

## **Marmora Dam - Accident**

### **Background**

- The dam is located immediately west of the Village of Marmora. Access to the dam is gained from the east side of the Crowe River on Water Street. The dam has been a fixture in the village of Marmora for many years and is frequented by the public virtually daily. The dam offers an opportunity for the public to view the upstream and downstream beauty of the Crowe River and the power of the river during spring freshets.
- The Marmora Dam was originally constructed in 1937 to generate power for both a saw and grist mill. The structure was then reconstructed by CVCA in 1977 to its present configuration. It consists of three concrete gravity-type sluiceways (main sluiceway, central and east). A concrete headwall connects the west and central sluiceways and
- earth embankment/island connects the central and east sluiceways.
- The west sluiceway is 5.49 m high and consists of five stop log bays, each with eight wooden stop logs.
- The central sluiceway is 4.57 m high and comprises of three stop log bays. Each bay contains ten stop logs. In August 1992, Consolidated Hydro Ltd. installed a hydroelectric generating facility downstream of the central sluiceway. The facility includes two 520 kW turbines capable of passing approximately 16 cubic metres of water per second.
- The east sluiceway is 4.27 m in height and consists of two spillways. Bay 1 has ten wooden stop logs, while bay 2 can be controlled by either stop logs or a sluice gate. A concrete parapet lines the edges of the deck of the sluiceway.

### **Timeline of Events**

- Tim had just returned from vacation on the 8<sup>th</sup> of September and a message had been left indicating there had been an accident on the “dam bridge” and would like a return call to discuss the incident. Regrettably, not all of the message was audible, especially the last couple of digits in the phone number and the gentleman’s name.
- Attempts were made to discover who the individual was and the correct phone number.

- A call was received on the 9<sup>th</sup> of September from Mr. Dave Ramnarine inquiring if I had received the message.
- Indicated message received, but with problems.
- Mr. Ramnarine proceeded to inform myself his mother had fallen into one of the gains (bays) on the east sluiceway, braking a collar bone and a toe. He stated the accident occurred on Saturday evening, the 28<sup>th</sup> of August.
- Mr. Ramnarine made it clear he wanted to report the incident, implying he wanted to make sure we were aware of the situation and to ensure we would take corrective action to prevent another accident.
- He felt the hinges on the gain cover had deteriorated and contributed to the failure of the cover, resulting in the fall. Fortunately, the gain is very narrow and would be difficult for an adult to fall all of the way through the gain.
- He was not angry, nor accusatory, rather, he was calm and matter of fact. No mention of a lawsuit was ever brought forward by Mr. Ramnarine.
- He stated his mother would be in contact with myself at some point in the near future. No phone call has been received to date.
- Mrs. Martha Ramnarine's address was recorded.
- Mr. Ramnarine concluded the conversation by noting he and his mother have been visiting the area for 15 years and has frequented the dam many times.
- Confirmed with staff the absence of the gain cover and the action taken to ensure the hazard was eliminated. The following Monday, 30<sup>th</sup> of August, an extra gain cover from another dam was placed over the opening to temporarily seal the opening until a permanent solution is attained. The gain cover has been locked and a stop log placed over the cover as well.
- Staff have speculated the gain cover may have been tampered with as well, loosening the hinges and shifting the cover off its inset lip or even removing the cover in its entirety, exposing the public to the fall hazard. A conversation with Mrs. Ramnarine may confirm whether the cover was in place or not.
- Staff have contacted the CVCA's insurance company to give them notice of the accident and the opportunity to provide any additional advice for the Authority.

**Recommendation:**

Staff recommend CVCA pursue one of the following three initiatives to protect the public and limit CVCA liability moving forward. All options are eligible for a WECI funding project and should gain approval due to safety concerns. Project submission for WECI funding will be in January/February of 2016.

1. Additional signage be installed to warn the public of hazards and install sufficient lighting to illuminate the decks of the three sluiceways.

Pro	Con
Visible warning	Public will ignore sign and still expose selves to hazards
Still permits public access	Previous similar signage has been vandalised and removed, nullifying effectiveness of signage until replaced
May limit CVCA liability	Lighting could be a vandal target as has been in the past
Better visibility to avoid hazards	

2. Install “No Trespassing” signage and install sufficient lighting to illuminate the decks of the three sluiceways.

Pro	Con
Increases awareness the CVCA is not inviting the public onto CVCA property, thereby reducing liability exposure	Public will ignore sign and still expose selves to hazards
	Signage will be vandalised and public will not be warned of trespassing and exposed risks
Better visibility to avoid hazards	Lighting could be a vandal target as has been in the past

3. Install a fencing/gate system to physically prevent the public from entering onto the dam along with appropriate signage warning of the hazards.

Pro	Con
Will eliminate most of pedestrian traffic	Public outcry – not able to access dam as

onto dam – increasing public safety	always have been able to for 40 years
Most restrictive option available to CVCA – strong deterrent and best protection from a liability perspective	Access to dam especially in low flows virtually impossible to stop from other access points from up or downstream
	Will encourage access from west end of dam – over steep nearly vertical embankment – fall hazard as well as greater usage of path near fall hazard (between CVCA parking lot and the dam)

Board Decision

TP