
Risk Assessment of the Rideau Canal System (Northern Sector)

A question of balance

Stage 3 Conceptual Assessment

NOTE: All personal information regarding contributors to this research has been deleted from this version. All other information is as submitted.

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1.0 Introduction

The Rideau Canal corridor has been a popular recreation destination since the 1870's. An estimated one million land-based visitors pass through the corridor's lock stations each year, and the Rideau Canal itself contributes over \$24 million to national GDP¹ and sustains over 600 full-time jobs.

While tourism has generally offered benefits to the region, increased recreational use of the canal system over the past decade has generated a number of safety and environmental concerns. Larger and faster boats, increased numbers of personal watercraft and the latest heavy-duty "toy" technology, wakeboarding, are placing increased strain on the system. Increased boating activity has also resulted in an increase in conflicts among boaters and between boaters and shoreline residents. A projected, substantial increase in population within the Ottawa region will place further pressure on the Rideau Canal system as more boaters demand access to the waterway.

Recognizing the need to ensure that uses and activities along this historic canal system; respect the heritage character of the Canal's cultural and natural resources, are compatible with public safety, and contribute to the public's appreciation and enjoyment of the Canal, Parks Canada has undertaken a number of recent communication, education, and research actions.

Objective of the Study

As part of Rideau Canal Safe Boating campaign, Parks Canada commissioned a risk assessment of the River Section of the Rideau Canal system, north of the Hwy 416 Bridge to Mooney's Bay. The study will focus on the identification and evaluation of human health and property risks associated with excessive speed and excessive boat wake.

The objective of the assessment is to develop a risk profile of the waterway section north of the 416 bridge to Mooney's Bay.

This assessment presents a snapshot of public safety and economic risk issues associated with boating activity on the waterway, and recommends alternative strategies for dealing with the identified risks.

¹ Gross Domestic Product, a measure of Canada's economy.

Study Phases

The first phase of the assessment was a review of current information related to boating on the Rideau system.

Published information included:

- Rideau Canal Visitor Information Program Reports;
- Rideau Canal Boat Traffic Statistics;
- Correspondence from public stakeholders;
- 2008 Boater Survey;
- Parks Canada, Canadian Coastguard and other government websites; and
- Rideau Canal Waterway website.

The next phase involved field work which included on the water observational trips, interviews with key stakeholders, and a small survey to identify current perspectives.

- 1 on the water field trip with Parks Canada officers
- 2 on the water field trips with the Ottawa Police
- 1 on the water field trip with local boaters
- Interviews with Parks Canada staff, shoreline residents, the general boating public, local businesses and Community Association executives, local marina operators, and Friends of the Rideau.

Methodology

The methodology for this Rideau Canal risk assessment conforms to requirements of the Canadian Standards Association's risk management standard, CSA / Q850, Risk Management: Guideline for Decision-Makers, published as a National Standard of Canada in 1997.

This methodology consists of a series of steps including:

- Identify risks to the achievement of identified objectives.
- Estimate the likelihood and impact of risk scenarios.
- Identify and evaluate alternative strategies for reducing unacceptable risks to a more acceptable level.
- Identify the trade-offs that arise in choosing amongst alternative courses of action.

This last step, evaluating trade-offs, includes making value-based choices about which trade-offs are acceptable and which are not.

Risk Ranking

Identified risks are evaluated in terms of their likelihood to occur and the impact if they do occur. The criteria, developed for this project, for estimating likelihood and impact are adapted from the Canadian Coast Guard risk scoring criteria. Scoring criteria are found in Appendix A: Risk Ranking Criteria.

Risks are scored on a scale of 1-5, with “5” being high impact or high likelihood, and “1” being minimal impact or minimal likelihood.

The method used to portray the relative ranking of a series of risks is to plot individual risks into a 5 by 5 matrix, as shown below, based on their likelihood and impact scores. This matrix is called a Risk Ranking Heat Map, with the “impact” scale on the vertical axis and the “likelihood” scale on the horizontal axis. For example; a risk with a likelihood of “2” and an impact of “3” would be slotted into box # 11 (medium risk).

Consistent with Canadian Coast Guard (CCG) risk methodology, risk scenarios slotted into boxes 1-6 are considered “low risk” (green); those slotted into boxes 7-15 are considered “medium risk” (yellow); those slotted into boxes 16-19 are considered “medium-high risk” (orange); and those slotted into boxes 20-25 are considered “high risk” (red).

CCG Risk Ranking Heat Map

Impact	5	15	19	23	24	25
	4	12	14	18	21	22
	3	6	11	13	17	20
	2	4	5	9	10	16
	1	1	2	3	7	8
	1	2	3	4	5	
	Likelihood					

2.0 Parks Canada Strategic Objectives

For this study, the strategic objective of Parks Canada is:

- To manage boating activities, to promote safe, enjoyable use of the Canal and to reduce conflicts and environmental impact.

In support of these goals, a set of appropriate uses and activities have been defined as those which; “*contribute to the public's appreciation and enjoyment of the historic canals; which are compatible with public safety*”.²

3.0 Risk Identification

For this stage, risks were identified through a series of interviews with key stakeholders including Parks Canada, marina operators, shoreline residents and the general boating public, though a series of field studies with the Ottawa Police and through a follow-up survey with an additional set of shoreline residents to gather more current local perspectives.

Consultation with Stakeholders

Interviews were conducted with Parks Canada employees, the Ottawa Police, shoreline residents, marina operators, and the general boating public.

Follow-up Risk Survey

In addition, a follow-up survey was introduced at the Manotick Community Association Executive meeting January 20, and again in the February 5, 2010 edition of the Manotick/Winchester EMC newspaper. Stakeholders were asked about speed and wake issues related to safety and property damages, and about the adequacy of signage along the waterway.

They were also asked to identify other safety concerns and to make recommendations for dealing with any identified issues.

While significant interest in the issues and the survey was expressed at the Manotick Community Association meeting, and though there were twenty requests for the survey; only four responses were submitted. Follow-up contact elicited key risk issues from additional respondents.

² Part II - Activity Policies: Historic Canals Policy

A copy of this follow-up survey can be found in Appendix B: Follow-up Survey.

The issue of excessive wash/wake was mentioned by all four respondents, targeting wakeboard boats (3) and large cruisers (1). Personal watercraft were identified for dangerous tracking of larger boats at close range, circling around, and jumping their wakes.

Visitor Information Program - Boater Survey 2008

While the focus of the report was on other than safety, one safety related point was provided.

While survey respondents were evenly split on whether there should be a speed limit on lakes, 64 of the 100 respondents believed that “*there should be a maximum speed limit on all other areas of the canal.*”

However; none of the local residents interviewed for this study (including local boaters in the areas of Manotick, Gloucester and Kars, Marina operators, and local residents responding to the follow-up risk survey) believed that there should be a speed zones the entire length of the canal. There was a general consensus amongst this local population that additional speed limits would reduce enjoyment of the waterway and would encumber local boat travel.

It should also be noted that none of those interviewed viewed excessive speed as a personal safety issue. It was acknowledged that there would likely always be boaters who, from time to time, might operate without regard for speed limits; but the vast majority of boaters, they believed, “operated in a responsible manner, at or very near the posted 10 km/hr speed limits”. On the water field observations support this view, as no boats were observed travelling significantly, if at all, in excess of posted speed limits.

Police report issuing approximately 50 tickets for speeding each summer. However the view of police is that, while speeding is an offence, the impact of speeding is not so much a personal safety issue as it is an issue of excessive wake and wash being generated by boats travelling in excess of posted limits.

A total of 50 speeding infractions represent a very small portion of the population of vessel passages through locks on the system over a season (.07%)³. This would be an even smaller percentage if local traffic was added to the population.

Police report that over the past 5 years there has only been a single accident that could be attributed to excessive speed.

There appears to be no compelling reason for adding additional speed zones along the entire length of the waterway. The number of boats travelling in excess of posted speed limits is very

³ Parks Canada estimates of vessel passages through lock on the system (2009 - 75,981 vessel passages)

low, in comparison to total boater traffic, and those who are caught speeding generate wake issues not safety risks.

The likelihood of their being a human safety related risk associated with excessive boat speed is considered rare.

Risk #	Risk Scenario	Description	Likelihood	Impact	Risk
R0	There is a risk that excessive speed will result in an accident causing injury or death.	One incident possibly related to speed	1 - Rare	3 - Medium	Low Risk

Impact	5					
	4					
	3	R0				
	2					
	1					
		1	2	3	4	5
		Likelihood				

Risk issues identified through consultations with stakeholders

The location and names of consulted stakeholders can be found in [Appendix C – Location of local stakeholders consulted](#)

Marina Operators

Marina operators who were interviewed⁴ identified a number of potential risk situations including;

- people being washed off marina docks by excessive boat wake (one reported incident);
- patrons at restaurant docks being rocked about; (ongoing situation, especially on weekends)
- fuel spills during refuelling operations; (once or twice per season)
- tour boat patrons being thrown off their seats by excessive wake; (one reported incident)
- the risk of being swamped while towing a disabled boat; and (one reported incident)
- collision risks for boats exiting and entering marinas (no reported collisions)

Risk Scenarios – Marina Operators

Risk #	Risk Scenario	Description	Likelihood	Impact	Risk
R1	There is a risk that a person will be washed off marina docks by excessive boat wake	One incident reported	1 - Rare	2 - Low	Low Risk
R2	There is a risk that patrons at restaurant docks will be rocked about by excessive wave action caused by boats.	Occurs often	3 - Moderate	1 - Negligible	Low Risk
R3	There is a risk that excessive wake at fuelling stations during refuelling operations will cause fuel spills.	One reported incident	2 - Unlikely	1 - Negligible Minimal health or environmental impact	Low risk

⁴ Operators of Manotick Marina, Kelly's Landing and Long Island Marine.

R4	There is a risk that four boat patrons will be thrown off their seats by excessive wake.	One reported incident	1 - Rare	1 - Negligible First Aid required	Low Risk
R5	There is a risk of being swamped while towing a disabled boat.	One reported incident	1 - Rare	3 - Medium Minor medical treatment required, no overnight hospitalization	Low risk
R6	There is a risk of collision for boats exiting and entering mainas	No reported incidents	1 - Rare	4 - High Serious injury requiring overnight hospitalization	Medium Risk

Impact	5					
	4	R6				
	3	R5				
	2	R1				
	1	R4	R3	R2		
		1	2	3	4	5
		Likelihood				

According to marina operators, the solution to the wake issue was not to add more speed zones, as these are considered to be ineffective in adequately dealing with excessive boat wake.

What were needed, were more appropriately located no-wake zones; in particular at least 50 meters before and after marinas, fuelling stations and boat launch areas. This would allow boats adequate time to reduce speed and wake before the affected areas were reached and to be far enough past the affected areas when coming back up to speed.

Marina operators also indicated that there was a need for greater police presence to enforce both maximum speed limits and no-wake limits, particularly on weekends and holidays.

In addition to increased enforcement, marina operators stated that larger and clearer signage, alerting viewers to regulations and penalties, would help get the message across to the boating public. In particular, advertising the types of charges that would be laid and their associated financial penalties was seen as a means of “getting the attention of boaters”. Large signs posting fines for speeding are currently in place on highways in Ontario and Quebec for just this reason.

Marina operators also agreed that communications from Parks Canada should be focussed on specific issues and targeted towards specific audiences. A “shot gun” approach to

communications, which includes multiple messages for multiple audiences, is seldom as effective as picking a single issue. For example, when the issue is boat wake, target operators of medium size family cruisers; primary generators of excessive wake, and tailor the message to that audience. For jet ski issues; target messages towards younger high school and university boaters; primary users of personal watercraft.

Shoreline Residents

For shoreline residents recurring themes included; excessive wake from cruisers and wakeboarding activities, safety issues associated with wakeboarding operations and excessive noise from cigarette boats and personal watercraft.

There was a suggestion from one shoreline resident to extend the speed zone south from N106, through the narrows, to just beyond Kelly's Landing. The issue mentioned was the large amount of high speed traffic, water-skiers and wake boarders, on weekends. They suggested, also, that this area should be a No Wake zone.

Another respondent also expressed concern about boaters speeding in the area of Manotick Marina, and the lack of enforcement on weekday and weekend evenings.

There is currently a single No Wake marker in front of Kelly's Landing. This is designed to protect fuelling operations, but there is only one marker. This single marker does not provide sufficient protection for fuelling operations as boats end up creating large wakes as they come off plane, immediately in front of the fuelling station. The wake action can disrupt fuelling operations and lead to fuel spills. The existing marker should be moved 50 meters further south to allow northbound boats sufficient distance to come down off plane prior to reaching the fuelling area. In addition a No Wake marker should be placed 50 meters north of the fuelling station to control southbound traffic.

However, given the afore mentioned speed concerns, and the close proximity to Kelly's Landing of the existing speed zone, I would recommend extending the existing speed zone south from N99 to 50 meters past Kelly's Landing, and placing "No Wake" markers immediately beside the speed markers. Having the two markers side by side would be far more visible, and boaters would have the option of reducing to 10 km/hr, if they created no wake at that speed, or slower as necessary. This would make the control zone (now speed and wake) more visible, and would help reduce excessive wake at both the Marina and at the Kelly's Landing fuelling station.

This configuration would also aid enforcement. Police state that getting convictions for speed violations is far easier than getting convictions for excessive wake violations. Those creating excessive wake in the area of the fuelling station could now also be charged with speeding.

Another suggestion from shoreline residents was to move the speed zone marker at the entrance to Mahogany Harbour further out into the channel. This would allow boats adequate distance to

slow down before entering the narrow entrance to the harbour. Currently boats are often well past the speed marker by the time they get to 10 km/hr, creating both a safety issue and a wake issue in this narrow entrance.

I would recommend moving the speed zone marker, currently at the entrance to Mahogany Harbour, seventy metres southeast to the actual entrance to the inner channel. There may be a need for two markers; one each at the north and south entrance point, to alert northbound and southbound traffic.

Consultations with shoreline residents north of Long Island Locks identified safety and wake issues associated with wakeboard activity in the area from N44 south to N48. A small, likely independent, wakeboard operation is reportedly being run out of the Gloucester Eccolands Park boat launch. The wakeboarding activity extends from the boat launch south through the built-up areas of Gloucester Glen and Honey gables. This part of the canal is less than 100 meters wide at its narrowest points and only 150 meters wide at its widest points.

Shoreline residents report being unable to safely swim or canoe because of the danger posed by wakeboarding activities. They also report damages to docks, boats and shoreline structures (retaining walls) because of the extreme wake thrown by the wakeboarding boat. In addition they complain, not only about the boat noise, but about the blaring music emanating from the boat; part of the wakeboarding experience.

Risk #	Risk Scenario	Description	Likelihood	Impact	Risk
R7	There is a risk of collision between wakeboard boats and people swimming or canoeing.	Numerous reported "near misses"	4 - likely ⁵	4 - High Serious injury requiring overnight hospitalization	High Risk
R8	There is a risk of property damage because of extreme wakes thrown by wakeboard operations.	Multiple incidents	4 - likely	1 - Low (\$1-\$5K) ⁶	Medium Risk

Impact	5					
	4				R7	
	3					
	2					
	1				R8	
		1	2	3	4	5
		Likelihood				

⁵ It is a "likely" weekly occurrence that persons are in danger if they try to swim or canoe while wakeboarding activities are being carried out in the area.

⁶ One interviewee spoke about wake-related damages (from wakeboard activities) to their retaining wall, a property loss estimated at \$15-\$20K.

Because of the risks to personal safety and to property, I would recommend a No Wake zone and a speed zone from Long Island Locks north to N44.

Because the safety issues relate solely to wakeboard operation, as opposed to all boat traffic, if there was a way to restrict the wakeboarding to the wider section of the Canal between N44 and N41; this would reduce the health and property risks in the residential areas south of N44 to a more acceptable level.

Most shoreline residents who were consulted supported the need for a greater police presence, but a few indicated that they observed police on the water “regularly”.

Many of those interviewed believed that it was larger “family cruisers” (over 25 feet) and the wakeboarding boats that created the excessively “huge” waves. The larger cruisers throw a large wake, even at 10 km/hr.

Parks Canada should consider targeting these boats at lock stations with messages speaking about the impact of excessive wake, explaining the regulations (what “No Wake” means) and listing the penalties.

None of those interviewed supported a speed zone the entire length of the study area.

Ottawa Police

Police estimate issuing 100 tickets each season in the study zone. Approximately half are for excessive speed in a speed zone and half for issues such as not having sufficient life jackets, not having proper documentation (boaters card, boat registration) in the boat, not having Transport Canada required safety equipment, and having liquor in the boat.

Police report only one significant incident over the past five years, a 2007 collision where a person was seriously injured. The incident involved a wakeboarding boat. Police acknowledged that a number of minor incidents are likely not being reported to police.

Police have no knowledge of boater accident fatalities⁷ in the area.

Constable X did not consider the area under study to be an “unsafe boating environment”. His opinion is that the vast majority of boaters do not speed to an extent that would create a serious risk to the public.

⁷ Statistics Canada recorded only 3 boating accident related fatalities in all of Canada for 2005, the latest year with information. The same year there were nearly 150,000 automobile collisions and just over 2,900 fatalities.

Damages caused by excessive wake and wash were an issue, although Constable X stated that identifying a specific offender was difficult, and proving a case of excessive wake in court, virtually impossible.

Constable X noted particular concern for the safety of wakeboard activities in the study area.

Parks Canada

Of particular concern was the possible wake-related damage to boats moored at south entrance to the locks.

It is often the case, and especially on weekends, that “jet skis” will use the bay as a play area, with high speed manoeuvring and the intentional creation of large wakes, over which the jet skis jump.

Unfortunately it is also a location where boats are moored at the Lock Station docks; either waiting to enter the locks or visiting the grounds. The wake generated by the fast moving jet skis, as well as the wake from other boats entering the area at speed, creates a significant risk of damage to moored boats. This risk was confirmed by the Lockmaster Justin Rice.

Warnings to jet ski drivers to slow down are often ignored.

A no-wake marker placed 250 meters south of the locks would create a zone to protect any moored boats from excessive wake created by fast moving watercraft. There would still remain 700 meters of bay area for boaters or personal watercraft operators to enjoy boating.

Risk #	Risk Scenario	Description	Likelihood	Impact	Risk
R9	There is a risk of property damage to boats moored at Long Island Locks due to jet ski activities in the southern bay.	Multiple incidents	4 - likely	Low (\$1-\$5K)	Medium Risk

Impact	5					
	4					
	3					
	2					
	1			R9		
		1	2	3	4	5
Likelihood						

I would recommend that a No Wake marker be installed 250 meters south of the lock entrance.

The addition of this No Wake zone would significantly reduce the risk of property damage to the boats moored at the Locks. It still provides adequate space for vessels to turn around without sending wake to the Lock station docks.

4.0 Summary of risks

Risk #	Risk Scenario	Description	Likelihood	Impact	Risk
R0	There is a risk that excessive speed will result in an accident causing injury or death.	One incident, possibly related to speed	1 - Rare	3 - Medium	Low Risk
R1	There is a risk that a person will washed off marina or other docks by excessive boat wake	One incident reported	1 - Rare	2 - Low	Low Risk
R2	There is a risk that patrons at restaurant docks will be rocked about by excessive wave action caused by boats.	Occurs often	3 - Moderate	1 - Negligible	Low Risk
R3	There is a risk that excessive wake at fuelling stations during refuelling operations will cause fuel spills.	One reported incident	2 - Unlikely	1 - Negligible Minimal health, environmental impact	Low risk
R4	There is a risk that tour boat patrons will be thrown off their seats by excessive wake.	One reported incident	1 - Rare	1 - Negligible First Aid required	Low Risk
R5	There is a risk of being swamped while towing a disabled boat.	One reported incident	1 - Rare	3 - Medium Minor medical treatment required	Low risk
R6	There is a risk of collision for boats exiting and entering marinas or boat launches	No reported incidents	1 - Rare	4 - High Serious injury requiring overnight hospitalization	Medium Risk
R7	There is a risk of collision between wakeboard boats and other boats, or people swimming or canoeing.	Numerous reported "near misses"	4 - likely	4 - High Serious injury requiring overnight hospitalization	High Risk
R8	There is a risk of property damage because of extreme wakes thrown by wakeboard operations.	Multiple incidents	4 - likely	2 - Low (\$1-\$5K)	Medium Risk
R9	There is a risk of property damage to boats moored at Long Island Locks due to jet ski activities in the southern bay.	Multiple incidents	4 - likely	2 - Low (\$1-\$5K)	Medium Risk

Summary Heat Map

Impact	5					
	4	R6			R7	
	3	R0 R5				
	2	R1			R8 R9	
	1	R4	R3	R2		
		1	2	3	4	5
		Likelihood				

Excessive Wake Issues

Nearly all respondents to Parks Canada surveys and follow-up consultations cited excessive wake as a risk issue. For most, the issues were damage to boats, docks, shoreline structures (retaining walls) and shoreline property (through erosion).

There were a small few who also mentioned safety issues associated with excessive wake related to smaller boats (fishing boats, canoes, kayaks) being swamped by the wake of larger boats.

There was one reported incident of a boat being swamped after being passed by two large cruisers. The swamped boat was towing a disabled boat at the time. No injuries were reported.

There was one reported incident of a person being knocked off a marina dock by excessive wake.

There was also one respondent who mentioned the potential risks to small children being injured by large waves while swimming, although no reported incidents.

The two dominant causes of excessive wake, according to respondents, were the larger “family cruisers” and wakeboarding activities. Water ski boats were specifically mentioned several times as not being an issue as they did not generate excessive wake, regardless of speed.

A 10 km/hr speed zone is not always an effective means of reducing the risks related to excessive wake because the larger cruisers and heavy wakeboarding boats can generate a damaging wake even when travelling at the posted speed limit. Several respondents suggested that “*slow speed zones should be combined with No Wake zones*”.

Effective communications, especially with operators of larger boats, are likely the best means of mitigating wake related risks associated with this class of boat. If communication efforts are coupled with heightened enforcement efforts, risks could be reduced even further.

Shoreline residents should accept some responsibility to protect their property by constructing infrastructure (docks, mooring systems and retaining walls) that can withstand normal, moderate wave action, regardless of the source.

Speed

Outside of references associated with excessive wake, speed as a dangerous and prevalent condition in the study area was not mentioned. Where interviewees were asked specifically whether or not they considered speeding to be a health and safety issue, all answered; “no”.

None of the stakeholders who were consulted believed that a speed zone the entire length of the study area was appropriate. There were recommendations from two shoreline residents to extend the current speed zone at Long Island Marine (approximately the N99 –N105 area).

Other than that, all of those consulted for this study considered that the current speed zones were appropriate.

Health and Safety

Two “health and safety” issues were identified. The first was the issue of small boats being swamped by the wake of larger boats. There was one reported incident of a small boat being swamped while towing a disabled boat. There were a number of comments about the potential for paddlers being swamped, but only two reported incidents.

The other identified risk was associated with wakeboarding activities being conducted in narrow areas of the canal where the boats and riders can come in contact with swimmers, paddlers and other boats.

During one field trip with Parks Canada, a wakeboard boat was observed towing a rider in and out of traffic, in the marked channel, at N97. The channel is only 80 meters wide at the marker. Given that a wakeboard tow rope is 30 meters long; this leaves little margin of error (10 meters) should a rider fall while on a high speed traverse. There is a considerable risk of hitting the shore or hitting docks extending into the canal.

The other reported risk situation relates to wakeboarding activities in the vicinity of Gloucester Glen and Honey gables where swimmers and paddlers are, according to local shoreline residents, at significant risk of being hit by wakeboard boats and/or towed riders. The canal is less than 150 meters wide in this heavily populated area.

The only significant health and safety risks mentioned were those associated with wakeboarding activities.

Communication

Field trips with the Ottawa police demonstrated that few of the boaters who were stopped for a safety check were aware of the amount that one could be fined for violating the regulations.

None of the boaters we spoke with were aware that operating a vessel towing a water-skier or person riding a tube or kneeboard in the navigational channel is prohibited.

I found a general lack of awareness amongst the general boating population about the regulations. This general lack of awareness was confirmed by the Ottawa police, who also stated that operators of the cruisers travelling through the system are not very knowledgeable about the regulations.

There is a need for more effective communications to alert the general boating population about specific regulations associated with this waterway.

The first step in developing effective communications, regardless of whether they are verbal, written in a brochure or posted on a sign, is to complete a stakeholder analysis of your target audiences.

The purpose of a stakeholder analysis is to identify; (1) what these stakeholders know about the issue(s), (2) what their knowledge gaps are, and (3) what misperceptions about the issues they may be harbouring.

Messages can then be tailored to fill knowledge gaps and correct misperceptions in a manner that resonates with that target audience. Too often messages tell people what they already know, at which point they stop listening or stop reading.

Wakeboarding

Local Resident, Kars

We have great concerns about the current sport of “wake-boarding”. Boats are weighted down in front and travel at slow speeds to create large wakes for ‘riders’. The wake created eventually reaches the shore, tossing moored boats and floating docks. Large waves splash against the shore tearing up vegetation and mud, swamping whatever is in the path. We suggest this sport be banned from the river as it is just too narrow to sustain such abuse.

All of those contacted for this study expressed concerns about wake board activities on the canal, noting not only concerns about wake related erosion, but also about serious health and safety and property damage risks associated with wakeboarding activities on such a narrow waterway.

Most wakeboarding boats have a variable ballast system, which allows for water to be pumped into and out of ballast bags from the surrounding water⁸. Adding ballast increases displacement, and consequently enlarges the wake produced.

To further these wakeboarding and wakesurfing activities, the boats are becoming larger and deeper and, with the advent of such devices as the hydraulically deployable wing under the transom, will create the huge continuous wakes particularly desired by surfers. During wakeboarding and wakesurfing, the boat is operated at speeds to ensure that the maximum-sized wake possible is generated.

A number of jurisdictions in Canada and the US are currently struggling to deal the issues associated with this relatively new sports activity.

There is compelling evidence supporting the opinion that wakeboarding is an inappropriate activity for the study area, and a number of those consulted recommended banning the activity on the river.

It is not possible to carry out wakeboarding activities without producing excessive wake that, on this narrow waterway, has no way of dissipating before it hits the shoreline.

One wakeboard operation (Ride the Wake) launches at the Bridge Street boat launch in Manotick and operates primarily between N99 and N95. This section of the river is quite heavily populated on both shores and has heavy boat traffic, especially on weekends.

This section is also quite narrow. With few exceptions the river is less than 140 metres wide; less than 100 metres wide at Collins Point. It is not possible for Ride the Wake to operate, on this stretch of the river, anywhere but inside the navigational channel.

In a waterway this narrow it is impossible for the wake left by the wakeboarding boat to adequately dissipate before it hits the shore. Shoreline residents report that the wake from the wakeboard boat dissipates little, if at all, before it reaches their docks, and boats, and swimming children. More likely is that the wake will actually grow as it hits shallower water.

It is not safe to pull a rider in this narrow channel when there are also other boats in the immediate vicinity; which there usually are. This is a very real safety concern.

I would not consider wakeboarding in this area to be a safe activity.

There is another wakeboarding operation in the areas of Honey Gables and Gloucester Glen, north of the Long Island Locks.

⁸ One issue associated with the use of ballast systems is the possible transference of invasive foreign species, e.g. zebra mussels, from one body of water to another.

This is another narrow (<150 metres) part of the river, again with many sections less than 100 metres wide. Also quite populated, and with moderate summer traffic transiting to and from Black Rapids locks.

For the same reasons as above, I would not, and neither do shoreline residents, consider wakeboarding in this area to be a safe activity.

Similar concerns were put forth by residents in the area of Kars where another wakeboard business is operating out of the Taylor Park area.

While the river south of James Island is considerably wider in most sections (300 – 400 metres), this area too is quite populated, and wake related property damage, to boats, docks and shoreline was a concern voiced by local shoreline residents.

The Muskoka Lakes Association has also identified a number of wakeboarding related issues in their region. Working with the Ontario Ministry of the Environment, this group has come up with a recommendation that no wakeboarding activity take place closer than 300 metres from shore and in open water.

If this recommendation were to be adopted by Parks Canada, there would be no region of the study area that could accommodate wakeboarding operations.

5.0 Summary of Recommendations

Recommendation #1

I would recommend extending the existing speed zone south from N99 to 50 meters past Kelly's Landing, and placing "No Wake" markers immediately beside the speed markers. Boaters would have the option of reducing to 10 km/hr, if they created no wake at that speed, or slower as necessary. Having the two markers side-by-side would make the control zone (now slow speed and no-wake) more visible, and would help reduce excessive wake at both the Marina and at the Kelly's Landing fuelling station.

This configuration would also aid enforcement. Police state that getting convictions for speed violations is far more difficult than getting convictions for excessive wake violations. Those creating excessive wake in the area of the fuelling station could now also be charged with speeding.

If this speed/no-wake zone is adequately enforced, the risks of fuel spills at the Kelly's Landing fuelling station would be mitigated.

Coupling the current speed zone with a no-wake zone would, if adequately enforced, also mitigate the excessive wake issues at Long Island Marine.

Recommendation #1 (alternative)

If extending the speed zone is not a practical option; I would recommend moving the current no-wake marker, located directly in front of Kelly's Landing south 50 meters. This would help protect the fuelling operations from excessive wake generated by northbound traffic. A no-wake marker is also required 50 meters north of Kelly's Landing to protect the fuelling operations from southbound traffic.

Recommendation #2

I would recommend moving the speed zone marker, currently inside the entrance to Mahogany Harbour, seventy metres southeast to just outside the actual entrance to the inner channel. There may be a need for two markers; one each at the north and south entrance point to alert both northbound and southbound traffic.

This would mitigate the risk of damage, to properties just inside the entrance, caused by boats coming down off plane in front of these properties, and generating excessive wake as they do so. Moving this end of the speed zone further out into the main channel would force boats to slow down just outside, rather than just inside, the narrow channel.

Recommendation #3

Because of the significant risks to personal safety and to property, associated with wakeboarding activities, I would recommend a No Wake zone north from the south end of the Honeygables development (approximately half way between N50 and N48) to the northern end of the Rideau Glen development, approximately .7 kilometres south of N44.

Because the safety issues relate solely to wakeboard operation, as opposed to all boat traffic, if it were feasible to restrict the wakeboarding to the wider section of the Canal between N44 and N41; this would mitigate the related personal and property risks in the residential areas south of N44.

Recommendation #4

I would recommend that a No Wake marker be installed 250 meters south of the Long Island lock entrance creating, from that point north to the locks, a No Wake zone.

This would significantly reduce the risk of property damage to the boats moored at the Locks. It still allows adequate space for vessels to turn around without sending wake to the Lock station docks.

Recommendation #5 - Communication

To deal with the excessive wake created by larger “family cruisers”, Parks Canada should target this particular class of boats at lock stations with messages; (1) about the impact of excessive wake, (2) explaining the regulations (what “No Wake” means) and (3) listing the penalties for violating these regulations.

This type of larger displacement boat still creates excessive wake even when travelling at the posted speed limit. Asking them to; “*Watch your wake, not just your speed*”, would help reduce excessive wake from this class of boats.

Recommendation #6 - Signage

There is currently no signage alerting north / south boaters that other boats may be entering the waterway from the public boat launch at Bridge Street. This is a particular issue for southbound traffic as the launch is hidden by the bridge structure. It would be helpful if southbound traffic was to be alerted to the potential for merging traffic

Parks Canada could consider mounting some signage on the north face of the bridge advising southbound boaters of the potential for starboard side merging traffic.

Recommendation #7 - Signage

On provincial highways in Quebec and Ontario, large signs are often posted advising motorists of the financial penalties associated with speeding. Marina operators were in agreement that there is a need to advertise fines and charges associated with speed and wake related regulations. These stakeholders recommended large and clear signage.

Parks Canada should place large signs at cooperating marinas and at public boat launches, listing the types of infractions and the associated financial penalties. Avoid cluttering the boards with motherhood safety slogans. Keep the focus on “stick” rather than “carrot”.

Recommendation #8 – Regulatory Change

SOR/93-220, Part 1, Paragraph 10(a) should be amended to include a reference to wakeboarding and wake surfing activities and equipment. Currently the regulation refers only to towing a water-skier or person riding a tube or kneeboard.

6.0 Appendix A: Risk Ranking Criteria

Likelihood	Experience/Observed Frequency
5 - Almost Certain	Occurs daily over the season
4 - Likely	Occurs weekly over the season
3 - Moderate	Occurs once a month
2 - Unlikely	Occurs once or twice over the season
1 - Rare	Almost never observed - may occur only in exceptional circumstances.

Likelihood

Impact

Level	Health and Safety	Economic
5 - Extreme	Death, permanent disability or illness	More than \$50,000
4 - High	Serious injury requiring overnight hospitalization	\$10,000 - \$50,000
3 - Medium	Minor medical treatment required, no overnight hospitalization	\$5,000 - \$10,000
2 - Low	Minor medical treatment required, no hospitalization	\$1,000 - \$5,000
1 - Negligible	First Aid required	Less than \$1,000

7.0 Appendix B: Follow-up Survey

Parks Canada Boating Safely Campaign – Risk Study

The Parks Canada Boating Safely Campaign began officially in 2009 and will continue to be a priority for the next several years. This campaign focuses specifically on problems created by excessive speed and wake.

Parks Canada Objectives:

- Public Safety
- Encourage (or at least not discourage) visitation and use
- Reduce risk of damage to property (docks, boats and shoreline)
- Ensure a quality visitor experience

Focus of the Risk Study

- Risks related to excessive speed (public safety)
- Risks related to congestion on the waterway (public safety)
- Risks related to excessive boat wake (public safety, property damage)

I am looking for input from shoreline residents regarding the risks associated with speed and wake.

I can be reached at:

jwvrma@sympatico.ca

819-827-9922 – Chelsea, Quebec

Jim Wright – Risk Management Associates

Questions for Rideau Canal Risk Survey

1. Speed

- Are the current 10km speed zones adequate?
- Are there other areas that you believe should be marked as 10km speed zones?
- Would you favour a 10km speed zone the entire length of the canal?
- In your opinion, are the current speed zone markers
 - o Visible
 - o Located in the proper zones
- Is there a need for greater enforcement of current speed limits?

2. Wake

- Have you experienced any wake-related damage to your property (boats, docks, other)
- Have you any wake-related safety concerns (canoes / kayaks being swamped, getting in or out of your boat, other)
- Are no-wake zones adequately marked?
- Are there other areas of the Canal that should be marked as no-wake?

3. Other Safety Issues

- Have you any other safety concerns?

4. Have you any recommendations for dealing with any of these risk issues

