

Fluid Meanings: Hydro Tourism and the St. Lawrence and Niagara Megaprojects

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In the 1950s Canada and the United States, along with Ontario and New York State (and their respective power entities), completed two hydro-electric developments: the International Niagara Control Works and the St. Lawrence Seaway and Power Project. Both water control projects—and the concomitant large-scale environmental manipulation of these borderland waterscapes—were shaped by “hydraulic nationalism” and “hydro tourism.” This study explores the tourist infrastructure and recreational facilities created to accommodate the millions of people who viewed these megaprojects. Blending tourism history with environmental, technological, cultural, transnational, and borderlands approaches, it gives consideration to the ways in which the involved governments and power utilities had similar, and diverging, conceptions of the nation-building importance of the St. Lawrence and Niagara undertakings.

Dans les années 1950, le Canada et les États-Unis, de concert avec l'Ontario et l'État de New York (et leurs services publics d'électricité respectifs), ont réalisé deux aménagements hydroélectriques : les International Niagara Control Works (des ouvrages de régulation) et le projet de voie maritime et de centrale hydroélectrique du Saint-Laurent. Les deux projets de régulation des eaux — et la modification à grande échelle de l'environnement dans ces paysages marins frontaliers qui allait de pair — portent la marque du « nationalisme hydraulique » et de l'« hydrotourisme ». La présente étude traite de l'infrastructure touristique et des équipements récréatifs créés en vue d'accueillir les millions de visiteurs venus voir ces mégaprojets. Alliant l'histoire du tourisme à des perspectives environnementales, technologiques, culturelles, transnationales et frontalières, elle tient compte des moyens par lesquels les gouvernements et les services publics d'électricité concernés exprimaient des conceptions similaires, mais divergentes, de l'importance des projets du Saint-Laurent et de la Niagara pour l'édification du pays.

THE 1950s were an era of massive water control projects in the Great Lakes-St. Lawrence basin—the two biggest were in the Niagara and St. Lawrence rivers. The St. Lawrence Seaway and Power Project, built jointly by Canada and the

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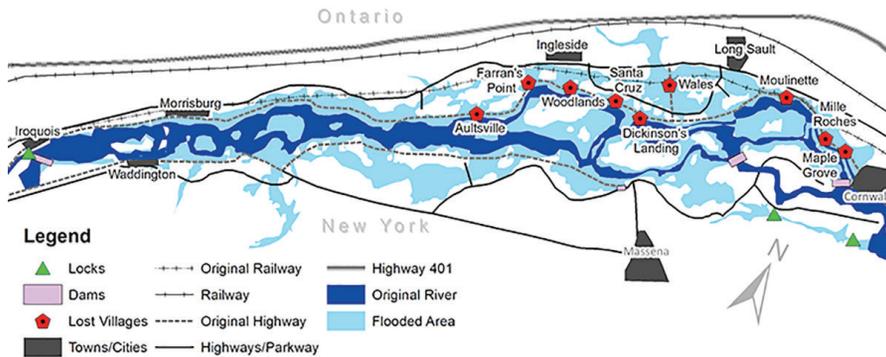


Figure 1: Lake St. Lawrence.
 Source: Courtesy of the author.

United States as well as Ontario and New York State (and their respective power utilities, Ontario Hydro and the Power Authority of the State of New York), is made up of both the largest navigable inland waterway in the world and a hydro-electric dam that, for several decades, was the largest transborder hydro dam in the world. Its construction closely followed another grandiose hydraulic engineering endeavour, the Niagara International Control Works and various associated hydro stations, built by most of the same governmental entities. Other scholars have addressed the subjects of St. Lawrence and Niagara Falls tourism, especially the latter, but generally from the perspective of tourists or the tourist industry.¹ Building on the envirotechnical and hydropolitical history of the Niagara and St. Lawrence undertakings, this article seeks to explain how the Canadian and Ontario states understood the role of tourism as part of these water control projects in the mid-twentieth century.² These two megaprojects are considered together not just

- 1 See Elizabeth R. McKinsey, *Niagara Falls: Icon of the American Sublime* (New York: Cambridge University Press, 1985); Patricia Jasen, *Wild Things: Nature, Culture, and Tourism in Ontario, 1790-1914* (Toronto: University of Toronto Press, 1995); Patrick McGreevy, *The Wall of Mirrors: Nationalism and Perceptions of the Border at Niagara Falls* (Orono: Canadian-American Center, University of Maine, 1991), and *Imagining Niagara: The Meaning and Making of Niagara Falls* (Amherst: University of Massachusetts Press, 1994); Pierre Berton, *Niagara: A History of the Falls* (Albany: State University of New York Press, 1992); Jeremy Elwell Adamson et al., *Niagara: Two Centuries of Changing Attitudes, 1697-1907* (New York: Routledge, 1992); William Irwin, *The New Niagara: Tourism, Technology, and the Landscape of Niagara Falls* (University Park: Pennsylvania State University Press, 1996); Karen Dubinsky, *The Second Greatest Disappointment: Honeymooners, Heterosexuality, and Tourism at Niagara Falls* (Toronto: Between the Lines, 1999), and "Everybody Likes Canadians: Americans, Canadians and the Postwar Travel Boom" in Shelley Baranowski and Ellen Furlough, eds., *Being Elsewhere: Tourism, Consumer Culture and Identity in Modern Europe and North America* (Ann Arbor: University of Michigan Press, 2001); Linda L. Revie, *The Niagara Companion: Explorers, Artists, and Writers at the Falls, from Discovery through the Twentieth Century* (Waterloo, ON: Wilfrid Laurier University Press, 2003); Ginger Strand, *Inventing Niagara: Beauty, Power, and Lies* (Toronto: Simon & Schuster, 2008).
- 2 For more on the history of the Niagara Falls remedial works and the St. Lawrence Seaway and Power Project, see Daniel Macfarlane, "'A Completely Man-Made and Artificial Cataract': The Transnational Manipulation of Niagara Falls," *Environmental History*, vol. 18, no. 4 (October 2013), pp. 759-784; "Creating a Cataract: The Transnational Manipulation of Niagara Falls to the 1950s" in Colin Coates, Stephen Bocking, Ken Cruikshank, and Anders Sandberg, eds., *Urban Explorations: Environmental*

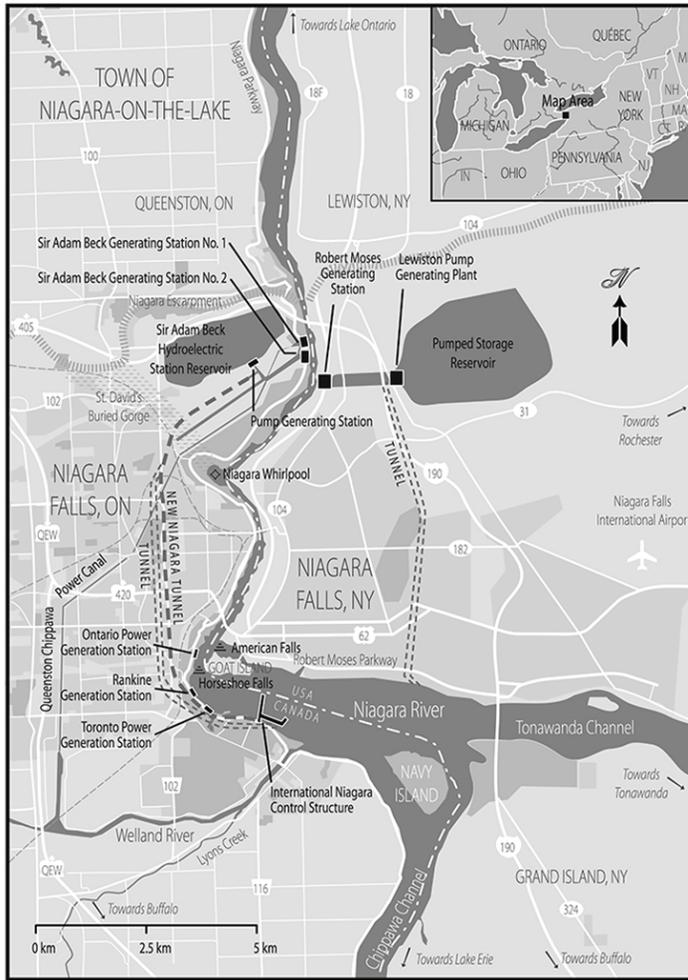


Figure 2: Niagara waterscape
 Source: Anders Sandberg and Rajiv Rawat, 2012, based on a map by the author.

because of their many obvious geographic, political, and technological similarities, but because the shared characteristics and parallels reinforce the extent to which conceptions of the relationship among government, hydro-electricity, and tourism were widespread across various levels of the Canadian state during the early Cold War.

The central justification for these two megaprojects was to remake water systems for the purposes of energy, industry, and transportation, but tourism was an important concern. These two projects posed a potentially disruptive threat to

Histories of the Toronto Region (Hamilton: L. R. Wilson Institute for Canadian Studies, McMaster University, 2013); and *Negotiating a River: Canada, the US, and the Creation of the St. Lawrence Seaway* (Vancouver: University of British Columbia Press, 2014).

the existing tourist industry, particularly at Niagara Falls, which had long been a leading tourist draw, but also in the upper St. Lawrence Valley. As a result, both riverine systems were modified so as not to harm tourism, and in fact to improve upon it because the new dams and remedial works could serve as displays of the state's legitimacy and vitality. Moreover, in addition to considering the post-construction impact upon sightseers, the various governments realized the tourism potential of the two megaprojects during their construction.

The International Niagara Control Works were meant to increase hydro-electric production without diminishing the tourist appeal of the great cataracts. Going back several centuries, Niagara has served as the exemplar of the North American natural sublime. By the latter half of the nineteenth century, however, the industry crowding the Niagara gorge had made the falls more of an exemplar of the technological sublime.³ In response, a movement to reclaim the natural splendour of Niagara led to the creation of parkland on both sides of the border.⁴ Despite the changing meanings of Niagara Falls throughout the twentieth century and the Niagara region's growth as a manufacturing and hydro-electric centre, it remained one of the continent's pre-eminent tourist magnets. The upper St. Lawrence River had not historically been the same international attraction, though it too had its share of visitors: the Thousand Islands section of the waterway had developed into a popular destination, and many visitors were enticed by the opportunity to shoot the rapids further downstream.⁵ Nonetheless, the St. Lawrence temporarily became a global tourist draw while it was being transformed into a deep waterway and hydro generating system. Millions of people visited the St. Lawrence Seaway and Power Project while it was under construction, including dignitaries, officials, and engineers from around the world.⁶ Spectators could take advantage of specially built viewing stations, bus tours, and official tour guides. Public viewing overlooks and infrastructure were prominently incorporated on the St. Lawrence power dams, with elaborate opening ceremonies featuring heads of state and dignitaries. Similar efforts obtained at Niagara, though its construction phase was not considered quite the same spectacle as its St. Lawrence cousin; yet Niagara would remain a paramount tourist lure after the hydro construction had drawn to a close.

Cultural Waterscapes

Several key concepts underpin this study of the remaking of Niagara Falls and the St. Lawrence River. Both of these water bodies are vitally important Canadian cultural landscapes. Cultural landscapes have been broadly defined as "a set

3 David E. Nye, *American Technological Sublime* (Cambridge, MA: MIT Press, 1994).

4 George A. Seibel, *Ontario's Niagara Parks: A History* (Niagara Falls, ON: Niagara Parks Commission, 1987); Anne Whiston Spirn, "Constructing Nature: The Legacy of Frederick Law Olmsted" in William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: W. W. Norton, 1996).

5 Jasen, *Wild Things*.

6 On "work display" and tourism, see Dean MacCannell, *The Tourist: A New Theory of the Leisure Class*, rev. ed. (Oakland: University of California Press, 2013). On landscapes and tourism, see Hal Rothman, *Devil's Bargains: Tourism in the Twentieth-Century American West* (Lawrence: University of Kansas Press, 2000).

of ideas and practices, embedded in a place.”⁷ Many natural features that have acquired status as significant cultural landscapes are of the “associative” type in which cultural or nationalist associations are projected onto natural features, with the importance not necessarily discernible to those outside a specific culture. However, because of the extent to which the St. Lawrence and Niagara rivers were remade and constructed, and the meanings superimposed on these altered water bodies, they are a hybrid of the two other main types of cultural landscape typologies: “designed” and “evolved.” The former refers to landscapes intentionally created by human design and with concrete associations attached (such as the Parliament buildings in Ottawa), while the latter, according to the UNESCO definition, “results from an initial social, economic, administrative, and/or religious imperative and has developed its present form by association with and in response to its natural environment.”⁸

The construction of these two megaprojects produced a unique form of “hydro tourism” based on a heady blend of technological, environmental, state-building, and nationalist appeal. Hydro tourism can be considered a type of industrial tourism, which attracts people to see massive engineering projects such as bridges and buildings, but also a type of nature/landscape tourism. Historical memory, both popular and official, of these locations as tourist and heritage sites shaped construction and post-construction landscapes and waterscapes. The development of hydro power in Canada was a public spectacle, representing engineering progress that simultaneously heralded the perceived Canadian heritage connection to the land while reshaping it to provide a heroic future. Tourists wanted to see sublime nature, but also flocked to see it controlled by sublime technology.⁹

Because of the nationalist feelings associated with these cultural waterscapes and the processes of their remaking, they can also be labelled “patriotic topographies.”¹⁰ The creation of the St. Lawrence and Niagara projects speaks to the ways in which national identities were bound up in places and environmental features, as well as the ways in which the Canadian state, at various levels, sought to package these patriotic topographies as places to be visited by Canadians. The St. Lawrence River, and the Seaway by extension, holds an exalted and iconic place in the Canadian national imagination, for the river was the crucible of central Canadian settlement and development. Canadian historiography is replete with notions of the river narrative and aquatic symbolism; in the words of historian Jean Manore, “rivers are Canadian cultural icons; they have consistently communicated the idea of Canada, its meta-narrative of nation-building and collective identity.”¹¹

7 See UNESCO definitions of type of cultural landscapes, <http://whc.unesco.org/en/culturallandscape/#1>.

8 *Ibid.*

9 On the technological sublime, see Nye, *American Technological Sublime*.

10 Brian Osborne, “Landscapes, Memory, Monuments and Commemoration: Putting Identity in its Place,” *Canadian Ethnic Studies*, vol. 33, no. 3 (2002), p. 12.

11 Jean Manore, “Rivers as Text: From Pre-Modern to Post-Modern Understandings of Development, Technology and the Environment in Canada and Abroad” in Terje Tvedt and Eva Jakobsson, eds., *A History of Water, Vol. 1: Water Control and River Biographies* (London: I. B. Tauris, 2006), p. 229. See also Brian Osborne, “A Canadian ‘Riverscape,’ National ‘Inscape’: The St Lawrence in the Canadian National Imagination,” *Études Canadiennes / Canadian Studies: Revue Interdisciplinaire des Études Canadiennes en France*, vol. 50 (2001), pp. 257-275.

The Seaway effectively served as a conduit for several different expressions of Canadian nationalism. Because they are all associated with the river both in its unmodified “natural” state and as a modified seaway and power project, these expressions can be subsumed under the term “hydraulic nationalism.”¹²

Hydraulic nationalism was also apparent in the Niagara project. Though prior to the twentieth century the Falls of Niagara were not seen as “Canadian” to the same extent as the St. Lawrence, Niagara Falls gradually came to resonate with Canadian nationalists for various reasons (many of which were shared with the St. Lawrence), including the great cataract’s proximity to the Canadian heartland, its location in the Great Lakes-St. Lawrence system, and its sites of Canadian resistance to American encroachment during the War of 1812. Put another way, Niagara Falls was Canada’s front door and America’s back door, a metaphor that applies equally to the St. Lawrence.¹³ Home to about one-third of Canada’s population, the Great Lakes-St. Lawrence basin has historically been the nation’s political and economic centre and offers one of the primary access routes by which Canadian people and goods intermingle with their southern neighbour. Conversely, only about 15 per cent of the American population resides in a region which that nation has ignored, viewed as a backwoods, or treated as a sort of industrial sacrifice zone.

Although there is a strong tradition of hydro tourism in America, as Donald C. Jackson has shown, power stations in the Great Lakes-St. Lawrence basin never figured as prominently in the American popular consciousness as did water control structures such as those on the Columbia and Colorado rivers, despite the fact that the Niagara and St. Lawrence developments ranked amongst the largest in the world at the time of their construction.¹⁴ According to Anthony Arrigo, tourism at Hoover Dam (completed in the early 1930s on the Colorado River) and its adjoining reservoir, Lake Mead, relied heavily on two themes: secular pilgrimages

12 Andrew Biro uses the term “hydrological nationalism.” See Andrew Biro, “Half-Empty or Half-Full? Water Politics and the Canadian National Imaginary” in Karen Bakker, ed., *Eau Canada: The Future of Canada’s Water* (Vancouver: University of British Columbia Press, 2007), p. 323.

13 A number of these reasons, as well as the front door/back door metaphor, are drawn from McGreevy (*The Wall of Mirrors*, pp. 1-3; *Imagining Niagara*) and discussed in Macfarlane, *Negotiating a River*.

14 Since at least the nineteenth century dams have fascinated large segments of the American public, generally being seen as things of beauty that enhanced and improved upon the surrounding environment. Donald Jackson points out that large dams only started to lose their popular appeal and attract criticism for their environmental impacts in the 1960s. Engineers and architects were well aware that their creations were an exciting technology that would attract attention. Large-scale “monumental” dams were very consciously understood as civic achievements and intertwined with American nationalism and power, particularly after the proliferation of the massive New Deal dams of the 1930s. Some early large-scale hydro developments incorporated recreation and/or visitor elements into the overall construction, including Hoover Dam (which was initially named Boulder Dam) and several Tennessee Valley Authority projects. By the 1950s these factors were even more at the forefront of planning, as exemplified by the St. Lawrence and Niagara projects and the Glen Canyon Dam. See Donald C. Jackson, *Pastoral and Monumental: Dams, Postcards, and the American Landscape* (Pittsburgh: University of Pittsburgh Press, 2013), pp. 3, 297; David Billington and Donald C. Jackson, *Big Dams of the New Deal Era: A Confluence of Engineering and Politics* (Norman: University of Oklahoma Press, 2006); Michael J. McDonald and John Muldowny, *TVA and the Dispossessed: The Resettlement of Population in the Norris Dam Area* (Knoxville: University of Tennessee Press, 1982); James C. Scott, “High Modernist Social Engineering: The Case of the Tennessee Valley Authority” in Lloyd I. Rudolph and John Kurt Jacobsen, eds., *Experiencing the State* (Toronto: Oxford University Press, 2006).

to witness the technological sublime in person, and a “playground” destination for camping, fishing, and boating.¹⁵ Both of these motivations obtained in the case of the St. Lawrence project, while Niagara tourism was motivated more by the former (though certainly accompanied by other types of cultural attractions). Though hundreds of thousands of people did visit some of the pre-1945 high-profile hydro undertakings such as the Hoover Dam, only after the Second World War was significant tourist emphasis placed on construction of North American mega dams.¹⁶ The St. Lawrence and Niagara projects may well be the earliest developments in which the entities involved made tourism during construction such a principal concern.

As will be shown, the actual manipulation of the Niagara Falls environment, including the very shape of the cataracts and riverbed, was the result of the tension between producing maximum power and maintaining the scenic appeal of the site and the concomitant tourist industry. Likewise, central aspects of the remade landscapes and waterscapes (including the displaced people and communities) around the new lake-cum-reservoir in the St. Lawrence River were dictated by recreation and tourist considerations. As has been the case with many other natural sites replete with societal meaning, there was a reciprocal and dialectical relationship between waterscapes and culture, as these projects were imbued with new associations while simultaneously creating and altering these meanings. In other words, these waterscapes were not just changed conceptually by tourism considerations, but physically and tangibly remade in a way that accommodated those conditions.

Keeping up Appearances at Niagara

Niagara Falls is made up of the Horseshoe Falls and the American and Bridal Veil Falls. The International Niagara Control Works, consisting of various weirs, dams, excavations, and fills, were constructed in the 1950s and designed not only to increase hydro-electric production by diverting water (up to three-quarters of the Niagara River’s flow) into tunnels above the falls which carried it to downstream power stations, but also to “beautify” the Falls by reshaping the flow of water over the crest to maintain their visual appeal and thus the tourist economy.¹⁷ These works were a joint undertaking of Canada and the United States, authorized by the 1950 Niagara Diversion Treaty, which was the result of several decades of bi-national attempts to plumb Niagara Falls for greater hydro production while “enhancing” the waterfall’s tourist appeal.¹⁸ Most of the work was undertaken by the Hydro-Electric Power Commission of Ontario (HEPCO for short, but the commission was also known as Ontario Hydro), and the Power Authority of the State of New York (PASNY), as well as the US Army Corps of Engineers.

15 Anthony Arrigo, *Imaging Hoover Dam: The Making of a Cultural Icon* (Reno: University of Nevada Press, 2014), pp. 220-221.

16 Arrigo, *Imagining the Hoover Dam*, p. 215.

17 Macfarlane, “‘A Completely Man-Made and Artificial Cataract’.”

18 Both the St. Lawrence and Niagara projects required transborder cooperation under the terms of the Boundary Waters Treaty of 1909 and the International Joint Commission (IJC).

Niagara was historically the cradle of hydro-electric production and distribution in North America. Though much of the industrial development on the American side of the gorge was removed during the 1880s in order to, in the popular parlance of the time, “free” Niagara, in the early twentieth century a great deal of water was still diverted to provide power, and the demands were only increasing. During the First World War all the water that could be utilized was made available for power diversion. While some limitations were instituted on the volume of diversions in the period between the two world wars, further expansion of hydro production facilities on both sides of the Niagara gorge took place, including the construction of lengthy diversion conduits and a massive power station.¹⁹ Since the early decades of the twentieth century, however, there had been worries that huge quantities of water taken for such purposes were harming the scenic beauty of the Falls and thus also tourism.²⁰ Nonetheless, Canada and the United States had accelerated their various transnational boards, studies, and negotiations aimed at maintaining or increasing power diversions, though without sacrificing the great cataract’s scenic appeal. The Canada-US Niagara Convention and Protocol was signed in 1929, but did not make it through the US Senate. Over the course of the following two decades, the Niagara issue became part of failed attempts at a treaty for a St. Lawrence Seaway and Power Project, as well as other Great Lakes basin water modification proposals. Both countries continued to seek ways to maximize diversions while hiding their impact, eventually culminating in the 1950 Niagara Diversion Treaty.²¹

The 1950 Treaty authorized remedial works (the International Niagara Control Works) and virtually equalized water diversions while restricting the flow of water over Niagara Falls to no less than 100,000 cubic feet per second (cfs) during the daylight hours of what officials deemed the tourist season (8:00 a.m. to 10:00 p.m. from April to mid-September, and from 8:00 a.m. to 8:00 p.m. during the fall) and no less than 50,000 cfs during the remainder of the year.²² This meant that Canada and the United States could, outside the designated tourist season and hours, take most of the total flow (200,000 cfs) over the Falls.²³ In addition to providing more power to both countries, these reductions were expressly designed to maintain the

19 Government of the United States, US Congress, “Preservation and Improvement of the Scenic Beauty of the Niagara Falls and Rapids: Message from the President of the United States Transmitting the Final Report of the Special International Niagara Board, Together With an Accompanying Report From the Acting Secretary of State and a Copy of a Letter from the Secretary of War” (Washington, US Government Printing Office, 1931).

20 Library and Archives Canada [hereafter LAC], MG 26 J2, Excerpt of Minutes of Meeting of the Hydro-Electric Power Commission of Ontario, March 19, 1935; letter from Hepburn to Bennett re: Niagara River, March 30, 1935.

21 On this 1950 treaty, see Macfarlane, “‘A Completely Man-Made and Artificial Cataract’.”

22 IJC, “Report to the Governments of the United States of America and Canada on Remedial Works Necessary to Preserve and Enhance the Scenic Beauty of the Niagara Falls and River, May 3, 1953” [hereafter IJC Report].

23 Eisenhower Archives, Staff Files: Records of John S. Bragdon, St. Lawrence Seaway – 1954, Box 69, file: St. Lawrence Seaway, Proposed F.P.C. Plan for Niagara Power Redevelopment; LAC, RG 25, file 1268-K-40C, St. Lawrence – Niagara River Treaty Between Canada and United States – Additional Diversion of Water at Niagara Falls, part 4 (January 1, 1948–November 30, 1949), vol. 3561, Secretary of State to Canadian Ambassador, November 7, 1949.

“scenic beauty” of the Falls and to slow down the erosion that caused the crestline continually to recede, to the consternation of those who had invested in nearby industrial and tourist infrastructure.²⁴

The various governments spoke of the waterfall as if it were a faucet to be turned on and off according to aesthetic whim. In the words of the Canadian Secretary of State for External Affairs Lester Pearson in 1949:

In the evening the Falls are floodlighted and 50,000 c.f.s. may not be enough water to provide an adequate spectacle at that time. It may prove necessary to maintain a flow of 100,000 c.f.s. up to midnight in the tourist season. On the other hand, it is probably unnecessary to turn on the full flow at sunrise. It may be better to define “night-time” as the period from midnight to 9:00 a.m. We shall have to discuss this problem with the authorities responsible for lighting the Falls.²⁵

There was considerable American public pressure for scenic works, and the Special International Niagara Board, a bilateral body previously formed to study remedial works and beautification, seemed genuinely concerned about the scenic quality of the Falls. There was less such pressure from Canadians. Nevertheless, according to a former Ontario Hydro public relations official, his organization was “leery” of altering the Falls because of public concerns about its appearance.²⁶

The cost of the International Niagara Control Works ended up totalling around \$12.5 million when finished in 1958. The 1,550-foot International Control Dam extended in a straight line from the Canadian shore, parallel to and about 225 feet downstream from a weir built in the early 1940s, and featured 13 sluices (soon increased to 18) equipped with control gates. The purpose of this structure was to control water levels in the Chippawa-Grass Island Pool above the Falls in order to supply the diversion intake works for both countries and to spread out the water, both for appearance and because flows that concentrated in certain places caused more erosion.²⁷ In addition, excavation took place along the flanks of the Horseshoe Falls (64,000 cubic yards of rock was removed from the Canadian flank; 24,000 cubic yards from the American) to create a better distribution of flow and an unbroken crestline at all times. To help compensate for past erosion, crest fills (100 feet long on the Canadian shore and 300 feet on the American) were undertaken.²⁸

24 Government of the United States, US Congress, “Preservation and Improvement.”

25 LAC, RG 25, file 1268-K-40C, St. Lawrence–Niagara River Treaty Between Canada and United States – Additional Diversion of Water at Niagara Falls, part 4 (January 1, 1948– November 30, 1949), vol. 3561, secretary of state to Canadian ambassador, November 7, 1949.

26 Interview with Dennis Dack (former speechwriter to HEPCO Chairman Robert Saunders), Toronto, Ontario, May 3, 2011.

27 LAC, RG 25, vol. 6351, file 1268-K-40, pt. 9.1: St. Lawrence–Niagara River Treaty between Canada and the US – Additional Diversion of Water at Niagara (February 2, 1954–April 28, 1955), Ontario Hydro Information Release (Release No. 24), Ceremonies officially marking the beginning of construction of the Niagara Falls Remedial Works Program, June 2, 1954.

28 LAC, RG 25, vol. 6348, file 1268-D-40, pt. 25.2: St. Lawrence General Correspondence (November 25, 1953–January 29, 1954), Press Release: Niagara Falls Preservation Program Starts, January 15, 1954; vol. 6351, file 1268-K-40, pt. 9.1: St. Lawrence–Niagara River Treaty between Canada and the US – Additional Diversion of Water at Niagara (February 2, 1954–April 28, 1955), Ontario Hydro Information

Parts of these crest fills were fenced and landscaped to provide prime public vantage points: on the Canadian side, Table Rock was reconfigured to offer an enhanced perspective for visitors to the Horseshoe Falls, and the same was done at Terrapin Point on the American side. Extensive scale models were the primary means by which the form and location of the remedial works were selected, and the models themselves became tourist attractions.²⁹ Long cofferdams shunted the water away from construction, and viewing stations were created so that the public could observe the dry waterfall and other aspects of the work in progress.



Figure 3: Tourists at Terrapin Point, 2012.
 Source: Photograph courtesy of the author.

The overarching goal was to have an uninterrupted “curtain of water” going over the precipice that displayed a pleasing consistency and colour.³⁰ The remedial works were also intended to reduce mist and “spray problems,” as visitors to the tunnels behind Table Rock had for decades complained that they were getting wet.³¹ This speaks to the commodification of the Niagara experience, a process intertwined with the other tourist trappings standard at Niagara Falls: nature should be sanitized, made predictable and orderly, and packaged for convenient consumption. The great cataract was reduced to cubic feet per second and feet

Release (Release No. 24), Ceremonies officially marking the beginning of construction of the Niagara Falls Remedial Works Program, June 2, 1954.

²⁹ IJC Report; Ontario Hydro, *Power from Niagara* (Toronto, 1970).

³⁰ LAC, RG 25, vol. 6351, file 1268-K-40, pt. 9.1: St. Lawrence-Niagara River Treaty between Canada and the US – Additional Diversion of Water at Niagara (February 2, 1954–April 28, 1955), Ontario Hydro, Background Information on Niagara Falls Conservation and Remedial Program, June 1954.

³¹ US Congress, “Preservation and Improvement of the Scenic Beauty of the Niagara Falls and Rapids.”

of crestline, a schematic or blueprint in which the beauty for the engineers lay in their precision and control over the waterfall. It was to be regulated and fine-tuned to produce the maximum beauty and maximum power. Indeed, the history of developments at Niagara Falls reflects a North American hubris about the ability of technology to control, tame, and exploit the natural environment, an impulse that took on even more urgency as the Cold War accelerated.

Canadian and American federal governments received considerable public pressure throughout the first half of the twentieth century to preserve the scenic beauty of Niagara Falls. For some elements of public opinion, the sublime singularity of Niagara Falls warranted protection by virtue of its very existence. For many, however, the satisfactory appearance of Niagara Falls was as much a means to economic ends—tourist dollars, for example—as it was for the sake of the cataract and its environs, in and of themselves. The likely public reaction to diminishing Niagara Falls compelled the involved governments to develop water power in such a way so as to uphold the “natural” appeal. Instead of making the technology of the Niagara remedial works prevalent, it was hidden from the casual observer, though apparent to the attentive visitor; to be sure, the downstream power stations were meant to invoke awe from the observer. In other similar cases, such as on the Columbia River or many of the cataracts in northern Ontario and Quebec, waterfalls were sacrificed for hydro development, with the dams that replaced them intended to stand in as the epitome of the power and beauty. Niagara, however, was no ordinary waterfall.

After the International Niagara Control Works were created in the 1950s, public campaigns to leave Niagara alone achieved greater success. Further remedial works were attempted in the early 1960s, though largely halted by a burgeoning public opposition to further modifications of Niagara Falls.³² This sentiment did not stop New York from constructing a new massive hydro-electric station across from Ontario’s new Sir Adam Beck No. 2 station several miles below the Falls, which, when completed in 1961, generated 2,400 megawatts—the largest at the time in the western world. The Robert Moses generating station, named after the legendary builder who was head of PAsNY, featured a parkway across the top and an elaborate public reception centre towering over the Niagara gorge. These stations took water from above the falls and channelled it through huge underground tunnels before sending it through penstocks to spin turbines. Ontario Hydro and PAsNY ensured that these efforts would be accessible to the curious public before, during, and after the construction phase.³³ In 1969 the American Falls were “shut off” and the US Army Corps of Engineers studied ways of improving it, including the removal of all the talus at the base. Ultimately, however, the Corps decided it was best to leave it alone, reflecting a changing ethos about humanity’s perceived ability to engineer nature.³⁴

32 LAC, RG 25, Vol. 5027, volume 13, file 1268-K-40: St. Lawrence Niagara River Treaty Between Canada and the USA – Additional Diversion of Water at Niagara (January 4, 1962–July 2, 1963), Memorandum for the Minister: Niagara Falls (by Robertson), March 7, 1962.

33 Interview with Dennis Dack.

34 IJC Report, Chapter VI: “The Commission’s Considerations and Conclusions,” p. 17.

Improving the St. Lawrence

The St. Lawrence Seaway technically runs 292 kilometres from Montreal to Lake Erie with a continual minimum depth of 27 feet, four large dams (two of which generate hydro-electricity), and 15 locks with a depth of 30 feet. The larger Great Lakes-St. Lawrence water route provides a network of deep canals, channels, and locks that stretch some 3,700 kilometres from the western end of Lake Superior to the Atlantic Ocean. The deeper channels created by the power dam's head were necessary to make 27-foot navigation to the heart of the continent feasible.

Prior to construction of the St. Lawrence Seaway, the international stretch of the river separating Ontario and New York had not attracted a great deal of vacationers from nearby Canadian cities such as Montreal, Toronto, or Ottawa.³⁵ Highway 2, a narrow curving highway that ran through the centres of the various soon-to-be Lost Villages, had been the main automobile route between Montreal and Toronto. It permitted much slower driving speeds than contemporary freeways, leading some motorists to stop overnight in waterfront communities and resulting in incidental tourism. In addition to visiting the Thousand Islands, a popular visitor activity since the nineteenth century had been shooting the Long Sault Rapids. However, this attraction would no longer be available after completion of the St. Lawrence Seaway and Power Project because the rapids were to be inundated and replaced by slack water.³⁶ The submersion of the rapids took with it a local tourist attraction and landmark, but for many residents the even more disconcerting result was the loss of the churning water's omnipresent rumble, which had been a constant feature of their everyday lives.³⁷

Formal discussions about a joint Canadian-American deep waterway in the St. Lawrence River dated back to the 1890s, and in the following decades the idea of pairing it with hydro-electric development had become entrenched. From the start, opinions about the desirability of a St. Lawrence project were mixed amongst the riverfront communities—some worried about the loss of their way of life, which included the existing tourist activities, while others welcomed the development possibilities.³⁸ Bilateral talks and transnational engineering studies led in 1932 and 1941 to formal agreements to develop the St. Lawrence, but in both cases the US Congress nixed the accords, largely due to the opposition of sectional interests.³⁹ As demands for the St. Lawrence project increased because of the exigencies of the early Cold War, Canada—growing tired of American Congressional inaction

35 Harold A. Wood, "Recreational Land Use Planning in the St. Lawrence Seaway Area, Ontario," *Community Planning Review* (March 1955), p. 24.

36 On nineteenth-century tourism on the St. Lawrence and at Niagara Falls, see Jasen, *Wild Things*. On Thousand Islands tourism specifically, see Susan W. Smith, "A History of Recreation in the 1000 Islands" (Ottawa, Parks Canada, 1976).

37 See Macfarlane, *Negotiating a River*; Joy Parr, *Sensing Changes: Technologies, Environments, and the Everyday, 1953-2003* (Vancouver: University of British Columbia Press, 2010), chap. 4.

38 Arthur V. White, *Long Sault Rapids, St. Lawrence River: An Enquiry into the Constitutional and Other Aspects of the Project to Develop Power Therefrom* (Ottawa: Mortimer, 1913), Appendix 30: Proceedings before the International Waterways Commission, February 8-9, 1910.

39 Government of the United States, US Congress, Senate, S. J. Res. 111, 80th Congress, 2nd session, pp. 525-530. The Lester K. Sillcox Series in the St. Lawrence Seaway Collection in the St. Lawrence University Archives is a particular strong repository of anti-Seaway sentiment.

and fed by hydraulic nationalism that framed the St. Lawrence as an exclusively “Canadian” river—attempted to go ahead with an “all-Canadian” Seaway entirely on the north shore. However, American pressure eventually induced Canada to acquiesce in a joint St. Lawrence Seaway and Power Project, and a bilateral agreement was achieved in 1954.⁴⁰



Figure 4: PANSY lookout.
Source: Collection of the author.



Figure 5: Tourists viewing the Iroquois Dam, 1958.
Source: Collection of the author.

40 For an elaboration of this argument about an “all-Canadian Seaway,” see Macfarlane, *Negotiating a River*.

Shovels hit the ground almost as soon as the ink had dried on the St. Lawrence agreement. Many Ontario Hydro and PAsNY workers went straight from the Niagara project to the St. Lawrence works, as did most of the engineers and planners. Construction of the Seaway and Power Project proceeded quickly and was completed by 1959. As a result of the dams, Lake St. Lawrence inundated some 20,000 acres of land on the Canadian side alone between Cornwall and Iroquois, along with another 18,000 acres on the American shore. Land was also taken in Quebec, though not because of flooding for power generation. On the Canadian side of the International Rapids section, 225 farms, seven villages and three hamlets (often referred to as the Lost Villages), part of an eighth village, 18 cemeteries, approximately 1,000 cottages, and over 100 kilometres of Highway 2 and railway mainlines were relocated, as were other major public works, including bridges at Montreal. So as not to create navigational and other difficulties in the new lake, everything had to be moved, razed, or flattened, including forests and cemeteries.⁴¹ Many people chose to transport their residences via special vehicles to the new communities created to house the displaced residents. The house-moving machines proved to be a leading draw for the national media as well as for locals and tourists, as did the assortment of other huge machines used on the project.⁴²

The mass flooding was the result of several dams. The Moses-Saunders powerhouse, the main power dam with 32 turbine/generator units, was a bilateral project spanning the International Rapids section and thus the international border, with the Canadian and American halves meeting in the middle. Prior to construction of this dam, parts of the International Rapids section of the river were dried out through extensive cofferdams. With the Long Sault Rapids dried up and laid bare by cofferdams, sightseers flocked to the river bed to peruse the rock formations, finding sunken treasures such as cannonballs possibly lost during the War of 1812. On July 1, 1958, thousands of people gathered for “Inundation Day” to witness the creation of Lake St. Lawrence and the initiation of the power phase of the dual St. Lawrence project. The visual backdrop to the ceremonies at the Moses-Saunders power dam was rich in symbolism—figures depicted Uncle Sam and a Canadian Mountie holding up cut-outs in the shape of New York and Ontario, with the two territories connected to the generation station by power lines. After removal of the cofferdams, water slowly started to flow into the dry stretches of the river, and it ended up taking several days to fill the new lake. This protracted process disappointed many of the 25,000 onlookers who had gathered in expectation of a spectacular flooding.⁴³

41 Ontario’s process of rehabilitation evolved over several years. For an example of considerations about how to handle the Lost Villages, see Hydro-Electric Power Commission of Ontario Archives [hereafter HEPCO], SPP Series, Report of Meeting in Morrisburg (August 9, 1956), Outstanding Problems Related to the Rehabilitation Problem in the St. Lawrence Seaway Valley (Chairman A. E. K. Burnell, Consultant, Ontario Department of Planning and Development), August 31, 1956; LAC, RG 34-3, container 27R, file: St. Lawrence Waterway, file: St. Lawrence Seaway, 1948-June 1954, Memorandum to Bunnell, Subject: Preliminary Survey, St. Lawrence Area, September 13-17 and 23, 1954.

42 HEPCO, SPP Series, copy of Reginald Hardy, “Many Fine Homes Soon to Disappear – St. Lawrence Families’ Plight,” *Ottawa Evening Citizen*, August 11, 1954.

43 *Daily Standard Freeholder* [Cornwall], July 2, 1958.



Figure 6: Opening ceremonies for the St. Lawrence Seaway.
 Source: Courtesy of Library and Archives Canada.

The celebration of the opening of the Seaway the following year was not only larger than the opening of the power phase, but a much more elaborate spectacle than the public commencement of the Niagara project. A bi-national working group was formed to oversee the joint international Seaway opening ceremony, and architects were hired to assist in the planning and stage-managing of every aspect of the ceremony.⁴⁴ While Inundation Day in 1958 had been open to the wider public, people from the flooded areas were largely excluded from the 1959 opening celebrations, which were reserved for invited guests and dignitaries. The ceremonies were timed to coincide with the visit of Canada's new queen, Elizabeth II, and organizers orchestrated a packed itinerary to highlight the roles of the various participating political entities. During a half-hour ceremony at the Saint Lambert Lock, the Queen and US President Dwight Eisenhower were each given a book bearing the names of almost 60,000 people who had been involved in creating the St. Lawrence project. The dignitaries delivered speeches affirming the grandeur of the project.⁴⁵ Afterward, the Queen and President boarded the royal yacht *Britannia* and entered the lock, accompanied by a crescendo of fireworks, bells, sirens, and gun salutes, embarking on a five-hour escorted cruise to the Lower Beauharnois Lock.⁴⁶

44 IJC, Canadian Section, docket 68-8-1:2, St. Lawrence Power Application, Material Distributed at the Opening of the St. Lawrence Power Project, Luncheon Address by James S. Duncan, Chairman, Ontario Hydro, Official Opening St. Lawrence Power Project, September 5, 1958.

45 LAC, RG 25, vol. 6786, file 1415-40, pt 4, FP 1, Text of Remarks by President Eisenhower at St. Lawrence Opening Ceremonies, June 26, 1959.

46 On the 1959 Royal Tour, see Phillip Buckner, "The Last Great Royal Tour: Queen Elizabeth's 1959 Tour to Canada" in Phillip Buckner, ed., *Canada and the End of Empire* (Vancouver: University of British Columbia Press, 2004).



Figure 7: Opening ceremonies for the Moses-Saunders Power Dam.
 Source: St. Lawrence University Archives.

The party then proceeded to the Eisenhower Lock, at which point members disembarked to travel to the PAsNY reception centre at the Moses-Saunders Power Dam, and then a ceremony at the middle of the dam itself. The Queen unveiled a stone marker at the international border, bisecting the powerhouses, which read: “This stone bears witness to the common purpose of two nations whose frontiers are the frontiers of friendship, whose ways are the ways of freedom, and whose works are the works of peace.” The wording had been the subject of much contemplation, and the final result took the form of a not-so-subtle jab at the Communist empire.⁴⁷ Lunch followed for the Queen in Cornwall, then a driving tour with short stops on the Ontario side at Long Sault, Ingleside, Morrisburg, and Iroquois, where she reboarded the royal yacht and proceeded to Brockville. This four-day tour attracted many sightseers eager to grab a glimpse of the monarch, who put on a good show despite her advanced pregnancy.

The construction of the project attracted national and international attention, though it would prove transitory. Thousands of engineers and experts from other countries came at various stages to witness the construction. The jacking up of the Victoria Bridge in Montreal to allow larger vessels to pass underneath serves as an example—as the largest endeavour of its type in the world, it attracted many formal visitors and observers. Ontario Hydro also brought dignitaries and special guests to see the huge Seaway models on which the engineers relied to plan the project (the use of such extensive scale models for both the St. Lawrence

⁴⁷ Macfarlane, *Negotiating a River*, p. 194.

and Niagara works was a notable hydraulic engineering advance for Canada).⁴⁸ Multiple raised observation lookouts were erected so that the public could survey the construction sites. Permanent viewing stations were also built at some of the new locks for curious onlookers and ship fanatics, and these have been maintained to the present day.

Both the Ontario and New York power entities constructed permanent visitor centres at their respective powerhouses. The head of PANSY, Robert Moses, had insisted that the initial aesthetic appeal of the eponymous power dam was not grandiose enough, and PANSY persuaded Ontario Hydro to change the design to the “national monument” and projection of power—of both the state and hydro varieties—that Moses envisioned. This was an elaboration of other North American hydro structures, such as Hoover Dam, that incorporated design elements allowing for public visitations. Tour guides were hired by both New York and Ontario to escort the many visitors around, and bus tours to the generating stations were arranged. PANSY retained a photographer to document all aspects of the project. Photographs and video were supplied to the media, as the St. Lawrence project was regularly front-page news. Arthur Murphy, who supervised Ontario Hydro’s public relations staff, including tour guides, recalls that many people wanted to see the area that was slated for inundation.⁴⁹ By the time the power dam became operational in summer 1958, over 1.8 million people had visited the project. After inundation, people were taken inside the completed Moses-Saunders dam, including the control room, the special border marker, and the raised observation rooms.

A movement to preserve the history of the region included archaeological digs on Sheek Island, a temporary museum in Morrisburg, the creation of Crysler Park, and a reconstituted replica pioneer village that was eventually named Upper Canada Village, which Alan Gordon’s article in this volume also discusses. The perception that the Ontario strip of the St. Lawrence was an area founded by United Empire Loyalists ran deep, as did connections to the War of 1812. Yet, for the sake of progress, it was worth erasing key sites of Canadian history, including the 1813 Battle of Crysler’s Farm. The memorial there was relocated to a 35-foot-high mound on the new shore beside Upper Canada Village. Historically and architecturally significant buildings were selected and moved to the site of this new living history museum, though only 15 of the original 40 buildings were from the flooded municipalities.⁵⁰ The creation of this historical park was the product of high modernist thinking that simplified space and time, directly contrasting the past with the modern future, and provided an intriguing insight into the juxtaposition of history and progress.

The creation of the new reservoir was an opportunity for Ontario Hydro both to modernize the region—the new communities were based upon cutting-edge

48 IJC, Canadian Section, 74-3-1:1, Niagara River Reference, Correspondence Prior to Reference, “Ontario Hydro’s St. Lawrence Models.”

49 Claire Parham, *The St. Lawrence Seaway and Power Project: An Oral History of the Greatest Construction Show on Earth* (Syracuse: Syracuse University Press, 2009), p. 156.

50 For more on the creation of Upper Canada Village, see Peter Stokes, *A Village Arising: The Story of the Building of Upper Canada Village, 1957-1961 and After* (Port Hope: ATS-PJS, 2011).

urban planning designs and featured some of the first strip malls in Canada—and to improve the new and expanded waterfront. The commission claimed it was democratizing the shoreline by making it accessible to all. During the construction years, Ontario Hydro sold 5,100 acres (for approximately \$659,000) of the land it had taken along the riverfront to the Ontario–St. Lawrence Development Commission, and this provincial parks commission was given authority to develop “surplus” land for recreational purposes.⁵¹ This land included the Long Sault Parkway, linking nine of the 18 new islands in Lake St. Lawrence, on which beaches, camping facilities, and other parks were created. A number of parks, golf courses, and other recreational facilities were constructed on the mainland as well, and PANSY undertook similar ventures on its side. In addition, thousands of trees were planted, and the Upper Canada Migratory Bird Sanctuary was established in the hopes of attracting Canada geese, which it succeeded in doing.⁵²

However, the recreational and tourist facilities were never developed to the extent promised, and many tourist attractions, such as fishing, had been severely impaired by the project, which had major ecological impacts on the upper St. Lawrence. The new shoreline had to be clear of permanent buildings for liability reasons linked to the operation of a fluctuating hydro reservoir, which meant that, for the most part, people could no longer live alongside the water.⁵³ The littoral zone of the new reservoir lacked natural beaches and was dotted with mud flats and shallow, weedy zones stretching out into the new lake due to fluctuating levels dictated by power demands. The St. Lawrence project also allowed for the extension of the new limited access freeway, Highway 401, to bypass the waterfront and nearby communities. Motorists could now leave Montreal after an early breakfast and be in Toronto by lunch. They sped along isolated from and out of view of the river/reservoir.

Granted, farmers’ fields were eventually shaped by erosion and wave actions into shorelines and beaches, and trees and vegetation partially reclaimed the disrupted landscape. The Long Sault Parkway was initially popular with motorists, with cars often backed up at the entrance gates on weekends.⁵⁴ Initial enthusiasm tapered off, however, and tourism and camping on the islands remains mostly seasonal, limited to warm months. The same is largely true of Upper Canada Village. Lost Villagers responded in the 1970s by forming the Lost Villages Historical Society (LVHS) and creating their own—even competing—version of Upper Canada Village.⁵⁵ This LVHS Museum, near Long Sault, was intended to represent the Lost Villages rather than the romanticized Confederation-era settlement portrayed at Upper Canada Village. Ultimately, the new parks and recreation facilities

51 HEPSCO, SPP series, Supplementary Report to James S. Duncan (Chairman and HEPSCO Commissioners): “The Acquisition of Lands and Related Matters for the St. Lawrence Power Project,” January 2, 1957.

52 HEPSCO, SPP series, St. Lawrence Power Project. Discussion with Mr. J. D. Millar by Mr. G. Mitchell and Dr. Holden on July 30, 1954 in Dr. Holden’s Office, August 10, 1954.

53 HEPSCO, SPP series, Report on the Acquisition of Lands and Related Matters for the St. Lawrence Power Project (By Property Office), 1955-1956.

54 Interview with Jim Brownell, Long Sault (Lost Villages Historical Society Museum), May 16, 2011.

55 Interviews with Jim Brownell and David Hill, Long Sault (Lost Villages Historical Society Museum), June 22, 2011.

provided inadequate compensation for the loss of natural habitat, way of life, and riverside communities.

Conclusion

The foregoing examination of the International Niagara Control Works and the St. Lawrence Seaway and Power Project affirms the extent of connections among hydro-electricity, water, nationalism, and tourism. Plans to remake both the St. Lawrence and the Niagara river systems for hydro power and navigation threatened the existing tourist audience, and the engineering of these water bodies was done in ways that would retain this appeal. The making of these high modernist projects thus represents a balancing act between developing energy and preserving the scenic allure and tourist industry.

Because so many hydro-electric schemes require massive transformations of landscapes that threaten existing tourist attractions, one way in which Canada and the United States sold the affected communities on the St. Lawrence and Niagara projects was by promising new tourist and recreational opportunities such as camping and boating. While those directly affected by the St. Lawrence reservoir were sceptical about, and often opposed to, their own relocation, the average North American in the mid-twentieth century bought into a societal ethos of progress that embraced new hydro stations and dams, and people came to witness the dams, both under construction and after completion. The Niagara and St. Lawrence projects both benefited from being accessible by automobile—Niagara was a day trip from the most populated region of Canada, and the Ontario section of the St. Lawrence could be reached quickly from Ottawa and Montreal, not to mention smaller cities like Kingston, Cornwall, and Brockville. After the 1950s, Niagara Falls remained one of the prime continental tourist draws, as it had before the remedial works; the St. Lawrence Seaway and Power Project was a major national and international attraction while it was under construction, but the new tourist and recreation facilities were more of a local attraction after its completion.

As this study demonstrates, tourism logistics were an important part of the planning and final shape of these hydro developments. A great deal of attention was paid to creating facilities that allowed the public to see, access, and enjoy these sites. This effort went beyond simply installing temporary viewing towers and the like during the construction phase—waterscapes were permanently altered in ways that would allow the power of the state to be on display long after the projects were complete. An interesting juxtaposition was at play in the Niagara case, for the hydro stations themselves were meant to be viewed and admired, but the various engineering and remedial works that made the diversions possible were meant to be unseen: that is, they were intended to blend in as much as possible so that the Falls would still appear “natural” to the beholder.

Canadians were fascinated by these megaprojects and thus were attracted by state-sponsored “hydro tourism.” Power dams and construction sites were something to see, and these specific cultural waterscapes were patriotic topographies infused by hydraulic nationalism, encapsulating the unique blends

of nationalism and identity connected to these border waters, situated within particular geographical and temporal contexts, and enhanced by the technological and economic progress symbolized by power stations. As was the case for the St. Lawrence, for many Canadian nationalists, the hydro power of the Niagara River was as strong a draw as was its natural beauty, since the development of power represented full usage of the nation's aquatic birthright. For the concerned governments, these projects were an opportunity to show off the power of the state, literally and metaphorically.