

Feb 24th, 2016

Subject: Springbank Dam

From: Jeff Gordon

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To: City Council Members and Mayor Matt Brown

I am unable to attend the March 8th, 2016 meeting regarding the above subject so I hope you will take the time and read this.

I do have some concerns related to revamp/rebuild of the dam and hope you consider these when making the decision to give the dam new life.

First, I would like to tell you a little about me.

- 1) Employed by the C of L for 34.5 years in the Environmental Services Division and retired in 2000 in the position of Division Manager of the same division. Specialty, wastewater treatment plants.
- 2) Worked in concert with the Upper Thames River Conservation Authority in the daily operation of the old dam, prior to the present broken dam.
- 3) Retired before the present dam was installed but I am familiar with the problems that occurred to make it fail. My knowledge of this was from the news media and not actual experience.
- 4) I had many exposures and episodes over the years with the older dam and experienced some major problems that occurred when the dam was in summer operation.
- 5) Made critical decisions related to the dam during extreme high flow conditions. Had hands on experience preparing the dam for summer and fall conditions.

Here are some issues you should consider before you decide to spend big money that we do not have on a new dam.

I believe I heard the mayor say he wants to invite development along the river and use the dam as a tool to help this go forward. When you invite people/business to invest in a vision and you promise how wonderful this would be is not the best thing to do. People have long memories and will expect nothing but the perfect dream that is being sold.

A dam is a dam and being a seasonal unit it will no doubt have problems, more than you want.

One of the first problems is what type of dam is the perfect fit for the application. Engineering firms will present various units but which one do you choose? Regardless of choice there will always be mechanical/electrical/human failure, for sure.

Once installed and operating more and more interest groups will demand setting up permanent or temporary events on the river and once they get established new problems begin. If an event is planned and (Murphy's Law) a storm or mechanical failure develops they will expect nothing more than perfect. No excuses, remember they have money invested and want to live the dream.

The river bank also takes a tremendous pounding from the variations in the river level. This not only happens during the spring and fall planned operation but throughout the entire summer. When there

are storm events the dam has to adjust for upstream flows which include local flooding and elevated discharge from the wastewater treatment plants. This causes river elevations to fluctuate and the debris that sits along the river bank starts floating downstream and always without fail clogs up the dam. This causes many operation problems and possible structural damage to the dam. It's unbelievable what floats down the river. I have seen large whole trees, boat docks and picnic tables. These items are very difficult to remove from the river due to the pressure of the flow.

At times these problems go on for a few days and the complaint phone will not stop ringing. The canoe clubs, rowing clubs and anyone tied into the river will not accept anything but perfect conditions. Storm events can last a few days before conditions get back to normal. These groups will not let up and demand what they expect.

If the dam is set up for automatic control it will be prone to failure. Lightning strikes can and will have a detrimental effect on the electronics and can jump across any surge protection installed and wipe out electrical panels. Backup power will be required either by a generator or a secondary power line. The cost to install a second power line would not be cheap. I am not sure if the old generator is still on site but again any generator requires constant maintenance. These structures require a lot of attention and maintenance to function properly.

Manual operation of a dam can be very unsafe. We had many occasions when manual operation was required to control river levels and flow. These events always take place when bad weather conditions prevail and often when lightning was all too close for comfort. It must be noted again that the shoreline debris floats downstream and gets hung up on the dam structure or operating gates and must be removed manually so the dam can function properly.

The river level when elevated becomes a lake in some peoples mind. These people like to go boating/canoeing/kayaking etc. and can do some really dumb things. There has to be some way to stop them from getting too close to the dam structure. In the past we had kids stuck at the overflow logs and had to cast a line and pull them back to shore. At times young people scaled the fence and had good times on the top (no go zone) of the dam. Again these things by nature invite trouble.

Another problem to watch is the sport fisherman. These people fish downstream of the dam and if the dam needs to open for flood control a warning must be sounded. This in itself can be a real pain in the butt because many people just do not think of the dangers around them and get upset when they are instructed to get back from the river bank.

You must also consider the coves that are situated just to the south east of Greenway P.C.C. When the river is elevated this has a direct effect on the flow from the coves which goes directly to the river. If the river got too high we had to install shear plates at the cove gate house to stop the river from backing up and causing problems at the coves. I am not sure if this process still takes place or the city has done something to correct this problem.

During a summer dry spell the flow in the river is minimal and it appears one could walk across with no problem. If the dam is in operation the river becomes a reservoir but where does the flow come from to maintain the proper elevation? The city has four wastewater plants upstream from the dam so let's use an average of 40 mg/d flow from the plants to the river. Having the dam in place will hold water and create a basin for which effluent impurities can settle and accumulate over the season. The treatment plants do a fine job for the city and are operated top notch. Unfortunately treatment plants are not designed for one hundred percent pure effluent. Combined with this is farm run off and that does not

make a very good recreational body of water. The river is better to flow and have no restrictions in my opinion.

If the dam is refitted who is responsible for its future operation? Who keeps paying for the maintenance? Who controls the flows during off hour operations? Who is responsible for the dumb ass people who get in trouble when the dam is a dam? Who is responsible if the dam is rebuilt and it fails again or operates poorly?

I believe putting the dam back in service is a waste of money for the small benefit received. We as a city cannot afford to spend money on "nice to have stuff" but need to get serious on paying off our dept. The dam is one of many items that are "nice to have" but we have bigger more important issues that are "must do items".

I hope this information will be considered along with all the other issues related to the fate of the dam. Be cautious what you do with the dam and who you invite to this party!!

Respectfully

Jeff Gordon

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