DEWDNEY AREA IMPROVEMENT DISTRICT

2015 October 19

British Columbia Utilities Commission
Sixth Floor. 900 Howe Street
Vancouver, BC V6Z 2N3
Attention: Ms. Erica Hamilton, Commission Secretary

Dear Sirs/Mesdames;

Re: **BC Hydro (BCH) 2015 Rate Design Application (RDA); Appendix B to order G-156-15**

Further to my online registration of the Dewdney Area Improvement District (DAID) as an intervenor and to my October 16 telecons with Erica Hamilton, DAID hereby provides its initial response to the Commission's invitation for submissions.

1. Background

The Dewdney Area Improvement District (DAID) operates under BC letters patent to provide dyking and flood prevention within the Hatzic Valley Flood Plain by sporadically operating up to five 350 HP electric pumps as required to prevent flooding during the freshet and heavy winter rainfall events.

DAID's revenue is derived from diking tax from approximately 500 properties with a total assessed value of $230,577,331 in 2013. The 82 square Km watershed drains into Hatzic Lake, then into the Fraser River when the Fraser is lower than Hatzic Lake. Four 3.3 square-metre flap gates set into Dewdney Dike prevent Fraser water from backfilling and flooding Hatzic Lake when the Fraser is high. Under those conditions, runoff and artesian water must be pumped from Hatzic Lake into the Fraser River to prevent flooding. After the 1948 floods, two 350 HP pumps were installed for flood prevention. Geotechnical constraints prevent them from operating below 2.4 mASL. Since flooding begins at 2.8 mASL, the pumps cannot pump down the lake in advance of anticipated heavy rainfall, and so have proven to be inadequate. Since 1949, there have been 8 major freshet floods and 8 major winter floods, defined as exceeding 3 mASL at the pump intakes, at a substantial cost to the Emergency Management BC. Losses of up to $2,229,500 annually in 2006 dollars have been reported.

With matching BC and federal funding after the 2003 flood, to supplement the two existing 1949 pumps, DAID designed and built North America's first major fish-friendly pumping station, powered by three 350 HP motors. It was commissioned ca 2014 March 13.

2. Electrical supply

The 1949 pumping station was supplied by DAID SRoW with transformer to supply 480/277 volts to the pumps and secondary metering 120/240 service for light and heat

Curiously, BCH billed DAID for electricity demand and consumption even while the overhead power lines had been removed during construction.

DAID installed a 1000 KVA 25 KV:600/347 volt transformer to supply the new pumphouse and a 750 KVA 25KV/480/277 volt transformer to supply the 1949 pumps. BCH insistence on primary metering has lead to exorbitant charges under Rate Schedule LGS RS 1610.

3. Pumping capacity and cost of electricity

The combined pumping capacity of 19 CMS is adequate to prevent all foreseeable floods, particularly since the new pumps can operate down to 0.7 mASL which permits Hatzic Lake to be lowered in advance of heavy rainfall events, which have occurred historically on average once every four years. Between 2014 November 1 and 2015 February 28, there were four such events, which is unprecedented. The growing super el Niño may cause rainfall surpassing even that of last winter, which would drastically increase last season's exorbitant $124,000 cost of electricity to power the pumps, up from $40,000 the previous year. This costs $248 per taxpayer, up from $80 the previous year. To say that they are disgruntled is an understatement.

4. Freshet Load characteristics during the freshet

When freshet flow raises the Fraser stage above that of Hatzic Lake, watershed runoff and artesian water must be pumped from Hatzic Lake into the Fraser River to prevent flooding. At least one pump is run during the freshet, with others being run as required. Because heavy rainfall is unlikely, the three new pumps are likely to be adequate. There is some leeway to start and stop the pumps at times convenient to BCH, such as running during Low Load Hours (LLH).

5. Load characteristics during winter flooding

Winter flooding is less predictable that freshet flooding. It occurs when rainfall in the Fraser River watershed raises the Fraser stage above that of Hatzic Lake, thereby closing the above flap gates which requires pumping. Under these conditions, the duration of pumping using between one and five pumps can vary between two days and two weeks.

6. Reduced cost of electricity to the Province

Because the additional pumping capacity reduces EMBC costs and BCH is a crown corporation, fairness requires that BCH offset the increased cost of electricity that reduces costs to the Province. Otherwise constitute a tax on flood prevention.

7. Freshet

The fact that generating capacity soars during the freshet to the point where reservoir water is spilled means that electricity can be provided to DAID free of charge without cost to BCH.

8. Low Load Hours (LLH)

To benefit BCH, DAID can pump during LLH, but this will require more pumps running only 8 hours per day instead of 24 hours per day, i.e. three pumps instead of one pump and all five pumps instead of

two, but this will quintuple the demand charge. For DAID assist BCH in this way this requires that the demand charge to be made linear rather than progressive, or, preferably, eliminated.

9. Minimum charge

Because five pumps were run for a few days last winter, under LGS Conservation Rate 1611, DAID is now charged $5552 per month even when the Demand is only 7 KW (There is no charge below 35 KW) and only 4,800 KWh of energy is used per month as shown in Appendix A below in red. This corresponds to ~ one dollar per KWh, or an order of magnitude higher than the normal rate. According to the tariff, this minimum will be charged for a year after all five pumps were run for only a few days. This is prohibitive.

BCH's LGS Conservation Rate 1611 is completely inappropriate for sporadic usage as described above.

The minimum charge of 50% of the highest demand charge in a 12 month period must be eliminated to make flood prevention affordable.

The table in Appendix A shows demand and consumption since power was reconnected with primary metering to supply the new pumping station as well as the 1949 pumps.

10. Request

For the above reasons, DAID hereby requests that a fair Rate Schedule (RS) specifically for prevention of sporadic flooding be established. This is applicable to pumping for flood prevention throughout BC.

Vic Liu PEng of Surrey's Dept of Engineering said "Irrigation is only charged for certain months, so why not flood control?"

11. Deadline Extension

Despite disputing the current inequity and BCH's frequent erroneously charges above the tariff, BCH lacked the courtesy to inform DAID of the 2015 RDA, so I didn't discover it until October 14, when I applied as intervenor. It is customary and reasonable for proponents to notify stakeholders well in advance. There was no notice of the preparatory workshops. Furthermore, the 24 day comment period to review the obscure 4902 page RDA is inadequate to say the least.

As BCH's next Rate Design Application will likely not be filed before 2020 (and possibly much later) it is critical that we present this evidence fully so that, despite government interference, the Commission can direct BCH to implement equitable measures in the near future.

I therefore hereby join many other intervenors in requesting an extension to review this lengthy application and to submit supplementary evidence and strongly suggest that BCUC require BCH to adequately notify all customers and other stakeholders of future reviews.

Since privatization, BCH has lost the high esteem which it previously deserved and is fostering a well-deserved reputation as a pariah. I urge BCUC to reverse this tragic trend.

Respectfully submitted,

C. Bruce Edwards M.A.Sc.
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Appendix A: ANALYSIS OF ELECTRICITY COST FOR FLOOD PREVENTION

2014										
Billing period end	14-03-25	14-04-25	14-05-26	14-06-17	14-07-18	14-08-18	14-09-18	14-10-17	14-11-18	14-12-18
Demand; KW registered	655	655	655	426	208	230	6	7	1,220	1,081
Energy: KWh used	34,800	42,000	43,200	115,200	78,000	45,600	3,600	4,800	258,000	196,800
Pumps run (Maximum)	3	3	3	2	1	1	0	0	5	4
Demand cost	$4,409	-	$5,622	$2,418	$1,164	$1,393	$0	$0	$11,243	$9,860
Energy cost	$2,239	-	$1,344	$4,581	$2,534	$1,726	$2,425	$2,425	$13,314	$10,573
		-								
Part 1 @$0.1010/KWh		-								$0
Part 1 @$0.0860/KWh		-								
Part 2 @$0.0971/KWh		-								$0
Part 2 @$0.1010/KWh		-								$1,495
Part 2 @$0.0486/KWh		-								$9,078
Minimum charge										
Total energy cost	$2,239	-	$1,344	$4,581	$2,534	$1,726	$2,425	$2,425	$13,314	$10,573
Cost $/KWh	$0.06	-	$0.03	$0.04	$0.03	$0.04	$0.67	$0.51	$0.05	$0.05
Demand over 35 KW		-								$597
Demand over 150 KW		-								$9,263
Demand $/KW	$6.73	-	$8.58	$5.68	$5.60	$6.06	$0.00	$0.00	$9.22	$9.12
$(Energy+Demand)/KWh	$0.19	-	$0.16	$0.06	$0.05	$0.07	$0.67	$0.51	$0.10	$0.10
2015										
Billing period end	15-01-20	15-02-19	15-03-20	15-03-31	15-04-22	15-05-21	15-06-19	15-07-21	15-08-20	15-09-21
Demand; KW registered	684	684	8	-	523	8	203	8	6	6
Energy: KWh used	132,000	72,000	6,000	-	76,800	6,000	46,800	6,000	6,000	4,800
Pumps run (Maximum)	3	3	0	-	3	0	1			
Demand cost	$6,801									
Energy cost	$7,191									
Part 1 @$0.1010/KWh	$0			$498	$1,052					
Part 1 @$0.0860/KWh				$336	$710					
Part 2 @$0.0971/KWh	$0			$230	$469					
Part 2 @$0.1010/KWh	$1,495			$0	$0					
Part 2 @$0.0486/KWh	$3,013			$553	$1,168					
Minimum charge		$4,721	$4,721			$4,721	$4,721	$4,721	$4,721	$4,721
Total energy	$4,508	$4,721	$4,721	$1,618	$3,398	$4,721	$4,721	$4,721	$4,721	$4,721
Cost $/KWh	$0.03	$0.07	$0.79	-	$0.07	$0.79	$0.10	$0.79	$0.79	$0.98
Demand over 35 KW	$597			$199	$422					
Demand over 150 KW	$5,313			$1,237	$2,623					
Demand $/KW	$8.64	$0.00	$0.00	-	$8.57	-	-	-	-	-
$(Energy+Demand)/KWh	$0.08	$0.07	$0.79	-	$0.08	$0.79	$0.10	$0.79	$0.79	$0.98