

June 28, 2018

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Hello Frank:

Re: Proposed hydro-electric generating station at the Bala falls

Summary

Your company appears to be completely underestimating the dangerous situation which would be created by the operation of your proposed hydro-electric generating station at the Bala falls.

The examples your company provided of other similar situations (Bala's Little Burgess generating station, the Bracebridge falls generating station, and Peterborough's London Street generating station) are not in fact similar. That you would cite these irrelevant examples, and other alarming statements made during our meeting on June 26, 2018, reinforces our serious public safety concerns that your company:

- a) Has not received input from those with in-water recreation public safety experience.
- b) Does not appreciate that someone tipping out of a canoe at the area's only boat rental would be drowned just 45 seconds later. And it would take only about 15 seconds longer from the municipal docks which are just upstream (see graphic below entitled *Murdered in 45 seconds*).
- c) Does not have control of the land and locations where warning signs would need to be located.
- d) Has significantly increased the minimum flow through your proposed generating station, from what was approved for your environmental assessment – and flow is what creates the danger.
- e) Is not familiar with the *Point of No Return* exclusion zone calculation that Transport Canada and the MNRF uses. This calculation shows it would not be safe for the only boat rental in the area to continue to rent boats (see graphic below). This would negatively impact both this private business and the area's economy, and your company's environmental approval does not permit this.
- f) Does not realize that your proposed project would create dangerously fast and turbulent water *outside* of your proposed downstream safety boom, and the Transport Canada approval your company received does not permit the extent of this safety boom to be increased.
- g) Plans a portage directly adjacent to the treacherously turbulent water exiting your proposed generating station. This would be as ridiculous as building a children's playground on the shoulder of a highway, with just a rope separating the two.

The Mayor of the Township of Muskoka Lakes dismisses these concerns as “minutia”, and your construction manager Stefan Kohlen of KGS Group similarly uses the term “granularity” believing that only minor changes will be required to address any public safety requirements. But attention to this detail is required to prevent drownings, as it would be unprecedented to build a large and dangerous industrial facility in the middle of a very popular in-water recreational area, and there are significant unaddressed concerns.

Your claim that the public safety concerns will be addressed sometime in the future is cause for alarm, as your company does not have and has not sought the required public safety expertise, has not done the analysis and due diligence required, and as detailed below, it appears that it would not be possible to safely operate this proposed project.

In the Section below, we have therefore provided specific questions concerning public safety, with further background provided in the Detail Section below that.

We look forward to your response within the 15-day period acknowledged in our meeting.

Questions

As detailed below, it appears that it would not be possible to safely operate this proposed generating station, we therefore look forward to your answers to the following questions:

- 1) The flow simulation provided by your company shows that the operation of your proposed project would create water velocities:
 - a) Greater than what is considered safe by Transport Canada for canoes and kayaks.
 - b) And these dangerous water velocities would occur outside of your proposed downstream safety boom.

Safe water velocities for in-water recreation such as swimming and Scuba diving would be even lower, but assessing whether such in-water recreational activities could safely continue is not the mandate or expertise of Transport Canada. Furthermore, turbulence is an even greater risk to public safety, and this too would occur outside of your proposed safety boom, for example as a result of the downstream end the proposed tailrace excavation extending past the proposed downstream safety boom.

How would your company address these risks, as Transport Canada’s approval:

- a) Did not address these risks to in-water recreation, and
 - b) Does not permit your company to extend the proposed downstream safety boom.
- 2) The *Point of No Return* calculation used by Transport Canada and the MNRF shows that the construction of your proposed project would require that boats not be operated in the area where the area’s only boat rental business is located.

This would negatively impact both this business and the area’s economy, and this negative impact is not allowed by your environmental approval and your company has not provided or negotiated any mitigation for this unacceptable negative impact.

How would your company address this need to relocate the upstream safety boom in the Bala north channel as would be required for public safety, given the approvals from Transport Canada and the MNRF do not permit this.

- 3) Your company's plans now include building a portage on the Township of Muskoka Lakes' Portage Landing, just inches away from the fast and turbulent water which would exit your proposed generating station, separated by only a safety boom.

How would people using the portage your company plans be protected from the treacherously dangerous water just inches away.

- 4) The public have a right to access the Moon River through Margaret Burgess Park, and boaters using the municipal docks on the Moon River need to make wide turns when arriving and departing. Therefore both would be exposed to the water your company's flow simulation shows would be made dangerous by your company's proposed project.

Also, the flow simulation did not include modelling turbulence, so there would likely be even more areas made dangerous outside of the proposed downstream safety boom.

Many people visiting Bala are visitors, so your suggestion of handing out pamphlets for perhaps the first three years of operation would be completely inadequate.

The Moon River is a navigable waterway and the public have a right to both use it and be safe outside of your proposed downstream safety boom.

What information can you provide to show that people would be safe from both high water velocities and turbulence outside of your proposed downstream safety boom.

- 5) To adequately warn and inform the public of the extreme dangers that would be created by the operation of the proposed generating station requires signs to be located on land or locations to which you have no rights.

Does your company have approval, from both CP Rail and the District Municipality of Muskoka, to install the required warning signs in the locations shown for your Transport Canada approval.

- 6) Would the minimum flow through your proposed generating station, for example, during the proposed cycling operation, be greater than the 14 to 20 m³/s approved for your environmental assessment.

- 7) We believe it would be unprecedented to build such a dangerous industrial facility in the middle of a popular in-water recreational area, yet it appears you have not addressed too many public safety risks.

Can you provide examples of similar-sized hydro-electric generating stations where there is a:

- a) Boat rental just a few feet upstream of the upstream safety boom.
- b) Private dock just 50 m from the tailrace.
- c) Portage encouraging canoeing directly adjacent to the safety boom.

You agreed to provide a response to this letter within 15 days, please copy your response to the Office of the Ombudsman of Ontario (e-mail address below) so that they may track this correspondence.

Detail

Here is the follow-up information for our June 26, 2018 meeting concerning public safety, and corresponding to the numbered questions above:

1) Downstream public safety

Below is a composite graphic entitled *Murdered in 45 Seconds*. This composite graphic clearly shows that the operation of the proposed hydro-electric generating station at the Bala falls would create dangerously fast and turbulent water outside of your proposed downstream safety boom.

- a) You requested the sources of the information for this composite graphic, to ensure they have not been “manipulated” or subject to “shenanigans”. So here are the sources which you can get on your own to ensure they are authentic:
 - The flow simulation is from the penultimate page of the Appendices of your 2012 Addendum to your Environmental Screening/Review report. This is for a flow of 98 m³/s, which Environment Canada historical flow data shows would occur an average of 21 days each summer, so such a flow is to be expected often during the in-water recreational season.
 - The downstream safety boom extent is from your Plan view drawing 131-13550-NWPA-01 in your application to Transport Canada for approval under Navigation Protection Act. This approval was issued on June 25, 2014.
 - The satellite view is from bing.com/maps.

The images were all rotated and scaled to match, and overlaid. As a result, this composite graphic clearly shows the water velocities at and outside of your proposed downstream safety boom.

- b) Transport Canada documents show the preferred maximum water velocity for small boats is 0.5 m/s. So for Scuba diving, swimming and other in-water recreation, the safe water velocity would be even lower.
- c) The composite graphic shows that water velocities of three and even four times the maximum safe water velocity of 0.5 m/s would extend outside of your proposed downstream safety boom.
- d) Note also that this same Plan view drawing shows the downstream end of your proposed tailrace excavation would extend past the safety boom, therefore there would be significant turbulence outside of the safety boom at this location. Turbulence is clearly a major concern as that would be what caused the 2008 drowning of a 16-year-old boy at the Wilson’s Falls generating station, as he was not simply pushed downstream.
- e) The MNRF utilizes the Bala south dam as the primary water control structure, so during the summer most flow is through the Bala south channel. The proposed project would bring this fast water hundreds of feet closer to the base of the Bala north falls, which is a popular in-water recreational area. Your company has not provided any information on how this major change in flow could be implemented safely.

2) Upstream public safety

The Ministry of Natural Resources and Forestry’s *Public Safety Measures Plan for the Bala Falls Dams*, March 2011, showed that to determine the required distance, upstream of a hazard, for a safety boom is to use Transport Canada’s *Point of No Return* calculation.

- a) For the *Public Safety Measures Plan for the Bala Falls Dams*, March 2011, this *Point of No Return* calculation is provided on the last page, and was used to determine that the upstream safety boom for the Bala north dam needed to be relocated 15 m farther upstream, which was subsequently done.

- b) The derivation and use of this calculation is provided in Transport Canada's *Guidance Document for Water Control Structures*, March 2007.
- c) The *Guidance Document for Water Control Structures* states:
 - In Section 6.2 that the "exclusion zone" is measured from the danger, which would be the upstream end of the proposed generating station's intake.
 - In Section 6.3, Method 2 that as the proposed generating station would be remotely operated requires the safety boom to be located approximately 10 m further upstream.

The result is illustrated in the marked-up copy of your 2012 Addendum Figure 2.1, below. This shows that the "exclusion zone" would begin at the CP Rail bridge. Therefore boats could not be rented or used from the boat rental which is upstream of the current Bala north dam upstream safety boom.

3) Portage Landing portage

The plans currently posted on your project web site show your company would construct a portage on the Township's Portage Landing and directly adjacent to the fast and turbulent water which would exit your proposed generating station. Such treacherously dangerous water would not be safe just inches away on the outside of the proposed downstream safety boom.

As many people visiting Bala are visitors, your suggestion that the public would be protected through education by handing out pamphlets from a booth for perhaps the first three years of operation would be entirely inadequate.

4) The MNRF's Section 28 Notices

I have reviewed the MNRF's May 2013 Section 28 Notices addressed to the Township of Muskoka Lakes and to the Moon River Property Owners' Association. These Notices very clearly state they applied only to the MNRF's land directly south of the Bala north dam.

As the MNRF's Section 28 Notices did not restrict the more common accessing of the Moon River from Margaret Burgess Park, the MNRF's Section 28 Notices cannot be interpreted to indicate any danger to accessing the water at the base of the Bala north falls.

Also, the public safety experts that wrote the MNRF's March 2011 *Public Safety Measures Plan for the Bala Falls Dams* observed in-water recreation at the base of the Bala north falls and did not recommend any changes to prevent people from accessing the Moon River.

Finally, the public using Margaret Burgess Park to access the Moon River is a right both protected by Section 3 of the *Public Lands Act* and as the Moon River is a navigable waterway.

Your claim is therefore unjustified that the MNRF's Section 28 Notice indicates people should not be in the Moon River.

5) Warning signs

Transport Canada's *Guidance Document for Water Control Structures* provides very clear requirements for signage, stating: "There should be two primary types of signage employed around water structures: the first to identify dangerous areas, and the second

to warn of potential hazards." (Section 7.1). These signs must be visible far upstream of the danger.

While your drawing 131-13550-NWPA-01 shows there would be warning signs on the upstream side of both the District Municipality of Muskoka's Muskoka Road 169 bridge and CP Rail's bridge, both over the Bala north channel, it is not known if you would receive permission to install adequate signs at these or the other locations needed.

6) Minimum flow

For your environmental approval, your company stated that the minimum flow through your proposed generating station would be between 14 and 20 m³/s. However, your company has since provided information that the minimum flow would actually be 26 to 30 m³/s.

As the flow is what creates the extreme danger, and a flow of just 10 m³/s caused the 2008 drowning of a 16-year-old boy at the Wilson's Falls generating station, this increase is a significant public safety concern which is not permitted by your environmental approval.

7) Unprecedented situation

I have personally visited more than 30 similarly-sized hydro-electric generating stations (photographs at <http://savethebalafalls.com/?p=6852>) and carefully checked for the proximity of docks and in-water recreational areas. I have not seen anything like the dangerous situation which would be created by the operation of your proposed generating station.

As we remain very concerned that it would be unprecedented to locate such a large and dangerous industrial facility in the middle of an in-water recreational area, please let us know of any situations you feel are similar, for example where there is:

a) A canoe rental within five feet of the upstream safety boom.

Note that the MNRF utilizes the Bala south dam is the primary water control structure, so currently during the summer the flow through the Bala north channel is limited to a few m³/s of flow, so the water is currently safe at this location.

b) A private dock within 50 m of the tailrace.

c) A portage route through the tailrace flow.

We look forward to your responses to the questions above.

Sincerely,



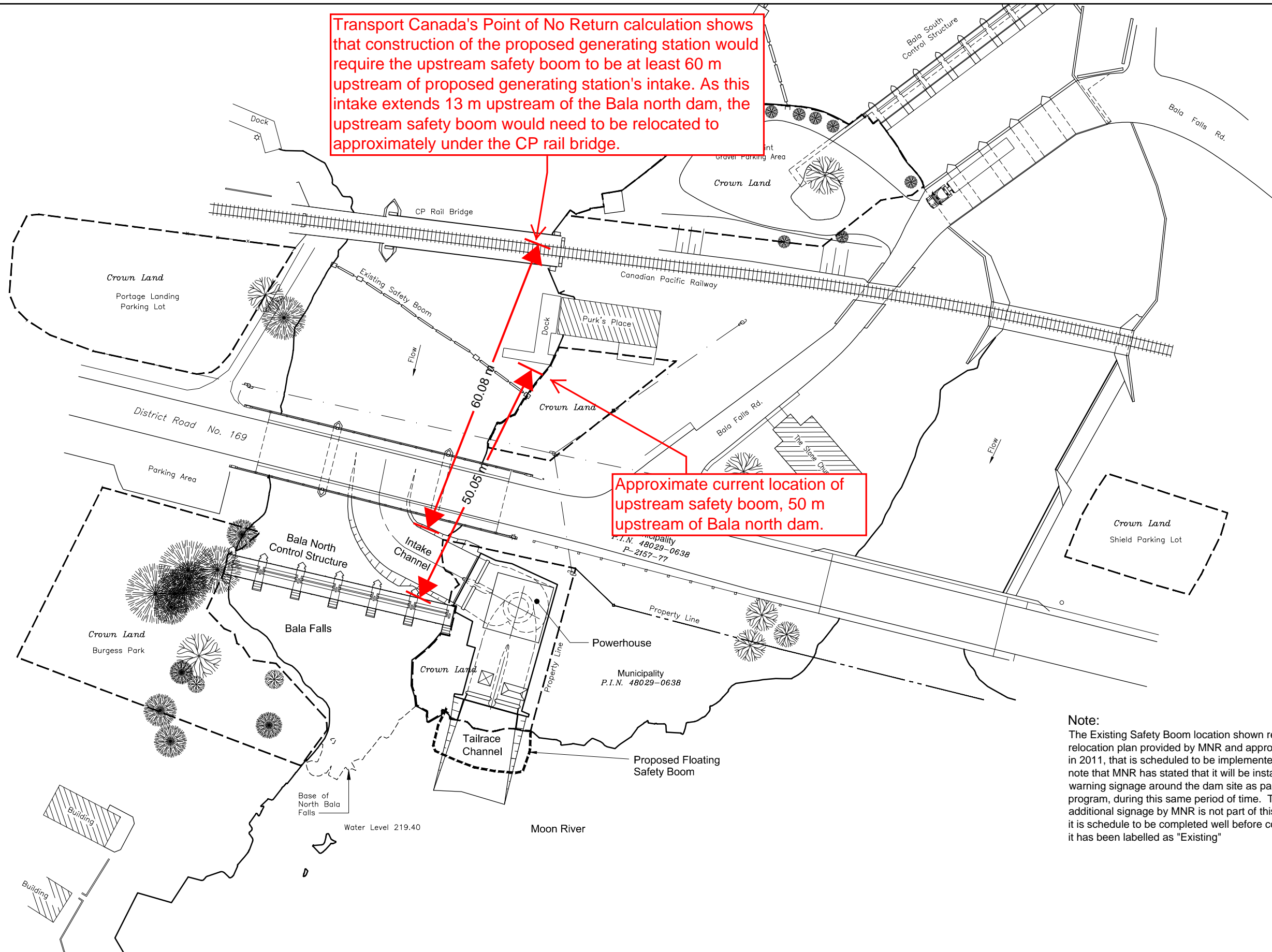
Mitchell Shnier

Cc: Mayor Don Furniss, Don.Furniss@muskokalakes.ca
Office of the Ombudsman of Ontario, info@ombudsman.on.ca
Troy Cockriell, TCockriell@gmail.com

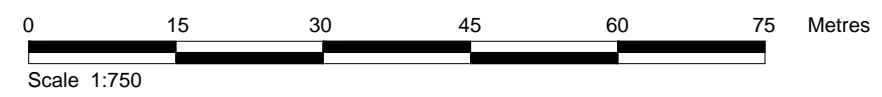


Transport Canada's Point of No Return calculation shows that construction of the proposed generating station would require the upstream safety boom to be at least 60 m upstream of proposed generating station's intake. As this intake extends 13 m upstream of the Bala north dam, the upstream safety boom would need to be relocated to approximately under the CP rail bridge.

Approximate current location of upstream safety boom, 50 m upstream of Bala north dam.



Note:
 The Existing Safety Boom location shown represents a proposed relocation plan provided by MNR and approved by Transport Canada in 2011, that is scheduled to be implemented by MNR in 2012. Also note that MNR has stated that it will be installing new safety / warning signage around the dam site as part of its own dam safety program, during this same period of time. This boom relocation and additional signage by MNR is not part of this project, however, since it is schedule to be completed well before construction of this project, it has been labelled as "Existing"



May 29, 2012, 9:26am
 Login name: park110733
 Drawing Name: P:\SWF\327078\CAD\C\Figures\327078-Fig. 2.1 General Arrangement.dwg

Figure 2.1