



Centennial Park Retaining Walls
18 Park Drive, Petawawa

RISK SUMMARY

This risk report is intended to bring your attention to measures which, if taken, may control or help reduce the possibility of injury or property loss.

It is not intended to imply that no other risks exist or that no other precautions need to be taken. The identified risks consist of code/standard references or may be a known best practice.

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Introduction

A 2016 Ontario court decision held a municipality 100% liable for injuries sustained in a recreational facility. The court found that the municipality breached its duty under the Occupiers Liability Act in four significant ways.

- Failure to post warning signs. Signs should clearly state the progressive difficulty and risks associated with the features and outline how they should be used.
- Negligent promotion of the facility. Sufficient warnings that address the skill level required to safely use the facility.
- Failure to monitor risks (by regular inspection and maintenance) and injuries at the facility. There should be an incident management reporting system to help determine the frequency and severity of the features that pose a danger.
- Failure to provide an adequate progression of qualifiers. The positioning of the features should be clearly separated and the level of difficulty emphasized.

Municipalities that build and operate recreational facilities must actively manage the associated risks and have policies and procedures in place to support their actions when a liability issue is encountered. This includes regular verification by inspection and maintenance to ensure the surfaces and slopes still meet the original design criteria. This can be accomplished by municipally trained staff or a third party competent with this area of expertise.

Although the court ruling was specific to a recreational mountain bike adventure park and specifically an articulating feature within the park, the underlying principles can be applied to other recreational facilities.

Background

Retaining Walls

1 - The two walls to create the pond were built by town residents approximately 50 years ago. The west wall has a concrete base and an approximate 4 foot cemented and grouted rock wall on top. The wider concrete base on the rock wall does not extend the full length of the wall. The purpose of the walls was to create the pond and hold back the river flow. Over time, the park was enhanced with a walking/biking trail part of which is asphalt. The rock wall has an inflow to the pond and the other wall has an outflow structure

2 - There are no drawings or engineering calculations for the concrete and rock walls. No investigation below the water line has been taken to assess scour or sinking issues.

3 - The area is in a seismic zone and there are some cracks that may be associated with past earthquake events

- 4** - The stability of the walls and a structural assessment has not been verified by calculation. The walls, as prototypes, have withstood the impact of the river water to date.
- 5** - In the 50 year history of the pond and the walls, at the time of investigation, staff was unaware of any known EMS calls for rescue.
- 6** - There is no signage at the two walls warning of any issues with walking on the walls.
- 7** - The date of the site visit was November 9, 2017. At this time of year the river water level is typically considered to be low to medium volume.
- 8** - On the date of the site visit, overtopping of the east concrete wall was prevalent.
- 9** - Use of the wall at dusk or dawn is not restricted.
- 10** - The two walls run approximately east and west and the sun angle can hinder a person's perception of distance and depth with the river water flowing alongside.
- 11** - There is no restriction to use the walls at night with restricted lighting.
- 12** - The two walls are owned entirely by the Town of Petawawa.
- 13** - In spring of each year the Petawawa River is at its largest volume. At that time of year the island in the river and the walls are completely submerged by water and the velocity scours the west end of the wall as well at the island. Measures have been taken to pour concrete in some places but they are considered to be a temporary stop gap measure.
- 14** - There is no lifesaving equipment in the area local to the walls.
- 15** - In 2005 local engineering consultants provided a synopsis and estimate of the cost of the repair to the walls. A 2017 update has been conducted and the values submitted to the Public Works department.
- 16** - The walls although still operating as a retaining wall barrier to the river flow have exceeded their useful life and functionality e.g. overtopping, scour, cracks
- 17** - Re-grouting the rock wall and repointing/resurfacing the walkway surface does not solve the liability issue. The west wall is not high enough, has numerous trip and fall hazards, has a walking surface which is narrow and uneven and undulating and is considered unsafe. Since the wall is rock and grout a potential breach is possible with the higher river water levels and forces.
- 18** - There are also several holes and depressions in the concrete walking surface.
- 19** - Although there are no known reported accidents or fatalities reported in the last 50 years, it is foreseeable that it will happen. If an incident occurred, the courts would most likely apply the "prudent person" scenario.
- 20** - The town does promote the park in its advertising but not the walls.
- 21** - There are no known survey records of the settlement of the walls. The east wall has a definitive slope to the discharge end and overtopping is prevalent at the time of inspection.

Park

22 - Swimming is permitted at the pond. Water contamination occurs seasonally as river levels decrease and cause insufficient turnover of water in the pond.

23 - Ice skating in winter is not an issue. Due to the current in the pond, ice thickness checks are not done.

24 - An annual polar bear dip is the only current activity that the Parks & Recreation department is involved with.

25 - There have been no known alcohol issues at the park.

26 - Although the park is known officially as the Centennial Park, some residents refer to it as the “Catwalk Pond” which refers to the concrete retaining walls.

Recommendations:

1 - The town council/decision makers need to **decide if they want people to access the walls or they do not**. The residents that use the wall may be a minority. This decision will dictate the options to be pursued going forward.

2 - If the decision is to restrict access to the walls which is what we would recommend as the most cost effective solution, then signage and fence barriers can be installed at the entrances to the walls. The walls are currently an attractive nuisance and in the current litigious climate there would be little defence to liability charges. These fence barriers are envisioned to be similar to the barriers uses at the bottom of water dam discharges. The fences would be non-climbable with wing walls that are welded in order to prevent people circumventing the barrier. The barriers would allow the surge of water to pass through.

3 - If the decision is to allow residents access to the walls, then we would recommend that the walking surface follow sidewalk (Minimum Maintenance Standards –MMS) standards and be wide enough and have guards on both sides conforming to Ministry of Labour occupational health and safety regulation for industrial establishments. For the east wall, precast walkways with guards could be added on top of the existing wall by drilling anchors into the current concrete. The walkways would also be level and therefore would be somewhat of an eyesore (not aesthetically pleasing) since the concrete wall below it slopes toward the east by a large margin. However this type of solution would not be practical for the rock wall on the west side, since the rock wall does not have a homogenous consistency in order to be able to have a structurally sound composite element.

4 - As your insurer we are not in a position to advise which course of action the town should adopt. However, from the perspective of liability we would recommend the restriction to the walls. The walls are retaining the water and are not considered a recreational element of the park. We realize this may cause some consternation with the residents and we leave the decision to the authorities who will have to allocate the funds to remedy the situation.

Images:



Rock Wall (Looking East towards the Island)



Rock Wall (Partial Elevation View)



Rock Wall Walking Surface - and Trip and Fall Hazards



Rock Wall – Looking West from Island (shows partial foundation supporting wall)



Outflow Wall – Looking South East (overtopping taken from Island)



Outflow Wall – Looking North West (partially submerged structure)