Saving Niagara From Itself:
The Campaign to Preserve and Enhance the American Falls, 1965-1975

Daniel Macfarlane
Western Michigan University

Introduction

On January 31, 1965, the Niagara Falls Gazette ran a multi-page feature with the title “American Falls: Death Watch at a Cataract.”¹ Featuring background history, explanations of geological processes, and ample maps and diagrams, the point was to show that the American Falls was “destroying itself” by erosion. This was a choreographed effort by the newspaper to jumpstart a wider campaign to preserve and enhance the American Falls – that is, to determine whether the shape, stability, and flow of the actual waterfall could be improved to suit societal tastes. The Gazette found a receptive audience, and government officials quickly launched a transborder study on the cataract, highlighted by the dewatering of the American Falls in 1969. In this article I explore the genesis, evolution, and resolution of the American Falls preservation campaign between 1965 and 1975.²

Shutting off the American Falls to study how to reconfigure it might seem like an extreme response. Yet, situated within the context of Niagara’s modern history, physical manipulation was very normal and, initially, non-controversial. Indeed, it was a logical extension

¹ The author would like to thank Lynne Heasley, Andrew Watson, Jeremy Mouat, Murray Clamen, and Andrea Gaynor for reading and commenting on previous versions of this article.
of transborder efforts to renovate Niagara Falls in previous decades, and one goal here is revealing the extent to which Niagara Falls is, in fact, a heavily manipulated system even though many view it as a continental, even global, icon. Another aim of this study is demonstrating how local concerns created an international environmental “crisis” which initially centered on preserving the American Falls through an interventionist approach: i.e., whether the talus – a slope formed by an accumulation of rock debris – at the base of the American Falls should be removed, and whether natural erosion processes should be circumscribed. However, the campaign came to encompass the additional questions of public safety related to instability of the rock around the Falls and the impact that the surrounding environment and urban setting had on appreciation of the waterfall. Moreover, as I will illuminate, over the course of the campaign, preservation of the American Falls evolved to mean non-intervention. This position was primarily motivated by a growing reluctance to interfere with natural processes, which was part and parcel of the environmental movement sweeping the continent. But abstaining also had other roots, including the realization that the talus might actually be stabilizing the face of the cataract. With energy crises and recession looming, cost also factored into the equation, particularly as it became apparent that an extended dewatering of the Falls or further rock slides would likely hurt tourism, coupled with evidence that the general public would not likely notice or appreciate the removal of the talus.
A range of scholars have effectively detailed changing cultural and artistic conceptions of the Falls of Niagara. Another body of historiography looks at Niagara as an important site of technological prowess. Yet most existing scholarship ignores the actual waterfall, and even environmental history, the field best equipped to combat this oversight, has had little to say specifically about the cataract. This article attempts to rectify that omission for one part of Niagara’s modern history, blending approaches from the fields of environmental, envirotech, transborder, and international history. I contend that changing cultural attitudes toward Niagara Falls – e.g., its sublimity – cannot be understood apart from physical changes to the cataract. To illustrate, compared to a nineteenth century observer, a tourist at Niagara Falls in the early 1960s would have been witnessing half as much water go over a shrunken waterfall. As a result, the

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3 This author is completing a book on the wider modern history of remaking the Niagara Falls landscape for energy.
failure of the 1960s tourist to find the Falls sublime may not have stemmed only from his or her cultural context or personal experiences, though there are certainly differences in the ways that Americans and Canadians interpreted the Falls, but from physical alterations that had actually rendered the Falls less impressive by noticeably diminishing their size and volume. To get at this dualism, I employ an approach that utilizes aspects of both historical neo-materialism, which stresses how humans and their cultures are understood as products of their material environment, and the history of emotions.4

As an important cultural landscape, Niagara Falls is imbued with societal and nationalist significance. But the fact that the Niagara River forms the border between Canada and the United States has had profound consequences for the way it has been altered and understood. It has both shared, and diverging, meanings within American and Canadian cultures. Both nations evince competing forms of “hydraulic nationalism” that differently intertwine national identity with water resources in general, and Niagara Falls specifically.5 These different national ideas impact how Niagara Falls has been technologically replumbed, to the point that it is a hybrid envirotechnical system in which the “natural” has been made into an integral part of the infrastructure, much of it submerged.6 Tinkering with the Falls demonstrates the ways that humans used technology to rationalize their perceptions of these spaces as both natural and industrial. Since Niagara is a major provider of hydro power and an exemplar of the “water-
energy nexus” I suggest that it is profitably understood as an “energy landscape” – i.e., decisions about the utility, and actual shape, of Niagara Falls have historically been determined by energy considerations. However, whereas most waterscapes capable of major hydro-electric production were destroyed or became sacrifice zones in the process of development, Niagara’s tourist potential meant that it was important to maintain the waterfall’s appearance and mass appeal. The physical contours of Niagara Falls reflect this tension between producing energy and producing beauty.7

7 The “water-energy nexus” is the principle that water is essential to all types of energy production at various stages, and energy flows are essential for making water accessible to humans (delivery, purify, dispose, etc.). In terms of energy landscapes, tar/oil sands in Alberta are an obvious example, and fields stocked with corn for the express purpose of producing ethanol, or a meadow of solar arrays. In this case, the landscape is Niagara Falls, whose waterscape has been shaped by hydro-electricity development. See Daniel Macfarlane “Current Concerns: Canadian-American Energy Relations and the St. Lawrence and Niagara Megaprojects,” in Amelie Kiddle, ed., Energy in the Americas: Critical Reflections on Energy and History, University of Calgary Press (under review).
American Falls International Board’s Plan for Studying the Dewatered American Falls

Developing Niagara Falls

Niagara Falls is made up of the Horseshoe Falls, almost entirely in Canadian territory, and the American Falls (which also encompasses the tiny Bridal Veil Falls, bordered by Luna Island and Goat Island). The Niagara River is part of the largest freshwater system in the world, funneling the water from four of the five Great Lakes. The availability of water power, produced by the large drop from the level of the upper Niagara River to the lower river, created by the Niagara Escarpment, meant that by the last half of the nineteenth century the Niagara Frontier was a mecca for both industrialists and tourists. Crowded along the gorge below the Falls on the American side, factories took advantage of the water power diverted from above the Falls. But these diversions and industrial complexes sparked a public outcry about the visual impact on the Niagara landscape. During the 1880s the resulting “free Niagara” movement – perhaps the period when romanticist notions of Niagara’s sublimity really began to give way to the impression of the Falls as an anthropomorphized victim to be pitied and rescued – led to the dislocation of industry, replaced by parkland on both sides of the border at and around the waterfall. But this did not slow down demands to divert greater quantities of water, particularly as hydro-electric power replaced hydraulic power. Niagara was the locale for many important steps in the evolution of large-scale hydro-electric production and distribution systems, even if its role is sometimes exaggerated by oversimplified technological momentum narratives.
By the early twentieth century, hydro-electric plants dotted both the New York and Ontario shorelines above and below the Falls, and small alterations to both waterfalls had already been made to better facilitate diversions. The worries that had prompted the Niagara parks movement in the late nineteenth century were channeled into a movement to protect the scenic beauty of the Falls. Many, maybe most, people cared more about the potential for power than
beauty. But others were concerned about the amount of water industry was taking, as well the natural erosion of the cataracts – Niagara Falls needed to be protected not only from rapacious capitalists, but from itself. These concerns found expression in government legislation such as the 1906 Burton Act and the 1909 Boundary Waters Treaty between Canada and the U.S. (which also created the International Joint Commission to prevent or resolve American-Canadian border water and environmental issues), both of which limited Niagara diversions.

Between the two world wars, the two nations undertook binational studies on remedial works, as well as some failed international agreements, in attempts to salve the scenic impact of the water diversions, which continued apace. Seeking to legally enshrine higher diversion levels, in 1950 the U.S. and Canada signed the Niagara River Diversion Treaty. Its terms stipulated that half of the water volume of the Niagara River goes over the falls, and the rest to massive hydro power facilities downstream, during tourist hours (8a.m.-10p.m. in the summer and early fall); outside of tourist hours, three-quarters of the water of the Niagara River is siphoned off by huge tunnels that run for miles underneath the adjoining cities to feed the power stations. The U.S. and Canada split the cost of the International Niagara Control Works to make this water regime possible. These works involved the installation of structures and a range of physical reconfigurations to the river and waterfall during the 1950s. The Horseshoe Falls was shut off in stages, parts of the riverbed and lip excavated and filled so as to redistribute flow, and the flanks reclaimed in order to shrink the waterfall and become prime viewing areas. Engineers sought to produce a pleasing “curtain of water” over an unbroken crestline, with the appropriate color and, in response to tourist complaints about getting wet, not too much spray or mist. The overarching goal was to achieve a sufficient “impression of volume” to captivate tourists, and this disguised design obscured the fact that half the water, at minimum, destined to go over the waterfall was
being diverted for power production. A gated dam was built above the Falls, replacing a 1940s weir, to apportion the flow of water, and was extended in the early 1960s.⁸

All these efforts resulted in a reconstituted Horseshoe Falls and water regime. However, this was only the most radical step in a long line of taking water and reshaping rock that stretched back almost a century. Little wonder that romantic conceptions of the Falls as the epitome of the sublime had started to fade in the latter half of the nineteenth century, precisely when industrial uses of the Falls really accelerated, and even after adjacent parkland was created. The classical sublime is based on a sense of awe derived from a combination of beauty/love and terror, but for many of those viewing a diminished waterfall, fear had been eroded, like the waterfall itself, and replaced with sympathy, even pity. The Falls were no longer seen as something natural and wild, outside of human control – aside of when someone challenged it with a barrel or tightrope, of course – but were increasingly spoke of as a vulnerable and anthropomorphized waterscape that was under siege; in the nineteenth century, it was industry that threatened the Falls, for the first two-thirds of the twentieth century the threat was nature, but by the 1970s it was a combination of both.

These shifting sensibilities about Niagara stemmed partly from changing cultural mores and artistic standards, along with a rising appreciation for the technological sublime, as many others have pointed out;⁹ but an equally important reason for changing perceptions about the sublimity, or lack thereof, lies in the fact that Niagara Falls was objectively less impressive in terms of the volume of water falling over it. The 1950s remedial works did mask the impact of the diminished water flows, which actually improved the appearance compared to what had been

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the case when there were few limits, or none at all, on diversions, but without any remedial compensations. Underlying this approach was the belief that subjective sensory responses to “beauty” could be measured, quantified, and reproduced through engineering techniques and then extrapolated onto the real-world setting. This mindset was still in place at the start of the campaign to preserve and enhance the American Falls, though it would be in flux by the end of it.
Comparison of American Falls Talus in 1885 and 1960s

Schematic Profile of American Falls and Talus

The Genesis of the American Falls Campaign

As a result of all the post-Second World War remedial works, erosion of the crest of the Horseshoe Falls was reportedly reduced from several feet per year to several inches. Because of the water action undermining rock, Niagara is constantly wearing its way upriver. Studies suggested that the Horseshoe Falls, which now channeled 90% of the Niagara River’s flow (around 200,000 cubic feet per second) had receded 7 miles in 12,000 years, and 865 feet since 1764, though not at a uniform rate. The American Falls receded at a considerably slower rate
since a much smaller volume of water (i.e., around 10,000 cfs) poured over it. Niagra is made up of numerous layers of rock, much like a layer cake. At the top, the hard Lockport Dolomite resists erosion fairly well. However, underneath is a layer of Rochester Shale, and shale exposed on the face of the Falls is more apt to erode from the effects of water seepage, spray, and seasonal freeze and thaw cycles. This undermines the resistant rock cap until it falls, sometimes in small chunks, sometimes in large dramatic collapses.

Two major rockslides had occurred at the American Falls in 1931 and 1954. In January 1931, a total of about 76,000 tons of rock fell from the crest, leaving it much more jagged. The falling rock significantly increased the height of the talus, reducing “the unbroken curtain [of water] up to about one-half of its original height.” Whereas the powerful flow of the Horseshoe Falls chews up and disperses most rock that collects at its base, the comparatively lower volume of the American Falls is not enough to scour away all the talus, particularly the more durable dolomite. On July 28, 1954, 185,000 tons of rock fell from Prospect Point on the northeast flank of the American Falls, including part of the viewing area abutting the cataract. This rockfall, the largest in recorded history, further added to the estimated 280,000 cubic yards of talus and altered the waterfall’s crest and flank, obscuring the famed “Indian Head” rock formation. In December of the same year an additional 15,000 tons broke away from an adjacent spot. The lowering of water levels by 15-25 feet in the Maid of the Mist Pool at the base of the Falls, the result of the hydro power diversions permitted under the 1950 Niagara treaty, further increased the height of the rock slope. As a result, in the span of one generation the talus had reduced the

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sheer drop of the American Falls by about half; experts predicted that more rockfalls, completing the transformation of the cataract into a cascade, were inevitable without human intervention.\(^\text{11}\)

It was in this context that the mid-1960s crusade aimed at forestalling the destruction of the American Falls emerged. Though the 1954 rockfall was the largest to date, little had been said in the intervening decade about attending to the American Falls. Perhaps that was because attention was still focused on the Horseshoe Falls, as government proposals in the early 1960s to increase diversions there had, in contrast to the previous decade, met with public resistance. At any rate, the campaign to save the American Falls commenced in January 1965. It started with Cliff Spieler, the Sunday editor of the *Niagara Falls Gazette*. Early in the month, he pitched to his publisher, Herman E. Moecker, a series of feature articles on the “imminent ‘death’ of the American Falls” and the need for remedial works. Before any announcement was made to the public, Spieler and Moecker went to work behind the scenes to secure political support for their nascent preservation campaign, including President Lyndon Johnson. Legislation for Niagara preservation was drawn up at the state level, where politicians such as Senator Robert F. Kennedy and Governor Nelson Rockefeller were “tripping over one another to line up in support of the campaign.”\(^\text{12}\)

On January 31, the campaign went public. The *Niagara Falls Gazette* ran the multi-page special referenced in the opening of this article, the first in a blitz of pieces and editorials on the American Falls. American Falls could “cease to exist as a waterfall” and “[i]t could happen

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anytime.” Even if it did not crumble into a series of cascades, its slow decay was undermining the grandeur of the cataract, since the talus removed the dramatic plunge of water – evoking the pity, rather than awe, that was now often experienced at the Falls, the newspaper opined that it was “like watching an incurably ill loved one.” Yet, the writer added, the talus was also possibly preventing erosion or providing structural support. What should be done?

The *Niagara Falls Gazette* called for a campaign to rescue the American Falls. Adopting language similar to that directed towards the Horseshoe Falls in the previous decade, the paper demanded the “preservation and enhancement” of the smaller cataract. It should be dewatered so that engineers could explore options to remedy the situation, which included removing some or all of the talus, various remedial works (e.g., reinforcing the face of the American Falls, fixing joints and cracks in the rock, installing anchors), and reapportioning the Niagara River’s flow to reduce erosion. This had the backing of expert engineers and geologists. State and federal authorities, and potentially Canada through the International Joint Commission, should be involved. Although the costs of such measures to preserve the American Falls were unknown until further investigation was undertaken, the paper asked “How can you put a price tag on the world’s most-visited natural wonder?”

Because of Spieler and Moecker’s advance networking, within days the Niagara Falls City Council had already adopted a resolution urging state and federal agencies to undertake the suggested study. Politicians, government agencies, representatives of the local tourist industry, and the power and industrial companies in the area, responded immediately. So too did newspapers across New York State, and across the country. Headlines were dramatically ominous, playing on the readers’ emotional connections to the waterfall: “Fall Menaced,” “Save Niagara”, and “Disaster Threatens”. Some newspaper commentators were agnostic or
noncommittal about an engineered solution, while a few outright objected to modifying the waterfall and letting nature take its course; but most stressed that a dewatering and engineering investigation should proceed. The American Falls at Niagara needed to be preserved at any cost, with cooperation from all levels of government, since it was a national treasure that benefitted all. Letters to the editor, and other available means of gaging public opinion, indicated that the public strongly concurred. Before the end of summer of 1965 the New York State Governor had greenlighted funds for the state to join in an engineering survey of the American Falls, and a few months later Congress gave the U.S. Army Corps of Engineers approval to play the lead role in a study of measures to preserve and enhance the scenic beauty of the American Falls.13

However, the sudden alarm about the state of the American Falls was, at least in part, a manufactured crisis. President Johnson had announced in January 1965 the Beautiful America initiative (spearheaded by his wife, Ladybird Johnson), and Niagara civic leaders saw the American Falls preservation campaign as an opportunity to attract federal funding to resuscitate not only the American waterfall, but also the wider community abutting the famous falls.14 Some perceptive members of the media picked up on this. “Nobody can say that Niagara Falls, NY doesn’t have an alert bunch of aldermen and businessmen,” the Chicago Tribune wryly stated, “[a]s soon as they heard Mr. Johnson tell of the Beautiful America which is to come with the Great Society, they realized what this might mean for Niagara Falls.” Like a few other newspapers, the Chicago Tribune voiced its suspicion that Niagara Falls officials just wanted

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13 For a range of newspaper responses see LAC, RG 25, 86-2-1:1, American Falls (Niagara), Transcript of Hearing. USACE was authorized by section 304 of the Rivers and Harbors Act, October 27, 1965.

“Uncle Sam to foot the bill” for local efforts which were chiefly designed to compete with Canadian tourism.\(^\text{15}\)

\[\text{Talus at Base of American Falls}\]

The main instigators of the preservation campaign did indeed have this ulterior motive: namely, to get state, federal, and international (i.e., Canada and the International Joint Commission) funds for local improvements beyond just the waterfall. Niagara Falls, New York had historically been more reliant on industrial development than its Canadian cousin, and some of the impacts associated with the rust belt were already apparent. Moreover, the remaking of the

Horseshoe Falls in the 1950s had increased the Canadian dominance of Niagara tourism. National pride was clearly a factor as well. The editor of Rochester’s *Democrat and Chronicle*, for example, claimed that a failure to improve the appearance of the American Falls “would be a blow to this nation’s prestige, since the magnificence of the Canadian cataract, in contrast, has been guaranteed for future generations.”

**Dewatering the American Falls**

Within days of receiving its official authorization to begin studying the American Falls, the Buffalo District of the Army Corps of Engineers was at work in the field. In November 1966 it reduced the flow over the American Falls for part of a day in order to perform surveys, aerial photographs, soundings, and visual inspections of the upper river bed, falls, talus, and Maid of the Mist pool. These investigations were supplemented by a public hearing in Niagara Falls: while some thought the natural state was the most desirable, the consensus was that an unbroken curtain of water from crest to base (i.e., free of talus) was most attractive. The Corps concluded in the spring of 1967 that the removal of talus and other remedial works would be expensive but technically feasible; whether or not such an undertaking was desirable was chiefly an aesthetic question.

What happened to the American Falls obviously impacted the overall experience and setting of Niagara Falls, including the view from across the border. In other words, Canada had a vested interest in all of this. Moreover, since dewatering the American Falls required a cofferdam

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which would change the levels of a border river, Canadian concurrence was required, either through the International Joint Commission or a special diplomatic agreement. In March 1967, under Article IX of the Boundary Waters Treaty the Canadian and American governments sent a formal reference to the IJC, requesting that the commission investigate the aesthetic aspects of the American Falls and recommend: “(1) what measures are feasible and desirable (a) to effect the removal of the talus which has collected at the base of the American Falls; and (b) to retard or prevent future erosion; (2) other measures which may be desirable or necessary to preserve or enhance the beauty of the American Falls.” This reference formally became IJC Docket 86, Preservation and Enhancement of the American Falls, Niagara River. The IJC established a four-member American Falls International Board, composed of an engineering representative and a landscape architect from each country so as to incorporate both technical and aesthetic perspectives. This distinguished board also set up a Working Committee, on which representatives from the state and provincial park commissions bordering the Falls were included. The Corps of Engineers made its studies available to the commission, and the two entities agreed to cooperate moving forward.

The IJC scheduled public hearings for late October. There, the two power utilities that handled most of the hydro-electricity, the Power Authority of the State of New York (PASNY) and the Hydro-Electric Power Commission of Ontario (HEPCO), suggested that their generating stations absorb the excess water resulting from a dewatering. Otherwise, the increased volume of water going over the Horseshoe Falls would increase “the danger of scour, erosion, and rock falls,” in addition to wasting potential power. Other groups represented at the hearing were almost unanimously in favor of proceeding with the dewatering of the American Falls. The proposed dewatering, however, might leave less water flowing over the Horseshoe Falls than
was legally required by the 1950 Niagara Treaty, which complicated matters. Downstream interests, as well as members of local governments and chambers of commerce, complained that this would curtail levels in the lower river, and further lessen the scenic appeal, in addition to what had already resulted from the water regime of the 1950 treaty. Some voiced concern that lower water volumes would aggravate existing pollution problems because of the river’s reduced dilution capacity.\textsuperscript{18} Underlying many of these complaints was anxiety that this “temporary” decrease of water was just the thin edge of a wedge leading to a permanent increase in water diversions.\textsuperscript{19}

Nonetheless, on the IJC’s recommendation, the two countries agreed in March to authorize construction of a cofferdam to enable the drying of the American Falls. When the cofferdam was in place, 92,000 cfs and 41,000 cfs would go over the Horseshoe Falls during tourist and non-tourist hours respectively, rather than the 100,000 cfs and 50,000 cfs required by the 1950 treaty, with the power entities utilizing the difference. The United States and Canada would share the costs of studying the American Falls, which HEPCO and PASNY agreed to supplement with financial contributions, material, and labor in exchange for receiving the extra volume of water. However, the required U.S. Senate approval of this bilateral agreement was not


\textsuperscript{19} The Maid of the Mist Boat Company, for example, complained that lower levels would impair its dockage and navigation. The owner of the Spanish Aero Car attraction at the Whirlpool downstream complained that diverting extra would tamper with the flow of the whirlpool, which was known to reverse itself when water levels decreased enough. In response to complaints that the Niagara Rapids experience would suffer, the International Niagara Board of Control countered that the slight level decrease that could be expected would actually be an improvement because there would be greater “violent surface agitation.” LAC, RG 25, 86-3-1:1, American Falls (Niagara), General Correspondence Vol. 1: letter from Maid of the Mist Steamboat Company to IJC, November 1, 1967; LAC, RG 25, 86-3-1:1, American Falls (Niagara), General Correspondence Vol. 1: International Niagara Board of Control Report, March 12, 1968; LAC, RG 25, 86-2-4:1, American Falls (Niagara), Briefs and Statements 1967/10: PASNY Statement for IJC Public Hearing on October 20, 1967.
immediately forthcoming. Without higher appropriations from the U.S. Congress, the Corps of Engineers could not move ahead with the cofferdam.\textsuperscript{20}

The dewatering was consequently delayed until 1969. In June of that year, the Albert Elia Building Co., contracting with the Corps of Engineers, built a 600-foot cofferdam from Goat Island to the American mainland to cut off the channel leading to the American Falls. It would remain in place until late November. Anxious to get out in front of public opinion, the IJC and other cooperating agencies had planned an aggressive information program to inform the populace about the dewatering process. A number of outdoor information displays were installed near the Falls, for instance. Media from around the world showed up to get footage. Much of the area was fenced off, and the Niagara Frontier State Park Commission built a walkway so that tourists could access the dry river bed, where tomato plants and poplar trees were sprouting. On the advice of a professor hired to conduct an ecological impact, the Corps of Engineers instituted a watering program for trees on the small islands that dotted the channel. Many coins and other items of interest were found in the dry rock bed, including bodies from suspected suicides.\textsuperscript{21}

The dry American Falls was akin to a sedated patient undergoing a biopsy. Water and sand blasters were used to clean rock. Sprinklers were installed along the face of the Falls to keep the shale layer underneath the Lockport dolomite rock moist, since it deteriorated more quickly if exposed to wind and sun. Engineers drilled holes in the river bed several hundred feet in depth so that tests could be conducted to determine the composition of the rock layers, including permeability and strength, and core samples could be obtained for laboratory analysis.

\textsuperscript{20} The two power entities eventually each contributed $276,500. LAC, RG 25, 86-3-1:1, American Falls (Niagara), General Correspondence Vol. 1: Memorandum to Chairman. Re: Temporary Diversion of Flows from the American Falls. By M.W. Thompson, May 31, 1968.

Trace dye was injected into rock fractures to see where it emerged. As a safety precaution, sensors were installed to detect imminent rockslides, such as extensometers that used air bubbles to measure any minute rock movement. Piezometers measured hydrostatic pressure on rock joints. Tiltmeters detected deep-seated shear in the rock. Pins and monuments were employed to visually measure any shifts. To conduct tests and scale rocks from the face of the Falls, cranes lowered workers and geologists in suspended cages. Various means of improving drainage were effected. The surface of the talus and underlying bedrock was surveyed, mapped, and photographed in detail.\textsuperscript{22}

There had been hopes that the dewatering might stimulate an increase in the more than 10 million tourists who visited the site annually. At first, record-setting crowds did arrive to experience this “once in a lifetime opportunity” – one July weekend, for example, saw 90,000 visitors to the Niagara Reservation Park. However, overall tourist visits actually dropped in 1969, and those that did come did not stay as long nor spend as much, compared to previous years.\textsuperscript{23}

\textsuperscript{23} Niagara Falls Public Library (Ontario), File: Niagara River and Falls – Diversion and Cessation. Adult LHC. Vertical File 380800034199098: “Dry falls blamed for decline,” by John Fedoe.
Dewatered American Falls (note sprinkler system running along the crest)

**Broadening the Reference**

In the meantime, the American Falls International Board had become concerned about another issue: the wider Niagara experience beyond just the waterfall. This had not been part of the 1967 American Falls reference. The board likened Niagara’s surroundings to a jewel set in lead, or a gallery built to house great works of art – in each case, the wider scene enhanced or detracted from the object of beauty, or what the AFIB called the culturally-shaped “climate of appreciation.” That is, the waterfall could not be enjoyed in isolation from everything around it.
And, as one government memorandum put it, “the awesome beauty of Niagara Falls is enclosed on either side by two cities of quite awesome ugliness.”

Such sentiments bore a strong resemblance to the “free Niagara” movement of the 1880s. The problem now, rather than mills and factories immediately abutting the upper river and gorge, was a range of large tourist, commercial, and industrial structures threatening the vulnerable icon. While the skyline immediately at the Falls had been the initial issue that caught the AFIB’s attention, it soon encompassed a variety of considerations across the Niagara Frontier: the snarled traffic situation; various motels, tourists traps, and commercial areas in need of urban renewal; a general “honky-tonk” atmosphere; industrial blight; and other aspects of the natural and human landscape. Air and water pollution were high on this list: sewage effluent turned the Falls an unnatural greenish hue, and at times several feet of foam from detergents and chemicals formed at the base of the Falls and sprayed onto Maid of the Mist excursions. The American Falls International Board catalogued it all in a November 1970 report entitled “Intrusions on Views of Niagara Falls” and called for both nations to commit to a larger IJC study. American authorities promptly agreed and began considering the wider Falls scene. However, Canadian officials were much less interested, and the Province of Ontario in particular believed that an IJC study would only benefit the New York region of Niagara, stealing away tourism and economic development.


As the affective turn in historical enquiry has demonstrated, emotions change over time and are historically contingent. Such is case at Niagara, evidenced by the changing nature of what constitutes sublimity among the various involved “emotional communities” or “emotional regimes”\(^2\): groups that developed their own unique norms of valuation, expression, style and shared assumptions. In the context of this study, the prime emotional regimes are the engineers, planners, industrialists, artists, and different classes of tourists. Though these can certainly overlap, within them affective responses to the Falls are often stylistically uniform, suggesting that many are performing cultural scripts – e.g., fainting at the site of Niagara or, conversely, leaving unimpressed after a few minutes; advocating that it be left alone or, conversely, planning to dam it all up for power.\(^2\) Over the past two centuries such communities have determined the conventions of how responses to the Falls are interpreted: e.g., in the 1950s and 1960s, the engineering community was dominant, though in the 1970s the bounds and assumptions of this regime began to shift, as we shall soon see.

Nevertheless, the physical shape of Niagara Falls was, to put it bluntly, altered in ways that were intended to engender particular emotional responses: a sense of reverent awe, or at least sufficiently impressed. What is striking is the ways that engineers sought to quantitatively measure and assess what was essentially qualitative – i.e., how people emotionally responded to the sight, sounds, sound, and feeling of Niagara. In turn, the engineers used this information to physically reshape the waterfall so that tourists would continue to experience the requisite emotions. Granted, the affective response to Niagara Falls was filtered through various lenses,


\(^{27}\) Evidence of such responses can be found in diaries, postcards, letters, guest books, photographs, art, engineering studies, governmental reports, etc. On performativity see Monique Scheer, “Are emotions a kind of practice (and is that what makes them have a history)? A Bourdieuian approach to understanding emotion,” *History and Theory* 51 (May 2012), 193-220.
including nationality, but there was still enough common ground about what constituted the
grandeur of the spectacle that it could ostensibly be captured in a laboratory and on a model.\textsuperscript{28} However, there were signs that the façade was beginning to crack, as the emerging
environmental ethos was changing how people felt about the appearance of Niagara Falls.

Though the push to include the wider Niagara setting within the purview of the 1967
American Falls reference failed to gain traction, the reference was broadened in another way.
Geological investigations during the dewatered phase had revealed several areas of instability at
the American Falls. Cracks were discovered on the surface of Prospect Point and Luna Island
which, along with the Cave of the Winds (which no longer featured a cave), was immediately
closed to the public. Terrapin Point also had problems of its own. These were all areas that had
previously been reclaimed, and apparently the falls did not like being caged in, for the water
worked to undermine these areas. The IJC’s investigation of measures necessary to preserve or
enhance the beauty of the American Falls was therefore widened in 1970 to look at the extent to
which the rock astride the American Falls and the Goat Island flank of the Horseshoe Falls were
endangered by the possibility of erosion and other structural problems and, if so, what measures
were feasible and desirable to protect these areas while eliminating any hazards. In short, public
safety joined scenic beauty as the prime considerations of the reference.

\textsuperscript{28} In addition to works mentioned in footnote #24, scholarship on emotional history includes: Mick Smith, Joyce
Davidson, Laura Cameron, and Liz Bondi, eds., \textit{Emotion, Place and Culture} (Burlington: Ashgate, 2009); Frank
Costigliola, “‘I React Intensely to Everything’: Russia and the Frustrated Emotions of George F. Kennan, 1933-
Emotions History} (Chicago: University of Illinois Press, 2014); Susan Broomhall, ed., \textit{Early Modern Emotions: An
Introduction} (London: Routledge, 2017); Franklin Ginn, \textit{Domestic Wild: Memory, Nature and Gardening in
Suburbia} (London: Routledge, 2017). In terms of combining environmental and emotional history specifically, little
work has been done aside of Andrea Gaynor’s forthcoming work, as well as a recent blog post:
Interim Opinions

Engineers and technocrats spent several years analyzing and processing the data from the 1969 dewatering. A lack of sufficient Congressional appropriations continued to hamper the study. Nonetheless, even while the Falls were still dry, it had become apparent that the primary cause of rockslides was not the face of the Falls, but joints in the riverbed upstream from the precipice. The water that seeped into these vertical fractures undermined the Rochester Shale, creating thin columns that decreased the stability of the Falls. The experts eventually determined that this could be best combated by a mass stabilization effort: they created tunnels within the rock to provide internal drainage, tied the rock together with tendons and verticals anchors that connected the tunnels and riverbed, and installed concrete facing.29

In addition to the physical evidence, the AFIB wrestled with the subjective question of what constituted beauty when it came to the American Falls. As the board fully admitted, aesthetic assessments and emotional responses to Niagara’s splendor varied. The board determined that the key elements of the cataract’s appeal included: “the volume of water, the sculptural form of the talus and bedrock, the surface level and water’s edge of the pool. In understanding the American Falls as an immense water-sculpture, these are the controllable elements of the design. The beauty and drama of the Falls depend on the interplay and the relative proportions of these elements.” Since the “character and beauty of the Falls depend on the interplay of water and rocks” they surmised that increasing the flow rate might amplify the appeal of the American Falls. A demonstration was arranged in which the flow was decreased and increased by diverting water from the Horseshoe Falls. The logic behind inflating the flow rate was that this amount would be “a very substantial addition” to the American Falls “but

would not represent a very significant change in the proportions of the Horseshoe Falls.” The augmented flow over the American Falls “greatly enriched the appearance, deepening the green water plunging over the crest and adding considerably to the turbulence of the white water pouring over the talus rocks.” Making this increase permanent would require excavation and a control structure at the upstream end of Goat Island.30

Comparison of Increased Water Flow over American Falls

High-precision scale models had been a fundamental part of designing the Niagara remedial works in the 1950s, and remained the “most practicable tool” for visually determining the effects of removing talus, raising the pool level, and increasing the flow over American Falls. A scale model of the American Falls was built at Ontario Hydro’s Islington laboratories. Based on the model demonstrations, authorities determined that the American Falls would be “more dramatic, majestic and beautiful” if much of the rock was removed, the surface of the Maid of

the Mist Pool was raised with a downstream dam, and the amount of water topping the American Falls was increased.31

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The AFIB’s interim report, “Preservation and Enhancement of the American Falls” was submitted to the IJC in December 1971 (later followed by lengthy appendices). The purpose was to summarize the findings of the investigations up to that point, and determine what aspects the AFIB should focus on for the remainder of its study. The board outlined the practical means of increasing the flow over the American Falls (at a cost of $6 million), the raising of the Maid of the Mist Pool ($8.6 million), and the removal of practically all the talus ($10 million). The report admitted that all this was feasible, and would clearly heighten the waterfall and its dramatic effect. Nonetheless, in the Board’s estimation the desirability of such measures was “debatable.” The Board questioned whether any of the alternatives would “raise the beauty of the Falls in a truly remarkable way, to an extent that would be fully understood and appreciated by the public?” Additionally, there was evidence the talus actually served to inhibit more rapid geological deterioration by stabilizing the face of the Falls. The Falls were so impressive and astonishing, the report postulated, precisely because they were “live, active, and violent” – to control erosion patterns would therefore threaten to strip it of its animating character. Ultimately, the AFIB concluded that “it is better to allow the process of natural change to continue uninterrupted rather than to give permanence to a particular condition and appearance.”

In the context of the momentum to preserve the American Falls, and the modern history of manipulating Niagara Falls, this conclusion was surprising, to say the least. Yet, throughout the report the board’s stance that it would be better to allow the process of natural change to proceed uninterrupted was clearly conflicted, even contradictory. To illustrate, in case an intervention route was chosen by the IJC, the board also outlined a range of alternatives for

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different combinations of physical alterations to the American Falls. In the conclusions, the board stated its preference for Alternative No. 3, the option that, at a cost of $27-29 million and staggered over time, would remove a substantial amount of the talus, increase the flow over the American Falls during select hours of the day, and raise the Maid of the Mist Pool. The interim report’s attention to public safety measures likewise seemed inconsistent with the notion of letting nature take its course: the board proposed that sensors to detect rock movement could be installed, and the flanks of the Falls could be stabilized to protect the public from further rockslides. This the authors justified by declaring that it was for convenient enjoyment of the spectacle; as the report put it, “when one is considering how to protect the public against the violence of nature, the safest animal is a dead animal and the safest waterfall is an emasculated one.” Leaving aside the gendered and anthropomorphized implications of such a statement, it was as if the board was saying: it would probably be best to leave the American Falls alone, but if that is not possible, here is how we think it should be remade.33

The Final Report

The IJC approved the AFIB’s interim report as the basis for moving forward. The various means that the IJC used to gage public opinion indicated that attitudes had changed considerably since the start of the reference in 1965. In fact, the various public feedback mechanisms demonstrated that many people thought that pollution abatement in the Niagara River was a higher priority than remaking the American Falls – a prescient concern, given that the Love Canal crisis was percolating within walking distance, and one which reflected the era’s growing

33 LAC, RG 25, 86-4-5:1, American Falls (Niagara), Board’s Interim Report and Distribution, Vol. 1: Preservation and Enhancement of the American Falls at Niagara, Interim Report to the International Joint Commission by the American Falls International Board, December 1971, Appendix B, page 35-6; LAC, RG 25, 86-4-5:1, American Falls (Niagara), Board’s Interim Report and Distribution, Vol. 2: Meeting Canadian Secretary of AFIB with Canadian Secretary of IJC, February 8, 1972.
concerns about public health issues. But since both the board and the larger commission felt that the hearings to date had not provided enough public feedback and confirmation, particularly considering that a hands-off tack had emerged, they decided to issue to the public 220,000 copies of a booklet entitled “The American Falls: Yesterday Today Tomorrow.” Enclosed were ballots asking respondents to voice their opinion on several options: remove the talus, increase the flow over the Falls, restore the Maid of the Mist Pool, or make no physical changes. “How would you like your American Falls?” one newspaper asked: “On the rocks? Straight up? With a little more water?” For each option, a pictorial representation of the American Falls model under the respective conditions was provided. About three-quarters of the 40,000 persons who responded favored some change. However, the IJC worried internally that the results were skewed because “no physical change” had not been presented as an alternative throughout the booklet, apparently because it did not need an explanation, even though it was an option on the mail-in ballot.34

The IJC also convened a seminar composed of 15 distinguished environmental planners and landscape architects from both countries. The seminar participants (9 American; 6 Canadian) met in June 1973 and “reached a remarkable unanimity of opinion relative to the appearance of the American Falls, that being to leave the American Falls alone and remove no talus.” They opposed raising the pool level or increasing the flow of water over the Falls, and argued that “irreversible damage” could result from heavy-handed intervention. Moreover, in the eyes of

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these consultants, the deteriorating conditions of the larger scene around the Falls was a matter of much more serious concern than the appearance of the Falls themselves. This heartened the AFIB.

The expert seminar reflected a countercurrent that had been forming and gathering momentum, and the desire to see the natural sublime restored at Niagara seemed to include a partial return to a romanticist emphasis on “wildness”. At the start of the American Falls reference, few voices had been raised against alteration of the Falls, within the IJC or wider society. Exceptions included the Niagara Parks Commission general manager, Maxim T. Gray, who had indicated in 1967 that he preferred to see to the cataract untouched – a reporter identified this as “the first and only indication of opposition to a preservation program” for the Falls. But by the early 1970s environmental groups like the Committee of a Thousand were vociferously opposing remedial works at the IJC’s public hearings. At the March 1972 hearings after the AFIB’s interim report, the Chairman of the Ontario Niagara Parks Commission reported that his organization preferred that the process of natural change continue uninterrupted. Others pointed out at the same hearings that the talus actually added to the winter grandeur of the gorge. The curator of the local Schoellkopf Geological Museum, meanwhile, characterized the potential renovations as “a joke”.35

The very fact that the seminar was not primarily stocked with engineers in itself suggested a changing ethos within the IJC. Moreover, a member of the AFIB, who was also an Army Corps engineer, was quoted as saying: “I’ve always thought we should just leave the Falls alone. The public has been brainwashed into thinking there’s a problem at the American Falls. …

It’s this kind of misinformation that led to the board’s study in the first place – ignorance of the fact that this is a natural geological process here and not some kind of accident or mistake that we should correct.” Moreover, the American Falls International Board admitted that “[r]ecent emphasis on environmental values has raised questions about changing natural conditions even for demonstrated and measurable social benefit. When changes are made for a calculated economic and social benefit, measures should be taken to prevent excessive damage to the natural environment.” Such a statements indicate the creeping impact of scientific uncertainty, in contrast to the hubris that had defined earlier engagements with this landscape.

Within the environmental movement, resistance to engineering and manipulating nature joined pollution concerns. Nonetheless, as Matthew Wisnioski argues, the “purposes of engineering and the nature of technology” within the American engineering profession shifted between 1964 and 1974 – which lines up almost precisely with the period of the American Falls reference – with technology taking on “ambiguous and ultimately sinister connotations in American thought and culture.” Within landscape architect circles, moreover, there was a growing movement to be more ecologically sensitive and “design with nature,” exemplified by a 1969 book of the same name by Ian L. McHarg. Furthermore, many people were obviously concerned about technology as it pertained to chemical production and nuclear weapons, and by the mid-1970s there was an apparent apprehension, influenced by the likes of Murray Bookchin.

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and Barry Commoner, about large-scale technological solutions that altered nature purely for aesthetic reasons.

This shift in the engineering mindset was firmly linked to the broader North American environmental movement of the 1960s and 1970s. Was the resistance to changing the American Falls just part of the normal trajectory of the environmental movement? In one sense, the answer is in the affirmative: changing mindsets about the environment drove the altered approaches to modifying the American Falls (i.e., the ascendance of preservationist impulses over conservationist goals). Yet this story is different in important ways. For starters, this was different because it involved Niagara Falls, one of the continent’s natural icons. People feel differently about Niagara Falls, and proposals about Niagara receive national and international attention. What is done to a nation’s cherished environmental symbols says a great deal about a society’s views about nature.40 In the 1950s and 1960s, Americans looked long and hard at remaking other charismatic waterscapes for hydro-electricity: damming the Grand Canyon; the Hells Canyon Dam on the Snake River in Idaho; an Echo Park Dam in Colorado’s Dinosaur National Monument Park; a pumped storage plant in Storm King Mountain on the Hudson River. In all these cases, as well as other potential water control projects, such as the Tocks Island dam on the Middle Delaware River or the Meramec River in Missouri, public opposition halted or significantly modified development. In addition to Niagara’s status as one of the most revered American natural icons, the American Falls case is also unique because it was the engineers who were promoting the hands-off approach – it was one thing coming from landscape architects, environmental groups, and the affluent and upper-middle classes, but a changing ethos is readily

40 This statement is made while also keeping in mind the importance of local concerns and quotidian experiences for influencing American environmentalism in this era. Christopher Sellers, Crabgrass Crucible: Suburban Nature and the Rise of Environmentalism in Twentieth-Century America (Chapel Hill, NC: University of North Carolina Press, 2012).
apparent when even those whose profession it is to manipulate these environments become wary of doing so.

The campaign to preserve and enhance the American Falls reflects the shift from the rise of modern environmentalism to its mainstreaming.\footnote{Standard works on the American environmental movement include: Roderick Nash, \textit{Wilderness and the American Mind} (New Haven, CN: Yale University Press, 1965); Samuel Hays, \textit{Beauty, Health and Permanence: Environmental Politics in the United States, 1955-1985} (Cambridge: Cambridge University Press, 1987); Robert Gottlieb, \textit{Forcing the Spring: The Transformation of the American Environmental Movement} (Washington: Island Press, 1993); Benjamin Kline, \textit{First Along the River: A brief history of the U.S. environmental movement} (Lanham, MD: Acade Books, 1997); Philip Shabecoff, \textit{A Fierce Green Fire: The American Environmental Movement} (Washington: Island Press, 2003).} The effort to remake the American Falls began in 1965, and gathered momentum, as modern environmentalism was itself gaining steam: following on the heels of \textit{Silent Spring} and other concerns, the passage of the Wilderness Act (1965) and Wild and Scenic Rivers Act (1967) combined with other events – some of them, like the purported death of Lake Erie and the repeated fires on the Cuyahoga River, were not far upstream of the Niagara River – and were followed by the first green decade, marked by the 1970 Earth Day, the creation of NEPA and the EPA, and the passage of water legislation such as the Clean Water Act (1972).

Even if a critical mass was building away from confronting the talus and erosion, it was a different story for rock issues that threatened public safety, another key component of public environmental sensibility in the 1970s. Under IJC approval, in November 1971 a cofferdam was built to shut off the flow to Bridal Veil Falls, and the next year remedial work began on the Luna Island area. In addition to clearing away rock and drilling drainage holes, warning sensors were installed to detect rock movement. Bolts and tendon cables were put into the rock to increase stability, in addition to other ways of enhancing slope stability protection, such as a concrete parapet wall at the front of the island. The Cave of the Winds received a facelift too. Along with
Luna Island, it was reopened to the public in 1973. At Prospect Point similar work was completed.\textsuperscript{42}

The different forums for public opinion confirmed the AFIB’s revised direction. The board forwarded its final report to the IJC at the end of June 1974. This final report did not depart much in substance or tone from the interim report. The AFIB explored numerous alternatives, and even devised a rating system that compared the various options according to different criteria. It found that measures to remove the talus and inhibit further erosion were feasible. Recession at the crest and flanks, for instance, could be prevented and arrested by a program of mass stabilization, which would cost about $26 million.\textsuperscript{43}

However, the report ultimately came out against procedures that changed the appearance of American Falls, although the board was open to alterations that would improve public safety. While talus removal would provide a water plunge that was more complete and dramatic, this should not be done at that time since it would be costly and it was “not clear that the removal of the talus would enhance the beauty of the Falls to an extent that would be fully appreciated by the public.” The Board suggested that this position might be revisited in the future, such as after another massive rockfall or once a study of the overall environment had occurred. Nor should the measures to stop erosion be undertaken, as that risked making “the Falls static and unnatural, like an artificial waterfall in garden or park, however grand the scale.” The Board contended that the “guiding policy should be to accept the process of change as a dynamic part of the natural condition of the Falls, and that the process of erosion and recession should not be interrupted.”

\textsuperscript{42} Terrapin Point remained closed until 1983, when New York State Frontier Park Officials blasted off the unstable overhand. LAC, RG 25, 86-3-1:1, American Falls (Niagara), General Correspondence Vol. 3: Daniel D. Ludwig (Colonel, Corps of Engineers; Chairman, US Section, American Falls International Board) to Colonel Andrew C. Remson (Chairman, US Section, American Falls International Board), April 10, 1978.

\textsuperscript{43} The criteria included: Improve Safety; Improve Viewing; Enhance Natural Appearance; Compare Cost; Maintain Reversibility/Flexibility; Maintain Natural Process; Maintain Positive Economic Impact on Tourism.
Nonetheless, the AFIB’s final report carried forward the interim’s report conflicted stance about the extent to which nature should be allowed to run its course. For instance, in contrast to the above-mentioned position on talus, at one point in the report the board wrote that it “may lean more towards a policy of ‘enhancement’ … than a policy of preservation” since the members “may conclude that removal of some or all of the talus would enhance the Falls.” Moreover, the board left open-ended the questions of raising the Maid of the Mist Pool and increasing the flow over the American Falls, but seemed to implicitly favor them. Granted, for the AFIB, altering water levels was understood as an attempt to return to the natural conditions that existed before large-scale diversions from Niagara. When it came to unstable areas that had been the subject of the 1970 reference, a tension between intervening and abstaining was apparent: the board advocated structural supports, rock stabilization, and safety warning systems, but also suggested that railing realignment and closure of certain viewing areas might be preferable.

The final report was summarized in pamphlet form for easier public consumption. Newspaper editorials and letters to the editor tended to affirm the recommendations, including the Niagara Falls Gazette, which had started the whole furor back in 1965. Another round of public hearings were held, in March 1975, to receive feedback on the AFIB’s report. Most submissions supported leaving the talus at the base of the Falls, and witnesses almost unanimously agreed that the Falls should not be artificially stabilized and that natural processes should be allowed to continue uninterrupted.44 At the same time, all witnesses who addressed the public safety issue concurred that steps should be taken.

The IJC issued its final report on the Preservation and Enhancement of the American Falls to the U.S. and Canadian governments in 1975. The study had originally been expected to wrap up by 1971, and its costs had also ballooned significantly, up to $2.7 million apiece for both nations. Although the IJC’s report was more truncated and matter-of-fact, it echoed the AFIB’s key findings. The IJC concluded that, while it was technically feasible to remove the talus and control the erosion, it was not desirable to use artificial means, at least not at the present time. Though the IJC thought the public should accept that some risk was inevitable, remedial works were recommended for the unstable flanks of the American Falls and the Goat Island flank of the Horseshoe Falls. It also stressed the need for an environmental study of the total setting.\textsuperscript{45}

The U.S. and Canadian governments accepted, and generally concurred, with the IJC’s recommendations. There was, however, one key exception: the broad environmental study. Without governmental support, a transborder program to address the Fallscape could not go anywhere. As a result, until it was disbanded in 1979, all the AFIB could do was continue to recommend that “protection and enhancement of the whole environment of the Falls should receive as much emphasis as the measures for preserving and enhancing the beauty of the Falls themselves.”\textsuperscript{46}

\textbf{Conclusion}

At first, the American Falls campaign was driven by local interests that extended beyond

\textsuperscript{45} Ibid.
just the state of the Falls. But the movement to save the American Falls tapped into a wider sentiment that was concerned about the cataract for its own sake and as a symbol of natural and national grandeur. This concern morphed over time, as preservation of the Falls came to be understood as leaving it alone, rather than intervening. Cost, concern about public safety, and uncertainty about whether stopping the natural processes of erosion and talus accumulation would actually make a perceptible aesthetic difference to the average tourist also deflected attention away from intervention.

No effort was subsequently made to reengineer the American Falls, outside of safety measures. The IJC’s decision not to significantly alter the American Falls coincided with the environmental movement of the 1960s and 1970s, as well as changing ideas about the role of engineers and technology in society. In the case of the American Falls, it appears that this philosophical evolution was driven primarily by elites, particularly the American Falls International Board and the International Joint Commission. The decision not to alter nature represented a new direction for the IJC. But a receptive public was also necessary, for the new environmental ethos gave engineers and government the license to change their approach to dealing with Niagara. In 1965 only a few voices argued that the American Falls should be left alone; a decade later, it was the majority view.

While American preservationists had always sought to protect “wilderness” and special environmental locales, they often shared some of the conservationist urge to engineer or tinker with nature to make it more amenable to human use. In this respect, one of the main preservationist-conservationist divides was not whether nature should be changed – at least not in the pre-1960s era, before ecological concerns about protecting nature for its own sake – but what the end goals of such manipulation should be: for consumption as natural resources, or for
consumption though experience for betterment of the human condition? For the American Falls, preservation initially meant intervention; the meaning of preservation, however, shifted quickly and significantly between 1965 and 1975. Many became wary of interfering with nature as the high modernist attitudes of the middle third of the century gave way to the realization that there were limits to control along with unintended repercussions. This also reflected shifting attitudes about sublimity – before 1970, the technological sublime had been well ensconced and many tourists were more impressed by perceived ability to control the waterfall than by the cataract itself; by the 1970s, the sublimity of Niagara was returning to a sense of experiencing the setting in all its messy and imperfect glory, as a waterfall that had not been neutered, to borrow the gendered and anthropomorphized language contemporaries frequently employed, and still carrying some semblance of its former sense of danger, even if past sensations of pure sublimity could not be recaptured. Many historians have rightfully pointed out the many ways that the environmental movement was driven by quotidian concerns. But environmental icons like Niagara are equally important for they serve not only as barometers of national sentiments about nature, but also as drivers of these attitudes. Thus, the American Falls was very important symbolically, not only because it provided a cross-border contrast with Canada, but because Niagara Falls stood as a national icon, a synecdoche for how Americans perceived the state of their environments.

Nevertheless, the decision not to affect the Falls was also calculated, reflecting more realistic cost-benefit engineering analysis compared to prior decades of pork barrel politics as well as the partial incorporation of ecological values and amenities into this analysis. It was not worth spending all the time and money that would be necessary to remove the talus and control erosion if these measures would only achieve a minor aesthetic benefit – i.e., if it would not be
noticed by most people, as studies suggested. The local New York tourist industry, which had originally figured it would benefit from a refurbishment of the American Falls, now thought the opposite: namely, that closing attractions for several more years to reclothe the American Falls would result in a significant loss in tourist revenue. Moreover, for most observers and officials, addressing the potential safety issues discovered during the course of the American Falls study took precedence over considerations of improving the beauty of the Falls – tourists might want to experience a sense of danger, but not the reality.

The decision to involve Canada in the American Falls debate and Ontario’s unwillingness to undertake a coordinated study about the wider Niagara setting speak to the myriad ways that borders matter. Even though the full range of potential manipulations that had been considered for the American Falls did not take place, the waterfall was still a blend of the natural and artificial, rock sutured by bolts, cables, anchors, and cement. An envirotech approach points to the intertwined natures of technology and environments, and provides analytical tools for conceptualizing Niagara Falls as both a natural icon and as an infrastructural complex. Similar sentiments about hybridity underpin the constructs of “organic machine” and “cyborg”, both of which can effectively characterize the Niagara situation. What separates Niagara Falls from other large hydro-electric developments of the era, which replaced the involved water body with a dam and reservoir, is that at Niagara the technology was largely hidden through disguised design: the waterfall was to be left looking untouched and fully natural, even as it was heavily manipulated and controlled. I would suggest that Niagara Falls is best understood as a “simulacrum” – i.e., as an unsatisfactory imitation of something for which the original no longer exists. Indeed, I would suggest that the real waterfall is downstream in the penstocks of the

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enormous hydro stations. Nonetheless, it is a testament to the power of Niagara Falls that even a partial reflection can still inspire and impress.