



File: 16039

August 6, 2017

Lower Nipit Improvement District
Site 26A Comp 1 RR# 1
Kaleden, BC V0H 1K0

Attention: Coral Brown, Chair, LNID

email: coralbrown2@gmail.com

Re: Proposed scope of work for preparing Twin Lakes Water Management Plan Framework

The following proposed scope of work has been prepared for your review based on discussions with the LNID Board and input from the RDOS.

1. Context

The Letters Patent for the LNID dated September 30, 1965, state "The objectives of the improvement district shall be the acquisition, maintenance, and operation of works for land improvement purposes and all matters incidental thereto." The Letters Patent also specify the properties that form the improvement district that include some but not all the properties near the Twin Lakes. The LNID's authorities are limited and it does not have authority regarding water demand and the area is experiencing increasing demand for water due to new developments.

The LNID holds water licenses C041537 (dated January 2, 1974) and C060398 (dated July 23, 1984) that authorize the district to divert water from lower Twin Lake and to divert and store water from Horn Creek. Water license C041537 authorizes the LNID to divert water from lower Twin Lake into Horn Creek *as directed by the Engineer of the Fairview Water District*. Water license C060398 authorizes the district to divert and store up to 200 acre-feet of water from Horn Creek in a reservoir on L 1469s, SDYD. It should be noted that the reference in water license C041537 to "Horn Creek" is incorrect. The license authorizes the diversion of water from lower Twin Lake into Park Rill Creek.

The district currently has an electric pump in lower Twin Lake that can pump water to the east through DL 280 where it will drain into Park Rill Creek. The pump is operated as directed by staff from the FLNRORD office in Penticton. The Horn Creek diversion and reservoir authorized under water license C060398 was used from 1996-1998 but the reservoir was never constructed. There is now a residence on this property making the future use of this land for a reservoir unlikely.

Since the Letters Patent were issued in 1965 and the water licenses in 1974 and 1984, there has been the development of several residences as well as other low lying infrastructure on lower Twin Lake that are situated near the lake and are subject to flooding when lake levels rise above a certain level. There has also been development in the Park Rill Creek watershed that is subject to flooding from Park Rill Creek on occasion which limits the timing and volume of water that can be diverted from Twin Lakes into Park Rill Creek. Also the ranch lands near upper Twin Lake that were formerly irrigated using water from upper Twin Lake are now owned by The Nature Trust of BC that currently is not irrigating its lands.

The water licenses held by The Nature Trust authorize it to use up to ~55 acre-feet of water from upper Twin Lake for irrigation and it holds storage licenses for 320 acre-feet on upper Twin Lake as well 52 acre-feet from

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Horn Creek The Trust is also responsible for the dam on upper Twin Lake for the storage of water authorized under its water licenses. The provincial Dam Safety program is enforcing the conditions under the Dam Safety Regulation for all storage dams in BC including the dam on upper Twin Lake that results in increased costs by the Trust. Since the Trust is not using its irrigation licenses it has indicated that it is reviewing how it may proceed with the dam if it is not required by the Trust.

There has never been a formal water management plan prepared for Twin Lakes. The district has used the report *Preliminary Report on Control of Surface Levels on Twin (Nipit) Lakes* prepared by the Department of Lands, Forests, and Water Resources, Water Rights Branch in February 1973, aka the Botham Report, as a guide for managing the levels on the lakes. A comprehensive, approved plan is required to address all matters regarding water supply and demand in the Twin Lakes area.

The flooding that occurred in 2017 and again in 2018 around lower Twin Lake resulted in significant impacts to those dwellings and infrastructure near the lake that were subject to flooding as well as considerable costs for emergency pumping that had to be installed by the RDOS EOC with funding from EMBC. Following the 2018 flooding the provincial government has indicated that it wants permanent solutions for the flooding issues such as those around lower Twin Lake to protect public safety. The RDOS EOC has received funding from EMBC to assess the recent flooding issues in the Twin Lakes area and recommend options for a permanent solution.

Residents in the Twin Lakes area depend upon either surface water or groundwater as their water supply. In addition to periods of flooding there have also been extended periods of below normal precipitation resulting in low lake levels and lower groundwater levels. The owner of the Twin Lakes Golf Course has submitted a residential development proposal to the RDOS for approval that proposes to use groundwater as the source of supply. Considerable effort by consultants has been put to better understanding the aquifer(s) in the Twin Lakes area and what a sustainable demand is. The conclusions of the studies have been varied and there is no common agreement on what is a sustainable demand.

In summary, the current water issues in the Twin Lakes area include; water quantity - floods, droughts, surface water management, groundwater management, and water quality – protection of the surface and groundwater sources from contamination from residential sewage systems. A water management plan must also consider the impacts of a changing climate.

2. Proposed Scope of Work

Due to the changes in land use in the Twin Lakes area and in the Park Rill Creek watershed that have a direct impact on how water is managed in the lakes, developing a water management plan based on the current objectives for the LNID and the authorities under the water licenses may not be a practical or useful approach. Therefore the following scope of work is proposed.

Phase 1 for a Water Management Plan for Twin Lakes

Phase 1 of a Water Management Plan for Twin Lakes would complete a review of the current mandate of the LNID as stated in the 1965 Letters Patent and the authorities stated in the district's water licenses, in the context of the current water issues in the Twin Lakes area. The outcome of this review would be to determine if the existing authorities for managing water in the Twin Lakes area is still appropriate, or, have conditions changed significantly such that the existing structure is no longer appropriate to address the current and future water management issues.

If it is determined that the existing authorities are appropriate to address the current water issues, then Phase 2 would be to develop a Water Management Plan to formalize the implementation of the terms in the Letters Patent and the water licenses.

If it is determined that the conditions/issues have changed and that existing authorities in the LNID Letters

Patent and its water licenses will not effectively address the current conditions/issues, then a decision would be required by the LNID, the RDOS, Municipal Affairs & Housing and FLNRORD as to a new approach to address the water issues. Phase 2 would be the preparation of an interim water management plan for Twin Lakes, based on the current authorities that could be used during the period of transition.

3. Deliverables

Phase 1

- 3.1 A report summarizing the results of the Phase 1 review and the supporting information regarding the reasons why either the existing authorities are adequate for managing water in Twin Lakes, or, why the existing authorities are no longer adequate for managing water in Twin Lakes.
- 3.2 A summary of the current water management issues in the Twin Lakes area and the area that could be affected by the proposed new water management plan.

Phase 2

- 3.3 An interim water management plan for Twin Lakes based on the current authorities that could be used during the period of transition.

4. Estimated Cost to complete Phases 1 and 2

The estimated cost to complete Phases 1 and 2 and provide the deliverables is \$20,000.00.

5. Timeline

The estimated time to complete the proposed work would be three months from the date that the authority to proceed was received.

Sincerely,



D.A. Dobson, PEng