

River Restoration Through Dam Removal Efforts, with a Particular Focus on the Ottawa River at Chaudière Island.

This document has been created in support of the effort to restore the Chaudière Falls in keeping with the vision of Elder (Dr.) William Commanda and the Circle of All Nations. It is hoped that this research will be a stepping-stone for further knowledge sharing and advocacy, and that those who are involved with and allied to this cause will benefit from the information presented in this paper. If you have any questions, please feel free to contact me and I will attempt to answer them if possible or try to point you in a helpful direction.

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Summary

This discussion paper examines dam removal initiatives in Canada and its application to the Chaudière Falls site on the Ottawa River. Dam removal campaigns exist to renew river ecology, ensure public safety, meet economic goals, and protect indigenous rights. Dam removal is often less expensive than refurbishment, and opens economic avenues for tourism and recreation. Many arguments against dam removal are based on logical fallacies and ecological misunderstandings. In the case of the Chaudière dam complex, an effective campaign to free the Falls should consider multiple interests, including tourism and recreation. The value of these interests are required to offset the loss of revenue promised to the stakeholders in the industrial site. Arguments in favour of removal include, but are not limited to: protection of First Nations rights and the goals of reconciliation, economic opportunity, ecological restoration, increased land value and cultural-aesthetic needs. Counter-arguments include: the profitability of industrial use of the site, colonial heritage value, ownership structure of the dam, and ecological fallacies concerning river restoration. The renewal of the location requires some preconditions, among them: formation of a coalition of diverse interests around the suggested theme of “Chaudière Falls Renewal”; political will and action from the N.C.C.; forestalling of further development of the industrial site; and effort to raise public awareness in the National Capital region. Additional support is provided in suggested readings, references, and appendices.

1. Overview of dam removal in Canada¹

Canada is among the world's top ten dam builders and is by far the largest diverter of water. While there is no comprehensive inventory of the thousands of small dams in Canada, over 800 large dams do exist, the largest of which are the La Grande (James Bay, Quebec), Churchill-Nelson diversion (Manitoba), and Churchill Falls (Labrador), which comprises two-thirds of all water diverted within Canada.² Of the dams in Canada that are over 15 m in height, 75% are components of hydroelectric power plants, which accounts for two-thirds of Canada's energy supply.³

Public campaigns in support of dam removal may emerge for a variety of reasons, including but not limited to:

- Aged or decommissioned dams are a hazard to public safety, an economic liability, and expensive to upgrade
- Ecological problems associated with dams, among them:
 - Barriers to fish migration;
 - Siltation above and low water levels below the dam destroy habitats and reduce biodiversity;
 - Loss of healthy peak flows during spring and impeded sediment transport along the river system throughout the year;
- Recreational factors: water sport and fishing improves with unimpeded river flow, bringing with it new economic opportunities through tourism;
- Cultural values and heritage conservation: the right of traditional use of the river system by First Nations peoples for food and ceremony

As can be inferred from this list, it is possible for a diverse group of concerned parties to converge upon a campaign to remove a dam. The most extensive grassroots activity has been occurring on the West Coast of Canada and the U.S., where the recovery of salmon stocks depends upon access to upstream spawning habitats. A similar concern over Atlantic salmon has supported the removal of the Edwards Dam on the Kennebec River in Maine. Add to this the growing public interest in outdoor recreation in pristine wilderness, and it is clear why so many different interests can be represented in dam removal campaigns.

There is no national organization behind dam removal advocacy in Canada. Instead, there are regional organizations, each with its own constellation of local interests. The most likely explanation for this fact is that energy policy and hydroelectricity generation and management falls within the jurisdiction of the Provinces. While there may be agreement between a B.C. and

¹ It is necessary at the outset to state that there are significant differences between Canada and the U.S in environmental policy. There are many instances of dam removal actions in the U.S., and advocates of dam removal must act within regulatory processes specific to American federal and state regulations. While the experiences of these advocates is valuable, it is beyond the scope of this report to detail methods and processes that would be outside the confines of Canadian policy. Please consult the list of online readings available at the end of this report.

² The Canadian Encyclopedia.

<http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1SEC831729>

³ The Canadian Dam Association. FAQs. <http://www.cda.ca/>

an Ontario group on the principles for dam removal, each has to contend with different Provincial policies and regulations, so there has been little interprovincial coalition building to date.

2. Basic economics of dam removal

A simple calculus for the economic benefit/loss of dam removal does not exist. Indirect economic effects, much like a river system, extend well beyond the dam location and into connected activities and economic spheres. For example, the abovementioned Edwards Dam on the Kennebec River accounted for only 0.1% of the total hydroelectric capacity of the state of Maine.⁴ But with the removal of the dam, the windfall delivered by a renewal of the sportfishing industry alone is estimated at \$48 million, of which half of the benefit is expected to remain within the local region.⁵

Nevertheless, most sources do agree on some general assumptions about the economics of dam removal, some of which follow:

- For most older dams (the average life expectancy of a dam is 50 years), it often costs less to dismantle a dam than to refurbish it: one study places the cost of removal at only 37% of the total cost of repair;⁶
- One source states that the total cost of dam removal and river restoration can range from \$200,000 for small creeks, \$800,000 for small rivers, or \$3 million for medium-sized rivers;⁷
- Sediment management from dam removal can amount to 40%-70% of the total cost;
- In most cases, at least with small dams, the cost of construction and maintenance of a fish ladder can exceed the cost of dam removal.

The important thing to keep in mind about the economics of dam removal is that it is impossible to weigh the cultural and heritage value of a river system in a cost/benefit analysis. The means is available, however, to incorporate the added long-term value of tourism and recreation to the local economy in a dam removal study. This can often outweigh the value of hydroelectric power, at least to the local region in question.

3. Common arguments against dam removal

The following arguments are often cited by parties in opposition to dam removal. For a more detailed exploration of these arguments, please see Smith (2002).⁸

⁴ Smith, D. C. Improving the Sustainability of River Systems. p. 20.

⁵ Smith, D. C. Improving the Sustainability of River Systems. p. 24.

⁶ Otto, Betsy. Paying for Dam Removal: A Guide to Selected Funding Sources. American Rivers. 2000. <<http://www.dnr.state.mi.us/PUBLICATIONS/PDFS/fishing/dams/Paying-Dam-Removal.pdf>>. p.1.

⁷ This estimate includes the cost of sediment management, a cost that appears to be excluded from many other sources. Note also that the 'typical' dam creates a reservoir, which accumulates sediment. This is not the case with the Chaudière Ring Dam, which merely diverts the river flow toward the generating stations. What impact this may have on the cost would need to be determined.

⁸ pp.4-6.

1) *Regulatory obstacles*

- a. Eligibility for the removal of dams is negated by laws or regulations.
- b. Bureaucratic delays and red tape hinder the actualization of the campaign.

2) *Ecological fallacies*

The dam can be seen as a part of the adapted river system. The river has grown around the dam that has existed there for decades. Damage to the river occurred in the distant past, and to undam the river would cause greater ecosystem harm than to leave it in place.

3) *Socio-ideological barriers*

Some people:

- a. Value the aesthetic of dams: 'part of the (built) environment'
- b. Dam as symbol of 'man's triumph over nature'
- c. Lack of knowledge of the harmful aspects of dams.
- d. Do not consider the possibility of dam removal.
- e. Find comfort that dams prevent downstream flooding
- f. Value dams as access infrastructure (walkways, roadways).
- g. Level of public apathy
- h. Absence of leadership, unity, or direction in the movement to remove a dam.

4) *Economic barriers*

The cost of campaigning for dam removal, or in some cases the removal project itself, may exceed the means of those who want it fulfilled.

Any or all of these obstacles can come into the debate over a specific dam removal case. No doubt many more rationalizations exist that are not stated above. While the soundness of logic in the above statements may be suspect, it is crucial for advocates of dam removal to at least be aware of the arguments and be prepared to counter them effectively,

4. Case study: Chaudière ring dam

In order to effectively orchestrate a campaign to remove the Chaudière dam, the site must be described in as much detail as possible, those who stand to gain from the preservation of the dam identified, and all parties who would benefit from its removal identified. The purpose of this section is to build as much knowledge as possible in order to assist in the organization of a campaign. Therefore, the recommendations of the author as well as queries and concerns are noted where appropriate.

The Chaudière dam is a 'ring dam' situated above the Chaudière Falls on the Ottawa River, created for the purpose of diverting the river's current into four separate hydroelectric generating facilities on and around Chaudière Island.

4.1. Ownership of the dam

Having never signed a treaty, the land and waters in question are considered by the Algonquin First Nation to be unsurrendered territory. Nevertheless, other stakeholders claim ownership of the area. Chaudière Island is federal (Crown) land, held in trust by the N.C.C. and leased to Domtar Inc. The waters of the Ottawa River, however, are divided between the Provinces of Ontario and Quebec along an interprovincial border. This is significant, since the Chaudière ring dam is a structure built *directly on the Ottawa River, almost entirely in Quebec waters* to the west of and separated from Chaudière Island, connected to the island by concrete penstocks that channel water to the power stations. While an N.C.C. map identifies the dam and the area within its concave shape as “partnership” (federal role and involvement) land, its actual legal status needs to be confirmed. [*Recommend: Investigate whether the dam itself is within the N.C.C. jurisdiction.*]

Three principal parties share responsibilities for managing the dam, maintaining and setting water levels (portion of interest in parentheses):

Ontario: Hydro Ottawa Holding Inc. (17/60 = 28.33%)
Quebec: Hydro-Quebec (20/60 = 33.33%)
Private: Domtar Inc. (23/60 = 38.33%)

These three principals operate and maintain the dam under the corporate entity known as Chaudière Water Power Inc. (CWPI). The City of Ottawa owns Hydro Ottawa Holding Inc., while a subsidiary of Hydro Ottawa Holding Inc., Energy Ottawa, owns and operates two of the hydro-electric generating plants below the falls on the Ontario side.

4.2. Plans for the Dam

Current long term plans for CWPI forecast capital expenditures of some \$20 million over an eight-year period commencing in 2009 for the restoration of the dam’s supporting piers.⁹ Additionally, after merging with forestry transnational Weyerhaeuser in August of 2006, Domtar is in a position to reinvest in the development of Chaudière Island. In September 2006, Domtar published an Environmental Screening Report (ESR) to redevelop the hydroelectric potential of Chaudière Island.¹⁰ The plan involves substantial renovation of the existing plant to achieve a 28 MW generating capacity a water discharge of 340 cubic metres per second.¹¹ This is a substantial increase in capacity from the previous plant.

The N.C.C. has the long-term goal of acquiring and opening-up the industrial site on Chaudière Island for tourism and mixed-use development. The vision for the site is detailed in its 2005 publication, *Canada’s Capital Core Sector Plan*.¹² However, in November 2006, Domtar announced it is working hard to acquire the NCC lands on Chaudière Island.¹³

⁹ Hydro Ottawa Holding Inc. 2004 Annual Report. p.29.

¹⁰ “Environmental Screening Report for Domtar Inc.’s New Project to Develop the Hydroelectric Potential of the Site in Ottawa” (ESR), Presented to Domtar Inc., Prepared by GENIVAR. September 2006.

¹¹ ESR. Sect 4.1.

¹² Of particular interest are the following passages from the report:

4.3. Arguments for the removal of the Chaudière dam

This section outlines key arguments in support of the removal of the Chaudière dam. It is by no means exhaustive, and those advocates who support the effort are encouraged to add to this list. The arguments are not listed in any particular order of significance, keeping in mind that a coalition of interested parties would likely support different priorities.

Human rights

- The rights of the Algonquin First Nation, the original inhabitants of the area, to an (unceded) river system restored to a state that supports traditional land use. *[Recommend: Inform Robert Potts, senior partner, Blaney McMurtry LLP, who is representing the Algonquins in their land claim.]*

Financial

- Expensive upgrades: Of the \$20 million earmarked for dam upgrades, approximately \$5.7 million would need to come from the City of Ottawa and its taxpayers.
- Low cost of sediment management: With the absence of a reservoir (the ring dam diverts water), the expenses incurred for sediment management during and after dam removal should be well below average
- Gains in land value: Restoration of the area from industrial to mixed-use would elevate land value for development.
- Gains from tourism and recreation: Public access to Chaudière Island and the availability of land for cultural development would provide substantial revenue from tourism. A natural river habitat will also attract more recreational users: white-water rafting and similar water sports at the falls and sportfishing around the islands will improve the recreational value of the location.

Ecological

“...Celebrate the unique industrial and aboriginal histories of Victoria and Chaudière Islands, encouraging their transformation into an important public destination that includes a new Aboriginal Centre, *preserves working industrial uses*, adaptively reuses redundant heritage structures and promotes the infill development supporting a mix of new uses and activities at an intimate scale. The focus of development and activity will be on Victoria Island and the eastern tip of Chaudière Island (Place-Making Initiatives Nos. 4 and 5 on Map 9).” Canada’s Capital Core Sector Plan. NCC. 2005. p. 114. [emphasis added].

“...Establish pedestrian linkages from the Canadian War Museum to the Chaudière Falls Ring Dam, via Albert and Chaudière Islands, in collaboration with Domtar and Energy Ottawa.” [ibid.] p. 115. *Note that this assumes and promotes a heritage/aesthetic value to the dam. – Ed.*

¹³ Bassett, Shannon. “Logjammed”. Canadian Architect. Jan. 2007. < http://www.canadianarchitect.com/issues/PrinterFriendly.asp?story_id=198722134700&id=183232&RType=&PC=&issue=01012007>.

- Sediment cycles : Unimpeded sediment transport through the river system and the return of natural peak flows during spring.
- Migration of fish, eel, and other aquatic species: The removal of the Chaudière dam, power plants, and surrounding infrastructure will open natural migration paths for existing species and, in the long term, facilitate the reintroduction of former river inhabitants.
- Improved biodiversity and riparian habitat restoration: Natural river flows will restore the health of shorelines above, along, and below the Chaudière.
- Reduction of toxins: Known presence of soil and groundwater contamination in the Chaudière area will dissipate with the absence of concentrated industry.

Cultural-Political, Heritage, Aesthetic

- Makeover for a ‘world city’: The Chaudière dam and supporting infrastructure is an industrial eyesore in the heart of a modern, international city. Its presence prevents the development of the area to its full potential. It is not hard to imagine an Aboriginal peace-building and conference centre on Victoria Island and, perhaps, an Ottawa River Heritage Museum on Chaudière, with parkland and trails between them, and each divided by a multi-use route connecting Ottawa with Old Hull. A marketable vision without the dam is needed. *[Recommend: Commission an artist’s concept of the Islands and surrounding waters incorporating this vision.]*
- Reconciliation: Much of the developed core of Ottawa caters to the wealthy, and most heritage sites in downtown Ottawa celebrate the Eurocentric colonial history of old Bytown. Developing Chaudière and Victoria Islands around the heritage and values of Canada’s First Nations would place the true history of Ottawa at its centre for all to see and experience. This step would be a pragmatic step toward reconciliation between Canada and First Nations.

4.4. Barriers to the removal of the Chaudière dam

- It is a money maker: Energy Ottawa sells Chaudière power to the Ontario grid. This is the equivalent of about 1.5% of the total consumption of the City of Ottawa, and the power does not support Ottawa exclusively – but the profit gained by Energy Ottawa is returned directly to the city.¹⁴
- Removal of the surrounding infrastructure would be expensive: The total cost of Chaudière dam removal and river restoration needs to be calculated, but the author’s rough estimate, based on comparison with other dam removal costs, stands at \$5 million. The N.C.C. would have to buy-out the current leases, pay-off the CWPI

¹⁴ Figures from Hydro Ottawa Holding Inc. 2003 Annual Report, p. 1.

stakeholders, and bear the cost of river restoration.

- Heritage value of the site: Many may perceive a great value in the colonial heritage offered by the site and resist the demolition of the dam and power plants, instead supporting alternatives such as public access to view the Chaudière Falls. Some place historical and heritage value on the site, but its origin is limited to its modern history and its heritage as the birthplace of the local economy. The dam is seen as a symbol of progress.
- Lack of acknowledgement of the Algonquin claim to the site as ‘unsurrendered land’. As a result, there are disputes over the existence, definition, and implications of land ‘title’, ‘ownership’, ‘right of use’ among various constituents. Some are incapable of respecting the site as a sacred site, or the understanding dam as a profanity within a sacred geographic system.
- Its not a real dam. It’s a diverter: “Why tear down so much infrastructure when the dam itself isn’t such a serious problem for the River?” [*Note about approach: If the project is to not only remove the dam, but also the power plants and infrastructure, then we shouldn’t be calling it dam removal. We should be using descriptions such as ‘restorative ecology’ or ‘Chaudiere Falls Renewal’.*]
- Leadership change in the N.C.C., the current landholder, may preclude the interests of a minority coalition group in its planning and actions concerning the site.
- N.C.C. as a powerless partner? Would the N.C.C. ever break its lease with Domtar? Is the N.C.C. capable of acting against local industry which is also a source of local revenue and local jobs?

4.5 Required conditions for the removal of the Chaudière dam

The vision of the transformation must be presented as an economically and ecologically viable proposition. A detailed and realistic cost-benefit analysis of Chaudière Falls Renewal should be conducted as soon as possible, so the core group requires the *pro bono* services of an economist, an engineer, and an ecologist.

The N.C.C. must be in a position to implement its vision for Chaudière and Victoria Islands – *without* the preservation of “working industrial uses”, i.e., hydroelectric generation.¹⁵ For this to happen, the N.C.C. must find the political will to expropriate the lands for cultural and heritage purposes only. It would be necessary for the City of Ottawa to act as a development partner in this effort, convinced by the windfall of tourism and recreation revenue for its constituents, as well as the vision it promotes for the heart of the city.

None of these conditions will be met without an effective public campaign involving a constellation of diverse interest groups focused on the sole objective of changing the Chaudière

¹⁵ Which is included in its present plan. See Canada’s Capital Core Sector Plan, NCC. 2005. p. 114.

landscape for good. While the ownership of the river renewal campaign will lie within a core group, a successful discourse coalition must involve a wide spectrum of parties:

- Private sector tourism partners throughout the National Capital Region.
- Regional water-sport groups and whitewater rafting businesses
- Sportfishing groups, clubs, and alliances
- Ottawa River shoreline ecology groups (both downstream and upstream)
- Partners within the political administration of the City of Ottawa
- Local and regional heritage and culture groups
- Gatineau groups advocating waterfront renewal
- Private citizens and activists on both sides of the River

One short term condition is also a must: the planned reinvestment in the hydroelectric potential of the Chaudière must be postponed as long as possible to allow the N.C.C. to deal for the land. While Domtar is the largest stakeholder, the City of Ottawa is also a shareholder and should be made aware of the campaign so that City Council may debate the issue.

Other conditions will emerge as the campaign progresses. Note that the recommended action that appear earlier in this report are important requirements as well.

4.5 Summary of a campaign strategy

DECLARE A VISION: A vision for Chaudière Island must be elevated to the status of the vision for Victoria Island. In fact, they should be treated as a single category, much like the *Asinabka* vision presented by the Circle of All Nations.¹⁶ Geographic, heritage, and cultural assumptions about these spaces must be challenged in a creative and inspiring way to attract public attention and appeal. “Chaudière Falls Renewal” is a good theme to start with, and should carry with it a clear interpretation of the changes that could improve the heart of Ottawa. Compromise may be necessary to ensure the removal of the dam and its supporting infrastructure, since tourism and recreation revenues are needed to offset the loss of industrial income for the City of Ottawa. The cost of river renewal may be the development of a ‘heritage attraction’ on Chaudière Island – but Victoria Island should remain in accord with the longstanding vision of Elder William Commanda, Douglas Cardinal, and their allies.

FORM A COALITION: A wide coalition composed of parties listed in the previous section must be formed.

INVOKE DEMOCRACY: Effort must be made to re-open the public consultation process concerning the refurbishment of the hydroelectric project at Chaudière. While an environmental assessment was conducted in 2006, stakeholders identified in this report were not consulted in its preparation.¹⁷ Media releases must be utilized to raise public awareness and promote debate on

¹⁶ See map illustration, “William Commanda’s Vision for Asinabka”, available at www.circleofallnations.ca.

¹⁷ Please see “Environmental Screening Report for Domtar Inc.’s New Project to Develop the Hydroelectric Potential of the Site in Ottawa” (ESR), Presented to Domtar Inc., Prepared by GENIVAR. September 2006. Available at the

the matter. Citizens of the region should be informed and invited to participate in the campaign. Youth involvement in the campaign will be valuable.

5. Invitation to discussion and feedback

The proposed strategy is a working plan that requires input from many sources to grow into a viable campaign. The transformation of the landscape and river system at the Chaudière Falls rests on the assumption that a broad constituency would support the end of industrial uses of the area.

Politically, the location could not be more complex: the site is located on an interprovincial border within the nation's capital, at the intersection of provincial, municipal, and federal government bodies. The site is part of a claim to unsundered Algonquin territory. The Algonquin vision for *Asinabka* grows from an understanding of history that stands directly opposed to the colonial heritage of the Ottawa area.

Many questions remain unanswered. If a coalition is formed, how much will the vision for *Asinabka* become diluted within the wider context of heritage, tourism, and recreation interests? Public opinion sees hydroelectric power as a 'green' energy source: can this perception be overcome? Is N.C.C. expropriation of the land really a possibility? And is it truly necessary for Domtar to sell the land, or would Domtar Corp. see opportunity within the plan and remain as a partner? Isn't expropriation directly opposed to the spirit of reconciliation? How much razing of the industrial infrastructure is required, or even realistically attainable in light of colonial heritage interests? More questions that grow from those already posed.

In spite of the complexities of the issue, this author believes that the vision of an open, renewed, accessible, and attractive setting on and around Chaudière and Victoria Islands is of great benefit to many.

6. Suggested readings

In the course of compiling this report, many valuable sources were identified. The most helpful and relevant of those are listed here:

American Whitewater: "2007 Top Ten River Stewardship Issues".

<http://www.americanwhitewater.org/content/Article/view/articleid/10295/display/full/>

Bednarek, Angela T. "Undamming Rivers: A Review of the Ecological Impacts of Dam Removal." *Environmental Management*. 27: 6 (2001) Springer-Verlag, New York. 803-814.

Clearinghouse for Dam Removal Information, Library at U of Cal, Berkeley.

<http://www.lib.berkeley.edu/WRCA/damremoval/news.html>

History and Architecture of the Chaudière Falls Area, academic webpage

<http://aix1.uottawa.ca/~weinberg/chaudier.html>

Ottawa Riverkeeper's River Report. Issue N°1 - Ecology and Impacts. Ottawa Riverkeeper/Sentinelle Outaouais, May 2006.

Preliminary Economic Assessment of Dam Removal, the Klamuth River.
http://www.ecotrust.org/nativeprograms/siskiyou_assessment.html

Report on the Domtar Hydroelectric Refurbishment Project. Document #06-01-17141. Canadian Environmental Assessment Registry. Government of Canada. Ottawa, Ontario.
http://www.ceaa.gc.ca/050/Viewer_e.cfm?CEAR_ID=17141

River Recovery, a B.C. campaign group.
<http://www.recovery.bcit.ca/index.html>

Saugeen Valley Conservation Authority
<http://www.svca.on.ca/>

Readings related to the Canadian Environmental Assessment Act:

“Considering Aboriginal traditional knowledge in environmental assessments conducted under the Canadian Environmental Assessment Act -- Interim Principles” http://www.ceaa.gc.ca/012/atk_e.htm

“Ministerial Guideline on Assessing the Need for and Level of Public Participation in Screenings under the *Canadian Environmental Assessment Act*” http://www.ceaa.gc.ca/013/006/ministerial_guideline_e.htm

7. References

Bassett, Shannon. “Logjammed”. *Canadian Architect*. Jan. 2007.
http://www.canadianarchitect.com/issues/PrinterFriendly.asp?story_id=198722134700&id=183232&RType=&PC=&issue=01012007

Canada's Capital Core Sector Plan. NCC. 2005.
http://www.canadacapital.ca/bins/ncc_web_content_page.asp?cid=16300-20444-20473&lang=1

“Environmental Screening Report for Domtar Inc.'s New Project to Develop the Hydroelectric Potential of the Site in Ottawa” (ESR), Presented to Domtar Inc., Prepared by GENIVAR. September 2006.

The Canadian Dam Association. Website. <http://www.cda.ca/>

The Canadian Encyclopedia. The Historica Foundation.
<http://www.thecanadianencyclopedia.com/index.cfm?PgNm=HomePage&Params=A1>

Hydro Ottawa Holding Inc. 2004 Annual Report.

Otto, Betsy. Paying for Dam Removal: A Guide to Selected Funding Sources. American Rivers. 2000. <http://www.dnr.state.mi.us/PUBLICATIONS/PDFS/fishing/dams/Paying-Dam-Removal.pdf>.

Smith, Donald Craig (D.C.). Improving the Sustainability of River Systems Through the Removal of Dams on the Saugeen River, Southwestern Ontario. M.A. Thesis. U of Guelph, 2002.

Appendix A. – Aerial map of the Chaudière Falls and surrounding area



Appendix B1. – Newspaper article

“Free the Falls, 72% say: Public willing to spend millions on Chaudiere site, new poll reveals”
Mike Blanchfield. The Ottawa Citizen. Ottawa, Ont.: May 19, 1998. pg. A.1.FRO

Abstract (Document Summary)

Almost 83 per cent of respondents said they favour naming a new park after the company if [Eddy] were to give the property away. And 64 per cent of poll respondents said Eddy would deserve "a significant tax break" in return. Ross Stairs, manager of Eddy's Ottawa-Hull division, says the company is flattered by the poll results, but it has no plans -- at least not for now -- to turn over any of its property for public use. "A major issue for us is: we still have an operating mill. It's a viable operation and we believe it has an excellent future," Mr. Stairs said yesterday in a telephone interview. "That's an issue we have to keep uppermost in our mind."

The poll's favourable attitude towards Eddy is part of a larger trend that has seen the proliferation of naming public places after corporate entities. It is part of the same trend that has seen the proliferation of sports stadiums, such as Kanata's Corel Centre, named after everything from insurance companies to high tech firms, said Mr. [Conrad Winn].

Full Text

Ottawa area residents overwhelmingly support public access to the Chaudiere Falls. And they don't mind if some public money pays for that, says a Citizen poll. Almost three quarters -- 72 per cent -- of 410 people polled this past weekend said it would be desirable to open the Chaudiere Falls to the public. And two out of five people surveyed -- 41.5 per cent -- said they wouldn't mind seeing up to \$10 million in public funds go to the project, according to Ottawa polling firm Compas Inc., which conducted the telephone survey Friday and Saturday on behalf of the Citizen.

"It means people are fairly enthusiastic about redevelopment of the Chaudiere Falls area. There's virtually no opposition," said pollster Conrad Winn. "Compared to other recreation issues, this ranks quite high." Respondents also had kind things to say about E. B. Eddy Forest Products Ltd., the major obstacle to the National Capital Commission's plan to redesign and commercially develop property near the falls.

Eddy owns Chaudiere Island, one of the key areas around the Falls. After a long silence on the issue, the company said Friday it will likely expand its operation to the island, after having recently invested \$50 million in technological upgrades for its Hull paper mill.

Almost 83 per cent of respondents said they favour naming a new park after the company if Eddy were to give the property away. And 64 per cent of poll respondents said Eddy would deserve "a significant tax break" in return. The poll sample is considered accurate to within five percentage points 19 times out of 20.

Ross Stairs, manager of Eddy's Ottawa-Hull division, says the company is flattered by the poll results, but it has no plans -- at least not for now -- to turn over any of its property for public use. "A major issue for us is: we still have an operating mill. It's a viable operation and we believe it has an excellent future," Mr. Stairs said yesterday in a telephone interview. "That's an issue we have to keep uppermost in our mind."

It was only this past week, Mr. Stairs said, that the idea of pursuing some sort of compromise between Eddy's economic goals and the public's interest was first raised when the company and the NCC met. "We realized we had some major obstacles in trying to combine the two, especially in the limited geographical area." Mr. Stairs said he recognizes the poll suggests Eddy has the opportunity to generate some positive public relations. "We are interested in being good corporate citizens," he said. "We've been here a long time

and that's important to us." He noted the company has made significant contributions to several local causes, including the Gatineau Park trail, the Tulip Festival, local hospitals and universities.

The poll will "cause us to be even more aware" of ways in which the company can work towards a compromise on the public access issue, he said. "It will give us additional reason to look at what we can do in that whole area of the Chaudiere Island." Mr. Winn said the poll reflects a significant shift in the public's attitude towards government spending.

While 41.5 per cent favoured spending up to \$10 million of public money on a park and 16.6 per cent approved of an expenditure of between \$10 and \$49 million, only 24.6 per cent opposed any use of public money towards the project. "For the last eight, nine years the public has been very tax- weary and debt-conscious and doesn't want to spend money on anything," said Mr. Winn. "The fact that only 25 per cent are against spending public money is a pretty strong confirmation that people are interested in the project."

The poll's favourable attitude towards Eddy is part of a larger trend that has seen the proliferation of naming public places after corporate entities. It is part of the same trend that has seen the proliferation of sports stadiums, such as Kanata's Corel Centre, named after everything from insurance companies to high tech firms, said Mr. Winn. "They (Eddy) have an opportunity here to win a lot of good will," said Mr. Winn. "Prior to 10 years ago, the dominant view among Canadians on public sponsored projects was, 'Let's just get hold of that piece of land, spend government money, redevelop it, and name it after some historical person.' "Now people are saying, 'Let's see what we can do without spending a lot of money. If we can save a bundle of money by giving credit to the current owners, let's do that'."

Former NCC Chair Jean Pigott says she's not the least bit surprised by the public's positive attitude towards Eddy. "Eddy has produced a lot of jobs, through the Depression, through the war. So there's goodwill there," said Mrs. Pigott, who is also an adviser to Ottawa 2000, a group considering the restoration of the falls and nearby islands for a big millennium project for the capital. Mrs. Pigott says she can't see Eddy making a serious move in the near future because of the money the company has invested in the plant.

She hopes that by 2017 -- the 150th anniversary of the country and the capital -- the site will be developed with Eddy's full co- operation. The poll underscores the need for joint ventures between the public and private sectors. "If there's to be a commercial aspect to it, I think public- private ventures are right," she said. "I dream of yellow buses stopping there and telling the kids about the first people, the explorers, the missionaries, then the settlers who cut down the pines," she said. "The public, thanks to your (the Citizen's) leadership, has fallen in love again with an old dream."

Despite Eddy's reluctance, the NCC intends to promote its redevelop scheme for the falls area, part of its revised plan for the capital, which is to be released in the coming weeks. The plan calls for historical exhibits based on the ruins of mills on Victoria and Chaudiere Islands, a network of foot paths and bridges, a boardwalk and a mix of cafes, shops, and areas for open- air public performances.

"(The poll) clearly demonstrates the public supports this type of redevelopment -- within certain parameters. And that fits well with the commission's plans," said NCC spokeswoman Diane Dupuis. But the NCC realizes that such a venture would have to be a "public-private partnership. And of course the willingness of E.B. Eddy has to be there right from the outset," she said. "We still feel this is a viable project in the long term, even in the short term if it appears there is less flexibility."

Appendix B2. – Newspaper article

“Freeing the falls: For years, the NCC daydreamed of rescuing the Chaudiere Falls from obscurity. Now the dream may come true.” Tom Spears. The Ottawa Citizen. Ottawa, Ont.: May 2, 1998. ; p. A.1.FRO

Jean Pigott, former chairwoman of the National Capital Commission, and the owners of E. B. Eddy Forest Products Ltd. will meet next month to discuss ways of making the Chaudiere Falls accessible to the public again. After speaking out in a Citizen interview this week about the lack of public access to the historic falls, Mrs. Pigott got a call from a representative of the Weston family, owners of E. B. Eddy. Mrs. Pigott said she now has an appointment to discuss the issue with senior Weston officials, "hopefully in about six weeks." The Westons have just announced plans to sell E. B. Eddy through a public-share offering and "they're going to be very sensitive to some of these issues," she said. "They don't have to go away" from their facilities at Chaudiere, she observed. "They just have to have (public) access" to the falls, which she called "one of the greatest natural phenomena in this area."

An E. B. Eddy spokesman said yesterday the company is unaware of any plans to open up public access to the falls. Phil Hearn said the company insists on keeping its mills operating, and has just spent \$45 million to modernize its operations here. Mrs. Pigott said she has a plan to work from. While she was chairwoman of the NCC, a proposal was drawn up to bring the public back to Chaudiere Falls. For 12 years that plan has been gathering dust at the NCC. A consultant hired by the NCC in 1986 suggested paths leading to panoramic views of the same falls that Samuel de Champlain saw in 1613. It's a simple plan that wouldn't require immense changes at the site, said Denis Major, formerly director of urban planning at the NCC and now an urban planner in private practice. And Mr. Major said the capital needs some way -- whether using the 1986 plan or some other approach -- to let people see and appreciate the full glory of the Chaudiere. "We call it a hidden jewel," he said. "This has been a pet project of mine." First, he says, lights at either end of the curving "ring" dam just upstream from the falls would light the falling water dramatically. "The electricity is already there," he pointed out. Then comes the job of providing public access. "The Quebec side is the best way of seeing it," he remarked.

He traced the lines laid out in the 1986 study: a footpath coming down from the Parc des Portageurs on the north side to a viewing area on the mainland. From there the falls are still hard to see. But the plan also shows a possible footpath from the mainland through E.B. Eddy property to a spot by a wall just below the falls. He points to a spot where the consultant imagined a viewing area looking up at the nearly round falls. This is the view that gave the falls their name: Early French settlers thought it looked like a chaudiere, or kettle, with water boiling up from the bottom. "From the tip here you can see the whole falls," Mr. Major said. "The view here is fantastic in the springtime. "You can, without major disruption of industry there, make better public use of the falls." A third element of the plan is to widen the bridge that connects Booth Street on the Ottawa side with Eddy Street in Hull. There is no safe place to stop on the narrow, bustling four-lane bridge. The only sidewalk is on the side farthest from the falls, but the plan proposes sidewalks on both sides.

Mr. Major first proposed this plan to expand Mrs. Pigott's request for redevelopment plans for LeBreton Flats while she headed the NCC. But the proposal stalled for lack of support. There was no single obstacle; it just couldn't compete with higher priorities. Like the plans for to develop the nearby LeBreton Flats, the proposal didn't go anywhere. Instead, the NCC spent its money on projects that its commissioners saw having a higher profile: the facelift for Confederation Boulevard, the National Gallery of Canada, a new Justice building, and sprucing up Parliament Hill. "In terms of image, (these) were more important initially. You have to understand that," Mr. Major said.

The plan for the falls also had the handicap of needing co- ordination between two cities and two provinces, making any proposed work more complex politically than projects in Ottawa or Hull alone. The NCC often explores a variety of ideas, but doesn't act on all of them, he said. "Half the plans never go anywhere." The

NCC says the plan still isn't dead. "But actively being worked on? Probably not," said spokeswoman Diane Dupuis.

The plans for Chaudiere Falls were always considered the last stage of a three-part plan, which has been on the books since the 1980s. The first stage is the development of LeBreton Flats, she said. Part 2 is to be the development of land around Brewery Creek in Hull. Plans for Brewery Creek and the falls "were always part of long- range plans," she said. "I know it was always in the plans that the Chaudiere Falls should be opened up. None of those are shelved by any means." Despite extensive public debate over the past decade, LeBreton Flats have never been developed.

Mr. Major was drawn to the falls area partly by all the lore about the site and the surrounding area that he learned as a child. He was fascinated by the Devil's Hole on the falls' north side, where a whole car got sucked under the surface; no one knew how deep the swirling water was. Local children believed there was no bottom; in fact it was 20 metres down, and a natural tunnel drained water to the river downstream. Ms. Pigott was one of those children. "It was a headline in the newspaper (about a car swallowed in the hole) and I read it when I was about 10," she said. "I had nightmares about it." The Devil's Hole was created by a small, rocky island near the north side of the falls that diverted part of the river into a separate channel. A diver eventually found entire tree trunks had been sucked down to its bottom and into the tunnel leading away from its base. But like the falls, the Devil's Hole is now cut off from the flow of the river by the dam."

Appendix C – Report from the Canadian Environmental Assessment Registry

Report on the Domtar Hydroelectric Refurbishment Project. Document #06-01-17141. Canadian Environmental Assessment Registry. Government of Canada. Ottawa, Ontario.
http://www.ceaa.gc.ca/050/Viewer_e.cfm?CEAR_ID=17141

January 27, 2006 -- Public Works and Government Services Canada is required to ensure that a screening is conducted commencing on January 24, 2006 of the project: Domtar Hydroelectric Refurbishment Project, Chaudière Island, in Ottawa, Ontario.

The existing Ottawa #1 and #2 Generating Stations (referred to as the Ottawa Generating Stations) and the transmission infrastructures, located at 6 Booth Street in Ottawa, Ontario, are more than 90 years old and are at the end of their useful life. Domtar Inc. has decided to shutdown these assets. The proposed undertaking will consist of widening the channel by removing 6.25m of the existing sluice (artificial wall conducting water) to increase the maximum flow capacity from 85 m³/s to a capacity of 340 m³/s, resulting in an increase in power generation from 9 MW to approximately 27 MW. Water in the new widened channel will be deflected into a new intake structure formed by three water passages of 10m in width. A new powerhouse will be constructed on location by removing approximately 34 000 m³ of rock by either line drilling the stratified rock and/or by blasting. Related power cables will also be installed to provide Hydro Quebec with electricity. The following key pieces of equipment will be installed within the new powerhouse: - four 6,75 MW horizontal Kaplan turbines, - one 13,8-120 kV transformer rated at 30/40 MVA, - electrical switch gears and control, - an indoor lifting structure to operate the mechanical gates, and - one 120 kV interconnection transmission line. Onsite parking will be modified and relocated to the east side of Booth Street on Domtar's property.

Under section 5 of the *Canadian Environmental Assessment Act*, an environmental assessment is required for this project because Public Works and Government Services Canada may provide federal lands for the purpose of enabling this project to be carried out.

This project is also being assessed by the Government of Ontario.

The Canadian Environmental Assessment Agency will act as the Federal Environmental Assessment Coordinator for this environmental assessment.

Decision

October 4, 2006 -- Public Works and Government Services Canada has completed the screening of the Domtar Hydroelectric Refurbishment Project, Chaudière Island, in Ottawa, Ontario and on September 26, 2006 determined to take the following course of action. The authority may exercise any power or perform any duty or function with respect to the project because, after having considered the screening report, the authority is of the opinion that the project is not likely to cause significant adverse environmental effects.

As detailed in the environmental assessment report, mitigation measures have been required for the project to address:

- air quality
- water quality
- water quantity
- surface and bedrock features
- sedimentation
- soil quality

- noise levels
- fish and/or their habitat
- flora at risk (as defined under the Species at Risk Act)
- physical and/or cultural heritage
- structure, site or thing of historic, archaeological, paleontological or architectural significance
- human health and safety
- socio-economic impacts

A follow-up program for this project was not considered appropriate. Circumstances where a follow-up program would typically be warranted are outlined in the Agency's Operational Policy Statement on Follow-up.

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and refer to CEAR reference number **06-01-17141**

See also the *Canadian Environmental Assessment Act* (2003):

“Considering Aboriginal traditional knowledge in environmental assessments conducted under the Canadian Environmental Assessment Act -- Interim Principles” http://www.ceaa.gc.ca/012/atk_e.htm

“Ministerial Guideline on Assessing the Need for and Level of Public Participation in Screenings under the *Canadian Environmental Assessment Act*” http://www.ceaa.gc.ca/013/006/ministerial_guideline_e.htm

