between 260 and 270 Oceanview Road, in order to re-divert flow from above 270 Oceanview into Rundle Creek, a $358,000 project at a 30 percent contingency. The report pointed out that ditches and culverts below 270 would still require remediation for lower flowrates, an additional $314,000 project expenditure including a 20 percent contingency, for a total cost of $671,000.
      - Option 3 – Divert 90 percent of the 10-year flow between 260 and 270 Oceanview and direct the remaining 10 percent of the flow downstream to a remediated culvert to Rundle Creek, and install resized ditches and culverts below, a $769,000 project at 30 percent contingency[1].

      The Committee received input from the long-term owners of the properties on either side of the drainage culvert between 260 and 270 Oceanview Rd. PWM Nai Jaffer outlined that many municipalities experience watercourses that are undersized with deteriorating culverts. Poorly constructed roads and the use of corrugated metal culverts exacerbate the drainage issues faced in these communities and Lions Bay. Ditches are typically intended to be permeable and planted with vegetation to slow

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1 Option 2 diverts 100 % of the 10-year flows from above 270 across the easement to Rundle. The drainage system below 270 would be revamped to manage the drainage generated from the lower portion of Oceanview. Option 3 diverts 90% of the 10-year flows from above 270 to Rundle and then diverts the remaining 10% down Oceanview. The drainage system below Oceanview is revamped and some culverts resized to match the 10% and balance of drainage generated from below 270.

stormwater in order to aid exfiltration into the ground and to filter out road contaminants. In Lions Bay's case, the opposite is required—ideally all residential surface stormwater must be directed to one of several creek outfalls.

Of the options presented, Option 1 is only viable one, especially if its cost could be reduced by reinstating ditches in a 165-meter section currently costed for culvert replacement (a $247,500 item). Options 2 and 3 both involve reinstating the historic culvert between 260 and 270 Oceanview, and that option should be deemed too high risk:

- The alignment lies directly over two high pressure water mains, which would need to remain operational during construction
- The $358,000s cost estimate for the culvert between 260 and 270 Oceanview is considered to be a rough estimate, and, the Committee felt based on local knowledge, likely quite low.
- The easement is 20 feet wide. When the culvert was originally constructed there was no house on the property. Today, there is a retaining wall and a house that will make any construction much more impactful and complex.
- Access for ongoing maintenance would be "an impossible nightmare."

Several political considerations must be resolved by Council before the IC can opine further:

- There is no certainty that fixing drainage as outlined above would address the problem of groundwater entering onto private properties, which the Committee speculated are as much due to subsurface groundwater as to poor surface drainage. If it is in fact these issues that Council wishes to address, a costly long-term hydrology study would be required.
- PWM Nai outlined that solving the surface stormwater issues along Oceanview are a key first step in the eventual remediation of the road and that longer term remediation of the road would include watermain and road reconstruction.
- The ISL Oceanview Drainage Report considered stormwater flows for the entire catchment; however, it did not address the condition or size of the culverts or ditches above 270 Oceanview Road. It is likely that the same drainage concerns identified below 270 Oceanview Road are present on the upper section of this roadway.
- The report, which is based upon common engineering principles, modelled the stormwater catchment for Oceanview Road using flow modelling software. This incorporated rainfall and runoff from permeable (forest, lawns, gardens, etc.) and impermeable (rooftops, driveways, pavement, etc.) surfaces to determine the 10, 25, and 100-year flows through the drainage system. Ground truthing of these flows is not practical and would require a long-term hydrological study.
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Bottom line: the Committee has no recommendation at this point.

f) Corrosion control: After discussion, Nai will obtain cost estimates for various technical options to control pH and alkalinity of Lions Bay's water.

8) **New Business**: Committee member and Mayor Ron expressed Council's thanks to Committee's technical members for their involvement. Valued member Jim Murtrie's untimely passing was regretted a lot. Possible replacement might focus on a Geotech or Civil Engineer. For the record, pertinent qualifications and experience of technical members are:
    - Neville Abbott – Civil and Structural Engineering
    - Norm Barmeier – Biosystems Engineering, P. Eng
    - Karl Buhr – Chemical Engineering
    - Tony Greville – Chemistry
    - Brian Ulrich – Mechanical and Electrical Engineering, P.Eng.

9) **Public Questions and Comments**: none

10) **Next Meeting Dates**: Thursday 20 February 2020. Further meeting dates were mooted as March 19, April 23, May 21 and Jun 25, 2020.

11) **Adjournment**: 9:41 pm.