

+ **River &
Access Point
Safety
Signage**

River Safety and Education for
Recreational Users of Local Waterways.





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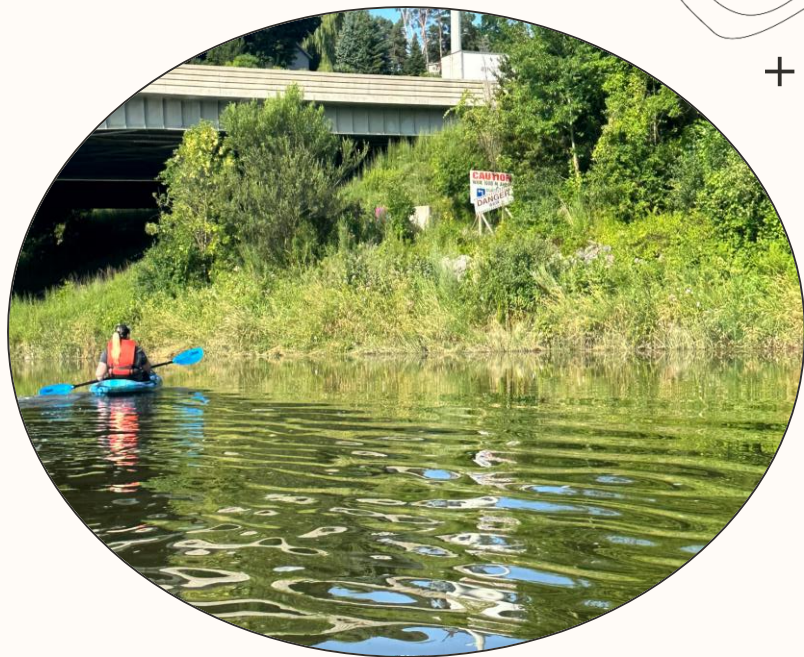
**Long Term
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01

Introduction

On Saturday, July 13, two women were enjoying a float down the Grand River in Kitchener, unaware that the water level and flow was ten times above normal. They were not following proper safety precautions and not using equipment that was fit for the river. They were also completely unaware of the potential dangers ahead. They were tragically unable to navigate a low-head dam and lost their lives.

Although multiple issues caused this tragic accident, many impossible to control, lack of adequate signage and information along the river and at launch sites contributed.

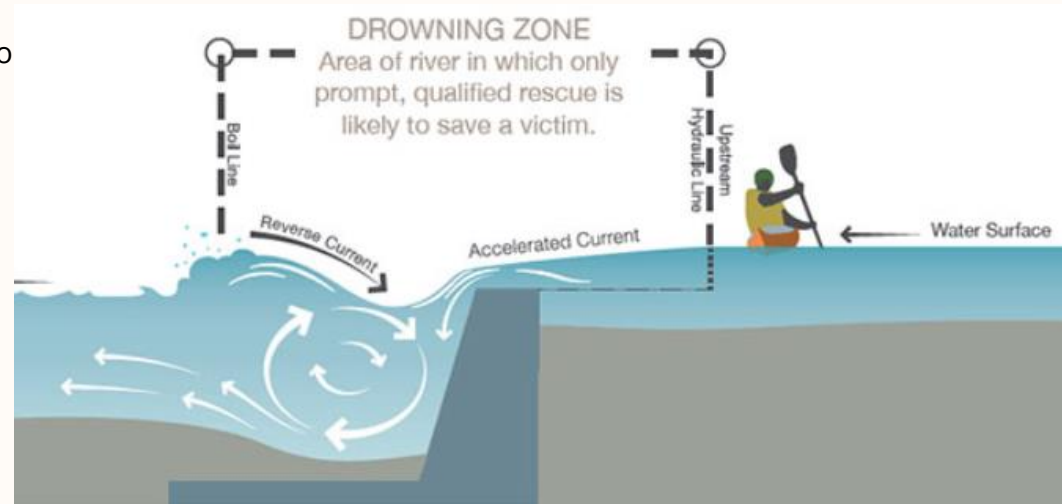


01

Low Head Dams and Weirs?

Low-head dams might not seem dangerous at first glance, but they can be very deceiving. Even a small drop can trap objects and claim lives. When viewed from upstream, a dam with a drop of several feet can be almost impossible to see. Because of this it's important to pay attention to warnings such as signs or buoys. A person may not know they are in danger until they are within a few feet of the dam and it may be too late to escape the current.

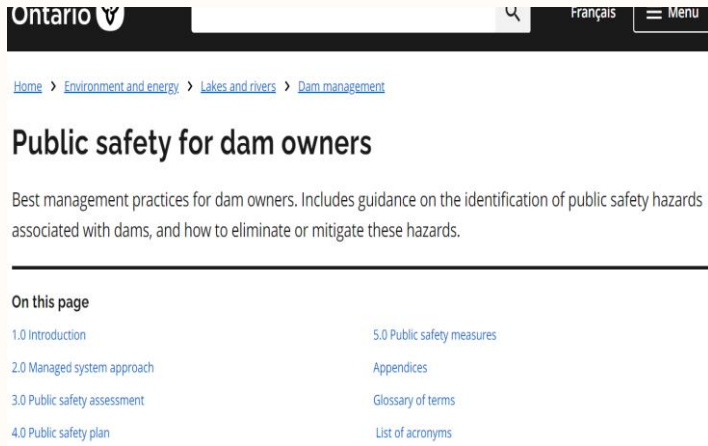
Low head dams and weirs are nicknamed "Drowning Machines." It is the term used to describe the dangerous situation that is created when water flows over a low-head dam. As the stream of water flows over the dam it drops into the water below creating a backwash or a current. This recirculating current, which is also known as a "hydraulic," can take an object (including a person) to the bottom of the stream. The current then brings the object back to the dam. Once at the face of the dam the object is forced back to the bottom from the water pouring down from above. This recirculation can hold in an object, even a boat, indefinitely and can be impossible to escape.



Background

The Ontario Ministry of Natural Resources provides recommendations and best practices for public safety around dams and weirs. The document describes signage and other safety strategies that should be implemented to keep public recreational users of waterways safe.

1.2: “Dam owners are responsible for the safe operation and maintenance of their dams. Part of safe operation and maintenance is a responsibility to implement appropriate public safety measures to address potential exposure to hazards created by the dam and its operation.”



The screenshot shows the top navigation bar of the Ontario government website, including the Ontario logo, a search icon, and links for 'Français' and 'Menu'. Below the navigation bar is a breadcrumb trail: 'Home > Environment and energy > Lakes and rivers > Dam management'. The main heading is 'Public safety for dam owners'. A short description follows: 'Best management practices for dam owners. Includes guidance on the identification of public safety hazards associated with dams, and how to eliminate or mitigate these hazards.' Below this is a section titled 'On this page' with a grid of links: 1.0 Introduction, 2.0 Managed system approach, 3.0 Public safety assessment, 4.0 Public safety plan, 5.0 Public safety measures, Appendices, Glossary of terms, and List of acronyms.

Document found by clicking link below:

[Ministry of Natural Resources Document](#)

Ministry of Natural Resources Guidelines Cont'

5.3.1 Signage

“Signage is a primary means of informing the public of hazards associated with dams. It is important that signs convey a message that is consistent with the degree of risk presented to the public. In general there should be two primary distinctions in signs used at a site to identify hazardous areas; those used to identify dangerous areas and those intended to identify warning areas.”



Current view of upcoming Hidden Valley Weir: no noticeable buoys or signage at Dam/weir site.

Note: the infinity pool effect and the noise from the hwy 8 bridge behind makes it impossible to hear the upcoming danger.



Sign 1000m away from Hidden Valley Weir: Currently blocked and broken



Very small portage sign obstructed by vegetation and almost unseeable from river view perspective

Ministry of Natural Resources Guidelines Cont'

“The elements of effective signs are:

1. The message is concise and easily understood;
2. Signs are consistent with respect to colour, size, format and messaging;
3. Signs are properly located and installed;
4. Signs are regularly inspected. Old, damaged and/or vandalized signs are replaced and new signs installed as needed; and
5. The message text on the sign is sized to the viewing distance.”

Ministry of Natural Resources Guidelines Cont'



The only sign that is not damaged or covered is located just 100 m away from the dam/weir and is only readable from the left hand side of the river.

'Signs should be:

1. Positioned where they provide adequate time for viewer response, considering such factors as approach speed. In some cases, it may be appropriate to install a warning sign (Appendix C Figure C.8 or 9) a suitable distance before a danger sign;
2. Visible from a safe viewing distance along normal access routes to the dam from land and water. The overall dimension of the sign, as well as the text size should be such that the message can be clearly read from beyond the hazardous area and takes into account the speed at which the hazard is approached. See Appendix A Figure A.2 for determining the message text size for the viewing distance;...."



Providing the public that frequent waterways with information about water flow and routes can be helpful to prevent accidents and enhance safety for individuals engaging in water activities like floating, canoeing, kayaking and swimming. It can also give fishermen, walkers and hikers important information regarding conditions along the banks. As our communities are growing dramatically around local rivers; so is usage of these passageways; so are the number of drownings.

Educational campaigns and new signage provide a way to educate and communicate information to new and frequent waterway users.

Objectives

1

Buoys look
like this....



Booms look
like this....



DANGER DANGER DANGER DANGER DANGER

DANGER
Dam- No Trespassing

Shand Dam
In emergency, contact 9-1-1



Address the urgent *and immediate* need for sign maintenance and regulation at the Hidden Valley Weir and in the Grand River Watershed.

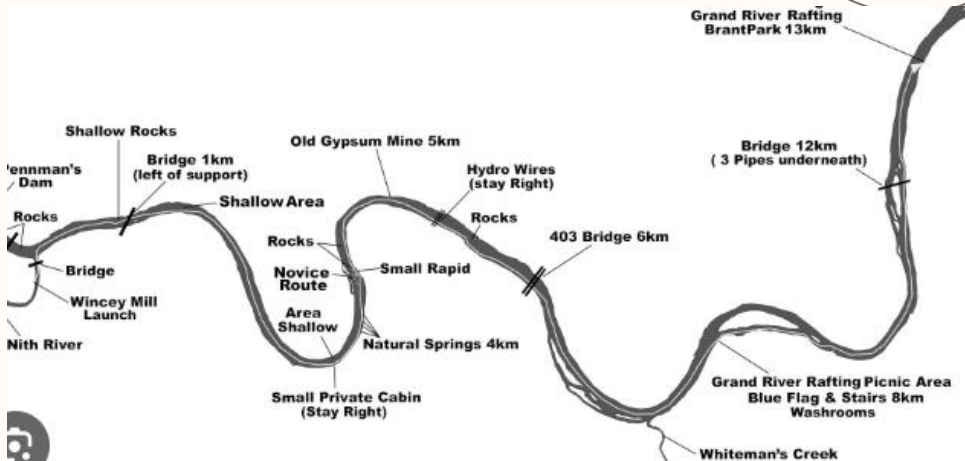
Many dangerous obstacles are inadequately marked for safety. One example is around the Hidden Valley Weir, but there are many more dangerous dams and known obstacles that lack safety signage and buoys. Many have no portage markers or have some that are not visible from the water point of view.

+ Objectives

2

The creation of a river map that could be posted at launch access points and online to familiarize users with the location of known obstacles, such as dams, weirs and rapids. The map could help recreational users plan their trip. These map could be similar to trail maps at trailheads.

03





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Objectives

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Accompanying the map, a QR code that links to already established information provided by the GRCA on flow rate and the water level would be beneficial. This would help people learn before they launch.

***Note:** the site already exists, flow and level are updated hourly. Needs to be more user friendly and accessible.





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Objectives

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Promote a culture
of river safety.

The creation of an educational campaign that municipalities, the Grand River Conservation Authority, cities, safety organizations and influencers could post on their socials. The objective would be to engage the community, have more conversations about rivers, safety, and awareness while promoting a culture of river safety in our communities.

*Note these already exist but are not shared widely with recreational users.



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Immediate Goals

1. To enhance safety in the Hidden Valley Dam/weir location, requesting immediate action to update and maintain the current signage, as well as the addition of buoys and booms. Along with the installation of larger portage signage, can significantly improve the safety of recreational users in the vicinity of the dam.
2. We would like to know more details about the investigation and review of improvements around the weir. The region has stated the staff are reviewing safety at that weir but they did not give a timeline or mention who, when, and how they are collecting data and how and if that investigation information will be acted upon or delivered to the public. We are requesting transparency on the process and would like to see public safety assessments (past and current).
3. The public are asking for more of a sense of urgency around updating signage at the Hidden Valley Weir and others like it that are in our community. We need to ensure loss of life does not happen again at this site. The time to act is now.



Short Term Goals

1. **Upgraded safety measures at Dam and weir sites. Addition of buoys and booms (floats across the river) Additional signage along the river banks and bridges that direct recreational users to portages.**
2. **Installation of additional signage at launch access points that includes a river map highlighting known obstacles, as well as a QR code that links users to the established Flow and Level charts. This initiative would aims to provide users with essential information to navigate the waters safely and locate themselves in the river in correlation to dangers.**
3. **That signage could also be used to communicate the dangers of not using proper equipment and personal safety**
4. **Update the GRCA and Region of Waterloo web pages to include more user friendly content for the recreational user of local waterways. (currently the description on how to read the charts and graphs is confusing)**

Long Term Goals

1. Engaging and interactive social media campaigns. Region/municipalities/GRCA
2. Teach users how to use the maps and QR Codes at launch sites and while traveling on the water. Learn then launch and know the flow.
3. Educate the community about the extreme danger that low lead dams/weirs pose. (Known as drowning machines) Similar to this video:

GRCA Video



Review

- Update current signage and buoys at dams and weirs
- Regulate signage in the GRCA Watershed
- Create access point signage
- Make informational webpages user friendly
- Promote a culture of river safety in our communities.



Thank you



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Representing local community
members concerned with
recreational use of waterways
in Waterloo Region.

